Pioneering for You

Wilo-DrainLift BOX

en Installation and operating instructions

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DrainLift BOX
https://qr.wilo.com/742

Table of contents

1 General information

1.1 About these instructions

These instructions form part of the product. Compliance with the instructions is essential for correct handling and use:

- Read the instructions carefully before all activities.
- Keep the instructions in an accessible place at all times.
- Observe all product specifications.
- Observe the markings on the product.

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

1.2 Copyright

1.3 Subject to change

Wilo shall reserve the right to change the listed data without notice and shall not be liable for technical inaccuracies and/or omissions. The illustrations used may differ from the original and are intended as an example representation of the device.

1.4 Exclusion from warranty and liability

Wilo shall specifically not assume any warranty or liability in the following cases:

- Inadequate configuration due to inadequate or incorrect instructions by the operator or the client
- Non-compliance with these instructions
- Improper use
- Incorrect storage or transport
- Incorrect installation or dismantling
- Insufficient maintenance
- Unauthorised repairs
- Inadequate construction site
- Chemical, electrical or electrochemical influences
- Wear

2 Safety

This section contains basic information about the individual stages in the life cycle of the pump. Failure to observe this information leads to:

- Danger to persons
- Danger to the environment
- Property damage
- Loss of claims for damages

2.1 Identification of safety instructions

These installation and operating instructions set out safety instructions for preventing personal injury and damage to property. These safety instructions are shown differently:

- Safety instructions relating to personal injury start with a signal word, are **preceded by a corresponding symbol** and are shaded in grey.

DANGER

Type and source of the danger!

Consequences of the danger and instructions for avoidance.

- Safety instructions relating to property damage start with a signal word and are displayed **without** a symbol.

CAUTION

Type and source of the danger!

Consequences or information.

Signal words

- **DANGER!**
  Failure to observe the safety instructions will result in serious injuries or death!
- **WARNING!**
  Failure to follow the instructions can lead to (serious) injuries!
- **CAUTION!**
  Failure to follow the instructions can lead to property damage and a possible total loss.
- **NOTICE!**
  Useful information on handling the product

Symbols

These instructions use the following symbols:


Danger of electric voltage


Danger of explosion


Personal protective equipment: Wear a safety helmet


Personal protective equipment: Wear foot protection


Personal protective equipment: Wear hand protection


Personal protective equipment: Wear safety goggles


Personal protective equipment: Wear mouth protection


Transport by two persons


Useful information

Markups

✓ Prerequisite

1. Work step/list

   ⇒ Notice/instructions

▶ Result

Identifying cross references

The name of the section or table is in inverted commas [“ ”]. The page number follows in square brackets [ ].

2.2 Personnel qualifications

- Personnel have been instructed on locally applicable regulations governing accident prevention.
- Personnel have read and understood the installation and operating instructions.
- Electrical work: qualified electrician
  Person with appropriate technical training, knowledge and experience who can identify and prevent electrical hazards.
- Installation/dismantling work: trained specialist in plant technology for sanitary facilities
  Fixation and buoyancy safeguards, connection of plastic pipes
- Maintenance work: skilled person (trained specialist in plant technology for sanitary facilities)
  Hazards caused by sewage, basic knowledge of lifting units, requirements of EN 12056

Children and persons with limited abilities

- Persons under the age of 16: Use of this product is prohibited.
- Persons under the age of 18: Supervise them during use of the product (supervisor)!
- Persons with limited physical, sensory or mental capacities: Use of this product is prohibited!

2.3 Electrical work

- Electrical work must be carried out by a qualified electrician.
- Disconnect device from the mains and secure it against being switched on again without authorisation.
- Observe applicable local regulations when connecting to the mains power supply.
- Comply with the requirements of the local energy supply company.
- Train personnel on how to make electrical connections.
- Train personnel on the options for switching off the device.
- Observe the technical information in these installation and operating instructions as well as on the rating plate.
- Earth the device.
- Arrange switchgears so as to be overflow-proof.
- Replace defective connection cables. Contact customer service.

2.4 Monitoring devices

The following monitoring devices must be provided on-site:

Circuit breaker

The size and switching characteristics of the circuit breakers must conform to the rated current of the connected product. Observe local regulations.

Residual-current device (RCD)

- Install a residual-current device (RCD) in accordance with the regulations of the local energy supply company.
- If people can come into contact with the device and conductive fluids, install a residual-current device (RCD).

2.5 Transport

- Locally applicable laws and regulations on work safety and accident prevention must be complied with.
- Transport product on a pallet or at the pipe sockets.
- Only lift the product by the tank (pipe sockets)!
  - The product will be damaged if lifted by the discharge port or the connection pipes.
- Units weighing 50 kg (110 lbs) and over must be transported by two persons. It is generally recommended that two persons transport the unit.
- If lifting equipment is used, observe the following points:
  - Lifting gear: Transport strap
  - Number: 2
  - Attachment point: Pipe socket
  - Ensure that the lifting gear is securely attached.

2.6 Installing/dismantling

- Locally applicable laws and regulations on work safety and accident prevention must be complied with.
- Disconnect device from the mains and secure it against being switched on again without authorisation.
- Close the inlet and pressure pipe.
- Ensure enclosed spaces have sufficient ventilation.
- When working in enclosed spaces, a second person must be present for safety reasons.
- Toxic or asphyxiating gases may build up in enclosed spaces or buildings. Observe protective measures in accordance with work regulations, e.g. carry a gas detector with you.
- Clean the device thoroughly.
  WARNING! Risk of fire if inappropriate clothing is worn and highly flammable cleaning agents are used!
  Static charging may occur when cleaning plastic parts. There is a risk of fire! Only wear anti-static clothing and do not use highly flammable cleaning agents.

2.7 During operation

- Open all gate valves in the inlet and pressure pipe!
- The maximum inflow must be lower than the maximum output of the system.
- Do not open the inspection openings!
- Ensure aeration and venting!

2.8 Maintenance tasks

- Maintenance work may **only** be carried out by qualified personnel (trained specialists in plant technology for sanitary facilities).

- Disconnect device from the mains and secure it against being switched on again without authorisation.
- Clean the device thoroughly.
  WARNING! Risk of fire if inappropriate clothing is worn and highly flammable cleaning agents are used!
  Static charging may occur when cleaning plastic parts. There is a risk of fire! Only wear anti-static clothing and do not use highly flammable cleaning agents.
- Close the inlet and pressure pipe.
- Only original parts of the manufacturer may be used. The use of any non-original parts releases the manufacturer from any liability.
- Collect any leakage of fluid and operating fluid immediately and dispose of it according to the locally applicable guidelines.

2.9 Operator responsibilities

- Provide installation and operating instructions in a language which the personnel can understand.
- Make sure that the personnel have received the required training for the specified work.
- Provide protective equipment. Ensure that the protective equipment is worn by personnel.
- Ensure that safety and information signs mounted on the device are always legible.
- Train the personnel on how the system operates.
- Demarcate and cordon off the working area.

3 Application/use

3.1 Intended use

For collection and pumping of the following in domestic areas:

- Sewage not containing faeces

A grease separator must be installed for pumping greasy sewage!

Sewage pumping according to (DIN) EN 12050

The pumps meet the requirements of EN 12050-2.

