Pioneering for You

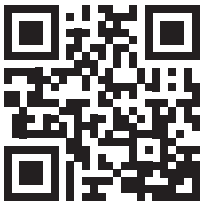
Wilo-Helix V, FIRST V, 2.0-VE 22, 36, 52, 80, 105

en Installation and operating instructions

4266341 • Ed.02/2025-05

Helix V, 50 Hz
https://qr.wilo.com/586

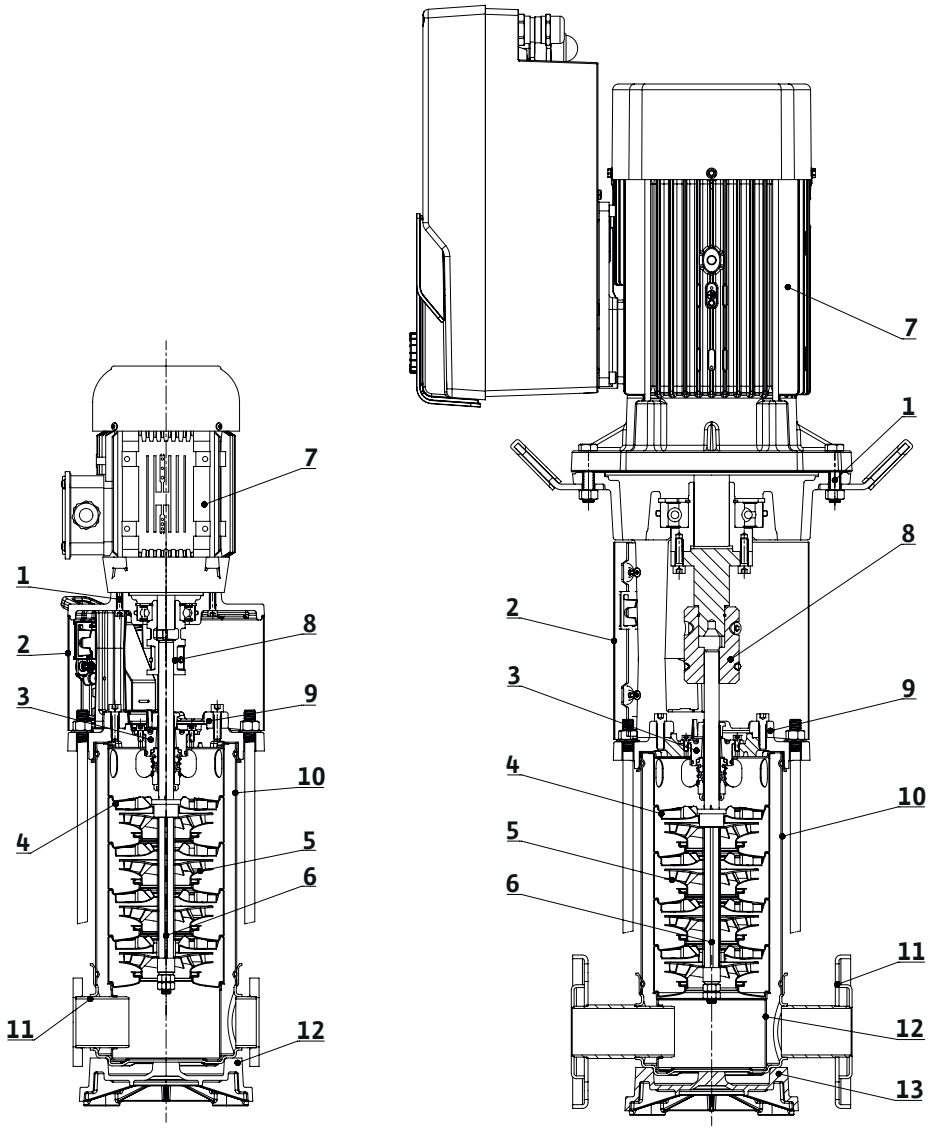
Helix V, 60 Hz
https://qr.wilo.com/3586



Helix FIRST V, 50 Hz
