Pioneering for You

Wilo-Jet-WJ

de Einbau- und Betriebsanleitung
en Installation and operating instructions
fr Notice de montage et de mise en service
nl Inbouw- en bedieningsvoorschriften
es Instrucciones de instalación y funcionamiento
it Istruzioni di montaggio, uso e manutenzione
cs Návod k montáži a obsluze
ru Инструкция по монтажу и эксплуатации
el Οδηγίες εγκατάστασης και λειτουργίας
tr Montaj ve kullanma kılavuzu
bg Инструкция за монтаж и експлоатация

2 050754-Ed.08 / 2021-12-Wilo

Fig. 1

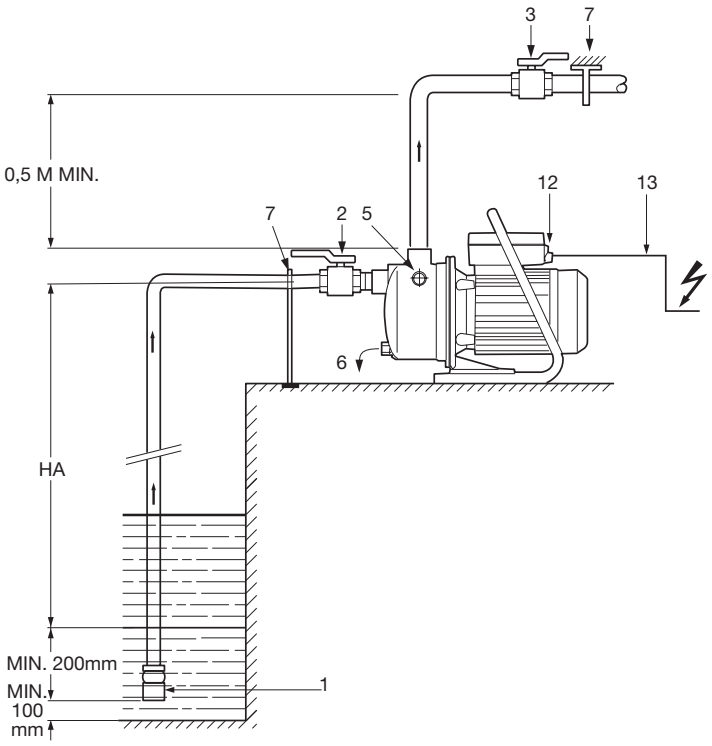


Fig. 2

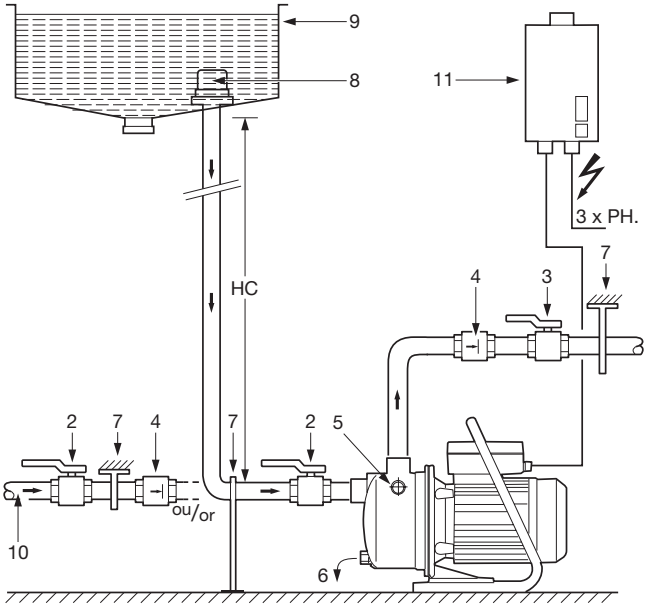
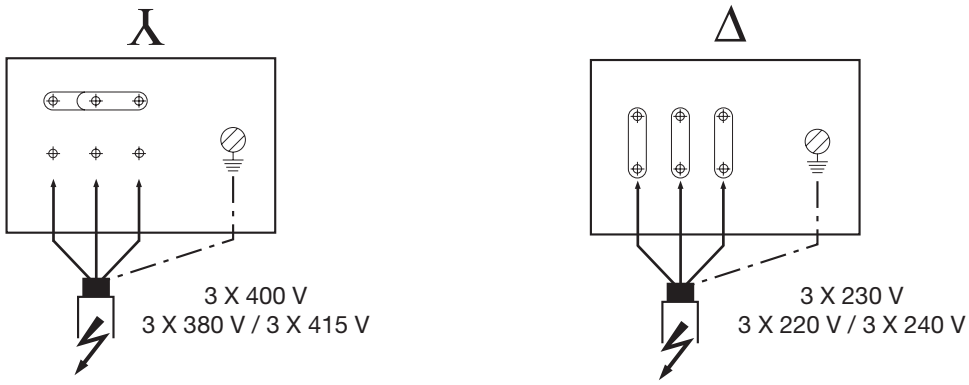


Fig. 3

3~
230 - 400 V
220 - 280 V / 240 - 415 V



1. General

See start of document.

