

# Wilo-Drain TS 50... / TS 65... / TP 50... / TP 65...

| | | | |
|---|---|---|---|
| **de** | Einbau- und Betriebsanleitung | **nl** | Inbouw- en bedieningsvoorschriften |
| **en** | Installation and operating instructions | **el** | Οδηγίες εγκατάστασης και λειτουργίας |
| **fr** | Notice de montage et de mise en service | **tr** | Montaj ve kullanma kılavuzu |
| **es** | Instrucciones de instalación y funcionamiento | **sv** | Monterings- och skötselanvisning |
| **it** | Istruzioni di montaggio, uso e manutenzione | **hr** | Upute za ugradnju i uporabu |

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**Fig. 1**

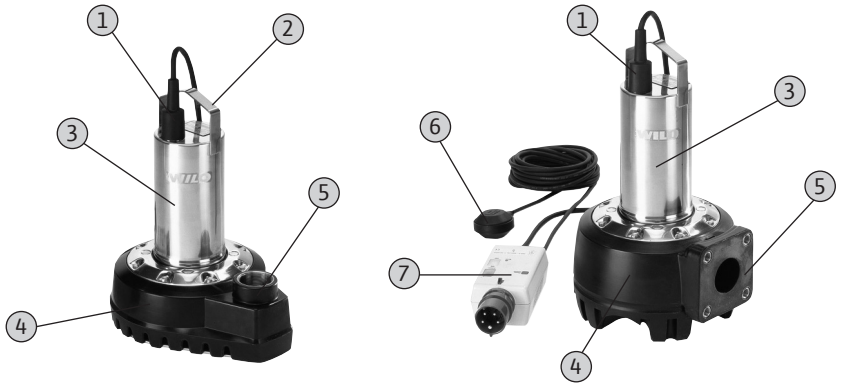



**Fig. 2**

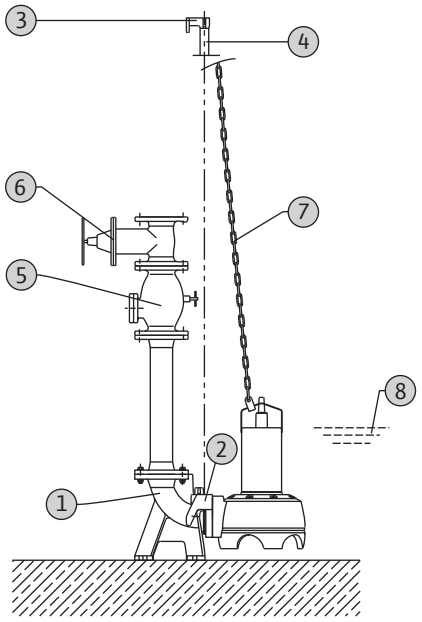



**Fig. 3**

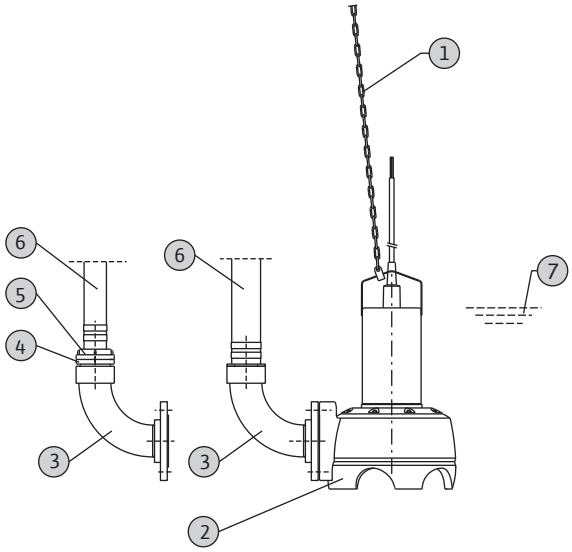
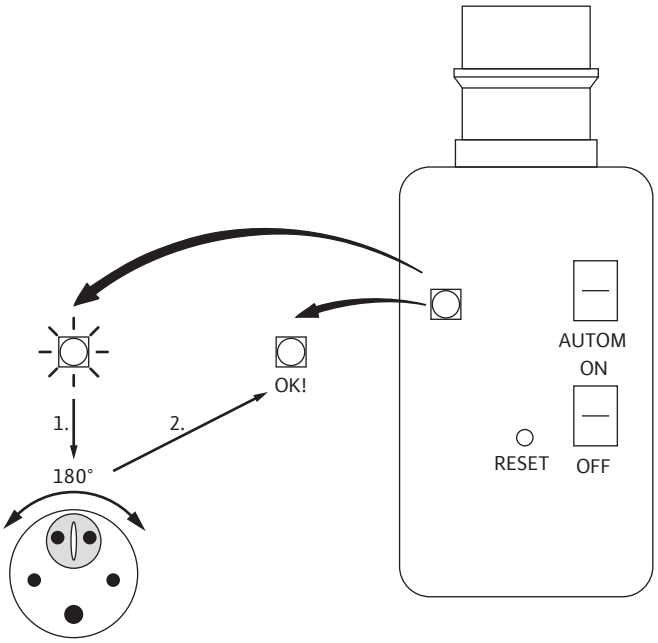



**Fig. 4**



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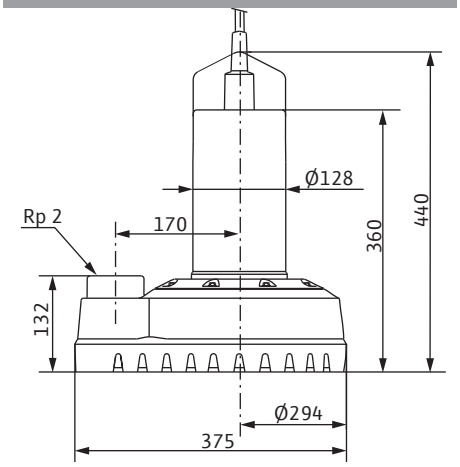


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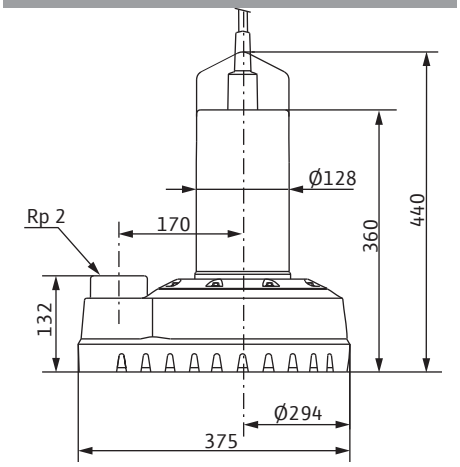


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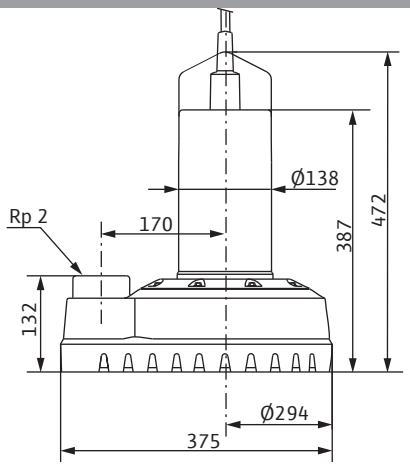


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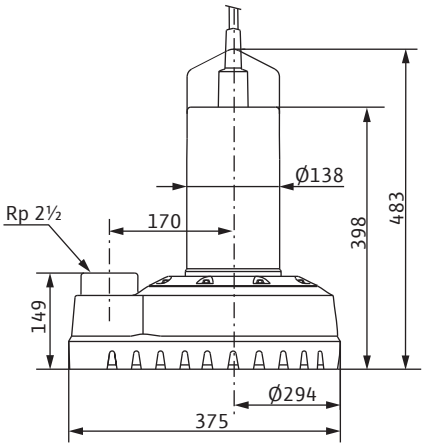


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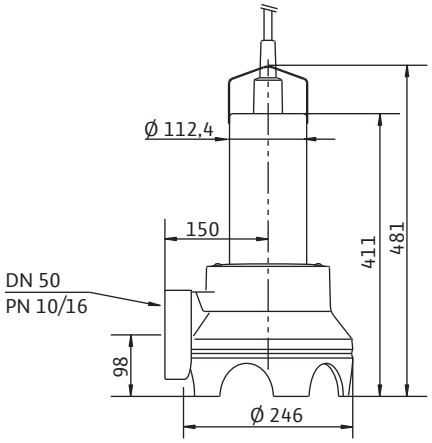


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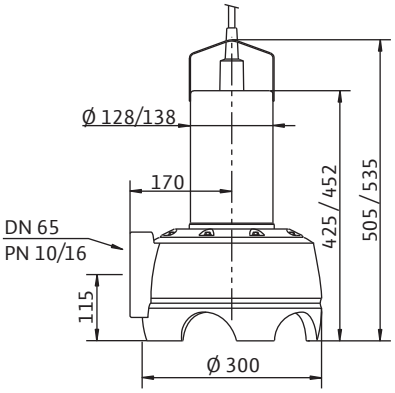

# 1 Introduction

## 1.1 About this document

The language of the original operating manual is German. All other language versions are translations of the original German manual.

The operating manual contains a copy of the EC Declaration of Conformity.

Any unauthorized or unapproved changes made to the constructions specified therein will nullify this declaration.

## 1.2 Layout of the manual

The manual is divided into individual chapters. Each chapter has a heading which clearly describes the content of that chapter.

The table of contents also serves as a brief reference, since all the important sections have their own headers.

All the important operating and safety instructions are highlighted. For detailed information on the structure of these texts, see “Safety” in Chapter 2.

## 1.3 Personnel qualifications

All personnel who work on or with the product must be qualified for such work; electrical work, for example may only be carried out by a qualified electrician. All personnel must be of legal age.

Operating and maintenance personnel must also observe national accident prevention regulations.

It must be ensured that personnel has read and understood the instructions in this operating and maintenance handbook; if necessary, this manual must be ordered from the manufacturer in the required language.

This product is not intended to be used by persons (including children) with limited physical, sensory or mental abilities or without experience and/or without knowledge, unless they are supervised by a person responsible for their safety and receive instructions from this person as to how the product is to be used.

Children must be supervised in order to ensure that they do not play with the product.

## 1.4 Abbreviations and technical terms

Various abbreviations and technical terms are used in this operating and maintenance manual.

### 1.4.1 Abbreviations

- p.t.o = please turn over
- approx. = approximately
- i.e. = that is
- incl. = included
- min. = minimum
- max. = maximum
- etc. = and so on
- s.a. = see also
- e.g. = for example

### 1.4.2 Terms

**Dry run**

The product is running at full speed, however, there is no liquid to be pumped. A dry run is to be strictly avoided. If necessary, a safety device must be installed!

**Dry-run protection**

The dry-run protection is designed to automatically shut down the product if the water level falls below the minimum water coverage value of the product. This is made possible by installing a float switch or level sensor, for example.

**Level control**

The level control is designed to switch the product on or off at various filling levels. This is made possible by installing either one or two float switches.

## 1.5 Illustrations

Dummies and original drawings of the products are used in the illustrations. This is the only pragmatic solution considering our wide range of products and the differing sizes offered by the modular system. More exact drawings and specifications can be found on the dimension sheet, the planning information and/or the installation plan.

## 1.6 Copyright



## 1.7 Rights of alteration

The manufacturer reserves the right to make technical alterations to systems or components. This operating and maintenance manual refers to the product indicated on the title page.

## 1.8 Warranty

This chapter contains the general information on the warranty. Contractual agreements have the highest priority and are not superseded by the information in this chapter!

The manufacturer is obliged to correct any defects found in the products it sells, provided that the following requirements have been fulfilled:

### 1.8.1 General

- The defects are caused by the materials used or the way the product was manufactured or designed.
- The defects were reported in writing to the manufacturer within the agreed warranty period.
- The product was used only as prescribed.
- All safety and control devices were connected and inspected by qualified personnel.

### 1.8.2 Warranty period

If no other provisions have been made, the warranty period applies to the first 12 months after initial start-up or to a max. period of 18 months after the delivery date. Other agreements must be made in writing in the order confirmation. These will remain valid at least until the agreed warranty period of the product has expired.

### 1.8.3 Spare parts, add-ons and modifications

Only original spare parts as supplied by the manufacturer may be used for repairs, replacements, add-ons and modifications. Only these parts guarantee a long working life and the highest level of safety. These parts have been specially designed for our products. Unauthorized add-ons and modifications or the use of non-original spare parts can seriously damage the product and/or injure personnel.