Application

- For the backflow resistant drainage in cases where the discharge point is below the backflow level.
- In cases where sewage cannot be led to the sewer system via a natural fall.
- Installation within a building

Application limits

Improper use and overstraining will cause overflow through the floor drain. The following application limits must be observed:

- Max. intake/h:
  - DrainLift BOX-32/8E: 1300 l (343 US.liq.gal)
  - DrainLift BOX-32/11E: 1200 l (317 US.liq.gal)
  - DrainLift BOX-40/11E: 870 l (230 US.liq.gal)
  - DrainLift BOX-32/8D: 2400 l (634 US.liq.gal)
  - DrainLift BOX-32/11D: 2200 l (581 US.liq.gal)
  - DrainLift BOX-40/11D: 1620 l (428 US.liq.gal)
  - DrainLift BOX-32/8DS: 3000 l (793 US.liq.gal)
  - DrainLift BOX-32/11DS: 3100 l (819 US.liq.gal)
  - DrainLift BOX-40/11DS: 1740 l (460 US.liq.gal)
- Max. pressure in the discharge pipeline: 1.7 bar (25 psi)

- Fluid temperature:
  - DrainLift BOX-32...: 3...35 °C (37...95 °F), max. fluid temperature for 3 mins: 60 °C (140 °F)
  - DrainLift BOX-40...: 3...40 °C (37...104 °F)
- Ambient temperature: 3...40 °C (37...104 °F)

Only applies to concealed floor installation:

- Max. ground water pressure: 0.4 bar (6 psi / 4 mWG above the floor of the tank)

3.2 Improper use

DANGER

Explosion due to use of explosive fluids!

Use of highly flammable and explosive fluids (gasoline, kerosene, etc.) in their pure form is prohibited. There is a risk of fatal injury due to explosion! The lifting unit is not designed for these fluids.

The following fluids must **not** be introduced:

- Sewage containing faeces
- Sewage from drainage objects that are located above the backflow level and can be drained by natural fall.
- Debris, ash, garbage, glass, sand, plaster, cement, lime, mortar, fibrous materials, textiles, paper towels, wet-wipes (e.g. fleece cloths, moist toilet paper wipes), nappies, cardboard, coarse paper, synthetic resins, tar, kitchen waste, grease, oil
- Slaughterhouse waste, disposal of slaughtered animals and animal waste (liquid manure, etc.)
- Toxic, aggressive and corrosive media, such as heavy metals, biocides, pesticides, acids, bases, salts, swimming-pool water
- Cleaning agents, disinfectants, dishwashing or laundry detergents in excess amounts, and such which have a high degree of foam formation
- Drinking water

Intended use also includes compliance with this manual. Any other use is regarded as non-compliant with the intended use.

4 Product description

4.1 Design

4.1.1 Concealed floor installation

Compact and fully-automatic sewage lifting unit for concealed floor installation within buildings.

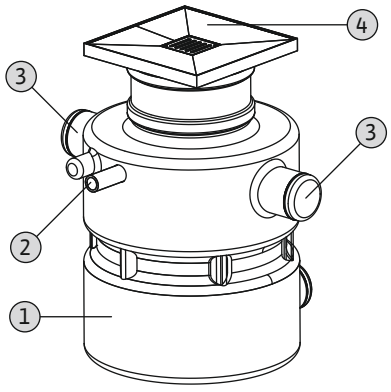
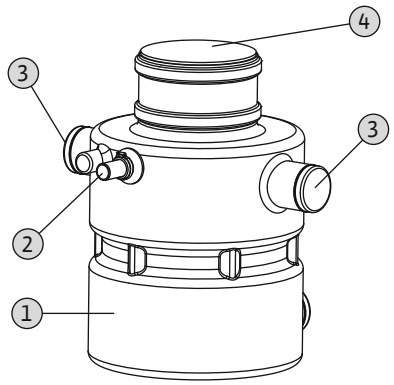


Fig. 1: Overview of concealed floor installation

1	Tank
2	Discharge connection
3	Inlet and ventilation connection
4	Height-adjustable cover with floor drain

4.1.2 Floor-mounted installation

Compact and fully-automatic sewage lifting unit for floor-mounted installation within buildings.



1	Tank
2	Discharge connection
3	Inlet and ventilation connection
4	Cover (cover plug)

Fig. 2: Overview of floor-mounted installation

4.1.3 Collection reservoir

Gas-tight and watertight collection reservoir made from plastic, with deposit-free interior. Two DN 100 connections at a 180° angle to each other for the inlet as well as venting and cable routing. The discharge connection is located at a 90° angle to the other two connections. For easy maintenance of the unit, the cover serves as an inspection opening.

4.1.4 Pumps used

Depending on its type, the sewage lifting unit is equipped with the following submersible sewage pumps:

- BOX-32/8 ...: Drain TMW 32/8
- BOX-32/11 ...: Drain TMW 32/11
- BOX-32/11HD ...: Drain TMW 32/11HD
- BOX-40/11 ...: Rexa MINI3-V04.11/M06 ... -A
- BOX-40/11 ... **DS** ...: Rexa MINI3-V04.11/M06 ... -P

The submersible pumps are pre-installed in the collection reservoir.

Drain TMW 32

Sewage pump with integrated turbulator (twister function), open multi-channel impeller and vertical threaded connection. Pump housing, strainer and impeller made of composite material. 1~ motor (jacket cooling) with integrated operating capacitor and self-switching thermal motor monitoring. Stainless steel motor housing. Oil-filled sealing chamber with double sealing: a rotary shaft seal is installed on the motor side, a mechanical seal on the pump side. Connection cable with float switch and fitted plug (CEE 7/7).

The twister function guarantees permanent turbulence within the pump's intake area. The turbulence prevents the settling sediments from sinking and settling. This ensures a clean pump sump and reduces the build-up of odours.

Drain TMW 32HD

Sewage pump with integrated turbulator (twister function), open multi-channel impeller and vertical threaded connection. Pump housing, strainer and impeller made of composite material. 1~ motor (jacket cooling) with integrated operating capacitor and self-switching thermal motor monitoring. Motor housing and shaft made of high-quality stainless steel (AISI 316L). Oil-filled sealing chamber with double sealing: a rotary shaft seal is installed on the motor side, a mechanical seal on the pump side. Connection cable with float switch and fitted plug (CEE 7/7).

The twister function guarantees permanent turbulence within the pump's intake area. The turbulence prevents the settling sediments from sinking and settling. This ensures a clean pump sump and reduces the build-up of odours.

Rexa MINI3-V ... -A

Sewage pump with vortex impeller and vertical threaded connection. Hydraulics housing made of grey cast iron, impeller made of plastic. Surface-cooled 1~ motor with integrated operating capacitor and self-switching thermal motor monitoring. Stainless steel motor housing. Oil-filled sealing chamber with double sealing: a rotary shaft seal is installed on the motor side, a mechanical seal on the pump side. Detachable connection cable with float switch and fitted plug (CEE 7/7).

Rexa MINI3-V ... -P

Sewage pump with vortex impeller and vertical threaded connection. Hydraulics housing made of grey cast iron, impeller made of plastic. Surface-cooled 1~ motor with integrated operating capacitor and self-switching thermal motor monitoring. Stainless steel motor housing. Oil-filled sealing chamber with double sealing: a rotary shaft seal is installed on the motor side, a mechanical seal on the pump side. Detachable connection cable with fitted plug (CEE 7/7).

4.1.5 Level control

DrainLift BOX ... E and DrainLift BOX ... D

The level control takes place via the float switch attached to the pump. The “pump on/off” switching level is determined by the cable length of the float switch.

DrainLift BOX ... DS

The level control takes place via the separate float switch in the tank and a switchgear. The switchgear is preset. The “pump on” switching point is determined by the cable length of the float switch. The “pump off” switching point is defined by the set follow-up time in the switchgear. The switchgear offers the following functions:

- Collective fault signal (SSM) and collective run signal (SBM)
- Individual fault signal (ESM) and individual run signal (EBM)
- High water alarm
  Additional float switch available as an accessory.
- Integrated buzzer, mains-independent
  9 V rechargeable battery included in the scope of delivery.

4.2 Operating principle

Single-pump system: Wilo-DrainLift BOX... E

The sewage produced is channelled into the collection reservoir via the inlet pipe, where it collects. When the water level reaches the switch-on level, the pump is switched on by the attached float switch and the collected sewage is pumped into the connected discharge pipe. When the switch-off level is reached, the pump is immediately deactivated.

