

Wilo-Drain TC 40



de Einbau- und Betriebsanleitung
en Installation and operating instructions
fr Notice de montage et de mise en service

it Istruzioni di montaggio, uso e manutenzione
nl Inbouw- en bedieningsvoorschriften
ru Инструкция по монтажу и эксплуатации

Fig. 1

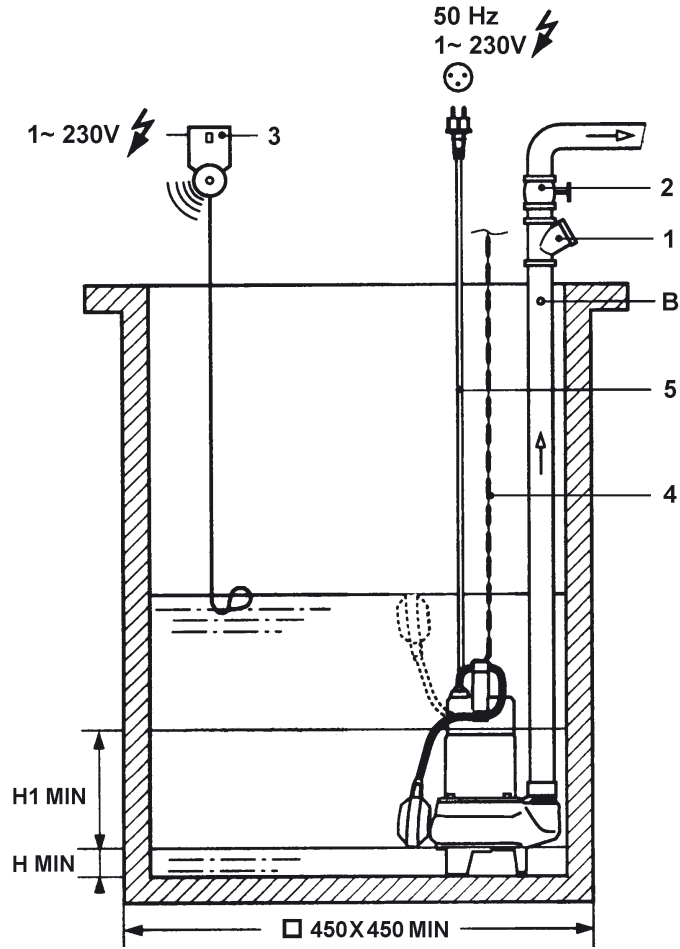
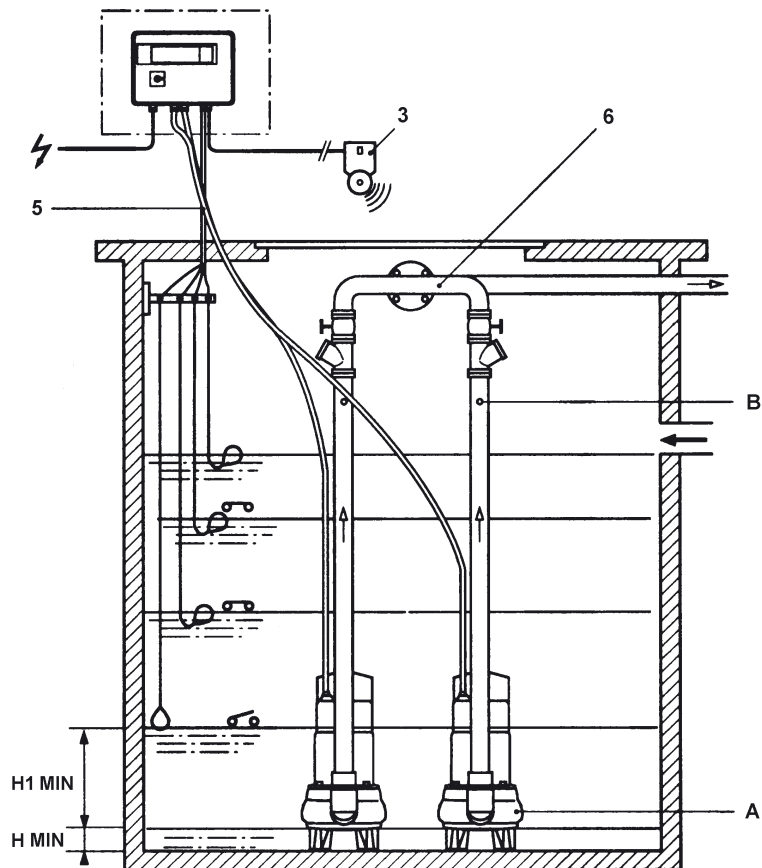


Fig. 2



1. General

1.1 About this document

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

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

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

EC declaration of conformity:

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

If a technical modification is made on the designs named there without our agreement, this declaration loses its validity.