1.1 Application

With the Jet-pump WILO offers an inexpensive water supply unit in the fields of home, hobby and garden. The pumps are suitable for:

– watering and sprinkling from ponds, creeks and bores,
– draining of tanks and containers,
– dewatering of flooded basements.

The pump works self-priming (e.g. from bores) or with flooded suction (e.g. from open tanks).
It must not be connected directly to public water supply systems.

1.2 Product Information

1.2.1 Technical Data

Suitable media: Water without solid particles, domestic, cold, cooling and rain water. Use of other media requires WILO's consent.

- Temperature min./max. : + 5 °C to + 35 °C
- Environment temperature min./max. : 0...40 °C
- Maximum suction lift : 8 m
- Single-phase (EM): 2850 1/min (50 Hz)
- Three-phase (DM): 3450 1/min (60 Hz)
- Size suction/discharge ports: G1"
- Max. working pressure: 6 bar
- Insulation class: 130
- Protection index: IP 44
- Electrical connection: 1 ~ 230 V ±6%, 50 Hz / 3 ~ 400 V ±6%, 50 Hz / 1 ~ 220-240 V ±6%, 60 Hz 3 ~ 220-254/380-440 V ±6%, 60 Hz

When ordering spare parts, please state all name plate data.

2. Safety

See start of document.

3. Transport and Storage

ATTENTION! The pump must not be subjected to temperatures outside the limits of 0 °C to + 40 °C.
If the equipment delivered is to be installed at some later time, store it in a dry place and protect it from impacts and all external influences (moisture, frost, etc.).
Handle the pump carrefully so as not to alter the geometry and the alignment of the hydraulic unit.
Never suspend the pump from the power cord.

4. Description of Product and Accessories

All WJ-series pumps are self-priming. All parts in contact with the medium being handled are of corrosion-resistant steel. Single-phase motors have built-in thermal contacts, switching off the motor on overload and on again after a cooling down period. A mechanical seal separates the pump housing from the motor.

ATTENTION! The pump must not run dry.

Warranty does not cover damages to the pu mp due to dryrunning.

4.1 Description of WJ-Series Pump

Series WJ pumps are portable for mobile application. Single phase pumps have a carrying grip and are supplied complete with power cable, plug and ON/OFF switch.

Standard-Installations

– Figure 1: Pump in suction
– Figure 2: Pump under pressure on storage tank or on town water supply with dry-running protection system.

Legend for Installation samples (see figures 1 and 2):
Pos. 1 Strainer-foot valve (maximum passing section 1 mm)
Pos. 2 Pump suction valve
Pos. 3 Pump discharge valve
Pos. 4 Non-return valve
Pos. 5 Filling plug
Pos. 6 Draining plug
Pos. 7 Pipe supports
Pos. 8 Strainer
Pos. 9 Storage tank
Pos. 10 Town water supply
Pos. 11 3~ motor protection relay
Pos. 12 OFF/ON switch for single phase motor (red indicator light)
Pos. 13 Power plug (1~ -Motor)

4.2 Scope of supply

– Jet Pump (WJ)
– Installation and Operation instructions.

4.3 Accessories

– Suction kit,
– Isolating valves,
– Non-return valves,
– Strainer-foot valve,
– Bladder tank,
– Vibrationless sleeves,
– Motor protection relay,
– Dry running protection (ME kit),
– On-off control device...

The use of new accessories is recommended.

5. Sitting/Installation

5.1 Installation

The pump must be operated in strict compliance with local water supply regulations.
Requirements on installation location:

- easy to reach
- well vented, dry and frostfree
- Installation on a concrete socket or directly on a smooth and horizontal floor, by use of 2 screws Ø 8 mm.
  It is the Operators responsibility to take all preventive measures (e. g. provision of alarm systems, standby pump, etc.) to avoid consequential damages such as flooding due to pump failure.
- Suction and discharge piping to be provided on site by others.
- When using solid pipe connections the pump must be firmly fixed to the floor.
- If not firmly fixed, flexible connectors must at least be used for suction and discharge ports.
- The suction pipe must be fully airtight and be installed free of stress, steadily rising towards the pump.
- Suction lifts above 5 metres require a suction pipe size of not less than $1^{1/4}$".
- Discharge pipe connections must be free of stress on the pump.

ATTENTION! In order to ensure proper operation a static discharge head of 30 cm is required; the discharge pipe must thus be installed with a rise of at least 30 cm.

