PUMPMAN

OWNER'S MANUAL
DEEP WELL SUBMERSIBLE PUMPS
Model: 4STM SERIES

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Read this manual carefully before using the pump. Failure to follow the instructions can cause serious injury or death. Pump is not to be used by children or persons 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 pump by a person responsible for their safety. Children should be supervised to ensure that they do not play with the pump.

This is a safety warning symbol. In this instruction manual, the safety warning symbol indicates important safety information. When you see this symbol, be alert to the possibility of personal injury and carefully read the information under the symbol carefully and inform other operators.

The factory shall not be responsible or liable for any injury to persons or property resulting from the failure of the pump to operate or failure to comply with the safety warning signs.
1. Please read the Product Instruction Manual carefully before installing the pump.
2. The electric pump shall be installed with leakage protection device and reliable grounding before use, and ensure that the power supply voltage is consistent with the nameplate.
3. After the electric pump is connected to the power supply, it is strictly prohibited to touch the rotating parts of the shaft.
4. The pump is designed to use the pump for a long time in dry running and full water (0).
5. Before servicing the pump, the power supply shall be disconnected to avoid electric shock. Do not touch the electric pump when the pump is running.
6. It is strictly prohibited to wash, swim or graze livestock in the water in the area where the pump is operating.

• It is strictly prohibited for children, persons lacking legal capacity, or persons with limited capacity to use this product.
• It is strictly prohibited to use the pump in the water with flammable and explosive (or chemically corrosive) liquids (especially the hazards mediums).

• It is strictly prohibited for the user to change the pump without authorization or to operate the pump beyond its operating conditions.

• The pressure of the system in which the pump is installed must be greater than the maximum allowable working pressure of the pump.

1.Brief introduction of structure

deep well submersible pump is consisted of multistage deep well pump, three-phase (or single-phase) submersible motor, cage coupling and shaft seal. The motor of the pump is sealed and up of the motor. Water-lubricated plain bearing is adopted by the pump. The pump is connected with the motor by the coupling. The water flows into the pump from the suction strainer of the motor and is discharged from the outlet. The discharge of electric equipment comply with the requirements of the product. The motor is equipped with a thermo protector for motor safe operation.

2.Application conditions

2.1 Pumping medium is clean water which temperature is below 40°C or other liquids with physical, chemical and mechanical characteristics similar to clean water, its density is between ≤1.0 .

2.2 Content of solids in water should be below 5 %(quality proportion) and diameter is below 1.5mm.

2.3 The pump is used for the underwater and it is widely used in the area of low water level, high head and for distance to draw water.

3.Model description

4.Product specifications

Model	Power		Rated									
	HP	kW	Hz	GPM	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5
4STM0.8	0.5	0.37	50	7.9	6.6	5.8	5.0	4.2	3.5	3.1	2.7	2.2
4STM1.0	0.75	0.55	50	10.6	8.8	7.8	6.6	5.6	4.7	4.2	3.6	3.0
4STM1.2	1	0.75	50	12.7	10.6	9.4	8.0	6.8	5.7	5.0	4.3	3.6
4STM1.5	1.5	1.1	50	15.9	13.2	11.7	10.0	8.4	7.1	6.3	5.4	4.5

5.Exploded view

NO.	Parts	Materials
1	Discharge Outlet	Brass AISI-3
2	Valve Seat	Rubber NBR
3	Valve Core	Plastic PC
4	Valve Support	Plastic PC
5	Rubber Bearing	Rubber NBR
6	Upper Shaft Sleeve	Stainless Steel 2Cr13
7	Pump Barrel	Stainless Steel 201
8	Impeller	Plastic POM
9	Impeller	Plastic POM
10	Middle Plate	Plastic PC
11	Unsupported Shaft	Stainless Steel 2Cr13
12	Lower Shaft Sleeve	Stainless Steel 2Cr13
13	Coupling	Stainless Steel 201
14	Rubber Bellows	Rubber NBR
15	Set Screw	Stainless Steel 201
16	Upper Bearing Housing	Cray Cast Iron HT200
17	Bearing Ball	Stainless Steel 304
18	Rotor	Silicon Steel Sheet 1380 Stainless Steel Rabbet Copper Wire Enamel Steel Shaft
19	Motor Housing	Stainless Steel 201
20	Lower Bearing Housing	Cray Cast Iron HT200
21	Pressure-regulating Diaphragm	Rubber NBR
22	Motor End Cover	Stainless Steel 201
23	Pressure Ring	Stainless Steel 304

6.Installation diagrams

A. Suitable well
B. The distance between dirt water line and submersible pump outlet is no less than 1m
C. The distance between the bottom of the water and the bottom of the well is no less than 1m
D. The pump under water surface is no more than 30m.

7.Installation and maintenance instruction

* Firstly check the nameplate of pump accord with the demands of application conditions before installation.

* Check whether the pump, motor, cable, and the socket connect is in good condition. All the screws connected should be tighten.

* If it is for distance to power supply should use a bigger diameter cable. The insulation resistance of motor stator winding should be over 5 meg. Ohm.