https://qr.wilo.com/582

Helix2.0-VE, 50/60 Hz
https://qr.wilo.com/745

Fig. 1



FIRST

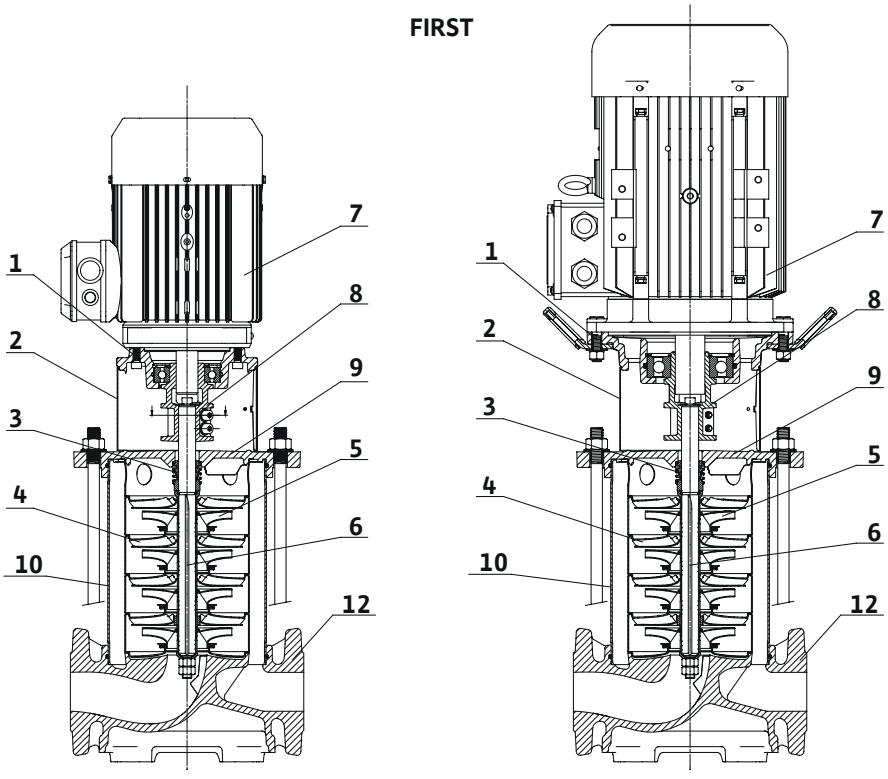


Fig. 2

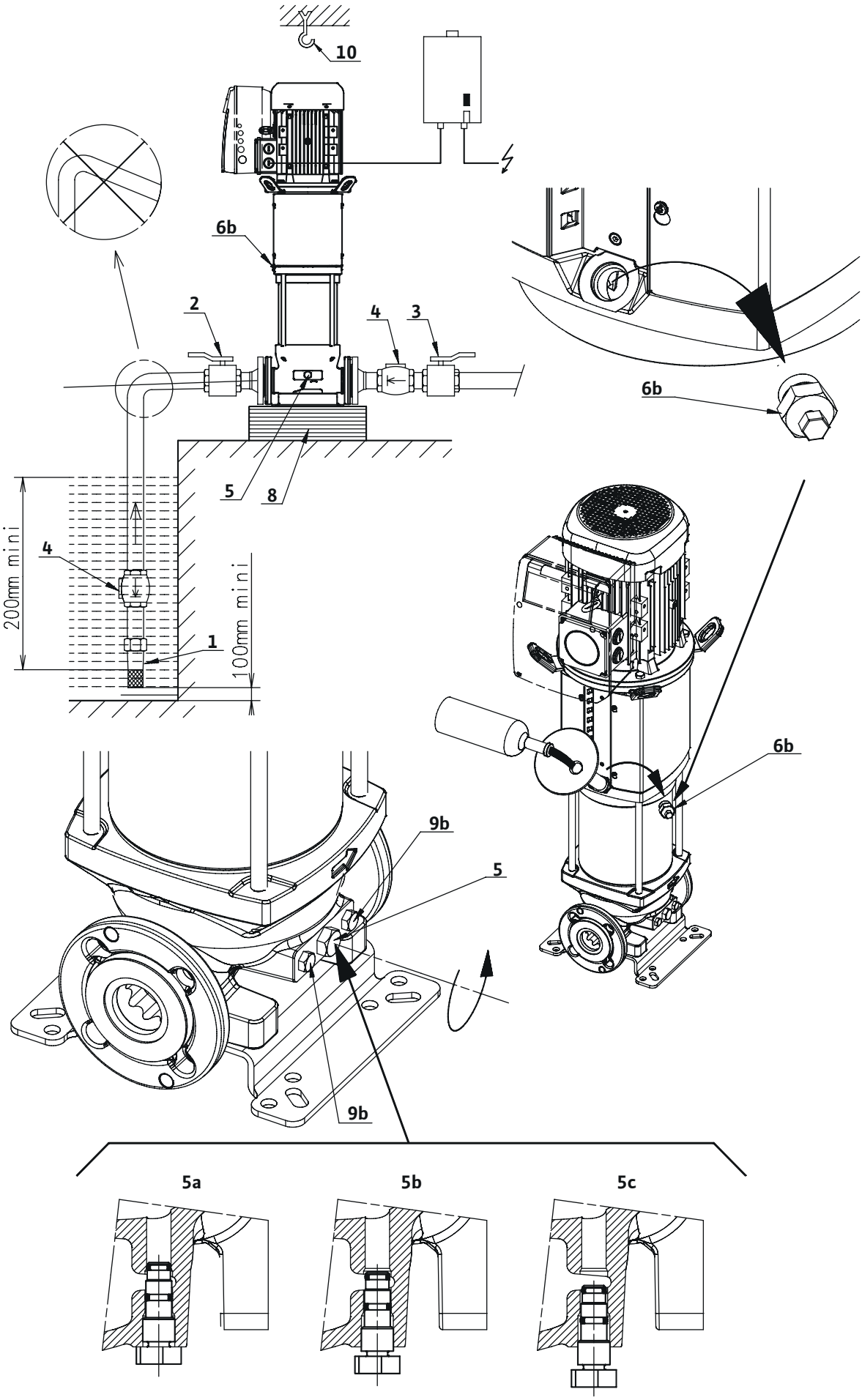


Fig. 3

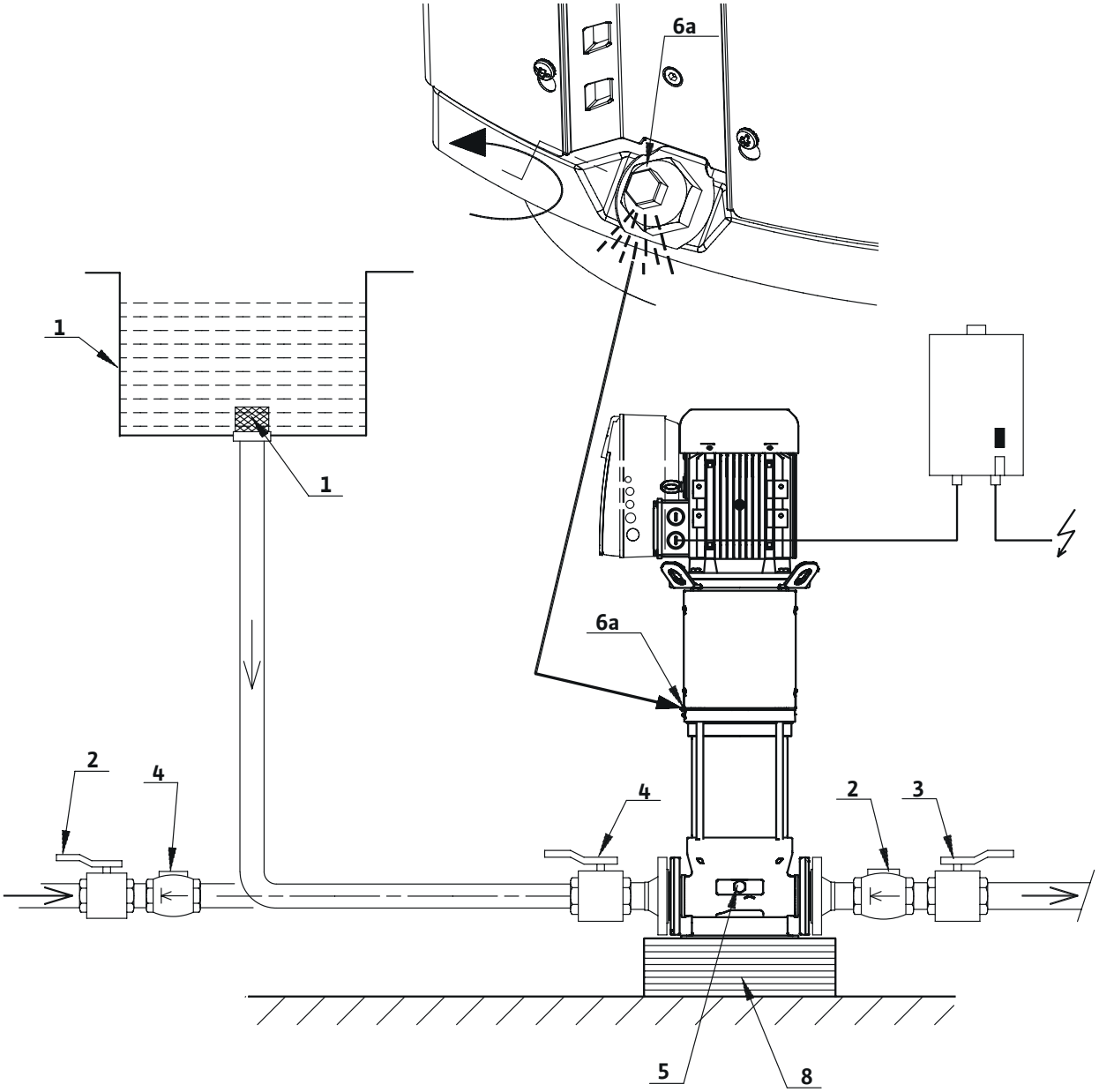
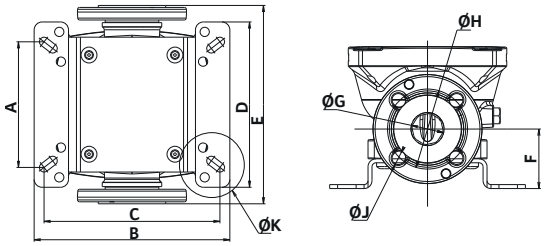
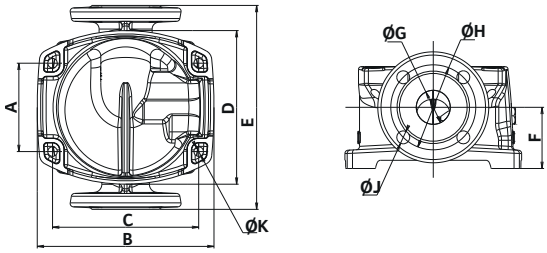