Double-pump system: Wilo-DrainLift Box... D (main/standby pump)

The sewage produced is channelled into the collection reservoir via the inlet pipe, where it collects. When the water level reaches the switch-on level, the pump is switched on by the attached float switch and the collected sewage is pumped into the connected pressure pipe. When the switch-off level is reached, the pump is immediately deactivated.
If the main pump malfunctions, pumping is performed by the standby pump.

Double-pump system: Wilo-DrainLift BOX ... DS (alternating operation)

The sewage produced is channelled into the collection reservoir via the inlet pipe, where it collects. When the water level reaches the switch-on level, the pump is switched on by a float switch and the collected sewage is pumped into the connected discharge pipe. When the switch-off level is reached, the pump is deactivated after the set follow-up time. Pump cycling is carried out after every pumping procedure. If one pump malfunctions, the other pump is automatically activated.

For enhanced operational reliability, a further float switch can be installed in the tank. A high water level can be defined using this float switch. When the high water level is reached:

- The switchgear emits audible and visual alarm warning signals.
- Both pumps undergo forced switch-on.
- The collective fault signal is activated.

As soon as the water drops below the high water level, the standby pump is deactivated once the follow-up time has elapsed, and the warning message is acknowledged automatically. The main pump continues to run in the regular pumping cycle.

4.3 Operating modes

Operating mode S3: Intermittent periodic duty

This operating mode defines a switching cycle in a combination of periods of operation and standstill. Specified value (e.g. S3 25 %) relates to the operating time. The switching cycle has a duration of 10 min.
If two values (e.g. S3 25 %/120 s) are specified, the first value relates to the operating time. The second value specifies the max. period of the switching cycle.

The unit is not designed for continuous duty! The max. volume flow applies to intermittent periodic duty S3!

4.4 Operation with frequency converter

Operation on the frequency converter is not permitted.

4.5 Type key

Example: **Wilo-DrainLift BOX-32/11HD DS O**

BOX Sewage lifting unit for sewage free of faeces

32 Nominal diameter discharge connection of the installed pump

11 Max. delivery head in m

HD HD = Pump for aggressive fluids

D Lifting unit version:

- E = Single-pump system
- D = Double-pump system

S Pump control:

- Without = Pump with float switch
- S = Switchgear with float switch

O Installation type:

- O = Floor-mounted installation
- U = Concealed floor installation

4.6 Technical data

Overview of technical data for the various versions.

Version	BOX-32/8E	BOX-32/8D	BOX-32/8DS	BOX-32/11E	BOX-32/11D	BOX-32/11DS	BOX-40/11E	BOX-40/11D	BOX-40/11DS
Mains connection	1~230 V/50 Hz			1~230 V/50 Hz			1~230 V/50 Hz		
Power consumption [P_1]	450 W			750 W			930 W		
Rated power [P_2]	370 W			550 W			600 W		
Max. delivery head	7 m	7 m	7 m	10 m	10 m	10 m	11 m	11 m	11 m
Max. volume flow	8.5 m³/h	8 m³/h	8 m³/h	11.5 m³/h	11 m³/h	11 m³/h	14 m³/h	14 m³/h	14 m³/h
Activation type	direct			direct			direct		
Operating mode	S3 25%	S3 25%	S3 25%	S3 25%	S3 25%	S3 25%	S3 20%	S3 20%	S3 20%
Fluid temperature	3…35 °C			3…35 °C			3…40 °C		
Max. fluid temperature for 3 mins	60 °C			60 °C			–		
Ambient temperature	3…40 °C			3…40 °C			3…40 °C		
Free ball passage	10 mm			10 mm			40 mm		
Gross volume	113 l			113 l			113 l		
Switching volume	26 l	24 l	30 l	24 l	22 l	30 l	29 l	27 l	29 l
Cable length to plug	10 m	10 m	1.5 m	10 m	10 m	1.5 m	5 m	5 m	1.5 m
Cable length to switchgear	–	–	10 m	–	–	10 m	–	–	5 m
Plug	CEE 7/7 (shockproof plug)			CEE 7/7 (shockproof plug)			CEE 7/7 (shockproof plug)		
Discharge connection	40 mm			40 mm			40 mm		
Inlet connection	110 mm (DN 100)			110 mm (DN 100)			110 mm (DN 100)		
Ventilation connection	110 mm (DN 100)			110 mm (DN 100)			110 mm (DN 100)		
Concealed floor installation weight	26 kg	31 kg	36 kg	28 kg	35 kg	40 kg	33 kg	45 kg	50 kg
Floor-mounted installation weight	20 kg	25 kg	30 kg	22 kg	29 kg	34 kg	27 kg	39 kg	44 kg

4.7 Scope of delivery

DrainLift BOX ... E

- Plastic chamber with installed pipework
- Pipework with non-return valve
- Pump with float switch and plug
- Pressure hose (inside diameter: 40 mm/1.5 in) incl. hose clips
- O-ring to seal tank cover and as anti-syphon trap
- **Concealed floor installation**

  - Tank cover with tile frame and floor drain
  - Shell cover
- **Floor-mounted installation**
  - Tank cover (cover plug)
  - Fixation material for buoyancy safeguards
- Installation and operating instructions

DrainLift BOX ... D
- Plastic chamber with installed pipework
- Pipework with non-return valve and Y-piece
- Two pumps with float switch and plug
- Pressure hose (inside diameter: 40 mm/1.5 in) incl. hose clips
- O-ring to seal tank cover and as anti-syphon trap
- **Concealed floor installation**
  - Tank cover with tile frame and floor drain
  - Shell cover
- **Floor-mounted installation**
  - Tank cover (cover plug)
  - Fixation material for buoyancy safeguards
- Installation and operating instructions

DrainLift BOX ... DS
- Plastic chamber with installed pipework
- Pipework with non-return valve and Y-piece
- Two pumps with plug
- Pressure hose (inside diameter: 40 mm/1.5 in) incl. hose clips
- O-ring to seal tank cover and as anti-syphon trap
- **Concealed floor installation**
  - Tank cover with tile frame and floor drain
  - Shell cover
- **Floor-mounted installation**
  - Tank cover (cover plug)
  - Fixation material for buoyancy safeguards
- Switchgear with float switch and plug
- 9 V rechargeable battery
- Installation and operating instructions

4.8 Accessories

- Collar – to stop ground water from seeping into the concealed floor installation.
- Alarm switchgears – to detect leakages.
- Float switch – to detect high water levels.
- Diaphragm pump – for emergency draining.
- Stop valve

5 Transportation and storage

5.1 Delivery

- After receiving the shipment, check it immediately for defects (damage, completeness).
- Defects must be noted on the freight documentation.
- Defects must be notified to the transport company or the manufacturer on the day of receipt of shipment.
- Subsequently notified defects can no longer be asserted.

5.2 Transport

- Wear protective equipment! Observe the work regulations.
  - Protective gloves: 4X42C (uvex C500 wet)
  - Safety shoes: Protection class S1 (uvex 1 sport S1)
- Transport product on a pallet or at the pipe sockets.
- Only lift the product by the tank (pipe sockets)!
  - The product will be damaged if lifted by the discharge port or the connection pipes.
- Units weighing 50 kg (110 lbs) and over must be transported by two persons.
- Always set the product down vertically on the pallet.
- Secure the product against slipping. When lashing, make sure that the plastic parts do not deform.
- Protect attached switchgears and plugs from water ingress.
- To avoid damage to the pipework and pipe adaptors, always keep the product vertical during transport.

5.3 Storage

CAUTION

Total damage due to moisture ingress

The ingress of moisture into the connection cable damages the cable and the pump! Never immerse the ends of the connection cable in fluid. Seal them tightly during storage.