- A foot valve is required at the end of the suction line. It must be located not less than 30 cm below the lowest water level. Recommended is the use of a suction hose set (optional extra) consisting of suction hose, suction strainer and foot valve.

5.2 Electrical connection

ATTENTION! Connections and checks should be carried out by a qualified electrician, in compliance with current local standards.

The power supply of the pump must include a circuit having a residual current difference device (earth fault breaker) acting at no more than 30 mA.

In case of cord damaged, make it replace by a qualified electrician.

- See name plate of the motor for electrical characteristics (frequency, voltage, nominal current).
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- Single-phase motor
  The single-phase motors have an integrated thermal protection. If an extension is added to the cord supplied with the motor, it must comply with the applicable standards: 3 conductors (2 phases + earth).
- Three-phase motors
  The electrical connection must be as shown by the diagram inside the cover of the terminal box (see Fig. 3). Use an electrical cable conforming with the standard in force (H07 RNF 4 G1 mm² external diameter: 10 mm max): 4 conductors (3 phases + earth).
- The motors must be protected by a circuit-breaker set to the current mentioned on the name plate of the motor. Provide a fuse disconnecting switch (type aM) to protect the mains supply.

ATTENTION! DO NOT FORGET TO CONNECT THE EARTH.
A connection error would damage the motor. The power cable must never touch the pipe or the pump ; make sure that it is sheltered from any humidity.

6. Commissioning

- Check to ensure that a sufficiently high water level is available in the open break tank or bore. Dry-running of the pump must be prevented as it will lead to destruction of the mechanical seal.
- Fill pump and suction line via the fill plug. Only a filled pump has self-priming capacity.
- Open discharge isolating valve(s) to allow free air evacuation from the suction pipe.
- Three-phase motors require a rotation check: Briefly switch on the pump and check whether actual direction of rotation corresponds with the arrow on the fan hood of the motor. II necessary, change any two supply phases.
- Never use the power supply cable for lifting, transporting or fixing of the pump.
- The pump must not be subjected to direct water spray.

7. Maintenance

Isolate from power supply before checking the pump!
In principle, damage to the connecting cable should only be repaired by a qualified electrician.

To ensure highest operational safety and reliability at lowest possible cost the following routine checks are recommended:

- Check on diaphragm vessel pressure (at least 1.4 bar on standard settings of pressure switch).
- Check pump for leaks.

On danger of freezing it is necessary to completely drain the pump using the drain plug at the bottom of the pump housing.
For prolonged standdown periods (e. g. winter shutdown) the pump needs thorough scouring, complete draining and dry storage.
On re-commissioning check tor free rotation by brieflyswitching-on the pump. Then re-fill with water.

8. Faults, Causes and Remedies

Faults	Causes	Remedies
Pump does not run	Interruption of the current, short circuit, Insulation fault in the motor coil	Check power supply, Call on expert to check cable and motor
	Pump is blocked due to foreign matters (1)	– Switch off the pump voltage and secure against reoperation. – Close the shut-off fittings at the back and front of the pump. – Remove foreign bodies from the pump
	Protective motor switch activated (1 ~ -Motor)	Let the pump/motor cooling
Motor overheats	Too low voltage	Check voltage on terminals of the motor. It should be within ± 6 % (50 Hz), resp. ± 6 % (60 Hz) of the rated voltage
	Pump is blocked due to foreign matters	(see 1)
	Ambient temperature above +40 °C	The motor is aimed at operating at a maximum ambient temperature of +40 °C
	Altitude > 1000 m	Motor is planned to operate at an altitude ≤ 1000 m
Thermal relay	Value of the thermal relay (3 ~ -Motor) is too low	Check the current with an ammeter or put the value switches off of the cuttent rating mentioned on the motor data plate
	Voltage is too low	Check the adequate cross-section of the electrical cable conductors
	A phase is cut	Check it and change the electrical cable if necessary
	Thermal relay of the curcuit-breaker is defective	replace it
	Motor is defective	replace it
Pump runs, but no delivery or it tranports too little	Pump is blocked due to foreign matters	(see 1)
	Pump is empty	Fill the pump
	Air in suction pipes	Check tightness of the whole pipe up to the pump and make it tight
	Suction pie obstructed	Clean all the pipes
	Wrong rotating direction(3 ~ -Motor)	Cross two phase wires
Pump vibrates	Loose on ist foundation	Check and completely tighten the nuts of the stud bolts
	Pump is blocked due to foreign matters	(see 1)
	Bad electrical connection	Check the connections to the pump motor

A blockage of the pump can in most cases be remedied by removing the suction connection and scouring the pump backwards under pressure.
Switch-on pump several times for 2 secs during scouring.
If the fault cannot be located or rectified, please contact your nearest WILO representative.

9. Disposal

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 in 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 dis- posed 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 technical modifications!