### 1.8.4 Maintenance

The prescribed maintenance and inspection work should be carried out regularly. This work may only be carried out by qualified, trained and authorized personnel. Repairs not listed in this operation and maintenance manual and all types of repair work may only be performed by the manufacturer and authorized service centers.

### 1.8.5 Damage to the product

Damage as well as malfunctions that endanger safety must be eliminated immediately by trained personnel. The product should only be operated if it is in proper working order. During the agreed warranty period, the product may only be repaired by the manufacturer or an authorized service workshop! The manufacturer reserves the right to have the damaged product delivered by the operator to the factory for inspection!

### 1.8.6 Exclusion from liability

No liability will be assumed for product damage if one or more of the following points applies:

- A construction by the manufacturer based on faulty and/or incorrect information provided by the operator or customer
- Non-compliance with the safety instructions, the regulations and requirements in terms of German law and/or the applicable local laws, as well as this operating and maintenance manual
- Improper use
- Incorrect storage and transport
- Improper assembly/dismantling
- Insufficient maintenance
- Unqualified repairs
- Faulty construction site and/or construction work
- Chemical, electrochemical and electrical influences
- Wear

This means the manufacturer's liability excludes all liability for personal, material or financial injury.

## 2 Safety

This chapter lists all the generally applicable safety instructions and technical information. Furthermore, each remaining chapter contains specific safety instructions and technical information. All instructions and information must be observed and followed during the various phases of the product's life cycle (installation, operation, maintenance, transport etc.)! The operator is responsible for ensuring that personnel follow these instructions and guidelines.

### 2.1 Instructions and safety information

This manual uses instructions and safety information for preventing injury and damage to property. To uniquely identify these for personnel, the instructions and safety information are differentiated as follows:

#### 2.1.1 Instructions

An instruction is displayed in "bold". Instructions contain text that refers to the previous text or particular sections of chapters, or highlights short instructions.

Example:
**Note that products stored with drinking water must be protected from frost!**

#### 2.1.2 Safety information

Safety information is slightly indented and displayed in "bold". It always commences with a signal word.

Information that only refers to material damage is printed in gray, without safety symbols.

Information that refers to personal injury is printed in black and is always accompanied by a safety symbol. Danger, prohibition or instruction symbols are used as safety symbols.
Example:


Danger symbol: General hazard


Danger symbol, for example, electrical current


Prohibition symbol, for example, Keep out!


Instruction symbol, for example, wear protective clothing

The safety symbols used conform to the generally valid directives and regulations, such as DIN and ANSI.

Each safety instruction begins with one of the following signal words:

- **Danger**
  This can result in serious or fatal injuries!
- **Warning**
  Serious injuries can occur!
- **Caution**
  Injuries can occur!

- **Caution** (Instruction without symbol)
  Substantial material damage can occur. Irreparable damage is possible!

  Safety instructions begin with a signal word and description of the hazard, followed by the hazard source and potential consequences, and end with advice on prevention.

  Example:
  **Beware of rotating parts!**
  **The rotating rotor can crush and sever limbs. Switch off the product and let the rotor come to a stop.**

## 2.2 General safety

- When installing or removing the product, never work alone in rooms and shafts. A second person must always be present.
- The product must always be switched off before any work is performed on it (assembly, dismantling, maintenance, installation). The product must be disconnected from the electrical system and secured against being switched on again. All rotating parts must have come to a stop.
- The operator should inform his/her superior immediately should any defects or irregularities occur.
- It is of vital importance that the system be shut down immediately by the operator if any problems arise which may endanger safety of personnel. Problems of this kind include:
  - Failure of the safety and/or control devices
  - Damage to important parts
  - Damage to electric installations, cables, and insulation.
- Tools and other objects should be kept in a place reserved for them so that they can be found quickly.
- Sufficient ventilation must be provided in enclosed rooms.
- When welding or working with electronic devices, ensure that there is no danger of explosion.
- Only use fastening devices which are legally defined as such and officially approved.
- The fastening devices should be kept safely and must be suitable for the conditions of use (weather, hooking system, load, etc).
- Mobile working apparatus for lifting loads should be used in a manner that ensures their support stability during operation.
- When using mobile working apparatus for lifting non-guided loads, preventive measures should be taken to avoid tipping and sliding etc.
- Measures should be taken to ensure that no person is ever directly beneath a suspended load. Furthermore, it is also prohibited to move suspended loads over workplaces where people are present.
- If a mobile working apparatus is used for lifting loads, a second person should be present to coordinate the procedure, if required (for example, if the operator's field of vision is blocked).
- The load to be lifted must be transported in such a manner that nobody can be injured in the case of a power outage. Additionally, when working outdoors, such procedures must be interrupted immediately if weather conditions worsen.
  **These instructions must be strictly observed. Non-observance can result in injury or substantial material damage.**

## 2.3 Directives used

This product is subject
- various EC directives
- various harmonized standards
- and various national standards.

Please consult the EU Declaration of Conformity for the precise information and the guidelines and norms in effect.

Also, various national standards are also used as a basis for using, assembling and dismantling the product. These include the German accident prevention regulations, VDE regulations, German Equipment Safety Law etc.

## 2.4 CE marking

The CE marking is found either on the type plate or near the type plate. The type plate is attached to the motor casing or to the frame.

## 2.5 Electrical work

Our electrical products are operated with alternating or three-phase current. The local regulations (e.g. VDE 0100) must be observed. The chapter entitled "Electrical connection" must be observed when connecting the product. The technical specifications must be strictly adhered to!
**If the product has been switched off by a protective device, it must not be switched on again until the error has been corrected.**

**Beware of electrical current!**
**Incorrectly performed electrical work can result in fatal injury! This work may only be carried out by a qualified electrician.**

**Beware of moisture!**
**Moisture penetrating the cable damages both the product and cable. Never immerse cable ends in the pumped liquid or other liquids. Unused wires must be insulated!**

## 2.6 Electrical connection

The operator is required to know where the machine is supplied with current and how to cut off the supply. The installation of an earth leakage circuit breaker (RCD) is recommended.

The governing national directives, standards and regulations as well as the requirements of the local public utility company must be observed.

When the product is connected to the electrical control panel, particularly when electronic devices such as soft startup control or frequency drives are used, the relay manufacturer's specifications must be followed to

comply with the electromagnetic compatibility (EMC) requirements. Special separate shielding measures (e.g. shielded cables, filters, etc.) may be necessary for the power supply and control cables.
**The connections may only be made if the relays meet the harmonized EU standards. Mobile radio equipment may cause malfunctions in the system.**

**Beware of electromagnetic radiation!**
**Electromagnetic radiation can pose a fatal risk for people with pacemakers. Put up appropriate signs and make sure anyone affected is aware of the danger!**

## 2.7 Ground connection

Our products (unit including protective devices and control station, auxiliary hoisting gear) must always be grounded. If there is a possibility that people can come into contact with the product and the pumped liquid (e.g. at construction sites), the connection must be additionally equipped with an earth leakage protection device.
**The pump units are submersible and conform to protection class IP 68 in terms of the applicable standards.**

**The protection class of the installed switching devices can be found on the device housing and corresponding operation manual.**

## 2.8 Safety and monitoring devices

Our products can be equipped with mechanical (e.g. intake strainer) and/or electrical (e.g., thermo sensors, moisture sensors, etc.) safety and monitoring devices. These devices must be attached or connected.

Electrical devices such as thermo sensors, float switches, etc. must be connected and checked by an electrician for proper functioning before start-up.

Please note that certain devices require a relay to function properly, e.g. PTC thermistor and PT100 sensor. This relay can be obtained from the manufacturer or an electrical supply dealer.
**Personnel must be informed of the installations used and how they work.**

**Caution!**
**Never operate the product if the safety and monitoring devices have been removed or damaged, or if they do not work.**

## 2.9 Safety rules during operation

When operating the product, always follow the locally applicable laws and regulations for work safety, accident prevention and handling electrical machinery. To help to ensure safe working practice, the responsibilities of employees should be clearly set out by the owner. All personnel are responsible for ensuring that regulations are observed.

The product has moving parts. During operation, these parts turn to pump the fluid. Certain materials in the pumped fluid can cause very sharp edges to form on the moving parts.

**Beware of rotating parts!**
**The rotating parts can crush and sever limbs. Never reach into the hydraulics or the moving parts during operation.**

**Before performing maintenance or repairs, switch off the product, disconnect from the mains and secure against being switched on again without permission. Let the moving parts come to a stop!**

## 2.10 Operation in an explosive atmosphere

Products marked as explosion-proof are suitable for operation in an explosive atmosphere. The products must meet certain guidelines for this type of use. Certain rules of conduct and guidelines must be followed by the operator as well.

Products that have been approved for use in an explosive atmosphere are marked as follows:
- An "Ex" symbol must be attached to the type plate!
- The information regarding the explosion-proof classification and the explosion-proof certification must be indicated on the type plate.
  **When using a product in an explosive atmosphere, observe the information on explosion protection provided in the other chapters!**


**Beware of using an accessory not approved for use in an explosive atmosphere!**
**If you use explosion-proof certified products in an explosive atmosphere, the accessories must also be approved for such use! Check all accessories before use to verify that they conform to this directive.**

## 2.11 Pumped liquids

Each pumped liquid differs in respect of composition, corrosiveness, abrasiveness, dry matter content and in many other aspects. Generally, our products can be used for many applications. Please note that if requirements change (density, viscosity or general composition), this can also affect many parameters of the product.

When using or replacing the product in a different pumped liquid, observe the following points:
- When used in drinking water applications, all the parts that come into contact with the fluid must be suitable for use with drinking water. This must be checked according to local laws and regulations.
- Products that have been operated in dirty waste water must be cleaned thoroughly before being used for other pumped liquids.
- Products that have been operated in sewage water and/or fluids that are hazardous to health must be decontaminated before being used with other pumped liquids.
  **It must be clarified, whether the product can be used at all with another pumped liquid.**

- If a product is operated with a lubricant or cooling fluid (such as oil), the pumped liquid can be contaminated

by these substances if the mechanical shaft seal is defective.
- It is strictly prohibited to pump explosive or highly flammable liquids in pure form!

**Danger – explosive liquids!**
**It is strictly prohibited to pump explosive liquids (gasoline, kerosene, etc.). The products are not designed for these liquids!**

### 2.12 Sound pressure

Depending on the size and capacity (kW), the products produce a sound pressure of approximately 70 dB (A) to 110 dB (A).

The actual sound pressure, however, depends on several factors. These include, for example, the installation depth, configuration, fastening of accessories and pipeline, operating point, immersion depth, etc.

Once the product has been installed, we recommend that the operator make an additional measurement under all operating conditions.

**Caution: Wear ear protectors!**
**In terms of the applicable laws and regulations, ear protection must be worn if the sound pressure is greater than 85 dB (A)! The operator is responsible for ensuring compliance with these regulations!**

## 3 Transport and storage

### 3.1 Delivery

Upon receipt of the delivery, it is immediately checked for damage and completeness. If any parts are damaged or missing, the transport company or the manufacturer must be informed on the day of delivery. Claims made after this date cannot be recognized. Damage to parts must be noted on the delivery or freight documentation.

### 3.2 Transport

Only the appropriate and approved fastening devices, transportation means and lifting gear may be used. These must have sufficient load-bearing capacity to ensure that the product can be transported safety. If chains are used they must be secured against slipping.

The personnel must be qualified for the tasks and must follow all national safety regulations in effect during the work.

The product is delivered by the manufacturer / shipping agency in suitable packaging. This normally precludes the possibility of damage occurring during transport and storage. The packaging should be stored in a safe place for reuse if the product is frequently used at different locations.

**Beware of frost!**
**If drinking water is used as a coolant/lubricant, the product must be protected against frost during transport. If this is not possible, the product must be drained and dried out!**

### 3.3 Storage

Newly supplied products are prepared so that they can be stored for at least 1 year. The product should be cleaned thoroughly before it is put into temporary storage!

The following should be taken into consideration for storage:
- Place the product on a firm surface and secure it against slipping and falling over. Wastewater and sewage submersible pumps are stored vertically.