2. Safety

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

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

2.1 Indication of instructions in the operating instructions

Symbols



General danger symbol



Danger due to electrical voltage



NOTE

Signal words:

DANGER!

Acutely dangerous situation.

Non-observance results in death or the most serious of injuries.

WARNING!

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

CAUTION!

There is a risk of damaging the product/unit. "Caution" implies that damage to the product is likely if this information is disregarded.

HINWEIS:

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

Information that appears directly on the product, such as:

- Direction of rotation arrow,
 - Identifiers for connections,
 - Name plate,
 - Warning sticker,
- must be strictly complied with and kept in legible condition.

2.2 Personnel qualifications

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

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

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

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

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

2.4 Safety consciousness on the job

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

2.5 Safety instructions for inspection and installation

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

- If hot or cold components on the product/the unit lead to hazards, local measures must be taken to guard them against touching.
- Guards protecting against touching moving compo-

nents (such as the coupling) must not be removed whilst the product is in operation.

- Leakages (e.g. from the shaft seals) of hazardous fluids (which are explosive, toxic or hot) must be led away so that no danger to persons or to the environment arises. National statutory provisions are to be complied with.
- Highly flammable materials are always to be kept at a safe distance from the product.
- Danger from electrical current must be eliminated. Local directives or general directives [e.g. IEC, VDE etc.] and local power supply companies must be adhered to.

2.6 Safety instructions for installation and maintenance work

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

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

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

2.7 Unauthorised modification and manufacture of spare parts

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

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

2.8 Improper use

The operating safety of the supplied product is only guaranteed for conventional use in accordance with Section 4 of the operating instructions. The limit values must on no account fall under or exceed those specified in the catalogue/data sheet.

3. Transport and interim storage

The pump may only be transported/suspended on the handle provided for transport. It is to be protected against humidity, frost and mechanical damage.

4. Product and accessory description

4.1 Applications

Pumps for lifting of domestic waste water:

- sewage, rainwater containing sludge and particles (except rigid particles) with traces of hydro-

carbon, detergent.

- For fixed installation in a sump or a tank.
- For housing, garages, car-parks, restaurants, boiler plants.



CAUTION! The pump must not be used for pumping drinking water.

4.2 Description (see Fig. 1-2)

- 1 Check valve adapted to the conveyed medium
- 2 Isolating valve
- 3 Overflow audible signal
- 4 Pump lifting chain
- 5 Motor cable – length 5 m
- 6 Collector for twinned pump.

4.3 Description of pump

- Submersible monobloc electropump,
- Centrifugal single-stage with vortex impeller,
- Vertical discharge port,
- Tightness with mechanical seal and lip seal.

4.4 Description of motor

- Monophase-motor equipped with a built-in motor cut-out, which switches the motor off if it overloads and automatically switches it back on again once it has cooled down; delivered with electric cable-length 5 m with a CEI 23-5 plug and float switch.
- Integrated capacitor.
- Protection index: IP 68
- Insulation class: B
- Oil-cooled motor.

4.5 Products delivered

- Submersible motor-driven pump complete,
- Installation and operating instructions.

4.6 Accessories

Accessories must be ordered separately.

- Isolating valve,
- Non-return valve,
- Floatswitch,
- Lifting chain,
- switch box for the automatic transmitter-dependent control of one or two submersible motor-driven pumps,
- Alarm switching device.

5. Product Information

Power consumption P1 [kW]	see rating plate
Motor-output P2 [kW]	see rating plate
Nominal current I 1~230 V [A]	see rating plate
Protection class at max. immersion depth	IP68
Insulation class	B
Immersion depth (√) max. [m]	2
Temperature range [°C]	3 to 40
Max. particle size [mm]	∅ 40
Equipment	
Cable type	H07RN-F
Cable length [m] / plug	5 / Schuko (CEI 23-5)
Float switch	connected
Pressure support DN	1 1/2"
Level control (Fig. 1, 2)	
Shaft dimension □ min [mm]	450 x 450
Cut-out level continuous duty H1min [mm]	230
Cut-out level intermittent duty (short-term) Hmin [mm]	40

When ordering spare parts, please give all the information on the pump rating plate.

