Installation and operation instructions of submersible sewage pump

潜水排污泵安装使用说明书



Please read the instructions before installing and using the product

Product implementation standard: GB/T24674 "Sewage submersible pump"

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One: Preface

Note: Read the products carefully before installation and use; improper use of the products can cause personal injury and property damage.

Two: Safety

Warning:

· Operators must be aware of safety precautions to prevent personal injury.

· If the pressure is too high, any pressure-containing equipment will explode, burst, or discharge the content contained.

· Operation, installation, or maintenance of the equipment in a manner other than that otherwise specified in this specification may result in death, serious injury, or equipment damage.

Safety terms and signs

· Is in danger of electric shock / electric shock if not done according to the details of this specification

· Is in danger of explosion or combustion if not done according to the rules of this specification

· Failure to follow this instruction may cause damage to personnel or cause damage to the machine

· Failure to follow this instruction can cause machine failure or impaired function

User security

1. Safety rules: Always keep the work area clean
Note the hazards caused by gas and steam in the work area
Avoid all electrical hazards. Please note the hazards of shocks and arcs
Always watch out for the dangers of drowning, electric shocks, and burns
2. Safety equipment: Use safety equipment according to the specific regulations of the company, generally including the following equipment:
Safety helmet goggles, preferably with side shields
Protective shoes, protective gloves, etc

3. Electrical connections: Electrical connections must be made by authorized electricians in accordance with all national and local regulations.

4. Clean the skin and eyes: If the chemical or dangerous liquid splashes into the eyes or touches the skin, please follow the following steps to clean:

condition	operation
Chemical or dangerous liquid splashes into the eyes	1. Force separating the eyelids with your fingers. 2. Wash your eyes with eye drops or tap water for at least 15 minutes. 3. Go to the hospital.
Chemical or dangerous fluids make contact with the skin	1. Take off your contaminated clothes. 2. Wash the skin with soap and water for at least 1 minute. 3. If necessary, go to the hospital.

Three: Packaging

Check the packaging

1. Check the packaging for damage or missing upon arrival.
2. Record any damage and missing items on receipts and freight bills.
3. Timely contact the relevant personnel of our company to claim for compensation.

Check the equipment

1. Remove the packaging material from the product. And discard all packaging materials according to local regulations.
2. Check the product to identify damaged or missing parts.
3. Remove the bolts or tie strap to loosen the product. Be careful when handling nails and straps for your safety.
4. For any questions, please contact your local sales representative.

Four: Transportation

1. Disconnect the power supply before removing or transporting the device.

2. All personnel shall be kept away from the suspended weights.

3. Abide by the current relevant accident prevention laws and regulations.

4. Use proper lifting equipment to ensure that the product is properly tightened.

5. Wear personal protective equipment.

7. Pay attention to the protection of the cable to prevent the cable rubber sleeve from being broken. (if the cable rubber sleeve is damaged, the cable should be replaced, and it is forbidden to use tape to prevent the motor from entering water).

Five: Storage

1. Storage location: the product must be placed in a covered and dry place, away from the high temperature heat source, dust and vibration.

Note: To prevent motor water intake or wire core aging:

Never put the end of the main cable or the control cable into the water;

Do not place the cable end on the open ground to prevent rain water from soaking the cable;

2. Anti-freezing measures: when the temperature is continuously below zero, the pump placed in water for a short time should be open to prevent the pump from freezing and cracking; the pump should be proposed for a long time and stored indoors.

The impeller is frozen and the pump should be immersed in a hot liquid and prohibit heating equipment.

3.Long-term storage: (if the pump storage time exceeds half a year)

After pump storage, the seal and cable inlet must be particularly carefully checked before running the pump;

The impeller must be rotated every other month to prevent the seals from sticking together.

Six: Conditions of use

1. The medium temperature shall not exceed 40 C, with a medium density of 1,050 kg/m3, The PH value is in the range of 4 - 10.
2. Minimum operating level: see ▽ (minimum level).
3. The main parts of the pump are cast iron or ductile iron, so it can not be used to extract a strong corrosive medium or the medium containing strong abrasive solid particles.
4. The maximum diameter of the solid form in the medium shall be less than the minimum diameter of the flow channel. Please refer to the specific pump model size table (see the sample).