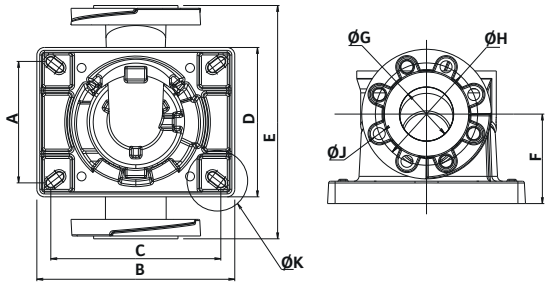
Fig. 4



Type/Mat. Code 2 (AISI 316L)		(mm)									
		A	B	C	D	E	F	G	H	J	K
Helix V 22	PN16/PN25/30	130	296	215	250	300	90	DN50	125	4 x Ø16	16 x Ø14
Helix V 36	PN16	170 or 220	296	240 or 220	250	320	105	DN65	145	4 x Ø16	
	PN25/30									8 x Ø16	
Helix V 52	PN16/PN25/30	190 or 220	296	266 or 220	250	365	140	DN80	160	8 x Ø16	

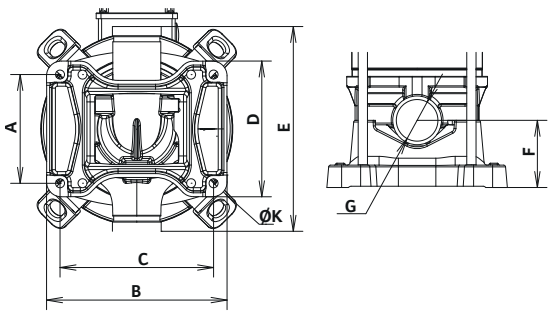


Type/Mat. Code 4&5 (cast iron)		(mm)									
		A	B	C	D	E	F	G	H	J	K
Helix First V22	PN16/PN25/30	130	260	215	226	300	90	DN50	125	4 x Ø16	4 x Ø14
Helix First V36	PN16	170	294	240	226	320	105	DN65	145	4 x Ø16	
	PN25/30									8 x Ø16	
Helix First V52	PN16/PN25/30	190 or 170	295	266 or 240	226	365	140	DN80	160	8 x Ø16	
Helix First V80 Helix First V105	PN16	199	350	280	261	380	140	DN 100	180	8 x Ø19	
	PN25								190	8 x Ø23	



Type/Mat. Code1 (AISI 304)		(mm)									
		A	B	C	D	E	F	G	H	J	K
Helix V22	PN16/PN25/30	130	262	215	226	300	90	DN50	125	4 x Ø16	4 x Ø14
Helix V36		170	282	240	230	320	105	DN65	145	4 x Ø16	
										8 x Ø16	
Helix V52		190 or 170	306	266 or 240	234	365	140	DN80	160	8 x Ø16	
Helix V80 Helix V105		225 or 199	394	350 or 280	269	380	140	DN 100	180 / 190	8 x Ø23	4 x Ø14 or 4 x Ø19

Type/Mat. Code 2 (AISI 316L)		(mm)									
		A	B	C	D	E	F	G	H	J	K
Helix V80 Helix V105	PN16/25/30	225 or 199	394	350 or 280	269	380	140	DN100	180 / 190	8 x Ø23	4 x Ø14 or 4 x Ø19



Victaulic	(mm)									
	A	B	C	D	E	F	G	H	J	K
Helix V 22	130	260	215	226	300	90	DN50	—	—	4 x Ø14
Helix V 36	170 or 220	284	240	230	320	105	DN65			
Helix V 52	199 or 170	310	266 or 240	234	365	140	DN80			8 x Ø14