6. Assembly/Installation

6.1 Installation

- Fig. 1: Installation of a pump with monophase motor, float switch and optional overflow audible signal.
- Fig. 2: Fixed installation of 2 pumps connected to a collector for twinned pumps and operating-control by 4 float switches.



NOTE:

Cut-out level:

For intermitted duty:

H min = 40 mm short-term,

For continuous duty:

H1 min = 230 mm (Fig. 1-2)

The shaft should be of ample size, so that the motor does not start too often.



NOTE:

Lower the pump into the sump using a chain (or a rope) hooked to the handle, never by its power- or float switch cable.

Take care not to damage the power cable of the motor during the going down in the sump.

Avoid placing the regulators near the outlet of the pipe through which the water enters the sump, since this could mover them.

Keep the lowest regulator away from the pump suction port so that it will not be sucked in.

If the installation is outside protect the discharge pipes, the isolating and check valve, and the electric controls from frost. Connect the cables to the overload release or to the control box.

6.2 Hydraulic connections

- Diameter of discharge pipe (1 1/2")
- The non-return valve must be connected to the upper side of the discharge pipe before the full-

bore isolation valve.

- Provide a 4 mm diameter hole on the discharge pipe before the check valve for a possible venting following a draining (Fig. 1-2, pos. B).
- Installation of twinned pumps to a collector, connect each discharge pipes to a check valve and an isolation valve (Fig. 2).
- Seal pipe connections carefully with appropriate products.

6.3 Electrical connection



WARNING! Electrical connection should be made by a qualified electrician. Current national and local regulations must be observed (e.g. VDE regulations in Germany).

- Make sure that the electric installation is in compliance with the standard IEC 364 and that the line power supply has a high-sensitivity earth fault breaker (max. 30 mA).
- The electrical connections have to be done before the pump is lowered into the sump.
- Check that the type, voltage and frequency of the electric line power supply complies with the indications mentioned on the name plate.
- The pump with monophase motor is delivered with a 3 wires cable equipped with a standardised plug (2 poles + earth). Connect obligatory the cable on a socket with 2 poles + earth.

7. Commissioning

7.1 Filling and venting

- Fill up the sump,
- Check that the float switch or the level regulators operate freely.

7.2 Starting

- Make sure that the sump is full of water.



CAUTION! The pump must never run dry. Dry-running will damage the mechanical seal.

- Open the discharge valve,
- Start the pump,
- The functioning is now controlled automatically by the float switch or the level regulators.

8. Service



DANGER! Pull the mains plug before checking the pump!

No special servicing while the pump runs but cleaning the impeller and draining the oil can be necessary.

Proceed as follow:

- Separate the pump from the discharge pipe.
- Lift the pump and wash it carefully with clean water before touching it (bear in mind the risk of infection).

Cleaning of the impeller:

- Turn the pump upside down, remove the 3 screws of the feet, remove the feet and dismantle the cover.

- Avoid removing the impeller for cleaning.

Drain the motor oil:

- Place the pump horizontally,
- Remove the plug A and its seal (Fig. 3, pos. A),
- Drain the oil in a transparent receptacle,
- Check the oil: A possible presence of water means that the mechanical seal is in bad state and must be replaced.

Oil Quality: “MOBIL DTE Oil Medium“ or similar.

Quantity: about 0.6 litre.

9. Problems, Causes and Remedies

Problems	Causes	Remedies
The pump fails to start	No current	Check the line Replace the fuses if necessary. Close the overload release or the switch of the control box
	Winding or cable open-circuit	Check the resistances between the cable ends; if necessary replace the cable. Attention: in case of replacing, reconnect correctly the supply wires according to the colours
	Rotor blocked (the motor “growls“)	Dismantle the impeller and clean it
The pump fails to deliver or delivers too little	Discharge pipe obstructed	Remove the pipe and clean it
	Impeller obstructed by particles	see 9.1-c
	The check-valve is mounted upside down	Check the direction of fitting
The pump trips out	Faulty electrical installation	Check the whole electrical installation
	Pump blocked	see 9.1-c
	The pump is hard to turn	see 9.1-c
Water in oil	The mechanical seals is in poor condition	Let the Wilo after-sales service replace the mechanical seal

If the fault cannot be remedied, please contact your plumbing and heating specialist or your nearest Wilo customer services or representative.

Subject to technical alterations!

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