- Place the lifting unit securely on a firm surface and secure it against slipping and falling over!
- Storage conditions:
  - Maximum: -15 to +60 °C (5 to 140 °F), max. humidity: 90 %, non-condensing.
  - Recommended: 5 to 25 °C (41 to 77 °F), relative humidity: 40 to 50 %.
- Drain the collection reservoir completely.
- Coil the connection cable and attach to the lifting unit.
- Remove the existing switchgear and store it according to the manufacturer's instructions.
- Tightly seal all open pipe sockets. Attach the chamber cover and close the floor drain.
- Do not store the lifting unit in spaces where welding work is carried out. The resulting gases or radiation can corrode the elastomer parts.
- Protect the lifting unit from direct exposure to sunlight. Extreme heat can damage the tank and the built-in pumps!

6 Installation and electrical connection

6.1 Personnel qualifications

- Electrical work: qualified electrician
  Person with appropriate technical training, knowledge and experience who can identify and prevent electrical hazards.
- Installation/dismantling work: trained specialist in plant technology for sanitary facilities
  Fixation and buoyancy safeguards, connection of plastic pipes

6.2 Installation types

- Inside buildings

The following installation types are **not** permitted:

- Outside buildings

6.3 Operator responsibilities

- Observe locally applicable accident prevention and safety regulations.
- Observe all regulations for working under suspended loads when using lifting equipment.
- Provide protective equipment. Ensure that the protective equipment is worn by personnel.
- Ensure free access to the installation location.
- Carry out the installation work according to locally applicable regulations.
- Check that the available consulting documents (installation plans, installation location, inflow conditions) are complete and accurate.
- Lay and prepare the pipes according to the consulting documents.
- Mains connection is overflow-proof.

6.4 Installation

CAUTION

Material damage due to incorrect transport!

It is not possible to transport and to position the lifting unit alone. There is a risk of material damage to the lifting unit! Always transport the lifting unit and align it at the installation location with two persons.

- Wear protective equipment! Observe the work regulations.
  - Protective gloves: 4X42C (uvex C500 wet)
  - Safety shoes: Protection class S1 (uvex 1 sport S1)
- Prepare the installation site:
  - Clean, free of coarse solids
  - Dry

  - Frost-free
  - Well lit
- Ensure operating space has sufficient ventilation.
- Ensure a clearance area of min. 60 cm (2 ft) around the floor drain.
- Provide threading strip for the installation of the connection cables.
- All connection cables must be laid properly. The connection cables must not pose any risk (i.e. tripping, damage during operation). Check whether the cable cross-section and the cable length are sufficient for the selected installation type.
- The mounted switchgear is not overflow-proof. Install the switchgear at an adequate height. Ensure good operation!
- In case of a floor-mounted installation, install buoyancy safeguards. Note the installation instructions.

6.4.1 Note on pipework

The pipework is subjected to different pressures during operation. Pressure peaks can also occur (e.g. when closing the swing check valve) which may be several times higher than the pump pressure, depending on the operating conditions. These different pressures put a strain on the piping and the pipe adaptors. In order to ensure safe and faultless operation, the piping and pipe adaptors must be checked based on the following parameters and designed according to the requirements:

- Pipes are self-supporting.
  No tensile or compressive forces must act on the lifting unit.
- Pressure resistance of pipework and pipe adaptors
- Tensile strength of the pipe adaptors (= longitudinal force fit connection)
- Connect the pipes free of stress and vibrations.

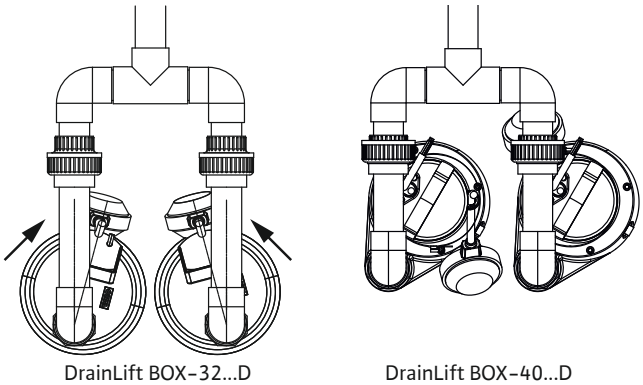
6.4.2 Preparing the lifting unit for installation

Prior to installation of the lifting unit, complete the following tasks:

- Check the position of the pumps.
- Check the level control.
- Open the connection port.
- Install accessories:
  - Mini float switch
    An additional mini float switch must be installed for the high water alarm.
  - Collar
    NOTICE! If watertight concrete (white tub) is sealed, an additional collar (available as an accessory) must be installed on the neck of the tank!

Checking the position of the pumps

The pumps are mounted and positioned in the factory. The pumps may shift during transport, which would impair proper function of the float switches. For this reason, check that the pumps are in the correct position before installation, and if necessary correct according to the illustrations.



DrainLift BOX-32...D DrainLift BOX-40...D

Fig. 3: Position of the pumps, without switchgear

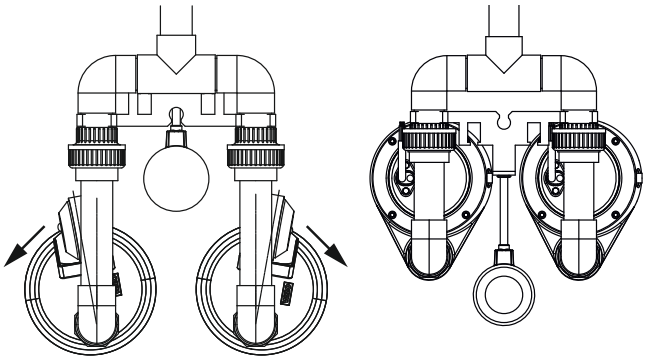


Fig. 4: Position of the pumps, with switchgear

Checking the setting on the level control device

CAUTION

Incorrect alignment of the float switches may lead to malfunction!

To function properly, the float switches must have sufficient space to float and lie flat on the surface of the water. Therefore, ensure correct alignment of the pumps and floaters!

The level control device is factory-mounted and factory-set. The level control device may slip from its mount during transport and lead to malfunction of the lifting unit. Therefore, check the attachment and the cable length of the float switches prior to installation and adjust if necessary.

Single- and double-pump system without switchgear

- DrainLift BOX-32/..
  - Level measurement is conducted by the pump's attached float switch.
  - The float switch cable is fixed to the pump's cable terminal.
  - The length of the cable defines the switching level.
- DrainLift BOX-40/..
  - Level measurement is conducted by the pump's attached float switch.
  - The float switch cable is attached to the pump motor via a cable clamp and a hose clip.
  - The length of the cable defines the switching level.

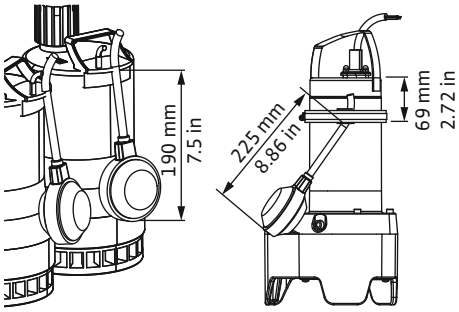


Fig. 5: Attaching and setting the float switches, without switchgear

Double-pump system with switchgear

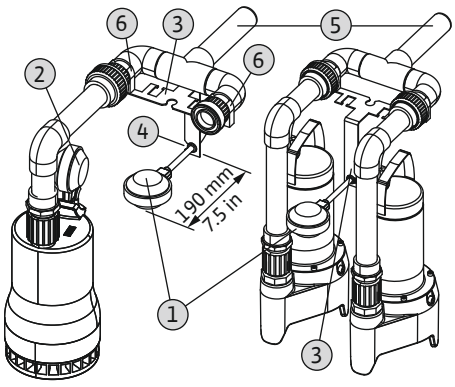


Fig. 6: Attaching and setting the float switches, with switchgear

1	Float switch for level control
2	Attached float switch, fixed in the "ON" position
3	Float switch holder
4	Float switch cable attachment point
5	Discharge pipe
6	Float switch holder attachment

The level is recorded by a separate float switch. The float switch is attached to the float switch holder, while the float switch cable is attached to the cross brace of the float switch holder:

- Wilo-DrainLift BOX-32/... DS:
  - The float switch is attached to the pump's cable terminal.
  - The pump's attached float switch must be fixed in the "ON" position.
  - The float switch holder is attached towards the pipework!
- Wilo-DrainLift BOX-40/... DS:
  - The float switch holder is attached towards the middle of the tank!