Seven: Pump installation matters need attention

1. Disconnect the power supply before installing or repairing the device.

2. Clean up all the garbage in the pump pit and pipeline before installation.
3. Ensure that the site foundation size is consistent with the size in the pump installation size drawing, and avoid forced force to connect the pump to the pipe.
4. Check the site for explosion hazards around the work area before using electric welding or power tools.
5. Before installing the water pump, please check whether the cable is damaged during transportation to prevent the danger of electric shock.
6. The installation shall prevent the device from rolling and falling, so as to avoid personal injury or property loss.
7. Ensure that all fasteners are tightened and no missing fasteners.
8. Check the rotation direction of the impeller before placing the pump

Electrical connection

matters need attention

1. Operators must have the relevant electrical technician certificate.
2. Before the connection operation, all power supplies must be cut off, including the control circuit power supply.
3. Ensure that all unused wires are insulated.
4. If the electrical connection is not performed correctly, or if the product is faulty or damaged, the electricity leakage or explosion danger will be caused.
5. Do not install startup equipment in explosion hazard areas, unless there is explosion-proof certification.

ask

1. Before installing the water pump, if you want to connect it to the public power supply, you must first notify the power supply department.
2. The power supply voltage and frequency must meet the requirements on the sign.
3. The specification of fuse and circuit breaker protector must be correct, and must be connected with overvoltage protection (motor circuit breaker protector), when direct startup startup current is generally 6 times the rated current; recommend high power pump with soft starter or self-coupling antihypertensive startup (90kW and below only).
4. Fuses and cable specifications must comply with the relevant regulations and requirements.
5. Thermal sensitive components and other water pump protection devices must be connected.

cable

1. The cable must be in good condition without any sharp bending or clamp and shall have a suitable bending radius.

2. The insulation layer at the end of the cable shall not be damaged, without gaps or indentation.
3. If the cable skin is found to be damaged, the cable must be replaced.

4. If the cable is too long, the voltage drop must be considered to ensure that the voltage of the pump motor meets the requirements of the sign.
5. No wire core of the signal cable shall be connected to the power supply.
6. In use, the cable cannot be used to withstand the weight of the pump itself to prevent its breaking.

landing

All electrical equipment must be grounded:

Insulation

Check the ground insulation resistance value of the motor stator winding, measured by 500V meu meter (commonly known as shaking meter), whose value is generally greater than 50 MΩ at the ambient temperature of 5℃, and more than 10 MΩ at 30℃, otherwise the equipment should be checked before use.

Eight, start

1.The starting level shall not be lower than the minimum level, see ▽ in the installation drawing;
2.Point the motor, check the steering, look from the motor side down, the pump should rotate clockwise;
3.The centrifugal impeller adopts the valve and the pressure gauge on the closed outlet pipe;
Mixed flow type, axial flow type impeller according to the pump type, to take the open valve to start;
4.Start the motor, and open the pressure gauge, as the rotating speed gradually rises, and gradually adjust the valve opening degree on the water outlet pipe to the required flow rate;

Nine, parking

1. First close the outlet valve, close the pressure gauge, and then cut off the motor power supply;
2. If you stop for a long time, it is recommended to lift the pump up, clean it up, put it in a dry place, and keep it properly;

Ten: Maintenance

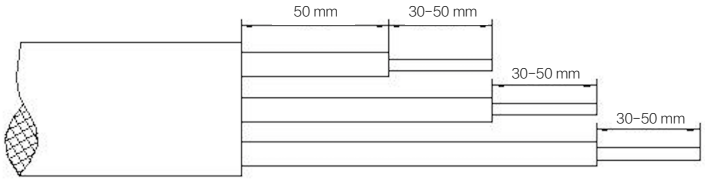
1. Check the motor current value regularly:
2. When the ambient temperature is the rated temperature of the motor, the current shall not exceed the rated current;
3. When the ambient temperature is lower than the rated temperature of the motor, the current value can be slightly increased, refer to the motor data for details;
4. If the current is abnormal, please immediately find out the reason;
5. After the long-term operation of the pump, due to the wear of the machine seal, bearing, impeller, sealing ring and other parts, it should stop for inspection, and replace the vulnerable parts such as the machine seal, bearing, O-ring, sealing ring, etc., the unit inspection cycle is generally one year, the service life of the machine seal is due to the site working condition, the design service life is 8000 hours;
6. Check the oil room regularly. In case of oil emulsification, replace the 32 # oil in time, and implement the standard: GB 443-89.