**Danger from falling over!**
**Never set down the product unsecured. If the product falls over, injury can occur!**

- Our products can be stored at temperatures down to –15 °C. The store room must be dry. We recommend a frost-protected room for storage with a temperature between 5 °C and 25 °C.
**Products that are filled with drinking water can only be stored in frost-free rooms, at no less than 3 °C, for up to 4 weeks. If longer storage is intended, the products should be emptied and dried out beforehand.**

- The product may not be stored in rooms where welding work is conducted as the resulting gases and radiated heat can damage the elastomer parts and coatings.
- Any suction or discharge ports should be closed tightly before storage to prevent impurities.
- The current supply cables should be protected against kinking, damage, and moisture.

**Beware of electrical current!**
**Damaged power supply cables can cause fatal injury! Defective cables must be replaced by a qualified electrician immediately.**

**Beware of moisture!**
**Moisture penetrating the cable damages both the product and cable. Therefore, never immerse cable ends in the pumped liquid or other liquids.**

- The machine must be protected from direct sunlight, heat, dust, and frost. Heat and frost can cause considerable damage to propellers, rotors and coatings!
- The rotors or propellers must be rotated at regular intervals. This prevents the bearing from locking, and the film of lubricant on the mechanical shaft seal is renewed. This also prevents the gear pinions (if present on the product) from locking and also renews the lubricating film on the gear pinions (preventing rust film deposits).

**Beware of sharp edges!**
**Sharp edges can form on rotors, propellers and hydraulic openings. There is a risk of injuries! Wear protective gloves.**

- If the product has been stored for a long period of time it should be cleaned of impurities such as dust and oil deposits before start-up. Rotors and propellers should

be checked for smooth operation. The housing coatings should be checked for damage.
**Before start-up, the filling levels (oil, motor filling, etc) should be checked and topped up, if necessary. Products filled with drinking water should be completely filled before start-up!**

**Damaged coatings should be repaired immediately. Only a coating that is completely intact fulfills the criteria for intended usage!**

If these rules are observed, your product can be stored for a longer period. Please remember that elastomer parts and coatings become brittle over time. If the product is to be stored for longer than 6 months, we recommend checking these parts and replacing them as necessary. If this is the case, please consult the manufacturer.

### 3.4 Returning to the product

Products that are returned to the factory must be properly packaged. In this context, properly means that impurities have been removed from the product and that it has been decontaminated, if it was used with fluids that are hazardous to health. The packaging must protect the product from damage during transportation. If you have any questions please contact the manufacturer!

## 4 Product description

The product has been manufactured with great care and is subject to constant quality controls. Trouble-free operation is guaranteed if it is installed and maintained correctly.

### 4.1 Proper use and fields of application

Manufacturer approval is required for pumping waste water contaminated with chemicals.

**Beware of electrical current**
**When using the product in swimming pools or other accessible pools, there is a risk of fatal injury due to electrical current. Note the following information:**

**Use is strictly forbidden if there are people in the pool.**

**If there are no people in the pool, protective measures must be taken according to DIN VDE 0100-702.46 (or the appropriate national regulations).**

**The product is made from materials that are not KTW approved. Furthermore, it can be used for pumping waste water. Therefore, pumping drinking water is strictly forbidden!**

Proper use also includes observation of these instructions. Any other use is regarded as improper.

#### 4.1.1 Wilo-Drain TS 50/TS 65

The submersible motor pumps are suitable for pumping:
- waste water with impurities with max. Ø 10 mm
- condensate pH < 4.5
- distilled water
- weak acidic/alkaline liquids in certain conditions
- partially desalinated water in certain conditions

in
- building and property drainage systems
- environmental and waste water treatment technology
- industrial and process technology

The submersible motor pumps **must not be used** for pumping:
- waste water with coarse impurities
- sewage/feces
- raw sewage!

#### 4.1.2 Wilo-Drain TP 50/TP 65

The submersible motor pumps are suitable for pumping:
- waste water
- sewage (feces restricted)
- partially desalinated water
- condensate pH < 4.5
- distilled water
- weak acidic/alkaline liquids in certain conditions

in
- building and property drainage systems
- sewage disposal (not covered by DIN EN 12050-1)
- water management
- environmental and waste water treatment technology
- industrial and process technology

The 1.4404 X-version can also be used for pumping:
- condensate
- partially desalinated and distilled water
- liquids with levels of chlorine up to 400 mg/l

### 4.2 Construction

The Wilo-Drain TS.../TP... is a floodable submersible motor pump, which can be operated as both a stationary and portable wet installation.

**Fig. 1: Description**

| | | | |
|---|---|---|---|
| 1 | Cable | 5 | Discharge port |
| 2 | Handle | 6 | Float switch |
| 3 | Motor housing | 7 | Plug |
| 4 | Hydraulic housing | | |

#### 4.2.1 Hydraulics

Wilo-Drain TS...:
The hydraulic housing and the impeller are made from a synthetic material (PP-GF30 or PUR). The discharge-side connection is designed as a vertical threaded flange. Semi-open, multiple-channel impellers are used.

Wilo-Drain TP...:
The hydraulic housing and the impeller are made from a synthetic material (PP-GF30 or PUR). The discharge side connection is designed as a horizontal flange con-

nection. Semi-open, single-channel or free-flow impellers are used.
**The product is not self-suctioning which means that the pumped liquid must flow in on its own.**

**Beware of static electricity!**
**Static electricity may be produced with plastic materials. This can give you an electric shock.**

#### 4.2.2 Motor

The motor is a dry run motor and made of stainless steel. The motor is cooled by the pumped liquid and the heat is transferred via the motor housing to the surrounding fluid. The unit must therefore always be submerged when operated. It can be used continuously or in intervals.

Furthermore, the motor is equipped with a thermal motor monitor (WSK). This protects the motor winding from overheating. On the units TS 50 (1~230 V/50 Hz), it is integrated and self-switching. This means that the motor is switched off when it overheats and automatically switched back on after it cools down.

The connection cable is available in different versions:
- With free cable end
- Version "A" for 1~230 V/50 Hz with float switch, capacitor box and Schuko plug
- Version "A" for 3~400 V/50 Hz with float switch and CEE plug
- Version "CEE" with CEE plug
**Note the IP protection class of the CEE plug.**

#### 4.2.3 Sealing

The sealing to the pumped liquid and to the motor compartment depends on the type:
- TS 50.../TS 65...: With a mechanical shaft seal on the liquid side, with a rotary shaft seal on the motor side
- TP 50.../TS 65...: With a mechanical shaft seal on the liquid side, with a rotary shaft seal on the motor side

The sealing chamber between the seals is filled with medicinal white oil. The sealing chamber is fully filled with white oil when the product is assembled.

#### 4.2.4 Float switch

With the "A" version, the float switch is connected to the capacitor box / CEE plug.

The float switch makes it possible to set up a level-control system which switches the unit on and off automatically.

### 4.3 Explosion protection in accordance with ATEX

The motors are certified for use in environments where explosions may occur, in accordance with directive 94/09/EC, and which require electrical devices in device group II, category 2.

The motors can be used in both zone 1 and zone 2.
**These motors may not be used in zone 0!**

Non-electrical devices (e.g. hydraulics) also comply with EC directive 94/09/EC.


**Danger of explosion!**
**The housing of the hydraulics must be fully flooded (completely filled with the pumped liquid) during operation. If the housing is not submerged and/or there is air in the hydraulics, flying sparks may cause an explosion e.g. due to static charge! Ensure that dry-run protection is in place for switching off.**

#### 4.3.1 Explosion coding

The **Ex d IIB T4** explosion coding on the type plate indicates the following:
- Ex = explosion-proof device complying to Euro norm
- d = ignition protection type for motor casing: Pressure-resistant encapsulation
- II = intended for places where explosions may occur, with the exception of mines
- B = intended for use with gases in sub-group B (all gases excluding hydrogen, acetylene, carbon disulphide)
- T4 = max. surface temperature of the device is 275 °F (135°C)

#### 4.3.2 "Pressure-resistant encapsulation" protection type

Motors with this protection type are equipped with a temperature control system.
**The temperature control system should be connected in such a manner that, if the temperature limiter is triggered, it can only be switched back on after the release button has been manually activated.**

### 4.4 Explosion protection certification number

- TS 50... (3~400 V/50 Hz): LCIE 03 ATEX 6202
- TS 65...: LCIE 03 ATEX 6202
- TP 65...: LCIE 03 ATEX 6202

### 4.5 Operating modes

#### 4.5.1 Operating mode “S1” (continuous operation)

The pump can operate continuously at the rated load without exceeding the maximum permissible temperature.

#### 4.5.2 Operating mode "S2" (short-term operation)

The maximum operating period is given in minutes, for example, S2-15. The pause must continue until the machine temperature no longer deviates from that of the coolant by more than 2 K .

#### 4.5.3 Operating mode S3 (interval operation)

This operating mode defines a combination of periods of operation and standstill. With S3 operation, the values given are always calculated based on a period of 10 minutes.

**Examples**

- S3 20%
Operation 20% of 10 min ) 2 min/standstill 80% of 10 min = 8 min

- S3 3 min
  Operation 3 min/standstill 7 min

  If two values are given, they relate to each other e.g.:
- S3 5 min/20 min
  Operation 5 min/standstill 15 min
- S3 25%/20 min
  Operation 5 min/standstill 15 min

### 4.6 Technical data

| | |
|---|---|
| **General data** | |
| Mains supply: | see type plate |
| Power consumption $P_1$: | see type plate |
| Rated motor capacity $P_2$: | see type plate |
| Max. pump head: | see type plate |
| Max. pump flow: | see type plate |
| Activation type: | direct |
| Liquid temperature: | 3...35°C |
| Protection class: | IP 68 |
| Isolation class: | TS 50.../TS 65...: F<br>TP 50.../TP 65...: F |
| Speed: | 2900 rpm |
| Max. submersion: | TS 50.../TS 65...: 10 m<br>TP 50.../TP 65...: 10 m |
| **Operating modes**[1)] | |
| Submerged: | S1 / S3 25% |
| Emerged: | S2-8 min |
| **Starts per hour** | |
| Recommended: | 20/h |
| Maximum: | TS...: 50/h<br>TP 50...: 70/h<br>TP 65...: 40/h |
| **Explosion protection*** | |
| TS 50.../TS 65.../TP 65...: | Ex d IIB T4 |
| TP 50...: | - |
| TS...-A/TP...-A: | - |
| **Discharge port** | |
| TS 50...: | Rp 2 |
| TS 65...: | Rp 2½ |
| TP 50...: | DN 50, PN 10/16 |
| TP 65...: | DN 65, PN 10/16 |
| **Free flow diameter** | |
| TS...: | 10 mm |
| TP...: | 44 mm |

* Explosion protection only with products with three-phase current motor and without float switch!

[1)] Maximum operating period: 200 h/a

### 4.7 Type code

| Example: | Wilo-Drain TS 50 H X 111/11-Ax |
|---|---|
| **TS** | Series:<br>TS = submersible motor pump for waste water<br>TP = submersible motor pump for waste water and sewage |
| **50** | Nominal discharge port |
| **H** | Impeller shape:<br>E = single-channel impeller<br>F = free-flow impeller<br>H = semi-open channel impeller |
| **X** | 1.4404 version |
| **111** | Impeller diameter in mm |
| **11** | /10 = rated motor capacity $P_2$ in kW |
| **A** | Version:<br>A = with float switch and plug<br>CEE = with CEE plug<br>Without = with free cable end |
| **x** | Mains supply<br>**1-230** = AC connection<br>**3-400** = three-phase current connection |

### 4.8 Scope of delivery

- Unit with 10 m cable
- AC version with
  - capacitor box, float switch, and Schuko plug
- Three-phase current version, type-dependent, with
  - float switch and CEE plug
  - CEE plug
  - free cable end
- Installation and operation manual

### 4.9 Accessories (optionally available)

- Products with cable lengths up to 30 m (1~230 V/ 50 Hz) or 50 m (3~400 V/50 Hz) in fixed increments of 10 m
- Suspension unit (for TP units only)
- Various discharge ports and chains
- Storz couplings
- Fixing accessories
- Switching devices, relays and plugs
- Hoses

## 5 Installation

In order to prevent damage to the product or serious injury during installation, the following points must be observed:

- Installation work – assembly and installation of the machine – may only be carried out by qualified persons. The safety instructions must be followed at all times.
- The machine must be inspected for transport damage before carrying out any installation work.

### 5.1 General

For planning and operation of technical waste water systems, attention is drawn to the pertinent local regulations and directives for waste water technology (such

as the German Association for Water, Wastewater and Waste).