NOTICE! For the float switch to work properly, the floater must float towards the centre of the tank. Make sure that the float switch holder is aligned correctly!

Opening a connection port

Open the following connection ports:

- Inlet: DN 100
- Venting: DN 100

1. Approx. 15 mm (0.5 in) from the outside, cut open the connection port with a saw.
2. Deburr the connection port.
   ► The connection port is now open.

Installing a mini float switch for high water alarm (only for "DS" version)

An additional mini float switch must be installed for the high water alarm to function. The mini float switch is available as an accessory.

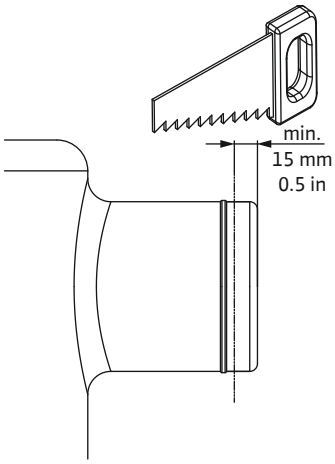


Fig. 7: Preparing the connections

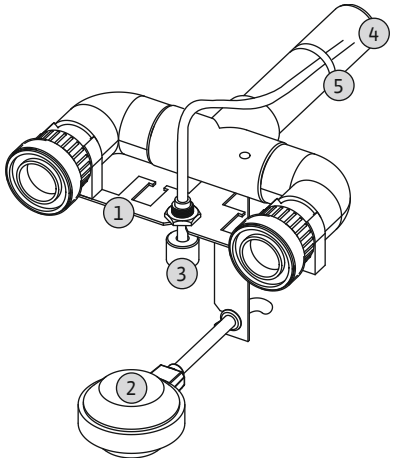


Fig. 8: High water level detection

1	Float switch holder
2	Float switch for level control
3	Mini float switch for high water alarm
4	Discharge pipe
5	Float switch cable attachment

✓ Preparatory tasks completed.
✓ Pumps' position set.
✓ Level control set.

1. Loosen the nut from the threaded bush. Keep approx. 5 mm (0.2 in) distance between the nut and the end of the threaded bush.
2. Insert the threaded bush into the oblong hole on the float switch holder.
3. Retighten the nut to affix the mini float switch to the float switch holder.
4. Fix the float switch cable to the discharge pipe with a cable tie.
   ► The mini float switch is now installed.

Concealed floor installation: Installing the collar

If watertight concrete is used (white tub), a collar must be fixed to the neck of the tank to create a seal between the concrete and the tank. The collar is available as an accessory.

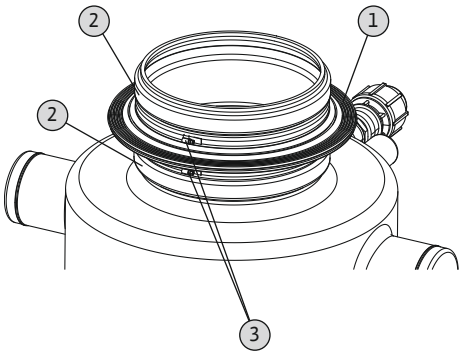


Fig. 9: Installing the collar

1	Collar
2	Sealing bead
3	Clamp

✓ The neck of the tank must be clean and dry.
✓ The collar must not be damaged.
✓ Observe the manufacturer's instructions!

1. Place the first clamp over the neck of the tank.
2. Fit the collar onto the neck of the tank, and place it between the two sealing beads.
   ⇒ Use a lubricant to make installation easier!
3. Introduce the first clamp into the lower groove of the collar and tighten.
4. Place the second clamp over the neck of the tank and introduce it into the upper groove of the collar.
5. Tighten the second clamp.
   ► The collar is now installed.

6.4.3 Concealed floor installation work steps

The lifting unit is installed using the following steps:

- Preparatory tasks.
- Dig a pit.
- Install the lifting unit.
  Lay the connection cable, connect the piping, fill the pit.
- Install the cover and restore the sub-floor.
- Final tasks.

6.4.3.1 Preparatory tasks

- Unpack the lifting unit.
- Remove the securing mechanisms.
- Check the scope of delivery.
- Check all components are in proper working condition.
  CAUTION! Do not install defective components! Defective components can lead to system failures!
- Place accessories to one side and keep them for later use.
- Select installation site:
  - Inside the building.
  - Not in the immediate vicinity of living and sleeping areas.
  - Pit depth and diameter.
    CAUTION! Do not install in peaty soil! Peaty soil leads to destruction of the tank!

6.4.3.2 Excavating the pit

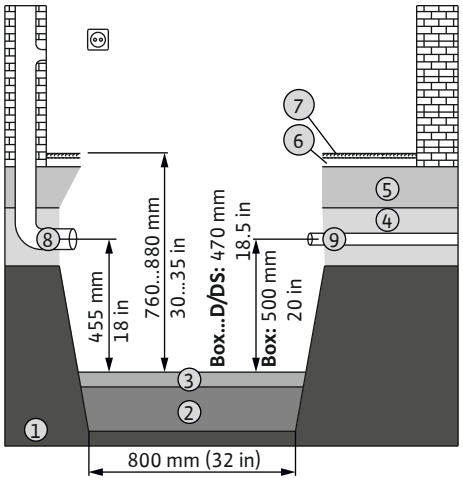


Fig. 10: Dig a pit

1	Ground
2	Underlay
3	Levelling layer
4	Filling material
5	Concrete layer
6	Screed
7	Tiled floor
8	Venting/cable duct
9	Discharge pipeline

✓ Preparatory tasks completed.

1. Dig out the pit, taking the following points into account:
   ⇒ Pump chamber height
   ⇒ Position of the connections
   ⇒ Underlay approx. 200 mm (8 in)
   ⇒ Levelling layer approx. 100 mm (4 in)
   ⇒ Max. height adjustment of the cover.
2. Fill in load-bearing mineral mixture underlay properly and compact (Dpr 97 %).
3. Add a levelling layer of sand and level off.
4. Prepare the on-site piping.

6.4.3.3 Installing the lifting unit (under the floor)

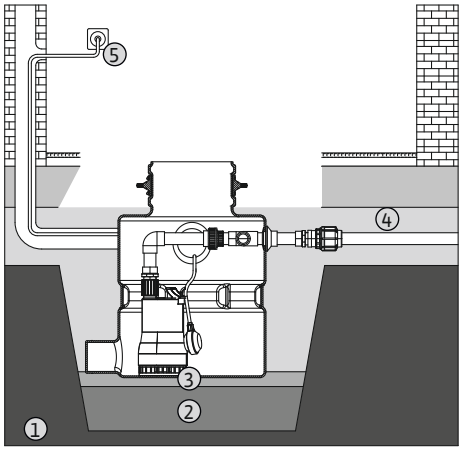


Fig. 11: Lifting unit installation

1	Ground
2	Underlay
3	Levelling layer
4	Filling material
5	Mains connection, version without switchgear

✓ Lifting unit prepared for installation.

✓ Two persons present.