Fig. 5

Helix V, Helix FIRST V

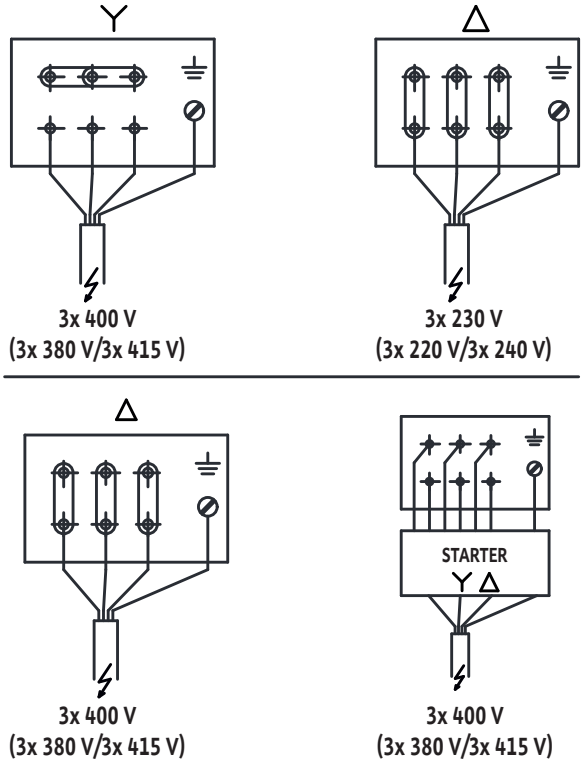


Fig. 6

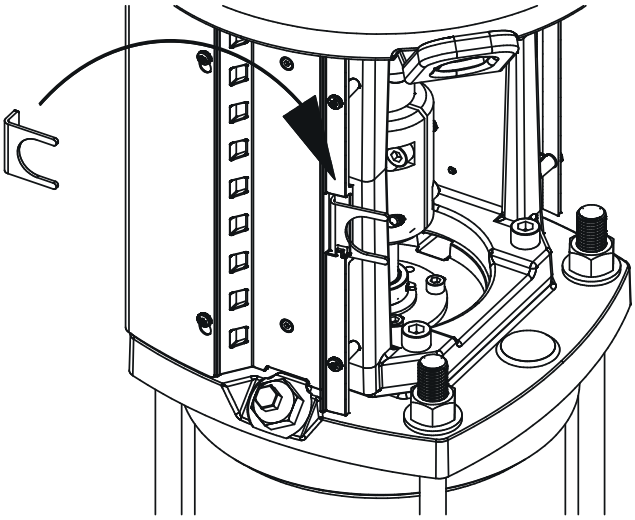


Fig. 7

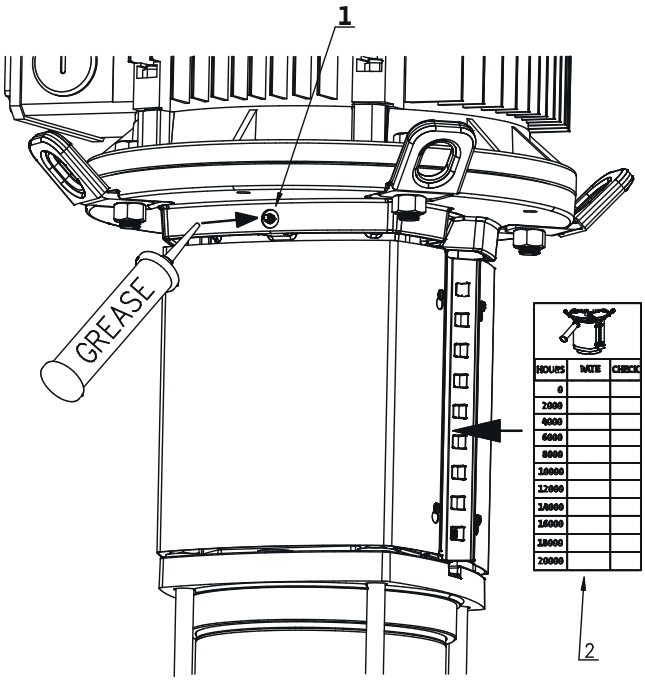


Fig. 8

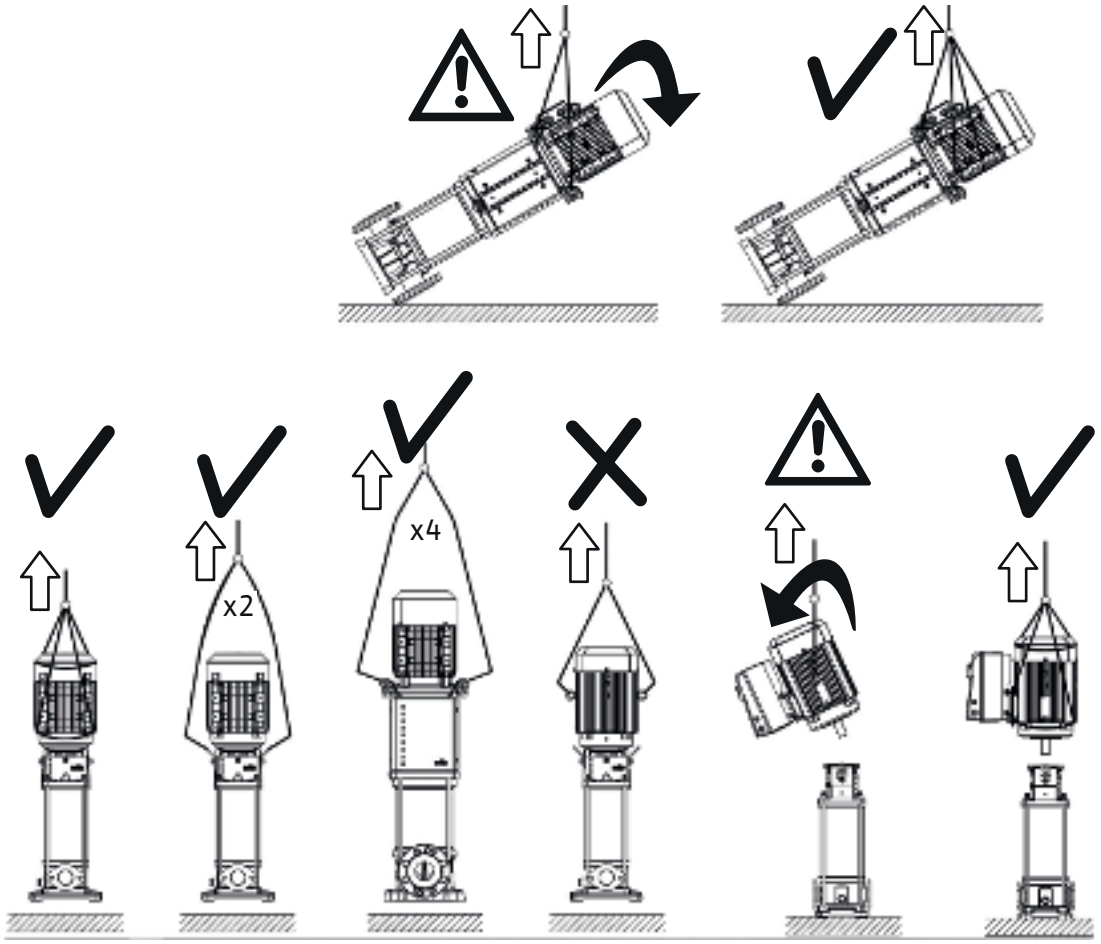


Fig. 9

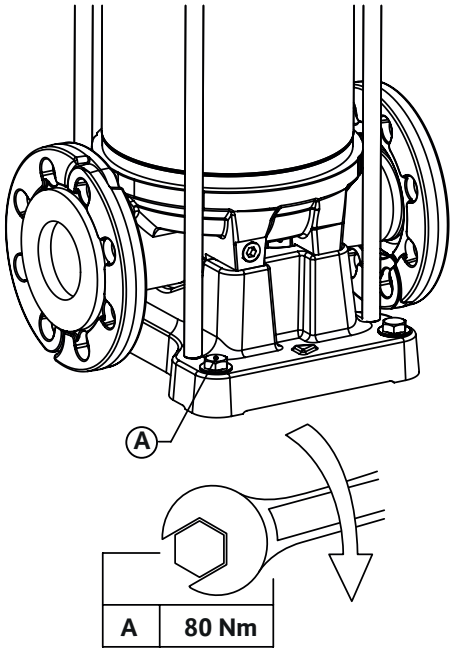
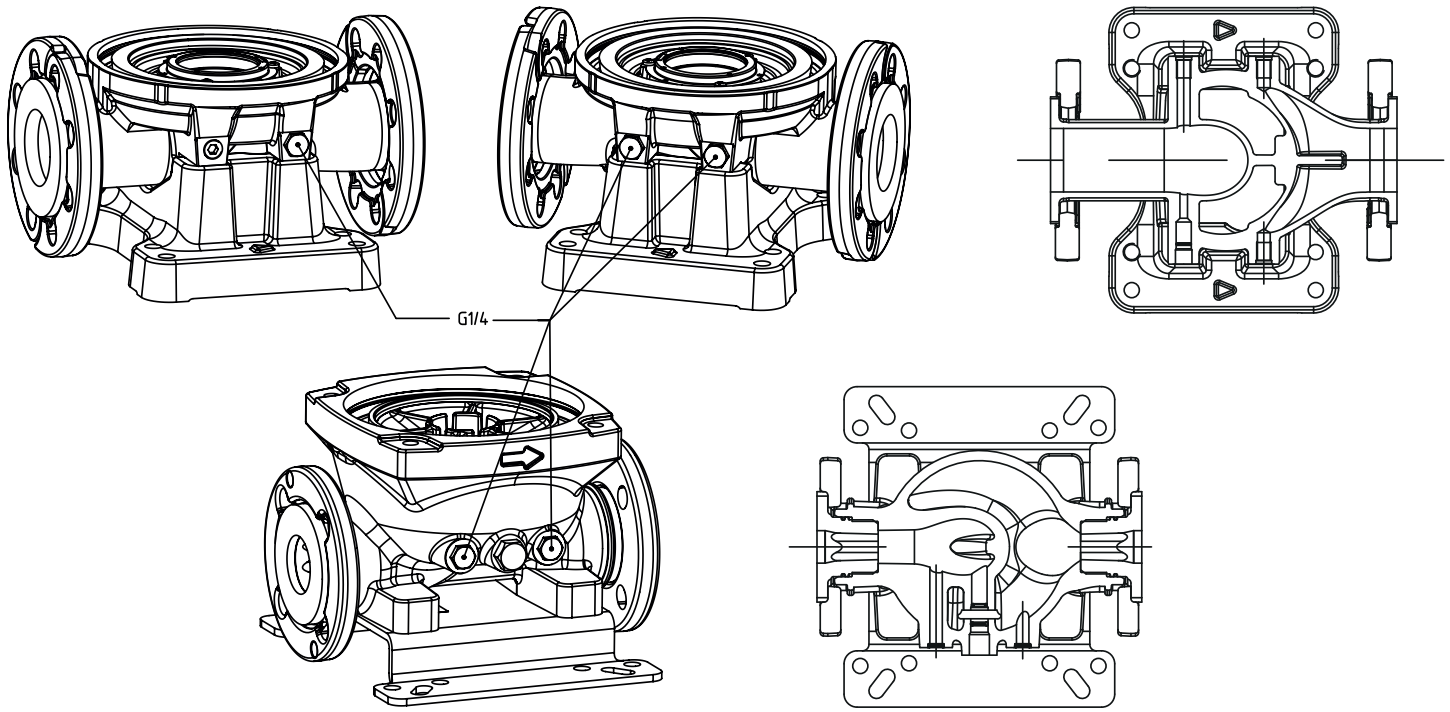


Fig. 10



Sommaire

1 General

1.1 About these instructions

These instructions are a part of the product. Obey the instructions for correct handling and use:

- Read the instructions carefully before all works.
- Keep the instructions easy to access.
- Follow the product specifications.
- Follow the markings on the product.

1.2 Copyright

1.3 Subject to change

Wilo reserves the right to change the listed data without prior notice and is not liable for technical inaccuracies and/or omissions. The illustrations vary from the original and are intended as a sample representation of the product.

1.4 Exclusion from warranty and liability

Wilo accepts no warranty or liability in these cases:

- Wrong configuration because the operator or the customer did not give enough or correct instructions
- Non-compliance with these instructions
- Incorrect use of the product
- Incorrect storage or transport
- Incorrect installation or dismantling
- Not sufficient maintenance
- Non-approved repairs
- Not applicable installation location
- Chemical, electrical or electrochemical causes
- Wear of product components

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.

- Injuries due to electrical, mechanical and bacteriological factors and electromagnetic fields.
- Damage to the environment due to leakage of hazardous materials.
- Damage to the installation.
- Failure of important product functions.

2.1 Symbols and signal words in the operating instructions

Symbols:

WARNING

General safety symbol

WARNING

Electrical risks

NOTICE

Notes

Signal words

DANGER

Imminent danger.
May result in death or severe injuries if the hazard is not prevented.

WARNING

Non-observance may result in (very) severe injury.

CAUTION

The product risks becoming damaged. “Caution” is used when there is a risk to the product if the user does not observe procedures.

NOTICE

Note containing useful information for the user about the product. It assists the user in the case of an issue;

2.2 Personnel qualification

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. Nonobservance of the safety instructions results in the loss for any claims to damages. In particular, non-observance can, for example, result in the following risks:

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

2.4 Safety consciousness on the job

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

2.5 Safety instructions for the user

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/unit lead to hazards, local measures must be taken to guard them against touching.
- Guards which protect personnel from coming into contact with moving components (e.g. the coupling) must not be removed while 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 values specified in the catalogue/data sheet.