Attention is drawn to pressure surges, in particular with stationary installations in cases where water is pumped with longer discharge pipes (especially with steady ascents or cross country terrain).

Pressure surges can lead to destruction of the unit/system and noisy operation resulting from valve knocking. This can be avoided by taking appropriate measures (e.g. non-return valves with adjustable closure time or laying the discharge pipe in a special way).

After pumping water containing lime, clay or cement, flush out the product with clean water in order to prevent encrustation and subsequent breakdowns.

If you are using level control, make sure that the minimum water coverage is present. Air pockets must not be allowed to enter the hydraulic housing or the pipeline system, and they must be removed with suitable bleeding equipment and/or by inclining the machine slightly (with a portable installation). Protect the product from frost.

## 5.2 Types of installation

- Vertical stationary wet installation with suspension unit (TP... only)
- Vertical portable wet installation

## 5.3 The operating area

The operating area must be clean, free of coarse solids, dry, frost-free and, if necessary, decontaminated. It must also be suitable for the respective product. When working in shafts, a second person must be present for safety reasons. If there is danger of poisonous or asphyxiating gases forming, the necessary countermeasures must be taken!

When installing in shafts, the size of the shaft and the cool-down time of the motor must be determined by the system planner, depending on the ambient conditions prevailing during operation.
**To keep dry motors sufficiently cooled when they are not submerged, they must be flooded completely before being switched back on!**

It must be ensured that hoisting gear can be fitted without any trouble, since this is required for assembly and removal of the product. It must be possible to reach the product safely in its operating and storage locations using the hoisting gear. The machine must be positioned on a firm foundation. For transporting the product, the load-carrying equipment must be secured to the provided lifting eyelets.

Electric power cables must be laid out in such a way that safe operation and trouble-free assembly/dismantling are possible at all times. The product must never be carried or dragged by the power supply cable. When using switching devices, the corresponding protection class must be observed. Switching devices must always be mounted in such a way that they are protected from flooding.

When used in an explosive atmosphere, it must be ensured that the product as well as all accessories are approved for this purpose of use.

The structural components and foundations must be of sufficient stability in order to allow the product to be anchored securely and functionally. The operator or the supplier is responsible for the provision of the foundations and their suitability in terms of dimensions, stability and strength!

Never let the machine run dry. The water level must never fall below the minimum. Therefore, we recommend installing a level control system or a dry-run protection system where there are great variations in the level.

Use guide and deflector plates for the pumped liquid intake. If the water jet reaches the surface of the water, air will be introduced into the pumped liquid. This will lead to unfavorable current and pumping conditions for the unit. As a result of cavitation, the product does not run smoothly and is subjected to increased wear.

## 5.4 Installation

**Danger of falling!**
**When installing the product and its accessories, work is sometimes performed directly at the edge of the basin or shaft. Carelessness and/or wearing inappropriate clothing could result in a fall. There is a risk of fatal injury! Take all necessary safety precautions to prevent this.**

The following information must be observed when installing the product:

- This work must be carried out by a qualified person and electrical work must be carried out by an electrician.
- Lift the unit by the handle or lifting eyelets, never by the power supply cable. When using chains, they must be connected with a shackle to the lifting eyelets or the carrying handle. Fastening devices must be technically approved.
- Check that the available planning documentation (installation plans, layout of the operating area, intake ratios) is complete and correct.
  **If the motor housing is to be taken out of the pumped liquid during operation, the operating mode for emerged operation should be followed. If this operating mode is not specified, operation with an emerged motor housing is strictly forbidden.**

  **Never let the machine run dry. We recommend that dry-run protection be installed. If fluid levels deviate dramatically, a dry-run protection must be installed.**

  **Check whether the cross section of the cable used is sufficient for the required cable length (see the catalog and planning documents or consult Wilo customer service for more information).**

- Please observe all regulations, rules and legal requirements for working with and underneath heavy suspended loads.
- Wear appropriate protective clothing/equipment.

- A second person must always be present when working in shafts. If there is danger of poisonous or asphyxiating gases forming, the necessary countermeasures must be taken!
- Please also observe the applicable national accident prevention regulations and trade association safety provisions.
- The coating is to be examined before installation. If defects are found, these must be rectified before installation.

### 5.4.1 Stationary wet installation

**Fig. 2: Wet installation**

| | | | |
|---|---|---|---|
| 1 | Pedestal elbow | 5 | Return flow prevention |
| 2 | Pump holder | 6 | Shut-off valve |
| 3 | Pipe tensioner for guide pipes | 7 | Load-carrying equipment |
| 4 | Guide pipe (1" according to DIN 2440) | 8 | Minimum water level |

A suspension unit must be installed for wet installation. This must be ordered separately from the manufacturer. The pipeline system on the discharge side is connected to this. The connected pipe system must be self-supporting, i.e. it may not be supported by the suspension unit. The operating area must be laid out so that the suspension unit can be installed and operated without difficulty.

1 Install suspension unit in operating area and prepare the product for operation on a suspension unit.
2 Check that the suspension unit is firmly fixed and functions properly.
3 Have an electrician connect the product to the power supply and check the direction of rotation in accordance with the chapter entitled "Start-up".
4 Secure the product to the load-carrying equipment, lift and lower slowly on to the guide pipes in the operating area. Hold the electric power cables slightly taut when lowering. When the product is connected to the suspension unit, make sure that the electric power cables are secured adequately against falling off and damage.
5 The correct operating position is reached automatically and the discharge port is sealed by its own weight.
6 For new installation: Flood the operating area and bleed the discharge pipe.
7 Start the product in accordance with the chapter entitled "Start-up".

**Beware of damaging threads!**
**Threads can be damaged by excessive screwing and different flanges.**

**Therefore, please note:**
**Only use M16 thread bolts with a maximum length of 12...16 mm.**
**The maximum torque is 15 Nm (TP 50) / 25 Nm (TP 65).**
**Only use flanges confirming to DIN 2576 form B (without sealing strip).**

**This requirement is fulfilled by the use of Wilo accessories.**

1 Portable wet installation

**Fig. 3: Portable installation**

| | | | |
|---|---|---|---|
| 1 | Load-carrying equipment | 5 | Storz hose coupling |
| 2 | Pedestal (integrated in hydraulics) | 6 | Discharge hose |
| 3 | Pipe bend for hose connection or Storz fixed coupling | 7 | Minimum water level |
| 4 | Storz fixed coupling | | |

This installation type makes optional positioning in the operating area possible because the product is set down directly at the place of use. A pedestal is integrated in the hydraulics for this purpose. This ensures the minimum floor clearance and a secure position on a firm foundation. For use on a soft foundation, a hard base must be used to prevent the machine from subsiding. A discharge hose is connected on the discharge side.

The unit must be anchored to the floor for longer operating times with this type of installation. This prevents vibrations as well as guaranteeing quiet and low-wearing running.

1 Fix the discharge hose to the hose connection on the discharge port.
Alternatively, a Storz fixed coupling and a Storz hose coupling can be fitted to the discharge hose.
**With the TP..., a pipe bend must be fitted for a vertical discharge port. The discharge hose can be fixed to this with a hose clamp or a Storz coupling.**

2 Lay the power supply cable so that it cannot be damaged.
3 Position the product in the operating area. If necessary, secure the load-carrying equipment to the carrying handle, lift the product and set it down at the intended operating position (pit, shaft).
4 Check that the product is upright and standing on a firm base. Do not let it subside.
5 Have an electrician connect the product to the mains power supply and check the direction of rotation in accordance with the chapter entitled "Start-up".
6 Lay the discharge hose so that it cannot be damaged. Secure at a suitable place as necessary (e.g. drain).

**Danger due to discharge hose being pulled off. Injuries may result from the discharge hose being pulled or knocked off accidentally. The discharge hose must be secured appropriately. Avoid kinks in the discharge hose.**

**Beware of burns**
**The housing parts can heat up to well above 40°C. There is a danger of burns. After switching off, let the product cool down to ambient temperature.**

**Beware of damaging threads!**
**Threads can be damaged by excessive screwing and different flanges.**

**Therefore, please note:**
**Only use M16 thread bolts with a maximum length of 12...16 mm.**
**The maximum torque is 15 Nm (TP 50) / 25 Nm (TP 65).**
**Only use flanges confirming to DIN 2576 form B (without sealing strip).**

**This requirement is fulfilled by the use of Wilo accessories.**

## 5.5 Dry-run protection

Make sure that no air enters the hydraulic housing. The product must therefore always be submerged in the pumped liquid up to the top edge of the pump housing. For optimum reliability, we recommend installing a dry-run protection system.

Correct running is ensured by float switches or electrodes. The float switch or electrode is fixed in the shaft and switches off the machine when the water level falls below the minimum coverage level. If dry-run protection is only put into effect with one float or electrode, the unit may turn on and off constantly if filling levels fluctuate strongly! This can result in the maximum number of motor start-ups (switching cycles) being exceeded.

### 5.5.1 Corrective measures for avoiding excessive switching cycles

**Manual reset** – The motor is switched off when the water level falls below the minimum coverage level and switched back on when a sufficient water level is reached.

**Separate reactivation point** – A second switching point (additional float or electrode) is used to obtain a sufficient difference between the activation and deactivation points. This prevents constant switching. This function can be put into effect with a level control relay.

## 5.6 Electrical connection

**Risk of fatal injury due to electrical current!**
**There is a risk of fatal electric shocks caused by improper electrical connections. Electrical connections may only be carried out by a qualified electrician who is approved by the local power supplier, in accordance with locally applicable regulations.**

- Mains current and voltage must correspond to the details on the type plate.
- Connect the power supply cable in accordance with the applicable standards and regulations and according to the wire assignment.
- Any available monitoring equipment, e.g. for the motor temperature, must be connected and tested to ensure that it is working properly.
- For three-phase current motors, a clockwise rotating field must be available.
- Ground the product properly.
  Products that are permanently installed must be grounded in compliance with nationally applicable standards. If a separate grounding conductor is available, it must be connected to the marked hole or grounding terminal (⏚) using a suitable screw, nut, toothed washer and flat washer. The cross section of the cable for the grounding conductor connection must correspond to the local regulations.
- **A motor protection switch must be used for three-phase motors.** We recommend using an earth leakage circuit breaker (RCD)
- Switching devices are to be purchased as accessories.

### 5.6.1 Technical details

| Unit | TS 50...<br>TS 65... | TP 50...<br>TP 65... |
|---|---|---|
| Activation type | direct | direct |
| Network-side fuses | 16 A | 16 A |
| Connection for WSK | 5 V DC, 2 mA;<br>max.: 30 V DC, 30 mA | |
| Cable cross section 1~230 V | 6G1 | 4G1 |
| Cable cross section 3~400 V | 6G1 | 6G1 |

Only slow-blow fuses or K characteristic automatic cut-outs may be used for pre-fusing.

### 5.6.2 AC motor

The AC version is delivered ready to plug in. To connect it to the electricity supply, plug it into the power socket.

**Connection according to DIN EN / IEC 61000-3-11**

- The pump, with an output of 1.5 kW, is intended for operation with an electricity supply with a system impedance Zmax at the house service connection of max. 0.125 (0.086) ohms with a maximum of 6 (20) switches.
- The pump, with an output of 1.1 kW, is intended for operation with an electricity supply with a system impedance Zmax at the house service connection of max. 0.142 (0.116) ohms with a maximum of 6 (20) switches.

If the impedance and the number of switches per hour is greater than the above values, the pump can cause temporary voltage drops and voltage fluctuations ("flickers") due to the unfavorable electricity supply. Certain measures may therefore be necessary before the pump can be operated properly using this connection.

Your local power supply company or the pump's manufacturer can give you the information required.

### 5.6.3 Three-phase current motor

The three-phase version can be delivered with a CEE plug or free cable ends:

- The version with a CEE plug is connected to the electricity supply by plugging it into the electricity socket.

- The version with free cable ends is connected to the electricity supply by connecting them to the switch box. The wires of the connection cable are assigned as follows:

| 6-wire connection cable | |
|---|---|
| Wire no. | Terminal |
| 1 | U1 |
| 2 | V1 |
| 3 | W1 |
| green/yellow | PE |
| 4 | WSK/⏚ |
| 5 | WSK |

#### 5.6.4 Monitoring device connections

Units with a 3- or 4-wire connection cable have an integrated switch for temperature control. This switches off the product when it overheats and switches it back on automatically after it has cooled down.