✓ Required installation material:
2x coupling sleeves for DN 100 connection ports.
1x hose section with 2x pipe clamps (included in scope of delivery).
1x anti-syphon trap for cable entry
Filling material: Sand/gravel without sharp edges, grain size 0 – 32 mm (0 – 1¼ in)

1. Place coupling sleeves on the inlet pipe and the ventilation/cable duct.
2. Lift the lifting unit with the DN 100 connection ports and lower it into the pit.
3. Align the connection ports with the pipes.
4. Bed the lifting unit into the levelling layer.
5. Coil the connection cables and attach them to the discharge pipe with a cable tie.
NOTICE! To allow the pumps or float switches to be lifted out of the tank as required, a cable loop (approx. 1 m/3 ft) must remain in the chamber!
CAUTION! The connection cables must not impede the movement of the float switch! If the float switch cannot move freely, this may cause the system to malfunction.
6. All connection cables (for pumps and float switches) should be led outside via the ventilation pipe using a drawing wire.
NOTICE! Install an anti-syphon trap at the transition in the operating space!
7. Slide the coupling sleeves over the DN 100 connection ports to make the inlet and ventilation connections.
8. Place the hose section on the discharge connection.
9. 1. Attach pipe clamp and affix the hose section to the discharge connection. **CAUTION! Max. tightening torque: 5 Nm (3.7 ft·lb)!**
10. 2. Attach pipe clamp.
11. Place the hose section on the discharge pipe and affix hose section to the on-site discharge pipe using the second pipe clamp. **CAUTION! Max. tightening torque: 5 Nm (3.7 ft·lb)!**
NOTICE! To prevent a backflow from the main public sewer, the discharge pipeline must be installed as a "pipe loop". The bottom edge of the pipe loop must be above the locally defined backflow level (usually street level) at its highest point!
12. Perform a leak test in accordance with the applicable regulations.
13. Fill the pit a layer at a time (layer thickness max. 200 mm/8 in) with filling material all the way around to an even height, up to the bottom of the sealing bead and compact properly (Dpr. 97%).
While filling, ensure that the lifting unit remains vertical and stable and watch out for deformation of the tank. Compact by hand directly by the tank wall (shovel, hand rammer).

► The lifting unit is now installed properly.

6.4.3.4 Installing the cover and restoring the sub-floor

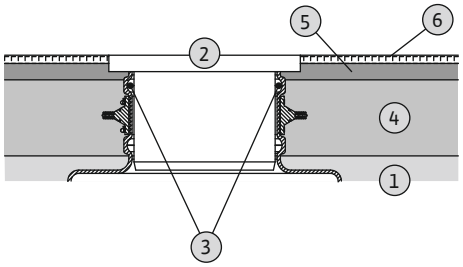


Fig. 12: Installing the tank cover

1	Filling material
2	Tank cover with tile frame
3	O-Ring in the upper sealing bead
4	Concrete layer
5	Screed layer
6	Ceramic tiling

✓ Lifting unit installed.

✓ Pit filled with filling material.

✓ Collar installed (mandatory when watertight concrete used!)

1. Insert the O-Ring in the upper sealing bead in the neck of the tank.
2. Apply a lubricant to the O-Ring.
3. Take the floor drain out of the tile frame.
4. Insert tank cover with tile frame into the neck of the tank.
5. Align the tile frame with the upper surface of the tiles in the operating space and fix the tank cover in place.
   CAUTION! Ensure the O-ring is in the correct position!
6. Restore the sub-floor: Fill in the concrete and screed layer.
   NOTICE! After the concrete and screed have hardened, fill in any hollow spaces with suitable material!
7. Restore the tile flooring.

► The lifting unit is now completely installed.

6.4.3.5 Final tasks

NOTICE

Only affix floor drain following function test!

The floor drain is fixed into the tile frame with silicone. If the floor drain is removed after the silicone has set, the old silicone must be removed completely and the floor drain re-installed.

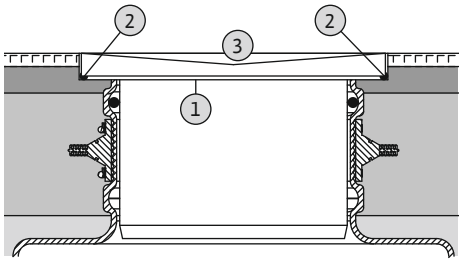


Fig. 13: Installing the floor drain

1	Tile frame
2	Line of silicone
3	Floor drain

✓ Tiling work complete.

✓ Function test carried out.

1. Apply a line of silicone around the tile frame.
2. Allow the silicone to dry briefly (max. 5 mins).
3. Insert the floor drain into the tile frame and lightly press it in.
4. Wait 24 hours before walking on the floor drain.

► The floor drain is now installed.

6.4.4 Floor-mounted installation work steps

The lifting unit is installed using the following steps:

- Preparatory tasks.
- Install the lifting unit.
  Lay the connection cable, connect the piping, install buoyancy safeguards.

6.4.4.1 Preparatory tasks

- Unpack the lifting unit.
- Remove the securing mechanisms.
- Check the scope of delivery.
- Check all components are in proper working condition.
  CAUTION! Do not install defective components! Defective components can lead to system failures!
- Place accessories to one side and keep them for later use.

- Select installation site:
  - Inside the building.
  - Flat and firm surface (e.g., concrete, screed, etc.)
  - Not in the immediate vicinity of living and sleeping areas.
- Observe the installation and fitting dimensions.

6.4.4.2 Installing the lifting unit (floor mounted)

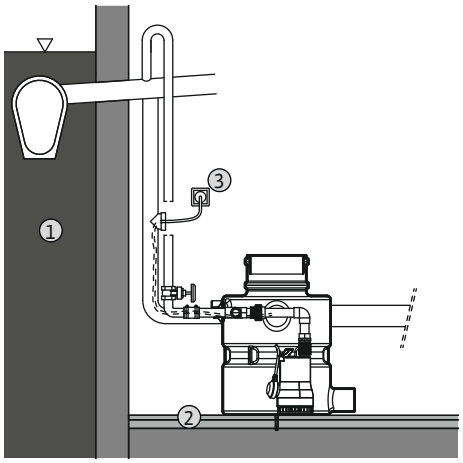


Fig. 14: Lifting unit installation

1	Ground
2	Bearing surface
3	Mains connection, version without switchgear

✓ Lifting unit prepared for installation.

✓ Two persons present.

✓ Required installation material:
2x coupling sleeves for DN 100 connection ports.
1x hose section with 2x pipe clamps (included in scope of delivery).
1x anti-syphon trap for cable entry
1x fixation material for buoyancy safeguards (included in the scope of delivery)

✓ Open DN 100 connection ports.

1. Position the lifting unit at the planned location on a flat and clean surface.
2. Align the connection ports with the pipes.
3. Coil the connection cables and attach them to the discharge pipe with a cable tie.
   NOTICE! To allow the pumps or float switches to be lifted out of the tank as required, a cable loop (approx. 1 m/3 ft) must remain in the chamber!
   CAUTION! The connection cables must not impede the movement of the float switch! If the float switch cannot move freely, this may cause the system to malfunction.
4. All connection cables (for pumps and float switches) should be led outside via the ventilation pipe using a drawing wire.
   NOTICE! Install an anti-syphon trap at the transition in the operating space!
5. Slide the coupling sleeves over the DN 100 connection ports to make the inlet and ventilation connections.
6. Place the hose section on the discharge connection.
7. Push the hose clips on the discharge connection.
8. Place the hose section on the discharge pipeline.
9. Attach hose section with hose clip on discharge connection and on the on-site discharge pipe. **CAUTION! Max. tightening torque: 5 Nm (3.7 ft·lb)!**
   NOTICE! To prevent a backflow from the main public sewer, the discharge pipeline must be installed as a "pipe loop". The bottom edge of the pipe loop must be above the locally defined backflow level (usually street level) at its highest point!
10. Mount the buoyancy safeguards on the hose section and attach to surface with suitable dowels.
11. Perform a leak test in accordance with the applicable regulations.
12. Position the O-ring in the neck of the tank.
13. Put the cover (cover plug) in the neck of the tank and close the lifting unit.