3 Application

This pump's basic function is to pump hot or cold water, water with glycol or other low viscosity fluids that contain no mineral oil, solid or abrasive substances, or materials containing long fibres. The manufacturer's approval is required for pumping corrosive chemicals.

WARNING

Risk of explosion

Do not use this pump to handle flammable or explosive liquids.

3.1 Applications areas

- Water distribution and pressure boosting
- Industrial circulation systems
- Process fluids
- Cooling-water circuits
- Firefighting and washing stations
- Irrigation systems, etc.

4 Product description

4.1 Type key

Example: Helix V2205 or Helix2.0-VE2205/2-1/16/E/KS/400-50xxxx	
Helix V Helix FIRST V Helix2.0-VE	Vertical high-pressure multistage centrifugal pump in in-line design (F) = VdS certified pump version With frequency converter
22	Nominal volume flow in m³/h
05	Number of impellers
2	Number of trimmed impellers (if any)
1	Pump material code 1 = Pump housing stainless steel 1.4301 (AISI 304) + hydraulics 1.4307 (AISI 304) 2 = Modular pump housing stainless steel 1.4404 (AISI 316L) + hydraulics 1.4404 (AISI 316L) 4 = Monobloc pump housing cast iron EN-GJL-250 (ACS and WRAS approved coating) + Hydraulics 1.4307 (AISI 304) 5 = Pump housing cast iron EN-GJL-250 (standard coating) + hydraulics 1.4307 (AISI 304)
16	Pipe connection 16 = round flanges PN16 25 = round flanges PN25 30 = round flanges PN40 P = Victaulic
E	Seal type code E = EPDM V = FKM
KS	KS = Cartridge seal, versions without "K" are equipped with simple mechanical seal S = Lantern adjustment in line with suction pipe
3	1 = Single-phase motor - None or 3 = Triphase motor
(With motor) 400 - 460 - 380	Motor electrical voltage (V) 50 - 60 = Motor frequency (Hz)
(Without motor) Bare-shaft pump	-38FF265 = Ø motor shaft – lantern size
XXXX	Option code (if any) M1nn = OEM model M0nn = Internal code TP = Threaded port

4.2 Technical data

Maximum operating pressure	
Pump housing	16, 25 or 30 bar depend on the model

Maximum suction pressure	10 bar Note: actual inlet pressure (P_{inlet})+ pressure at 0 flow delivered by the pump must be below the maximum operating pressure of the pump. If the maximum operating pressure is exceeded, there is a risk of damaging the ball bearing and mechanical seal, which could also result in a decrease in their service life. P_{Inlet} + P at 0 flow ≤ P_{max} pump See pump rating plate for the maximum operating pressure: P_{max}
Temperature range	
Fluid temperatures	EPDM: -30 °C ... +120 °C (+130 °C on request) FKM: -15 °C ... +90 °C
Ambient temperature	-15° to +50°C (other temperature on request)
Electrical data	
Motor efficiency	Motor according to IEC 60034-30
Motor IP rating	IP55
Insulation class	155 (F)
Frequency	See pump rating plate
Electrical voltage	See pump rating plate
Capacitor value (µF) in single-phase version	See pump rating plate
Other data	
Humidity	≤ 90 % without condensation (> 90 % on request)
Altitude	< 1000 m (> 1000 m on request)
Maximum suction head	According to pump's NPSH

Sound pressure level dB(A) 0/+3 dB(A)

Power (kW); 50 Hz									
0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5
56	57	57	58	58	62	64	68	69	69

Power (kW); 50 Hz								
11	15	18.5	22	30	37	45	55	75
71	71	74	74	76	76	76	81	83

Power (kW); 60 Hz									
0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5
60	61	61	63	63	67	71	72	74	74

Power (kW); 60 Hz								
11	15	18.5	22	30	37	45	55	75
78	78	81	81	84	84	84	89	91

4.3 Scope of delivery

Complete unit

- Multistage pump
- Installation and operating instructions
- Installation and operating instructions for drive

4.4 Accessories

Original accessories are available for HELIX series:

Designation		Article no°
2x round counterflanges in stainless steel 1.4404	PN16 – DN50	4038587
2x round counterflanges in stainless steel 1.4404	PN25 – DN50	4038589
2x round counterflanges in steel	PN16 – DN50	4038585
2x round counterflanges in steel	PN25 – DN50	4038588
2x round counterflanges in stainless steel 1.4404	PN16 – DN65	4038592
2x round counterflanges in stainless steel 1.4404	PN25 – DN65	4038594
2x round counterflanges in steel	PN16 – DN65	4038591
2x round counterflanges in steel	PN25 – DN65	4038593
2x round counterflanges in stainless steel 1.4404	PN16 – DN80	4073797
2x round counterflanges in stainless steel 1.4404	PN25 – DN80	4073799
2x round counterflanges in steel	PN16 – DN80	4072534
2x round counterflanges in steel	PN25 – DN80	4072536
2x round counterflanges in steel	PN16 – DN100	4073131
2x round counterflanges in steel	PN25 – DN100	4073716
Bypass kit 25 bar		4124994
Bypass kit (with pressure gauge 25 bar)		4124995

For bareshaft pumps or the motor replacement, please refer to electrical characteristics and weight indicated on pump's rating plate before setting up the new motor.

For a complete accessories list, contact your Wilo sales office .

4.5 Product description

Fig. 1

1. Motor connection bolt
2. Coupling guard
3. Mechanical seal
4. Hydraulic stage casing
5. Impeller
6. Pump shaft
7. Motor
8. Coupling
9. Lantern
10. Tube liner
11. Flange
12. Pump housing
13. Baseplate

Fig. 2, 3

1. Strainer
2. Pump suction valve
3. Pump discharge valve
4. Check valve

5. Drain + priming plug
6. Venting screw + filling plug
7. Tank
8. Foundation block
9. Optional: pressure plugs (a-suction, b-discharge)
10. Lifting hook

4.6 Design of product

- Helix pumps are vertical high-pressure non-self-priming pumps with in-line connection based on multistage design.
- Helix pumps combine both high-efficiency hydraulics and motors (if one).
- All metallic parts in contact with water are made of stainless steel or grey cast iron.
- For aggressive fluid, special versions are with stainless steel only for all wetted components.
- Helix pumps have a simple mechanical seal or a cartridge seal to make maintenance work easier.
- In addition, for heavy motors, a special coupling allows replacing the seal.
- Depending on the model, the pump housing offers multiple connections for connecting accessories (Fig. 10).
- The Helix lantern design integrates an additional ball bearing that absorbs the hydraulic axial forces. Therefore, a fully standard motor can be used for the pump.
- Special integrated transport lugs make the pump installation easier (Fig. 8).