For units with a 6-wire cable, the temperature control system must always be connected separately!
**When used in explosion hazard areas, the temperature monitoring device must be connected in such a way that, in the event that the temperature limiter has triggered, it can only be restarted after the "release button" has been activated manually.**

**This means that units with an integrated switch are not ex-approved!**

**Beware of connecting incorrectly!**
**WSK is connected single-ended to protective earth (PE). Therefore, the control voltage in use must be galvanically isolated and not grounded!**

**For constructional reasons, safe function of the named protection equipment is only guaranteed with Wilo Drain Control switching devices. All other switching devices must be supplemented by the SK 545 monitoring device.**

For this reason, no warranty claims can be accepted for damages to the winding resulting from unsuitable motor monitoring.

### 5.7 Motor protection and activation types

#### 5.7.1 Motor protection

The minimum requirement for three-phase motors is a thermal relay/motor protection switch with temperature compensation, differential triggering and an anti-reactivation device in accordance with VDE 0660 or the appropriate national regulations.

If the product is connected to electrical systems in which faults frequently occur, we recommend installing additional protective devices at the customer (overvoltage, undervoltage or phase failure relays, lightning protection etc.). We also recommend installing an earth leakage circuit breaker.

Local and national regulations must be adhered to when connecting the product.

#### 5.7.2 Activation types

**Direct activation**

At full load, the motor protection should be set to the rated current shown on the type plate. At partial load, we recommend that the motor protection be set 5% above the current measured at the operating point.

**Starting transformer/soft start**

Motor protection should be set to the rated current when fully loaded. At partial load, we recommend that the motor protection be set 5 % above the current measured at the operating point. Start up time with reduced voltage (approx. 70 %) is a maximum of 3 seconds.

**Operation with frequency transformers**

The product may not be operated on frequency transformers.

**Products with plugs/switching devices**

Insert the plug into the plug socket and press the on/off switch or let the product switch on/off automatically by means of the attached level control system.

Switching devices can be ordered as accessories for products with free cable ends. In this case, also observe the instructions enclosed with the switching device.
**Plugs and switching devices are not flood-proof. Note the IP protection class. Always install switching devices in such a way that they are protected from flooding.**

## 6 Startup

The “Start-up” chapter contains all the important instructions for the operating personnel for starting up and operating the product safely.

The following constraints must be adhered to and monitored:
- Type of installation
- Operating mode
- Minimum water coverage / max. submersion

**If the machine has not been operated for an extended period, these constraints must also be checked and any discovered faults rectified.**

This manual must always be kept either by the product or in a place specially reserved for it, where it is accessible for the entire operating personnel at all times.

In order to prevent damage or serious injury when starting up the product, the following points must always be observed:

- The product may only be started up by qualified, trained persons. The safety advice must be followed at all times.
- All persons working on or with the product must have received, read and understood this operating and maintenance manual.
- All safety devices and emergency cut-outs are connected and have been checked to ensure that they work properly.
- Electrical and mechanical settings must be made by specialist staff.
- The product is suitable for use under the specified operating conditions.
- The work area of the product is not a recreational area and is to be kept free of people! No persons are allowed in the work area during switching on and/or during operation.
- A second person must be present when working in shafts. Adequate ventilation must be ensured if there is danger of poisonous gases forming.

## 6.1 Electrical system

The product is connected and the power supply cables installed in terms of the “Installation” chapter as well as the VDE guidelines and the applicable national regulations.

The product is protected and grounded properly.

Pay attention to the direction of rotation. If the direction of rotation is incorrect, the unit will not perform as specified and can sustain damage.

All monitoring devices are connected and have been checked to ensure that they work properly.

**Beware of electrical current!**
**Electrical current can cause fatal injuries if not handled correctly! All products with free cable ends (i.e. without plugs) must be connected by a qualified electrician.**

## 6.2 Check the direction of rotation

The product is checked and adjusted in the factory to ensure that the direction of rotation is incorrect. The connection must be made according to the wiring code information.

Before submerging, the product must be checked to ensure that the rotation direction is correct.
**A test run should only be performed under general operating conditions. Switching on a unit that has not been submerged is strictly forbidden!**

### 6.2.1 Checking the rotation direction

The rotation direction must be checked with a rotating field tester by a local electrician. For the correct rotation direction, a clockwise rotating field must be available.
**The product is not approved for operation with a counter-clockwise rotating field.**

### 6.2.2 If the direction of rotation is not correct

**When using Wilo switching devices**

Wilo switching devices are designed so that the connected products are driven in the right direction. If the rotation direction is wrong, 2 phases/leads of the mains supply to the switching device must be replaced.

**With switching devices provided by the customer:**

If the rotation direction is wrong, with direct start motors, 2 phases must be swapped. In the case of star-delta start-up motors, the connections of two windings must be swapped e.g. U1 with V1 and U2 with V2.

### 6.2.3 Checking the rotation direction on units with CEE plug and integrated phase inverter

**Fig. 4: CEE plug with phase inverter**

To function correctly, a clockwise rotating field must be available.

When the CEE plug is plugged in, the lamp must not light up. If the lamp lights up, the direction of rotation is incorrect.

To correct the direction of rotation, you must push the phase inverter into the plug with a suitable screwdriver and turn it 180°.

## 6.3 Adjusting the level-control device

For correct adjustment, please see the installation and operation manual for the level control device.
**Please observe the information on the minimum water coverage of the product!**

## 6.4 Operation in explosion hazard areas

The operator is responsible for defining the explosion hazard area. Only products with ex-approval may be used within an explosion hazard area. Attached switching devices and plugs must be checked for use in explosion hazard areas.

Products that are ex-approved are labeled on the type plate as follows:
- Ex symbol:  or 
- Ex-classification, e.g. Ex d IIB T4
- Ex-certification number, e.g. ATEX1038X

**Risk of fatal injury due to explosion!**
**Products without ex-labeling are not ex-approved and may not be used in explosion hazard areas! All accessories (incl. attached switching device/plugs) must be approved for use in explosion hazard areas!**

**To keep dry motors sufficiently cooled when they are not submerged, they must be flooded completely before being switched back on!**

## 6.5 Startup

Minor oil leakage in the mechanical shaft seal on delivery is no cause for concern. However, it must be removed prior to submersion in the pumped liquid.
**Keep out of the work area of the unit. No persons are allowed in the work area during switching on and/or during operation.**

Before switching on for the first time, the installation must be checked as described in the “Installation” chapter and an isolation check must be carried out according to the “Maintenance” chapter.

**Beware of serious injuries.**
**In portable installations, the unit can fall over when it is switched on or during operation. Make sure that the unit is positioned on a firm foundation and that the pump pedestal is mounted correctly.**

If the unit falls over, it must be switched off before setting it up again.

In the case of versions with CEE plugs, note the IP protection class of the plug.

### 6.5.1 Before switching on

Check the following:
- Cable guidance – no loops, slightly taut
- Check the temperature of the pumped liquid and the submersion depth – see technical data
- If a hose is used on the discharge side, it should be flushed out with clean water before use to prevent any sediment causing blockages
- Clean coarse deposits from the pump sump
- Clean the pipe systems on the discharge and intake sides
- Open all sliders on the discharge and intake sides
- The hydraulic housing must be flooded, i.e. it should be completely full of fluid, with no air in it at all. Bleeding can be carried out using a suitable bleeding device in the system, or, if available, with bleeder screws on the discharge port.
- Check that all accessories, the pipe system and suspension unit are properly fitted
- Check all level control and dry-run protection systems

### 6.5.2 After starting up

The rated current is briefly exceeded during the start-up procedure. Once the start-up procedure has completed, the operating current may no longer exceed the rated current.

If the motor does not start immediately after the unit is switched on, it must be switched off without delay. The start pauses specified in the “Technical data” chapter must be adhered to before starting up again. If the fault recurs, the unit must be switched off again immediately. The unit may only be restarted, once the fault has been rectified.

## 6.6 Safety rules during operation

When operating the product, always follow the locally applicable laws and regulations for work safety, accident prevention and handling electrical machinery. To help to ensure safe working practice, the responsibilities of employees should be clearly set out by the owner. All personnel are responsible for ensuring that regulations are observed.

The product has moving parts. During operation, these parts turn to pump the fluid. Certain materials in the pumped fluid can cause very sharp edges to form on the moving parts.

**Beware of rotating parts!**
**The rotating parts can crush and sever limbs. Never reach into the hydraulics or the moving parts during operation.**

**Before performing maintenance or repairs, switch off the product, disconnect from the mains and secure against being switched on again without permission. Let the moving parts come to a stop!**

The following must be checked at regular intervals:
- Operating voltage (permissible deviation +/- 5 % of the rated voltage)
- Frequency (permissible deviation +/- 2 % of the rated frequency)
- Current consumption (permissible deviation between phases is a maximum of 5 %)
- Voltage difference between the individual phases (max. 1 %)
- Starts and stops per hour (see technical data)
- Air entry in the intake, a deflector plate should be fitted if necessary
- Minimum water immersion level, level control unit, dry-run protection
- Smooth running
- Shut-off valves in the intake and discharge pipes must be open

# 7 Shut-down/disposal

All work must be carried out with the greatest care.

Proper protective clothing must be worn.

When carrying out work in basins and/or containers, the respective local protection measures must be observed in all cases. A second person must be present for safety reasons.

Only hoisting gear that is in a technically perfect condition and load-carrying equipment that has been officially approved may be used for lowering and raising the product.

**Risk of fatal injury due to malfunctions!**
**Load-carrying equipment and hoisting gear must be in a perfect technical condition. Work may only commence if the hoisting gear has been checked and found to be in perfect working order. If it is not inspected, danger to personnel may result!**

## 7.1 Temporary shutdown

For this type of shutdown, the product remains installed and is not cut off from the electricity supply. For temporary shutdown, the product must remain completely submerged so that it is protected from frost and ice. Ensure that the temperature of the

pumped liquid and in the operating area does not fall below +3 °C.

This ensures that the product will be ready for operation at all times. During longer shutdown periods, carry out a regular (monthly to quarterly) function run for a period of 5 minutes.

**Caution!**
**Only carry out a function run under the proper operating and usage conditions. Never run the machine dry! This can result in irreparable damage!**

## 7.2 Final shutdown for maintenance work or storage

The system must be switched off and the product must be disconnected from the mains by an electrician and secured against being switched on again without permission. Units with plugs must be unplugged (do not pull the cable). Work on removing the product, maintenance and storage can then commence.

**Beware of poisonous substances!**
**Products that pump fluids which are hazardous to health must always be decontaminated before undertaking any other work! There is otherwise a risk of fatal injury! Wear the necessary protective clothing for this work!**

**Beware of burns!**
**The housing parts can heat up to well above 104 °F (40 °C). There is a danger of burns! After switching off, let the product cool down to ambient temperature.**

### 7.2.1 Removal

Products in portable wet installations can be lifted out of the pit after being disconnected from the mains power supply and emptying the discharge pipe. You may have to disconnect the hose first. Here as well, use of appropriate hoisting gear may be necessary.

Products in stationary wet installations with suspension units are raised out of the pit using the chain or lifting cable with the help of hoisting gear. This does not have to be emptied especially for this purpose. Make sure the power supply cable does not become damaged.

### 7.2.2 Return delivery/storage

For shipping, the parts must be packed and sealed in sufficiently large, non-tearing plastic sacks to prevent leakages. Shipping must be carried out by carriers who have been briefed accordingly.
**In this regard, please also refer to the chapter "Transport and storage".**

## 7.3 Starting up again

Clean the product of dust and oil deposits before starting up again. Then carry out all the maintenance tasks as described in the chapter entitled "Maintenance".

Once this work has been completed, the product can be installed and connected to the electricity supply by an electrician. This work must be carried out in accordance with the "Installation" chapter.

The product must be switched on as described in the "Start-up" chapter.
**The product may only be restarted if it is in perfect condition and ready for operation.**

## 7.4 Disposal

### 7.4.1 Lubricants

Oils and lubricants must be collected in appropriate containers and properly disposed of in terms of EC Directive 75/439/EEC as well as in compliance with the provisions of sections 5a and 5b of the German Waste Act or the applicable local laws.

Mixtures of water and glycol are classified as a class 1 water hazard in terms of the German Water Hazard Regulations (VwVwS) of 1999. The requirements of DIN 52 900 (in respect of propanediol and propylene glycol) or the applicable local regulations must be observed in the disposal.