► The lifting unit is now installed properly.

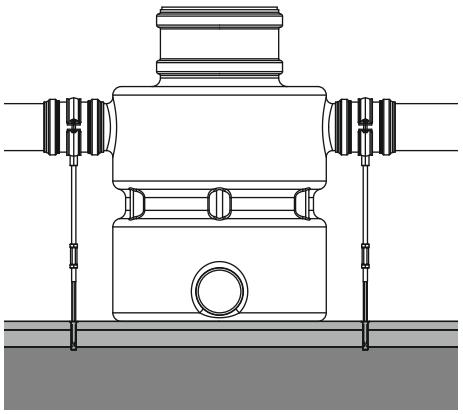


Fig. 15: Assembling the buoyancy safeguards

6.5 Electrical connection

DANGER

Risk of fatal injury due to electrical current!

Improper conduct when carrying out electrical work can lead to death due to electric shock!

- Electrical work must be carried out by a qualified electrician!
- Observe local regulations!

- Mains connection corresponds to the information on the pump rating plate.
- Route the connection cables according to the local regulations.
- Arrange the socket for the mains connection so that it is overflow-proof.

For the "DS" version with switchgear, observe the following additional points:

- Connect all connection cables (pumps and level control) according to the conductor assignments on the switchgear.
- Secure the earthing in accordance with local regulations.
  The cross-section of the cable for the protective earth conductor connection must comply with local regulations.
- Attached switchgear is to be arranged overflow-proof.

6.5.1 Fuse on mains side

Circuit breaker

The size and switching characteristics of the circuit breakers must conform to the rated current of the connected product. Observe local regulations.

Residual-current device (RCD)

- Install a residual-current device (RCD) in accordance with the regulations of the local energy supply company.
- If people can come into contact with the device and conductive fluids, install a residual-current device (RCD).

6.5.2 Mains connection

Wilo-DrainLift Box... E/Wilo-DrainLift Box... D

The lifting unit's pumps are equipped with shockproof plugs. For the connection to the mains supply, one or two shockproof sockets (according to applicable local regulations) must be provided by the customer.

Wilo-DrainLift BOX... DS

The switchgear is equipped with a shockproof plug. For the connection to the mains supply, a shockproof socket (according to applicable local regulations) must be provided by the customer.

6.5.3 "DS" version with switchgear

The "DS" version is equipped with a switchgear. The switchgear is pre-set in the factory and features the following functions:

- Level-dependent control
- Motor protection
- High water alarm

After installing the lifting unit, connect the pumps and level control device to the switchgear. For the connection to the switchgear and for all further information on specific functions, consult the switchgear's installation and operating instructions.

6.5.4 Operation with frequency converter

Operation on the frequency converter is not permitted.

7 Commissioning

CAUTION

Damage in the pump chamber!

Coarse contaminants can cause damage to the pump chamber. Remove coarse contaminants from the pump chamber before commissioning.

NOTICE

Observe additional documentation

Carry out the commissioning measures in accordance with the installation and operating instructions for the overall system!

Observe the installation and operating instructions for the connected products (sensors and pumps) as well as the system documentation!

7.1 Personnel qualifications

- Operation/control: Operating personnel, instructed in the functioning of the complete system

7.2 Operator responsibilities

- Providing installation and operating instructions by the lifting unit or at a place specially reserved for it.
- Making the installation and operating instructions available in the language of the personnel.
- Making sure that the installation and operating instructions are read and understood by all personnel.
- All safety devices and emergency cut-outs must be active and checked to ensure that they function properly.
- The lifting unit is suitable for use under the specified operating conditions.

7.3 Operation

Wilo-DrainLift Box... E/BOX... D

The individual pumps are directly controlled by the fitted float switch. After the plug has been inserted into the socket, the respective pump is now ready for operation in automatic mode.

Wilo-DrainLift BOX... DS

CAUTION

Malfunction due to incorrect operation of the switchgear!

When the plug is inserted, the switchgear starts in the last operating mode that was set. In order to be familiar with the operation of the switchgear, the installation and operating instructions for the switchgear must be read before inserting the plug.

The lifting unit is operated by the switchgear. The switchgear is preconfigured for use with the lifting unit. For information on the operation of the switchgear and its individual displays, consult the installation and operating instructions for the switchgear.

7.4 Application limits

Improper use and overstraining will cause overflow through the floor drain. The following application limits must be observed:

- Max. intake/h:
  - DrainLift BOX-32/8E: 1300 l (343 US.liq.gal)
  - DrainLift BOX-32/11E: 1200 l (317 US.liq.gal)
  - DrainLift BOX-40/11E: 870 l (230 US.liq.gal)
  - DrainLift BOX-32/8D: 2400 l (634 US.liq.gal)
  - DrainLift BOX-32/11D: 2200 l (581 US.liq.gal)
  - DrainLift BOX-40/11D: 1620 l (428 US.liq.gal)
  - DrainLift BOX-32/8DS: 3000 l (793 US.liq.gal)
  - DrainLift BOX-32/11DS: 3100 l (819 US.liq.gal)
  - DrainLift BOX-40/11DS: 1740 l (460 US.liq.gal)
- Max. pressure in the discharge pipeline: 1.7 bar (25 psi)
- Fluid temperature:
  - DrainLift BOX-32...: 3...35 °C (37...95 °F), max. fluid temperature for 3 mins: 60 °C (140 °F)
  - DrainLift BOX-40...: 3...40 °C (37...104 °F)
- Ambient temperature: 3...40 °C (37...104 °F)

Only applies to concealed floor installation:

- Max. ground water pressure: 0.4 bar (6 psi / 4 mWG above the floor of the tank)

7.5 Test run

Before the lifting unit starts in automatic mode, conduct a test run. A test run checks the proper functioning of the unit.

✓ Lifting unit installed.

✓ Floor drain or cover plug are removed.

1. Activate the lifting unit: Insert plug into socket.
   ⇒ **Wilo-DrainLift Box... E/BOX... D**: Lifting unit is in automatic mode.
   ⇒ **Wilo-DrainLift BOX... DS**: Check operating mode of the switchgear. The switchgear must operate in automatic mode.
2. Open the shut-off valve on the inlet and discharge sides.
   ⇒ Collection reservoir is filled slowly.
3. Lifting unit is switched on and off using the level control.
   ⇒ To conduct a test run, complete two entire pumping procedures.
   ⇒ When pumping out, the pump must not start slurping operation.
   Wilo-DrainLift Box... E/BOX... D: If slurping operation lasts longer than 1 s, readjust the length of the float switch cable.
   Wilo-DrainLift BOX... DS: If slurping operation lasts longer than 1 s, adjust the switchgear's follow-up time.
4. Close the gate valve in the inlet.
   ⇒ The lifting unit must be activated because there is no more fluid flowing in. If the lifting unit switches on again, the non-return valve is leaky. Contact customer service!
5. Open the gate valve in the inlet again.
   ► Lifting unit operates in automatic mode.

Following a successful test run, the floor drain or the cover plug must be put back on!

7.6 Follow-up time

The follow-up time is pre-set at the factory to 3 seconds. The follow-up time can be adjusted as required:

- Increasing the usable volume per pumping process.
- Extensive suction of settling sediments on base of tank through integrated depth suction.
- Slurping operation for avoiding pressure surges.

To set the follow-up time, read the installation and operating instructions for the switchgear!

CAUTION! Pay attention to the operating mode if the follow-up time is changed. The operating mode indicates the activation period and the downtime!

8 Operation

The lifting unit operates in automatic mode by default and is switched on and off using the integrated level control device.

✓ Commissioning was carried out.

✓ Test run has been completed successfully.

✓ The operation and functioning of the lifting unit are known.

1. Activate the lifting unit: Insert plug into socket.
2. "DS" version: Select automatic mode on the switchgear.
   ► The lifting unit operates in automatic mode and is controlled depending on level.