Eleven: Diving cable connection

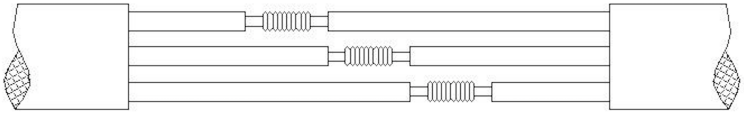
Two methods can be adopted: 1. Field wiring mode (high failure rate)
2. Middle terminal box mode (the best way)

1. When the diving sewage pump with cable length cannot meet the user installation requirements, need external cable, wiring should be operated by **trained electrician**, cable cross-section area is determined by the installation length, motor power and starting mode, motor cable and external cable joint requires reliable sealing, insulation, and should have a certain strength, wiring process is briefly as follows:

Press the cable on the sewage pump according to the figure below, strip the copper core out about 30~35mm long, and wipe the copper wire clean with sand cloth to shine it. Also strip the external 3-core cable out 30~35mm, and wipe it clean with sand cloth.

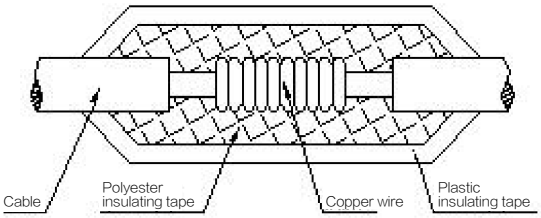


As shown in the figure below, plug the three-core copper wire cable and the external cable, and then tie it tight with a fine copper wire according to the sample shown in the figure, cut off the rest, press flat with scissors, no hand is appropriate, three are also tied.



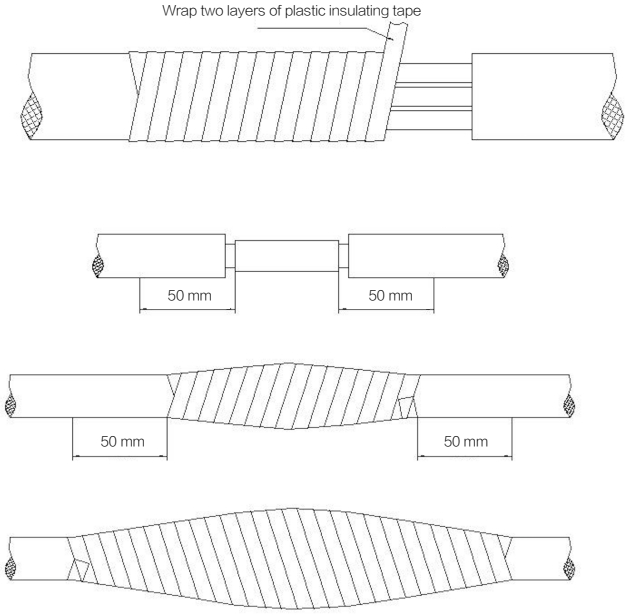
Prepare a small iron box or small iron pot (can dip in three wires), put the solder into the pot and heat on the fire, until the solder, the three threads with the right amount of welding oil, quickly into the pot welding, the welding surface smooth, no burr and false welding phenomenon, if there is no welding firm or not smooth, should be welded, until meet the requirements.

As shown in the figure, when wrapping half of the polyester insulation tape, we must press the first circle (semi-fold dressing method) to bandage 8 to 12 layers, and then wrap two layers with plastic tape for



Then pack 2-3 layers with waterproof tape for waterproof protection treatment.

As shown in the figure, the three wires are wrapped together with polyester insulation tape for two layers. The first layer exceeding 50mm above the end of each wire insulation layer, and the second layer exceeding 50mm above the end of the first layer must be closely wound to eliminate the air space as far as possible.