* The pH shall where modified the multistage deep well submersible pump should be a straight well, should keep a certain gap between the biggest out diameter of the pump and the inner wall of the well, so that to prevent the pump operating in the disabled depth can not touch the well of well.

* First should hang the pump and fixed firmly then install a leakage protector at the end of power cable and make good connection by the ground wire first with double color yellow and green or black to prevent electric shock (plug marked grounding).

* Fit a steel pipe or a hard rubber pipe to the outlet and fixed by a hoop tightly. Fix the pump on the well cover and then connect the outlet pipe. Fix the cable on the pump and fixed to use cable as hanging rope. The submerged depth of the pump can not exceed than 70 meter and the distance from bottom should over 50 cm, should install the protector at the end of power cable to prevent the water and sands blocked the filter net influence the pump normal operating.

* The motor should be idle for a few seconds after connected with power to check the pump whether is correct for starting, operating, and running direction.

* Check the pump performance whether operating in normal range, otherwise the pump operating in a abnormal condition, so the motor will be heated, even burned the motor.

* If discover some irregular phenomena such as abnormal sound, lack of water or intermittent flow, should stop the motor immediately and find out the reasons, should take the corresponding measures to eliminate the malfunction before restarting. Do not prevent from broken the pump body when air temperature is below 0°C.

8.Troubleshooting

Please turn off the power before maintaining.

Failures	Cause	Treatment
The motor cannot start	The motor voltage is too low.	1. Adjust the voltage to the rated voltage range.
	2. The power supply line is small.	2. Use a cable with a large cross-section.
	3. The power cord is broken.	3. Check and replace the power cord.
	Single-phase power supply (Only three-phase motor).	1. Repair the switch contacts or replace the switch.
	2. Poor contact of power switch.	2. Replace the fuse.
	3. Fuse burnout.	3. Check and repair the power line.
	4. Power cord is broken.	4. Check the capacitor.
	Cable voltage drop is too large.	1. Cut off the extra cable.
	1. Line is too large.	2. Use a cable with larger cross-section.
	2. Cable cross-section is too small.	
	Capacitor damaged	Replace the capacitor of the same capacity (send to after-sales service).
	The shaft and bearing are stuck	Replace the bearing (send to aftermarket service)
	Impeller stuck	Use a screwdriver to turn the impeller to check whether it rotates flexibly or remove the impeller and check.
	Stator winding burned out	Replace coil (send to after-sales service)
	Pump rotation direction is wrong	Change the wiring of two phases of the three-phase power cord.
Motor is running but no water	The tip is not full of water	Exhaust the air in the pump
	Impeller is broken	Replace the impeller (send to maintenance point for repair)

9.How to install a deep well submersible pump

SELECTING A PUMP FOR YOUR NEEDS

The pumps Series 4STM are specially designed for limited capacity wells, which is equipped with a check valve.

Pump Intended

1. The amount of water
2. Head
3. Well diameter
4. Capacity of well is more than
5. Pumping water level

The Amount of Water-Lubricated Sand

Before you determine the amount of sand in the water, you can try it by increasing the number of outlets gradually from small to large. These outlets may be a faucet, a shower, a washing machines, a toilet, a hose, etc. Even though there are two faucets, one hot and one cold, in the kitchen of your residence, these are counted as one outlet. Also, a washing machine with two water inlets is counted as one outlet. Open all outlets and run water system with a flow of approximately gallons per minute.

NEW WELL INSTALLATION

Your well driller can usually give you the important information you will need to select the correct pump. Local laws and other ordinances may require a permit for your installation.

The pumps Series 4STM are specially designed for residential use and is meant for shallow wells. Due to the limited capacity of the pump series, it is not suitable for use with a limited supply or is prone to unwanted sand in the water.

Find the cause, replace the winding coil

Clean or replace the mechanical seal

Replace the impeller (send to maintenance point for repair)

Well Diameter

Well diameter must be at least 4 inches or more in diameter to be able to use a submersible pump. If the inside diameter of the well is less than four inches, a jet pump may be used in a stable gas station.

Capacity Of Well & Capacity Of Water Level

Your well driller can provide you with this information. Your well capacity is great enough, select your pump to meet your water requirements for now and also for the future.

9. PIPING INSTALLATION

If additional pipe is used for an existing well, it is recommended to install a plastic pipe with the same horsepower as the submersible pump. Use a pipe with the same diameter as the inlet and outlet of the pump.

10.Maintenance

- Don't submerge the pump in water for a long time when unused, should be running in short water for a few minutes to both inside and outside of the pump, then put it in a room with good ventilation.
- Check the motor, cable and pump(not pasture domestic animals in water within the working area for two square meter 30m/h) firstly to touch the pump by hand under the power on condition to avoid accident.
- Check the motor and cable connection because of some trouble, should cut off the power and find out the reasons. After the trouble removed, the pump can run again.
- If some problems appeared both of pump and motor, would be repaired by the expert-maintenance personnel, or send to the maintenance department of our company. Otherwise, we are not responsible.