9 Shut-down/dismantling

9.1 Personnel qualifications

- Operation/control: Operating personnel, instructed in the functioning of the complete system
- Electrical work: qualified electrician
  Person with appropriate technical training, knowledge and experience who can identify and prevent electrical hazards.
- Installation/dismantling work: trained specialist in plant technology for sanitary facilities
  Fixation and buoyancy safeguards, connection of plastic pipes

9.2 Operator responsibilities

- Observe locally applicable accident prevention and safety regulations of trade associations.
- Provide the necessary protective equipment and make sure that the personnel wears it.
- Ensure enclosed spaces have sufficient ventilation.
- Take immediate countermeasures if there is a build-up of toxic or suffocating gases!
- When working in enclosed spaces, a second person must be present for safety reasons.

9.3 Shut-down

The lifting unit is turned off for this, but not completely put out of service. In this way, the lifting unit can be put back into commission at any time.

Bacteria can form in sewage which can lead to infections. Wear the following protective equipment while performing the work:

- Protective gloves: 4X42C (uvex C500 wet)
- Safety goggles: uvex skyguard NT
- Breathing protection: Half mask 3M series 6000 with filter 6055 A2

✓ Floor drain or cover plug removed.

✓ Protective equipment put on.

✓ If the lifting unit must be manually drained, operate the pump's float switch by hand. To do this, carefully reach into the tank from above and activate the float switch.
DANGER! Risk of limbs being crushed or severed! Never reach into the suction port. The impeller can crush or sever limbs!

1. Close the gate valve in the inlet pipe.
2. Drain the collection reservoir.
   Wilo-DrainLift Box... E/BOX... D: Turn the pump's float switch upward. As soon as the fluid has been pumped out, release the float switch.
   Wilo-DrainLift BOX... DS: Activate the lifting unit in manual mode.
3. Thoroughly hose down pumps, float switches and the tank with a hose through the tank opening.
4. Drain the collection reservoir. Repeat steps 3 and 4 as required according to the pollution degree.
5. **Wilo-DrainLift BOX... DS:** Switch the switchgear to standby mode.
6. Switch off the lifting unit.
   Pull the plug out of the socket. Secure the lifting unit against unexpected reactivation!
7. Close the gate valve in the discharge pipeline.
8. **Concealed floor installation**: Reinstall the floor drain and seal it with silicone (see "Final tasks").
   Floor-mounted installation: Install cover plug with corresponding gasket.

   ► The lifting unit is now out of operation.

10 Maintenance and repair

Maintenance and repair work may **only** be carried out by qualified personnel (e.g. customer service). Carry out the maintenance intervals in accordance with EN 12056-4:

- ¼ year in the case of commercial operations
- ½ year for multi-family houses
- 1 year for single-family houses

Keep a record of all maintenance and repair work in a log. The log must be signed by the qualified employee and the operator.

Carry out a test run after completing the maintenance work.

10.1 Personnel qualifications

- Electrical work: qualified electrician
  Person with appropriate technical training, knowledge and experience who can identify and prevent electrical hazards.
- Maintenance work: skilled person (trained specialist in plant technology for sanitary facilities)
  Hazards caused by sewage, basic knowledge of lifting units, requirements of EN 12056

10.2 Removing pumps for maintenance purposes

To carry out maintenance on the pumps easily, lift the pumps out of the tank.

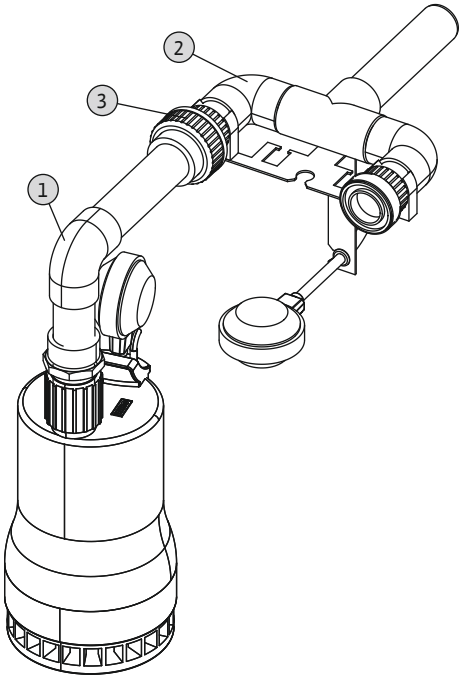


Fig. 16: Removing the pumps

1	Discharge pipe to the pump
2	Discharge pipe in the tank
3	Discharge pipe, screwed connection

✓ Lifting unit decommissioned.

✓ Floor drain removed.

✓ Protective equipment put on.

1. Reach into the tank from above.
2. Loosen the screwed connection.
3. Take pump with discharge pipe out of the tank.
   NOTICE! Damage to the connection cable! Take the pump out of the tank slowly and be careful with the connection cable. Do not remove the pump out of the tank if the connection cable is too short. Damaging the connection cable will lead to irreparable damage!

11 Faults, causes and remedies

Fault	Cause and remedy
The pump does not pump properly	4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18
Volume flow too low	1, 3, 7, 9, 12, 13, 14
Current consumption too high	1, 4, 5, 8, 14
Delivery head too small	1, 3, 5, 7, 9, 12, 13, 14, 17
Pump does not run quietly/emits loud noises	1, 3, 10, 13, 14, 15, 17

1. Inlet or impeller clogged
   ⇒ Remove deposits from the inlet, reservoir and/or pump → customer service.
2. Wear of inner parts (e.g. impeller, bearing)
   ⇒ Replace worn parts → customer service
3. Operating voltage too low
   ⇒ Have the mains connection checked → electrician
4. Float switch blocked
   ⇒ Check mobility of the float switch
5. Motor does not start because there is no voltage
   ⇒ Check the electrical connection → electrician
6. Inlet blocked
   ⇒ Clean the inlet
7. Motor winding or electric cable defective
   ⇒ Have the motor and electrical connection checked → electrician
8. Non-return valve clogged
   ⇒ Clean non-return valve → customer service
9. Water level dropped too low in the tank
   ⇒ Check level control and replace → customer service
10. Defective level control signal transmitter
    ⇒ Check signal transmitter and replace if necessary → customer service

11. Slide valve in the pressure pipe is not open or not sufficiently open
    ⇒ Fully open the slide valve
12. Impermissible amount of air or gas in fluid
    ⇒ customer service
13. Radial bearing in the motor defective
    ⇒ customer service
14. System-related vibrations
    ⇒ Check elastic connections of the piping ⇒ notify customer service if necessary
15. Winding temperature monitoring switched off due to excessive winding temperature
    ⇒ The motor switches back on automatically after the winding has cooled down.
    ⇒ Frequent switch-off by winding temperature monitoring → customer service
16. Pump ventilation clogged
    ⇒ Clean the pump ventilation line → customer service
17. Fluid temperature too high
    ⇒ Allow the fluid to cool

12 Spare parts

Spare parts are ordered via customer service. To avoid return queries and incorrect orders, the serial or article number must always be supplied. **Subject to change without prior notice!**

13 Disposal

13.1 Protective clothing

Used protective clothing must be disposed off in accordance with the locally applicable guidelines.

13.2 Information on the collection of used electrical and electronic products

Proper disposal and appropriate recycling of this product prevents damage to the environment and danger to your personal health.

NOTICE

Disposal in domestic waste is prohibited!

In the European Union this symbol may be included on the product, the packaging or the accompanying documentation. It means that the electrical and electronic products in question must not be disposed of along with domestic waste.

To ensure proper handling, recycling and disposal of the used products in question, please note the following points:

- Hand over these products at designated, certified collection points only.
- Observe the locally applicable regulations!

Please consult your local municipality, the nearest waste disposal site, or the dealer who sold the product to you for information on proper disposal. See www.wilo-recycling.com for more information about recycling.

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