After dressing, take a basin of cold water to soak the wrapped wire completely in water. After 12 hours of use, measuring the insulation with a 500V meOu meter should not be less than 50 meOM (it is recommended that it is best to measure once every 12 hours for 2 consecutive times to ensure safety), otherwise it should be redressing until the requirements are reached.
The grounding wire of submersible electric pump shall also be bandaged according to the requirements of submersible cable wiring process.
Note: 1. During the length of the customer connecting cable, the voltage drop shall be calculated; during the operation, observe the voltage change, which is generally controlled within 5% of the rated voltage.
2. At 30kW and below power wiring, copper connection plate shall be used at the wiring place to ensure safety.
Field wiring, high failure rate; terminal box wiring or direct replace long cable.

Twelve: Common faults and solutions

malfunction	cause	resolvent
The pump has no water output or an insufficient flow rate	· Motor reversal · Leaf leaves are blocked or pipes are blocked · The pipeline resistance is too large · The impeller was severely worn · The medium is mixed with gas · Check valve direction reverse · The customer said that the lift was not enough · Coupling leakage	· Adjust the phase sequence of the two-phase power supply · Clear debris, it is better to add a fine grille at the water inlet · ① reduces pipe curve and should increase pipe diameter for long pipe diameter ② Check that the valve is open ③ Check if the impeller is scraped into · Replace impeller · Eliminate the gas (note: the hard pipe installation needs to exclude the pump gas), increase the liquid level depth to reach the minimum water level requirements of "▽" · Adjust the check valve direction · (1) After excluding the above reasons, to see if the customer test method is correct Whether the (2) selection meets the requirements of the field working conditions · Check whether the installation is appropriate and ensure that the guide rod is vertical
Can't start	· impeller stuck · Winding connector or cable is circuit · The stator winding burned down · Control cabinet failure · Low power voltage	· Check the line to eliminate the missing phase problem · Remove debris · Repair after checking with ohms and universal tables · Replace the winding or stator, preferably add the temperature measuring element · Check the control cabinet for troubleshooting · Solve the power supply voltage problem

malfunction	cause	resolvent
The vomiting pressure that comes out fluctuates greatly	· The suction tank fluid level is too low · The suction bend is not tightly sealed to make the pump inhale the air · High medium temperature	· Control the minimum liquid level of the suction tank · Check the line connections and exclude the cause · Reduce the medium tempera-ture. If the medium temperature cannot be reduced, raise the minimum liquid level of the pump and replace the high temperature motor
The current is too large	· The selected pump head exceeds the actual head or the device head is greatly reduced, resulting in a large pump flow operation · The density or viscosity of the medium is too high · bearing failure · There is debris in the mouth ring · The power supply voltage is too low	· Close the outlet pipeline valve or the outer diameter of the vehicle impeller, or replace the pump that matches the actual working conditions on site · Dilute medium · Replace the bearing · Clean up debris · Solve the power supply voltage problem
Bearing heating	· Bearing wear and tear · Too little or too much bearing oil · Grease metamorphic	· Replace the bearing · The amount of oil added is about 1 / 3~1 / 2 of the oil indoor cavity · Replace the oil

Thirteen: Important matters

1、If the contents of the instructions are changed, anger will be no notice;
2、Users in the appropriate selection, the normal use of the pump three guarantees for a year, the normal wear of vulnerable parts is not in this limit;
3、During the three guarantees period, the user shall be responsible for all the consequences of the quality problems caused by the user's own disas-sembly;
The enterprise product three guarantees of matters strictly comply with the relevant provisions of the home implementation, beyond the warranty period or do not belong to the scope of the warranty, still dedicated to provide you with excellent service!
Customer always first: quality, innovation, continuous improvement! Is our quality policy, high quality products is our eternal pursuit!
After-sales service center: 0571-88111688 133 3601 6098

Fourteen: Product quality warranty card

User and product information			
Name of user		Portraiture	
Address		Date of purchase	
Product model		Contacts	
Factory code		Telephone	
			Sales Unit (seal)

Dear users:
Thank you very much for choosing our company produced by the submersible pump!
We will use a perfect service system to ensure that you enjoy the service we provide.
Please show this warranty card when the product needs to repair, please keep it properly!

Address:
Tel: 0571-88111009
E-mail:
Zip-code: 311106
Http: // www.xizipumps.com

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