5 Transport and interim storage

On arrival, immediately check the product and its packaging for damage in transit. If transit damage is identified, the necessary steps must be taken involving the carrier within the specified period.

CAUTION

External influences can cause damages. If the delivered product is intended for later installation, ensure that it is stored in a dry location. Prevent any impacts or external influences such as humidity or frost etc.

The product must be cleaned thoroughly before it is put into temporary storage. The product can be stored for a minimum of one year.

Handle the pump carefully so as not to damage the unit before installation.

Use the transport lugs and secure the pump to prevent the pump from tipping over.

6 Installation and electrical connection

Installation and electrical work in compliance with any local codes and by qualified personnel only.

WARNING

Bodily injury!

Existing regulations for the prevention of accidents must be observed.

WARNING

Electrical shock hazard

Dangers caused by electrical energy must be excluded.

6.1 Installation

The pump must be installed in a dry, well-ventilated and frost-free place.

CAUTION

Risk of damage to the pump!

Dirt and solder drops in to the pump body can effect the pump operation.

• It is recommended that any welding and soldering work is done before installing the pump.

• Thoroughly flush the system out before installing the pump.

- The pump must be installed in an easily accessible position to facilitate inspection or replacement.
- For heavy pumps, install a lifting hook (Fig. 2, item 10) above the pump in order to facilitate its disassembly.

WARNING

Risk of accident by hot surfaces!

The pump must be positioned in such a way that no-one comes into contact with the hot pump surfaces during operation.

- Install the pump in a dry place protected from frost, on a flat concrete block using appropriate accessories. If possible, use an insulating material under the concrete block (cork or reinforced rubber) to avoid any noise and vibration transmission into the installation.

WARNING

Risk of tipping!

The pump must be correctly screwed to the ground.

WARNING

Risk of tipping!

For pump versions with the material code 2 it is prohibited to remove the 4 screws securing the base plate (Fig.1, item 13) to the pump housing (Fig.1, item 12).
Material code 2 = Modular pump housing Stainless steel 1.4409 (AISI 316L) .

- Place the pump at an easily accessible place, to facilitate inspection and replacement work. The pump must always be installed perfectly upright on a sufficiently heavy concrete base.

WARNING

Risk of parts inside the pump!

Before installing the pump ensure that any closure members are carefully removed from the pump housing.

NOTICE

Each pump could be tested for hydraulic features in the factory, and there may be some water remaining in them. It is recommended to flush the pump before using it with potable water for hygiene purposes..

- The installation and connection dimensions are given in Fig. 4.
- Lift the pump carefully by using the integrated transport lugs, if necessary with a hoist and suitable slings according to the current hoist guidelines.

WARNING

Risk of tipping!

Take care to pump fixations especially for the highest pumps whose centre of gravity may lead to risk during pump handling.

DANGER

Danger through suspended loads!

Use the integrated transport lugs only if they are not damaged (no corrosion etc.). Replace them if needed.
The pump must never be carried by using the eye bolts on the motor: these are only designed to lift the motor alone.

Foundation

Guidance values for dimensioning the base:

- Approx. 1.5 ... 2 times heavier than the unit.
- The width and length should each be about 200 mm greater than the pump's base (see fig. 4).
- The fixings in the foundation must correspond to the weight of the pump.

6.2 Pipe connection

- Connect the pump to the pipes by using appropriate counter-flanges, bolts, nuts and gaskets.

CAUTION

Tighten the screws or bolts crosswise in steps of 20 Nm.

Tightening of screws or bolts must not exceed 80 Nm.

Use of impact wrench is prohibited.

- The direction of rotation of the fluid is indicated on the identification label of the pump.
- Pump must be installed in such a way that it is not stressed by the pipework. The pipes must be attached so that the pump does not bear their weight.
- It is recommended that isolation valves be installed on the suction and discharge side of the pump.
- Use of expansion joints may mitigate noise and vibration of the pump.
- With regard to the nominal cross-section of the suction pipe, we recommend a cross-section at least as large as that of the pump connection.
- A check valve can be placed on the discharge pipe in order to protect the pump against hammer shock.
- For direct connection to a public drinking water system, the suction pipe must also have a check valve and a guard valve.
- For indirect connection via a tank, the suction pipe must have a strainer to keep any impurities out of the pump and a check valve.
- For half-flange pumps, it is recommended to connect the hydraulic network and then omit the plastic fasteners to prevent leaks.
- For pump housings with additional threaded ports, refer to Fig. 10 to know which aera (suction and discharge) is linked to each thread.

6.3 Motor connection for bare-shaft pump (without motor)

- Remove coupling guards.

NOTICE

Helix pumps are equipped with captive screws as required in the Machinery Directive.

- Install the motor on the pump by using screws (FT lantern size – see product designation) or bolts, nuts and handling devices (FF lantern size – see product designation) provided with the pump: check motor power and dimension in Wilo catalogue.

NOTICE

Depending on fluid characteristics, motor power could be modified. Contact the Wilo customer service if necessary.

- Close the coupling guards by fastening all screws provided with the pump.
- Perform an electrical continuity test at the end of the motor assembly.

6.4 Electrical connection

WARNING

Electrical shock hazard!

Dangers caused by electrical energy must be excluded.
• Have electrical work done by a qualified electrician only!
• All electrical connections must be done after the electrical supply has been switched off and secured against unauthorised switching.
• For safe installation and operation, a correct grounding of the pump to the power supply's grounding terminals is necessary.

- Make sure that the operating current, voltage and frequency used comply with motor plating data.
- The pump must be connected to the power supply by a solid cable supplied with a grounded plug-connection or a main power switch.
- Three-phase motors must be connected to an approved safety switch. The set nominal current must be equal to the electrical data on the motor name plate.
- The supply cable must be laid so that it does not touch the pipework and/or the pump and motor housing.
- The pump/installation must be grounded in compliance with local regulations. A ground fault interrupter can be used as additional protection.

- The mains connection must be in accordance with the connection diagram Fig. 5 (for uncontrolled pumps) or with the one given in the manual for the drive (for speed-controlled pumps).
- Three-phase motors must be protected by a circuit breaker for the IE class of the motors. Current setting must be adapted to the pump's use, but it should not exceed the value I_{max} specified on the motor's rating plate.