### 7.4.2 Protective clothing

Protective clothing worn for cleaning and maintenance work is to be disposed of in accordance with the German Waste Code TA 524 02 and EC Directive 91/689/EEC.

### 7.4.3 Product

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

- Make use of the services or the advice of public or private waste disposal companies for the disposal of the product as well as parts thereof.
- More information about proper disposal can be obtained from the urban administration, the waste disposal authorities or from the supplier from whom the product was purchased.

# 8 Maintenance

Before performing maintenance or repair work, switch off and dismount the product as described in the chapter entitled "Final shutdown/disposal".

After completing maintenance or repair work, the product must be installed and connected according to the "Installation" chapter. The product must be switched on as described in the "Start-up" chapter.

Maintenance or repair work must be carried out by an authorized service center, Wilo customer service or a qualified specialist.
**Maintenance or repair work and/or constructional changes that are not listed in this operating and maintenance manual or which could impair explosion protection, may only be carried out by the manufacturer or by authorized service centers.**

The spark-proof gaps may only be repaired according to the manufacturer's design specifications. It is not permitted to carry out repairs according to the values in

tables 1 and 2 of DIN EN 60079-1. Only the screws stipulated by the manufacturer, fulfilling at least strength category A4-70, may be used.

**Risk of fatal injury due to electrical current!**
**There is a risk of fatal electric shocks when performing work on electrical devices. With all maintenance or repair work, the unit must be disconnected from the mains and secured against being switched on again without permission. Damage to the power supply cable may only be rectified by a qualified electrician.**

Observe the following points:

- This manual must be available to the maintenance personnel and its instructions must be followed. Only the repair and maintenance measures listed here may be performed.
- All maintenance, inspection and cleaning work on the machine and the system may only be carried out by trained specialists exercising extreme care in a safe workplace. Proper protective clothing is to be worn. The machine must be disconnected from the electrical system and secured against being switched on again. It must be prevented from being switched on inadvertently.
- When carrying out work in basins and/or containers, the respective local protection measures must be observed in all cases. A second person must be present for safety reasons.
- Only hoisting gear that is in a technically perfect condition and load-carrying equipment that has been officially approved may be used for lowering and raising the product.
  **Make sure that all fastening devices, ropes and safety devices of the hoisting gear are in a technically perfect condition. Work may only commence if the hoisting gear is in perfect working order. If it is not inspected, fatal injuries may result.**

- Electrical work on the product and system must be carried out by an electrician. Defective fuses must be replaced. Under no circumstances are they to be repaired. Only fuses at the specified current and of the prescribed type may be used.
- When working with inflammable solvents and cleaning agents, fires, unshielded lighting and smoking are prohibited.
- Products that circulate fluids hazardous to health, or that come into contact with these fluids, must be decontaminated. It must be ensured that no dangerous gases can form or are present.
  **If injuries involving hazardous pumping liquids or gases occur, first-aid measures must be performed in accordance with the notices in the workplace and a doctor must be called immediately.**

- Ensure that all necessary tools and materials are available. Tidiness and cleanliness guarantee safe and trouble free operation of the product. After working on the unit, all cleaning materials and tools should be removed from it. All materials and tools should be stored in an appropriate place.
- Lubricants, such as oil and grease, must be collected in suitable vessels and disposed of properly (in accordance with the 75/439/EEC directive and with §§5a, 5b AbfG). Appropriate protective clothing is to be worn for cleaning and maintenance jobs. This is to be disposed of in accordance with waste code TA 524 02 and EC Directive 91/689/EEC. Only lubricants expressly recommended by the manufacturer may be used. Oils and lubricants should not be mixed.
- Only use genuine parts made by the manufacturer.

## 8.1 Lubricants

Lubricants that are approved for use with foodstuffs in accordance with USDA-H1 are marked with an asterisk.

### 8.1.1 Overview of white oils

| | | | |
|---|---|---|---|
| * | Aral Autin PL | * | BP Energol WM2 |
| * | Shell ONDINA G13, 15, G17 | * | Texaco Pharmaceutical 30, 40 |
| * | Esso MARCOL 52, 82 | | ELF ALFBELF C15 |

**Products that were previously filled with transformer oil must be drained and cleaned thoroughly before using white oils!**

### 8.1.2 Filling quantities

| Mains supply | Motor capacity $P_2$ | Oil filling quantity |
|---|---|---|
| 1~230 V | up to 0.75 kW | 115 ml |
| | up to 1.1 kW | 150 ml |
| | up to 1.5 kW | 190 ml |
| 3~400 V | up to 0.75 kW | 115 ml |
| | up to 1.5 kW | 150 ml |
| | up to 2.2 kW | 190 ml |

### 8.1.3 Overview of greases

The following can be used as grease in accordance with DIN 51818/NLGI class 3:

- Esso Unirex N3
- SKF GJN
- NSK EA5, EA6
- Tripol Molub-Alloy-Food Proof 823 FM*

## 8.2 Maintenance intervals

Overview of the maintenance intervals needed
**If it is used in highly abrasive or corrosive material, the maintenance intervals should be reduced by 50%!**

### 8.2.1 Before initial start-up or after a longer period of storage

- Check the insulation resistance

### 8.2.2 2,000 operating hours or after ten years, whichever is earlier

- General overhaul

## 8.3 Maintenance tasks

### 8.3.1 Checking the insulation resistance

To check the insulation resistance, the power supply cable must be disconnected. The resistance can then be measured with an insulation tester (measuring voltage = 1,000 V). The following values may not be exceeded:

- For the initial start-up: Minimum insulation resistance 20 MΩ.
- For further measurements: Value must be greater than 2 MΩ.

**For motors with an integrated capacitor, the windings must be short-circuited before checking.**

**If the insulation resistance is too low, moisture may have penetrated the cable and/or the motor. Do not connect the machine, consult manufacturer.**

### 8.3.2 General overhaul

During a general overhaul, the bearings, shaft seals, O rings and power supply cables are inspected and replaced as required in addition to normal maintenance work. This work may only be conducted by the manufacturer or an authorized service workshop.

# 9 Troubleshooting and possible solutions

In order to prevent damage or injury while rectifying product faults, the following points must be observed in all cases:

- Only attempt to rectify a fault if you have qualified staff. This means that each job must be carried out by trained specialist staff. For example, electrical work must be performed by a trained electrician.
- Always secure the product against an accidental restart by disconnecting it from the mains. Take appropriate safety precautions.
- Always have a second person on hand to ensure that the product has been switched off for safety.
- Secure moving parts to prevent injury.
- Unsanctioned changes to the product are made at the operator's own risk and release the manufacturer from any warranty obligations.

### 9.0.1 Fault: The unit will not start

1 Electricity supply interrupted, short circuit or earth fault in the cable or motor windings
   - Have the motor and wires checked by a specialist and replaced if necessary.

2 Fuses, the motor protection switch and/or monitoring devices are triggered
   - Have a specialist inspect the connections and correct them as necessary.
   - Have the motor protection switches and fuses installed or adjusted according to the technical specifications, and reset monitoring equipment.
   - Check that the impeller/propeller runs smoothly. Clean or free it as necessary.

3 The moisture sensors (optional) have interrupted the power circuit (operator-related)
   - See fault: Mechanical shaft seal leak, moisture sensors report a fault or shut down the unit.

### 9.0.2 Fault: The unit starts, but the motor protection switch triggers shortly after start-up

1 The thermal trigger on the motor protection switch is incorrectly set
   - Have a specialist compare the setting of the trigger with the technical specifications and correct if necessary.

2 Increased power consumption due to major voltage drop
   - Have an electrician check the voltage on each phase and rewire if necessary.

3 Two-phase operation
   - Have a specialist inspect the connection and correct it as necessary.

4 Excessive voltage differences on the three phases
   - Have a specialist inspect the connection and the switching system and correct it as necessary.

5 Incorrect direction of rotation
   - Swap the two phases from the mains supply.

6 Impeller/propeller impeded by adhesive material, blockages and/or solid matter, increased current consumption
   - Switch off the unit, secure it against being switched on again, free the impeller/propeller or clean the intake port.

7 The pumped fluid is too dense
   - Contact the manufacturer.

### 9.0.3 Fault: Unit runs but does not pump

1 No pumped fluid
   - Open the container intake or sliders.

2 Intake blocked
   - Clean the intake, slider, intake port or intake strainer.

3 Impeller/propeller blocked or obstructed
   - Switch off the unit, secure it against being switched on again and free the impeller/propeller.

4 Defective hose or pipeline
   - Replace defective parts.

5 Intermittent operation
   - Check the control panel.

### 9.0.4 Fault: The unit runs, but not at the stated operating levels

1 Intake blocked
   - Clean the intake, slider, intake port or intake strainer

2 Slider in the discharge pipe closed
   - Fully open the slider

3 Impeller/propeller blocked or obstructed
   - Switch off the unit, secure it against being switched on again and free the impeller/propeller

4 Incorrect direction of rotation
   - Replace two phases on the mains supply

5 Air in the system
   - Check the pipelines, pressure shroud and/or hydraulics, and bleed if necessary

6 Unit is pumping against excessive pressure
   - Check the slider in the discharge pipe and open it completely if necessary, use a different impeller or contact the factory

7 Signs of wear
   - Replace worn parts

8 Defective hose or pipeline

- Replace defective parts

9 Inadmissible levels of gas in the pumped liquid
- Contact the factory

10 Two-phase operation
- Have a specialist inspect the connection and correct it as necessary

11 Excessive decrease in the water table during operation
- Check the supply and capacity of the system, and inspect the level control settings and functionality

#### 9.0.5 Fault: The unit does not run smoothly and is noisy

1 Unit is running in an inadmissible operation range
- Check the operational data of the unit and correct if necessary and/or adjust the operating conditions

2 The intake port, strainer and/or impeller/propeller is blocked
- Clean the intake port, strainer and/or impeller/propeller

3 The impeller is impeded
- Switch off the unit, secure it against being switched on again and free the impeller

4 Inadmissible levels of gas in the pumped liquid
- Contact the factory

5 Two-phase operation
- Have a specialist inspect the connection and correct it as necessary

6 Incorrect direction of rotation
- Replace two phases on the mains supply

7 Signs of wear
- Replace worn parts

8 Defective motor bearing
- Contact the factory

9 The unit is installed under mechanical strain
- Check the installation, use rubber spacers if necessary

#### 9.0.6 Fault: Mechanical shaft seal leak, moisture sensors report a fault or shut down the unit

(Moisture sensor monitoring is optional, and is not available for all types. For more details, see the order confirmation or the electrical connection plan.)

1 Condensation build-up due to lengthy storage and/or temperature fluctuations
- Operate the unit briefly (max. 5 min.) without moisture sensors

2 Expansion tank (optional for polder pumps) is too high
- Install the expansion tank no more than 10 m above the bottom edge of the intake port

3 Increased leakage when running in new mechanical shaft seals
- Change the oil

4 Defective moisture sensor cables
- Replace the moisture sensors

5 Mechanical shaft seal is defective
- Replace the mechanical shaft seal and contact the factory

#### 9.0.7 Further steps for troubleshooting

If the points listed here do not rectify the fault, contact our customer service. They can help you as follows:

- Telephone or written support from customer service
- On-site support from customer service
- Inspection or repair of the unit at the factory

Please note that you may be charged for some services provided by our customer support. For more details, please contact customer service.

## 10 Spare parts

Spare parts can be ordered from the manufacturer's customer service. To avoid queries and incorrect orders, the serial and/or article number must always be supplied.

**Technical changes reserved!**

# EG KONFORMITÄTSERKLÄRUNG
# *EC DECLARATION OF CONFORMITY*
# *DECLARATION DE CONFORMITE CE*

Als Hersteller erklären wir hiermit, dass die Pumpenbauarten der Baureihen
*We, the manufacturer, declare that the pump types of the series*
*Nous, fabricant, déclarons que les types de pompes des séries*

**TP50E...**
**TP50F...**
**TP65E...**
**TP65F...**
**TS50H...**
**TS65H...**

*(Die Seriennummer ist auf dem Typenschild des Produktes nach Punkten b) & c) von §1.7.4.2 und §1.7.3 des Anhanges I der Maschinenrichtlinie angegeben. / The serial number is marked on the product site plate according to points b) & c) of §1.7.4.2 and §1.7.3 of the annex I of the Machinery directive. / Le numéro de série est inscrit sur la plaque signalétique du produit en accord avec les points b) & c) du §1.7.4.2 et du §1.7.3 de l'annexe I de la Directive Machines.)*

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entsprechen :
*In their delivered state comply with the following relevant directives :*
*dans leur état de livraison sont conformes aux dispositions des directives suivantes :*

**_ Maschinenrichtlinie 2006/42/EG**
**_ *Machinery 2006/42/EC***
**_ *Machines 2006/42/CE***
und gemäss Anhang 1, §1.5.1, werden die Schutzziele der Niederspannungsrichtlinie 2006/95/EG eingehalten,
*and according to the annex 1, §1.5.1, comply with the safety objectives of the Low Voltage Directive 2006/95/EC.*
*et, suivant l'annexe 1, §1.5.1, respectent les objectifs de sécurité de la Directive Basse Tension 2006/95/CE.*

**_ Elektromagnetische Verträglichkeit-Richtlinie 2004/108/EG**
**_ *Electromagnetic compatibility 2004/108/EC***
**_ *Compabilité électromagnétique 2004/108/CE***

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

sowie auch den Bestimmungen zu folgenden harmonisierten europäischen Normen :
*comply also with the following relevant harmonized European standards :*
*sont également conformes aux dispositions des normes européennes harmonisées suivantes :*

**EN 809+A1**
**EN ISO 12100**
**EN 60034-1**
**EN 60204-1**

| | | | |
|---|---|---|---|
| Die Ausführungen<br>*The versions*<br>*Les versions* | **TP 50F90**<br>**TP 65F..** | in Bezug auf die **Bauproduktenverordnung Nr. 305/2011**, sind kompatibel für eine Nutzung nach<br>*under the **Construction Products Regulation No. 305/2011**, are suitable for using according to*<br>*au titre du règlement des Produits de Construction No. 305/2011, sont compatibles pour une utilisation suivant* | **EN 12050-1** |
| | **TP 50F82**<br>**TP 50E../65E..**<br>**TS 50H../65H..** | | **DIN EN 12050-2** |

| | |
|---|---|
| Die Ausführungen ausgestattet mit einer Netzanschlussleitung mit Stecker in Bezug auf die **Nierderspannungsrichtlinie 2006/95/EG**, entsprechen der<br>*The versions fitted with a supply cord with a plug according to the **Low Voltage Directive 2006/95/EC**, comply also with*<br>*Les versions munies d'un câble d'alimentation avec fiche de prise de courant au titre de la **Directive Basse Tension 2006/95/CE**, sont aussi conformes à* | **EN 60335-2-41** |

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen ist:
*Person authorized to compile the technical file is :*
*Personne autorisée à constituer le dossier technique est :*

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F_GQ_013-05

## *(BG) - български език*
### ДЕКЛАРАЦИЯ ЗА СЪОТЕТСТВИЕ ЕО

WILO SE декларират, че продуктите посочени в настоящата декларация съответстват на разпоредбите на следните европейски директиви и приелите ги национални законодателства:

Машини 2006/42/ЕО ; Електромагнитна съвместимост 2004/108/ЕО

както и на хармонизираните европейски стандарти, упоменати на предишната страница.

## *(CS) - Čeština*
### ES PROHLÁŠENÍ O SHODĚ

WILO SE prohlašuje, že výrobky uvedené v tomto prohlášení odpovídají ustanovením níže uvedených evropských směrnic a národním právním předpisům, které je přejímají:

Stroje 2006/42/ES ; Elektromagnetická Kompatibilita 2004/108/ES

a rovněž splňují požadavky harmonizovaných evropských norem uvedených na předcházející stránce.

## *(DA) - Dansk*
### EF-OVERENSSTEMMELSESERKLÆRING

WILO SE erklærer, at produkterne, som beskrives i denne erklæring, er i overensstemmelse med bestemmelserne i følgende europæiske direktiver, samt de nationale lovgivninger, der gennemfører dem:

Maskiner 2006/42/EF ; Elektromagnetisk Kompatibilitet 2004/108/EF

De er ligeledes i overensstemmelse med de harmoniserede europæiske standarder, der er anført på forrige side.

## *(EL) - Ελληνικά*
### ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΕΚ

WILO SE δηλώνει ότι τα προϊόντα που ορίζονται στην παρούσα ευρωπαϊκά δήλωση είναι σύμφωνα με τις διατάξεις των παρακάτω οδηγιών και τις εθνικές νομοθεσίες στις οποίες έχει μεταφερθεί:

Μηχανήματα 2006/42/ΕΚ ; Ηλεκτρομαγνητικής συμβατότητας 2004/108/ΕΚ

και επίσης με τα εξής εναρμονισμένα ευρωπαϊκά πρότυπα που αναφέρονται στην προηγούμενη σελίδα.

## *(ES) - Español*
### DECLARACIÓN CE DE CONFORMIDAD

WILO SE declara que los productos citados en la presenta declaración están conformes con las disposiciones de las siguientes directivas europeas y con las legislaciones nacionales que les son aplicables :

Máquinas 2006/42/CE ; Compatibilidad Electromagnética 2004/108/CE

Y igualmente están conformes con las disposiciones de las normas europeas armonizadas citadas en la página anterior.

## *(ET) - Eesti keel*
### EÜ VASTAVUSDEKLARATSIOONI

WILO SE kinnitab, et selles vastavustunnistuses kirjeldatud tooted on kooskõlas alljärgnevate Euroopa direktiivide sätetega ning riiklike seadusandlustega, mis nimetatud direktiivid üle on võtnud:

Masinad 2006/42/EÜ ; Elektromagnetilist Ühilduvust 2004/108/EÜ

Samuti on tooted kooskõlas eelmisel leheküljel ära toodud harmoniseeritud Euroopa standarditega.

## *(FI) - Suomen kieli*
### EY-VAATIMUSTENMUKAISUUSVAKUUTUS

WILO SE vakuuttaa, että tässä vakuutuksessa kuvatut tuotteet ovat seuraavien eurooppalaisten direktiivien määräysten sekä niihin sovellettavien kansallisten lakiasetusten mukaisia:

Koneet 2006/42/EY ; Sähkömagneettinen Yhteensopivuus 2004/108/EY

Lisäksi ne ovat seuraavien edellisellä sivulla mainittujen yhdenmukaistettujen eurooppalaisten normien mukaisia.

## *(HR) - Hrvatski*
### EZ IZJAVA O SUKLADNOSTI

WILO SE izjavljuje da su proizvodi navedeni u ovoj izjavi u skladu sa sljedećim prihvaćenim europskim direktivama i nacionalnim zakonima:

EZ smjernica o strojevima 2006/42/EZ ; Elektromagnetna kompatibilnost - smjernica 2004/108/EZ

i usklađenim europskim normama navedenim na prethodnoj stranici.

## *(HU) - Magyar*
### EK-MEGFELELŐSÉGI NYILATKOZAT

WILO SE kijelenti, hogy a jelen megfelelőségi nyilatkozatban megjelölt termékek megfelelnek a következő európai irányelvek előírásainak, valamint azok nemzeti jogrendbe átültetett rendelkezéseinek:

Gépek 2006/42/EK ; Elektromágneses összeférhetőségre 2004/108/EK

valamint az előző oldalon szereplő, harmonizált európai szabványoknak.

## *(IT) - Italiano*
### DICHIARAZIONE CE DI CONFORMITÀ

WILO SE dichiara che i prodotti descritti nella presente dichiarazione sono conformi alle disposizioni delle seguenti direttive europee nonché alle legislazioni nazionali che le traspongono :

Macchine 2006/42/CE ; Compatibilità Elettromagnetica 2004/108/CE

E sono pure conformi alle disposizioni delle norme europee armonizzate citate a pagina precedente.

## *(LT) - Lietuvių kalba*
### EB ATITIKTIES DEKLARACIJA

WILO SE pareiškia, kad šioje deklaracijoje nurodyti gaminiai atitinka šių Europos direktyvų ir jas perkeliančių nacionalinių įstatymų nuostatus:

Mašinos 2006/42/EB ; Elektromagnetinis Suderinamumas 2004/108/EB

ir taip pat harmonizuotas Europas normas, kurios buvo cituotos ankstesniame puslapyje.

## *(LV) - Latviešu valoda*
### EK ATBILSTĪBAS DEKLARĀCIJU

WILO SEdeklarē, ka izstrādājumi, kas ir nosaukti šajā deklarācijā, atbilst šeit uzskaitīto Eiropas direktīvu nosacījumiem, kā arī atsevišķu valstu likumiem, kuros tie ir ietverti:

Mašīnas 2006/42/EK ; Elektromagnētiskās Saderības 2004/108/EK

un saskaņotajiem Eiropas standartiem, kas minēti iepriekšējā lappusē.

## *(MT) - Malti*
### DIKJARAZZJONI KE TA' KONFORMITÀ

WILO SE jiddikjara li l-prodotti speċifikati f'din id-dikjarazzjoni huma konformi mad-direttivi Ewropej li jsegwu u mal-leġislazzjonijiet nazzjonali li japplikawhom:

Makkinarju 2006/42/KE ; Kompatibbiltà Elettromanjetika 2004/108/KE

kif ukoll man-normi Ewropej armoniżżati li jsegwu imsemmija fil-paġna preċedenti.

## *(NL) - Nederlands*
### EG-VERKLARING VAN OVEREENSTEMMING

WILO SE verklaart dat de in deze verklaring vermelde producten voldoen aan de bepalingen van de volgende Europese richtlijnen evenals aan de nationale wetgevingen waarin deze bepalingen zijn overgenomen:

Machines 2006/42/EG ; Elektromagnetische Compatibiliteit 2004/108/EG

De producten voldoen eveneens aan de geharmoniseerde Europese normen die op de vorige pagina worden genoemd.

## *(NO) - Norsk*
**EU-OVERENSSTEMMELSESERKLAEING**

WILO SE erklærer at produktene nevnt i denne erklæringen er i samsvar med følgende europeiske direktiver og nasjonale lover:

EG–Maskindirektiv 2006/42/EG ; EG–EMV–Elektromagnetisk kompatibilitet 2004/108/EG

og harmoniserte europeiske standarder nevnt på forrige side.

## *(PL) - Polski*
**DEKLARACJA ZGODNOŚCI WE**

WILO SE oświadcza, że produkty wymienione w niniejszej deklaracji są zgodne z postanowieniami następujących dyrektyw europejskich i transponującymi je przepisami prawa krajowego:

Maszyn 2006/42/WE ; Kompatybilności Elektromagnetycznej 2004/108/WE

oraz z nastepującymi normami europejskich zharmonizowanymi podanymi na poprzedniej stronie.

## *(PT) - Português*
**DECLARAÇÃO CE DE CONFORMIDADE**

WILO SE declara que os materiais designados na presente declaração obedecem às disposições das directivas europeias e às legislações nacionais que as transcrevem :

Máquinas 2006/42/CE ; Compatibilidade Electromagnética 2004/108/CE

E obedecem também às normas europeias harmonizadas citadas na página precedente.

## *(RO) - Română*
**DECLARAŢIE DE CONFORMITATE CE**

WILO SE declară că produsele citate în prezenta declaraţie sunt conforme cu dispoziţiile directivelor europene următoare şi cu legislaţiile naţionale care le transpun :

Maşini 2006/42/CE ; Compatibilitate Electromagnetică 2004/108/CE

şi, de asemenea, sunt conforme cu normele europene armonizate citate în pagina precedentă.

## *(RU) - русский язык*
**Декларация о соответствии Европейским нормам**

WILO SE заявляет, что продукты, перечисленные в данной декларации о соответствии, отвечают следующим европейским директивам и национальным предписаниям:

Директива ЕС по машинному оборудованию 2006/42/EC ; Директива ЕС по электромагнитной совместимости 2004/108/EC

и гармонизированным европейским стандартам, упомянутым на предыдущей странице.

## *(SK) - Slovenčina*
**ES VYHLÁSENIE O ZHODE**

WILO SE čestne prehlasuje, že výrobky ktoré sú predmetom tejto deklarácie, sú v súlade s požiadavkami nasledujúcich európskych direktív a odpovedajúcich národných legislatívnych predpisov:

Strojových zariadeniach 2006/42/ES ; Elektromagnetickú Kompatibilitu 2004/108/ES

ako aj s harmonizovanými európskych normami uvedenými na predchádzajúcej strane.