6.5 Operation with frequency converter

- The motors used can be connected to a frequency converter in order to adapt pump performance to the duty point.
- The converter must not generate voltage peaks at motor terminals higher than 850 V and dU/dt slope higher than 2500 V/µs.
- In case of higher value, an appropriate filter must be used: contact the converter manufacturer for this filter definition and selection.
- Strictly follow the instructions provided by the converter manufacturer's data sheet for installation.
- Minimum variable speed should not be set below 40 % of the pump's nominal speed.

7 Commissioning

Unpack the pump and dispose of the packaging in an environmentally-responsible manner.

7.1 System filling - Venting

CAUTION

Possible damage to the pump!

Never operate the pump dry.
The system must be filled before starting the pump.

Air evacuation process – Pump with sufficient supply pressure (Fig. 3)

- Close the two guard valves (2, 3).
- Unscrew the venting screw from filling plug (6a).
- Slowly open the guard valve on the suction side (2).
- Retighten the venting screw when air escapes at the venting screw and the pumped liquid flows (6a).

WARNING

Risk of scalding!

When the pumped fluid is hot and the pressure high, the stream escaping at the venting screw may cause burns or other injuries.

- Make sure the venting screw is in a suitable, secure position.
- Always be cautious when opening the venting screw.

- Open the guard valve on the suction side completely (2).
- Start the pump and check if the direction of rotation matches the specifications on the rating plate.. If this is not the case, swap two phases in the terminal box.

CAUTION

Possible damage to the pump

A wrong direction of rotation will cause bad pump performances and possibly coupling damage.

- Open the guard valve on the discharge side (3).

Air evacuation process – Pump in suction (Fig. 2)

- Close the guard valve on the discharge side (3).
  Open the guard valve on the suction side (2).
- Remove the filling plug (6b).
- Partially open the drain-priming plug (5b).
- Fill the pump and the suction pipe with water.
- Make sure that there is no air in the pump and in the suction pipe: refilling until complete removal of air is required.
- Close the filling plug with venting screw (6b).
- Start the pump and check if the direction of rotation matches specifications on the rating plate. If this is not the case, swap two phases in the terminal box.

CAUTION

Possible damage to the pump

A wrong direction of rotation will cause bad pump performances and possibly coupling damage.

- Open the guard valve on the discharge side a little (3).
- Unscrew the venting screw from the filling plug for air venting (6a).
- Retighten the venting screw when air escapes at the venting screw and the pumped fluid flows.

WARNING

Risk of scalding

When the pumped liquid is hot and the pressure high, the stream escaping at the venting screw may cause burns or other injuries.

- Open the guard valve on the discharge side completely (3).
- Close the drain-priming plug (5a).

7.2 Starting the pump

CAUTION

Possible damage to the pump

The pump must not operate at zero flow (closed discharge valve).

WARNING

Risk of injury!

When the pump runs, coupling guards must be in position, tightened with all applicable screws.

WARNING

Significant noise

The most powerful pumps can produce loud noise: hearing protection must be used when staying near the pump for long times.

CAUTION

Possible damage to the pump

The installation must be designed to ensure that nobody gets injured in the event of fluid leakage (mechanical seal failure etc.)

8 Maintenance

All servicing should be performed by an authorized service representative!

DANGER

Electrical shock hazard!

Dangers caused by electrical energy must be excluded.
All electrical work must be performed after the electrical supply has been switched off and secured against unauthorized switching.

WARNING

Risk of scalding!

At high water temperatures and system pressure close isolating valves before and after the pump. First, allow pump to cool down.

- These pumps are maintenance-free. Nevertheless, a regular check is recommended every 15 000 hours.
- Optionally, on some models, the mechanical seal can be easily replaced due to its cartridge seal design.
- For pumps with a half-flange design, it is recommended to use a plastic fastener to easily keep the half flanges together when reinstalling after a maintenance work.
- For pumps equipped with a grease feeder (Fig. 7, item 1), follow the lubrication intervals indicated on the sticker (Fig. 7, item 2).
- Once the mechanical seal position is set, insert the adjusting wedge into its housing (Fig. 6).
- Always keep the pump perfectly clean.
- To prevent damage, pumps that are not being used during periods of frost must be drained: Close the guard valves, fully open the drain-priming plug, and the venting screw.
- Service life: 10 years depending on the operating conditions and whether all requirements described in the operation manual have been met.

9 Faults, causes and remedies

DANGER

Electrical shock hazard!

Dangers caused by electrical energy must be excluded.
All electrical work must be performed after the electrical supply has been switched off and secured against unauthorized switching.

WARNING

Risk of scalding!

In case of high water temperatures and system pressure, close the isolating valves upstream and downstream the pump.
Let the pump cool down first.

Faults	Cause	Remedies
Pump does not run	No current	Examine the fuses, the wiring, and the connectors
	The thermistor tripping device has tripped out, cutting off power	Prevent any cause of overloading of the motor
Pump runs but delivers too little	Incorrect direction of rotation	Examine the direction of rotation of the motor and correct it if necessary
	Foreign bodies clogged the pump	Examine and clean the pipe
	Air in suction pipe	Make the suction pipe airtight
	Suction pipe too narrow	Install a larger suction pipe
	The valve is not open far enough	Open the valve properly
Pump delivers unevenly	Air in pump	Remove the air in the pump; make sure that the suction pipe is airtight. If necessary: Start the pump for 20 ... 30 s. → Open the venting screw remove air → Close the venting screw. → Do it several times until no more air escapes out of the pump
Pump vibrates or is noisy	Foreign bodies in pump	Remove foreign bodies
	Pump not properly attached to ground	Retighten the screws
	Bearing damaged	Call the Wilo customer service
Motor overheats, its protection trips out	A phase is open-circuit	Examine the fuses, the wiring, and the connectors
	Ambient temperature too high	Provide cooling
Mechanical seal is leaking	Mechanical seal is damaged	Replace the mechanical seal

If the fault cannot be solved, please contact the Wilo customer services.

10 Spare parts

All spare parts should be ordered directly from the Wilo customer service. To prevent errors, always quote the data on the pump's rating plate when making an order. The spare parts catalogue is available at www.wilo.com

11 Disposal

11.1 Operating fluids

- Collect operating fluids in dedicated tanks.
- Immediately clean up the leaked liquid.
- Obey local regulations to dispose of the operating fluids.

11.2 Information on the collection of used electrical and electronic products

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

NOTICE

Disposal as domestic waste is forbidden!

In the European Union, this symbol can appear 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:

- Only hand over these products at designated, certified collecting points.
- 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. For further information on recycling, go to www.wilo-recycling.com.

Subject to change without prior notice.

wilo

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