## *(SL) - Slovenščina*
**ES-IZJAVA O SKLADNOSTI**

WILO SE izjavlja, da so izdelki, navedeni v tej izjavi, v skladu z določili naslednjih evropskih direktiv in z nacionalnimi zakonodajami, ki jih vsebujejo:

Stroji 2006/42/ES ; Elektromagnetno Združljivostjo 2004/108/ES

pa tudi z usklajenimi evropskih standardi, navedenimi na prejšnji strani.

## *(SV) - Svenska*
**EG-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE**

WILO SE intygar att materialet som beskrivs i följande intyg överensstämmer med bestämmelserna i följande europeiska direktiv och nationella lagstiftningar som inför dem:

Maskiner 2006/42/EG ; Elektromagnetisk Kompatibilitet 2004/108/EG

Det överensstämmer även med följande harmoniserade europeiska standarder som nämnts på den föregående sidan.

## *(TR) - Türkçe*
**CE UYGUNLUK TEYID BELGESI**

WILO SEbu belgede belirtilen ürünlerin aşağıdaki Avrupa yönetmeliklerine ve ulusal kanunlara uygun olduğunu beyan etmektedir:

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ve önceki sayfada belirtilen uyumlaştırılmış Avrupa standartlarına.

# EG KONFORMITÄTSERKLÄRUNG
# *EC DECLARATION OF CONFORMITY*
# *DECLARATION DE CONFORMITE CE*

Als Hersteller erklären wir hiermit, dass die Pumpenbauarten der Baureihen
*We, the manufacturer, declare that the pump types of the series*
*Nous, fabricant, déclarons que les types de pompes des séries*

**TP65E... (3~)**
**TP65F... (3~)**
**TS50H... (3~)**
**TS65H... (3~)**

*(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 entsprechen :
*In their delivered state comply with the following relevant directives :*
*dans leur état de livraison sont conformes aux dispositions des directives suivantes :*

**_ Richtlinie "Explosionsgefährdete Bereiche" ATEX 94/09/EG**
**_ *"Explosive atmospheres" ATEX 94/9/EC***
**_ *"Atmosphères explosibles" ATEX 94/09/CE***

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

sowie auch den Bestimmungen zu folgenden harmonisierten europäischen Normen :
*comply also with the following relevant harmonized European standards :*
*sont également conformes aux dispositions des normes européennes harmonisées suivantes :*

**EN 60079-0** **EN 60079-1**

Baumusterprüfbescheinigung-EG:
*EC type examination Certificate:*
*Attestation d'examen CE de type :*
**LCIE 03 ATEX 6202X**

Benannte Stelle:
*Notified body:*
*Organisme notifié :*
**LCIE - ID: 0081**
**Laboratoire Central des Industries Electriques**
**33, Avenue du Général Leclerc**
**F-92260 FONTENAY AUX ROSES**

Kennzeichnung:
*Marking:*
*Marquage :*
**II 2 G Ex d IIB T4**

Dortmund,

**H. HERCHENHEIN**
**Group Quality Manager**

ppa.

Digital unterschrieben von holger.herchenhein@wilo.com
Datum: 2014.06.16 12:40:15 +02'00'

N°2105147.03
(CE-A-S n°6050101)

**WILO SE**
**Nortkirchenstraβe 100**
**44263 Dortmund - Germany**

F_GQ_013-05

## *(BG) - български език*
### ДЕКЛАРАЦИЯ ЗА СЪОТЕТСТВИЕ ЕО

WILO SE декларират, че продуктите посочени в настоящата декларация съответстват на разпоредбите на следните европейски директиви и приелите ги национални законодателства:

Машини 2006/42/ЕО ; Електромагнитна съвместимост 2004/108/ЕО

както и на хармонизираните европейски стандарти, упоменати на предишната страница.

## *(CS) - Čeština*
### ES PROHLÁŠENÍ O SHODĚ

WILO SE prohlašuje, že výrobky uvedené v tomto prohlášení odpovídají ustanovením níže uvedených evropských směrnic a národním právním předpisům, které je přejímají:

Stroje 2006/42/ES ; Elektromagnetická Kompatibilita 2004/108/ES

a rovněž splňují požadavky harmonizovaných evropských norem uvedených na předcházející stránce.

## *(DA) - Dansk*
### EF-OVERENSSTEMMELSESERKLÆRING

WILO SE erklærer, at produkterne, som beskrives i denne erklæring, er i overensstemmelse med bestemmelserne i følgende europæiske direktiver, samt de nationale lovgivninger, der gennemfører dem:

Maskiner 2006/42/EF ; Elektromagnetisk Kompatibilitet 2004/108/EF

De er ligeledes i overensstemmelse med de harmoniserede europæiske standarder, der er anført på forrige side.

## *(EL) - Ελληνικά*
### ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΕΚ

WILO SE δηλώνει ότι τα προϊόντα που ορίζονται στην παρούσα ευρωπαϊκά δήλωση είναι σύμφωνα με τις διατάξεις των παρακάτω οδηγιών και τις εθνικές νομοθεσίες στις οποίες έχει μεταφερθεί:

Μηχανήματα 2006/42/ΕΚ ; Ηλεκτρομαγνητικής συμβατότητας 2004/108/ΕΚ

και επίσης με τα εξής εναρμονισμένα ευρωπαϊκά πρότυπα που αναφέρονται στην προηγούμενη σελίδα.

## *(ES) - Español*
### DECLARACIÓN CE DE CONFORMIDAD

WILO SE declara que los productos citados en la presenta declaración están conformes con las disposiciones de las siguientes directivas europeas y con las legislaciones nacionales que les son aplicables :

Máquinas 2006/42/CE ; Compatibilidad Electromagnética 2004/108/CE

Y igualmente están conformes con las disposiciones de las normas europeas armonizadas citadas en la página anterior.

## *(ET) - Eesti keel*
### EÜ VASTAVUSDEKLARATSIOONI

WILO SE kinnitab, et selles vastavustunnistuses kirjeldatud tooted on kooskõlas alljärgnevate Euroopa direktiivide sätetega ning riiklike seadusandlustega, mis nimetatud direktiivid üle on võtnud:

Masinad 2006/42/EÜ ; Elektromagnetilist Ühilduvust 2004/108/EÜ

Samuti on tooted kooskõlas eelmisel leheküljel ära toodud harmoniseeritud Euroopa standarditega.

## *(FI) - Suomen kieli*
### EY-VAATIMUSTENMUKAISUUSVAKUUTUS

WILO SE vakuuttaa, että tässä vakuutuksessa kuvatut tuotteet ovat seuraavien eurooppalaisten direktiivien määräysten sekä niihin sovellettavien kansallisten lakiasetusten mukaisia:

Koneet 2006/42/EY ; Sähkömagneettinen Yhteensopivuus 2004/108/EY

Lisäksi ne ovat seuraavien edellisellä sivulla mainittujen yhdenmukaistettujen eurooppalaisten normien mukaisia.

## *(HR) - Hrvatski*
### EZ IZJAVA O SUKLADNOSTI

WILO SE izjavljuje da su proizvodi navedeni u ovoj izjavi u skladu sa sljedećim prihvaćenim europskim direktivama i nacionalnim zakonima:

EZ smjernica o strojevima 2006/42/EZ ; Elektromagnetna kompatibilnost - smjernica 2004/108/EZ

i usklađenim europskim normama navedenim na prethodnoj stranici.

## *(HU) - Magyar*
### EK-MEGFELELŐSÉGI NYILATKOZAT

WILO SE kijelenti, hogy a jelen megfelelőségi nyilatkozatban megjelölt termékek megfelelnek a következő európai irányelvek előírásainak, valamint azok nemzeti jogrendbe átültetett rendelkezéseinek:

Gépek 2006/42/EK ; Elektromágneses összeférhetőségre 2004/108/EK

valamint az előző oldalon szereplő, harmonizált európai szabványoknak.

## *(IT) - Italiano*
### DICHIARAZIONE CE DI CONFORMITÀ

WILO SE dichiara che i prodotti descritti nella presente dichiarazione sono conformi alle disposizioni delle seguenti direttive europee nonché alle legislazioni nazionali che le traspongono :

Macchine 2006/42/CE ; Compatibilità Elettromagnetica 2004/108/CE

E sono pure conformi alle disposizioni delle norme europee armonizzate citate a pagina precedente.

## *(LT) - Lietuvių kalba*
### EB ATITIKTIES DEKLARACIJA

WILO SE pareiškia, kad šioje deklaracijoje nurodyti gaminiai atitinka šių Europos direktyvų ir jas perkeliančių nacionalinių įstatymų nuostatus:

Mašinos 2006/42/EB ; Elektromagnetinis Suderinamumas 2004/108/EB

ir taip pat harmonizuotas Europas normas, kurios buvo cituotos ankstesniame puslapyje.

## *(LV) - Latviešu valoda*
### EK ATBILSTĪBAS DEKLARĀCIJU

WILO SEdeklarē, ka izstrādājumi, kas ir nosaukti šajā deklarācijā, atbilst šeit uzskaitīto Eiropas direktīvu nosacījumiem, kā arī atsevišķu valstu likumiem, kuros tie ir ietverti:

Mašīnas 2006/42/EK ; Elektromagnētiskās Saderības 2004/108/EK

un saskaņotajiem Eiropas standartiem, kas minēti iepriekšējā lappusē.

## *(MT) - Malti*
### DIKJARAZZJONI KE TA' KONFORMITÀ

WILO SE jiddikjara li l-prodotti speċifikati f'din id-dikjarazzjoni huma konformi mad-direttivi Ewropej li jsegwu u mal-leġislazzjonijiet nazzjonali li japplikawhom:

Makkinarju 2006/42/KE ; Kompatibbiltà Elettromanjetika 2004/108/KE

kif ukoll man-normi Ewropej armoniżżati li jsegwu imsemmija fil-paġna preċedenti.

## *(NL) - Nederlands*
### EG-VERKLARING VAN OVEREENSTEMMING

WILO SE verklaart dat de in deze verklaring vermelde producten voldoen aan de bepalingen van de volgende Europese richtlijnen evenals aan de nationale wetgevingen waarin deze bepalingen zijn overgenomen:

Machines 2006/42/EG ; Elektromagnetische Compatibiliteit 2004/108/EG

De producten voldoen eveneens aan de geharmoniseerde Europese normen die op de vorige pagina worden genoemd.

## *(NO) - Norsk*
**EU-OVERENSSTEMMELSESERKLAEING**

WILO SE erklærer at produktene nevnt i denne erklæringen er i samsvar med følgende europeiske direktiver og nasjonale lover:

EG–Maskindirektiv 2006/42/EG ; EG–EMV–Elektromagnetisk kompatibilitet 2004/108/EG

og harmoniserte europeiske standarder nevnt på forrige side.

## *(PL) - Polski*
**DEKLARACJA ZGODNOŚCI WE**

WILO SE oświadcza, że produkty wymienione w niniejszej deklaracji są zgodne z postanowieniami następujących dyrektyw europejskich i transponującymi je przepisami prawa krajowego:

Maszyn 2006/42/WE ; Kompatybilności Elektromagnetycznej 2004/108/WE

oraz z nastepującymi normami europejskich zharmonizowanymi podanymi na poprzedniej stronie.

## *(PT) - Português*
**DECLARAÇÃO CE DE CONFORMIDADE**

WILO SE declara que os materiais designados na presente declaração obedecem às disposições das directivas europeias e às legislações nacionais que as transcrevem :

Máquinas 2006/42/CE ; Compatibilidade Electromagnética 2004/108/CE

E obedecem também às normas europeias harmonizadas citadas na página precedente.

## *(RO) - Română*
**DECLARAŢIE DE CONFORMITATE CE**

WILO SE declară că produsele citate în prezenta declaraţie sunt conforme cu dispoziţiile directivelor europene următoare şi cu legislaţiile naţionale care le transpun :

Maşini 2006/42/CE ; Compatibilitate Electromagnetică 2004/108/CE

şi, de asemenea, sunt conforme cu normele europene armonizate citate în pagina precedentă.

## *(RU) - русский язык*
**Декларация о соответствии Европейским нормам**

WILO SE заявляет, что продукты, перечисленные в данной декларации о соответствии, отвечают следующим европейским директивам и национальным предписаниям:

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Maskiner 2006/42/EG ; Elektromagnetisk Kompatibilitet 2004/108/EG

Det överensstämmer även med följande harmoniserade europeiska standarder som nämnts på den föregående sidan.

## *(TR) - Türkçe*
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ve önceki sayfada belirtilen uyumlaştırılmış Avrupa standartlarına.

# Wilo – International (Subsidiaries)

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