INDEX

1.Brife Introduction 1
2.Model description 1
3.Explosive view 2
4.Warning 3
5.Operating instructions 8
6.Pipelines installation 10
7.Troubleshooting guide 12

Brife Introduction

The permanent magnet variable frequency booster pump is a small water supply system, suitable for household water intake, well-pumping water, pipeline pressurization,garden watering, vegetable greenhouse watering, and breeding industry, etc.

PH value:6-8.5
Environment temperature: 0-40℃
Liquid temperature: 0-90℃
Relative humidity:Max.85%(RH)

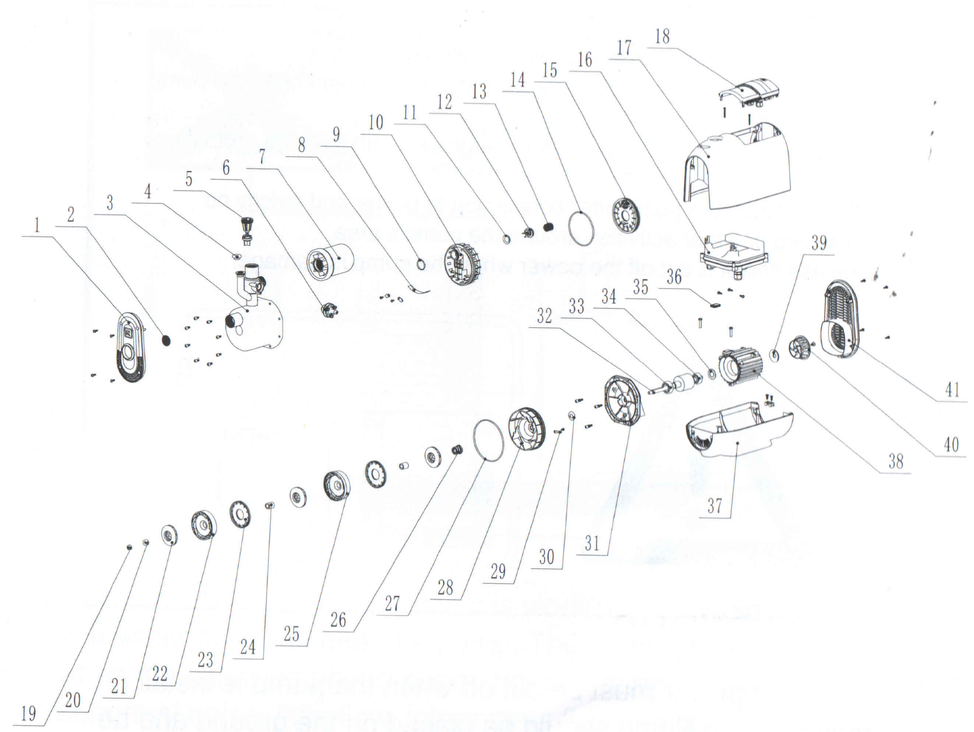
Model description

R2 - 30

- 30 — Rated head (m)
- R2 — Rated flow (m^3/h)

Model	Power Supply (V/Hz)	Power (W)	Suction (m)	Rated Flow (m^3/h)	Rated Head (m)	Max Flow (m^3/h)	Max Head (m)
R3-30	220/50	800	7	3	32	6	45
R2-30		600	8	2	30	5	42
R2-20		400	7	2	20	4.5	30

Explosive view

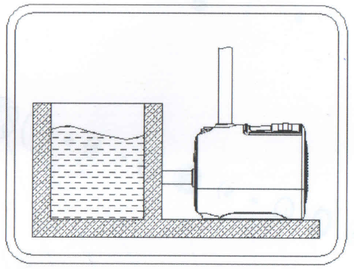


No.	Item	No.	Item	No.	Item
1	Outer covering front cover	15	Self priming cover assembly	29	Temperature sensor
2	Filter screen	16	Terminal box	30	Front retaining ring
3	Pump body assembly	17	Outer covering upper cover	31	Aluminum bracket
4	Water injection plug assembly	18	Digital display panel box assembly	32	Rotor
5	Outlet check valve assembly	19	Self-locking nut	33	Bearing
6	Pressure sensor assembly	20	Impeller locking sleeve	34	Bearing
7	Pressure tank assembly	21	Impeller	35	Wave spring
8	Self priming spring leaf	22	Guide vane	36	Sealing ring
9	O ring	23	Guide vane cover assembly	37	Outer covering lower cover
10	Self priming chamber	24	Shaft sleeve	38	Stator assembly
11	Inlet check valve gasket	25	Guide vane	39	Rear retaining ring
12	Inlet check valve	26	Mechanical seal	40	Fan
13	Spring	27	O ring	41	Outer covering back cover
14	O ring	28	Bracket cover		

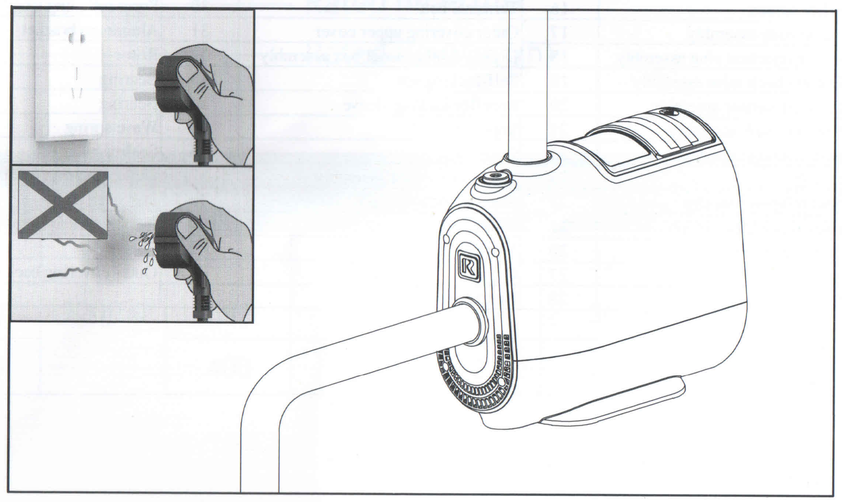
Warning

Please strictly follow instructions in user guide.
Check the insulation resistance carefully before connecting the pump to prevent leakage.
Water pump should be placed on the ground with leakage protection switch.
Do not touch the pump after connecting to power and strictly no washing or water activities around the pump's area.
Please check & cut off the power when the pump is damage.

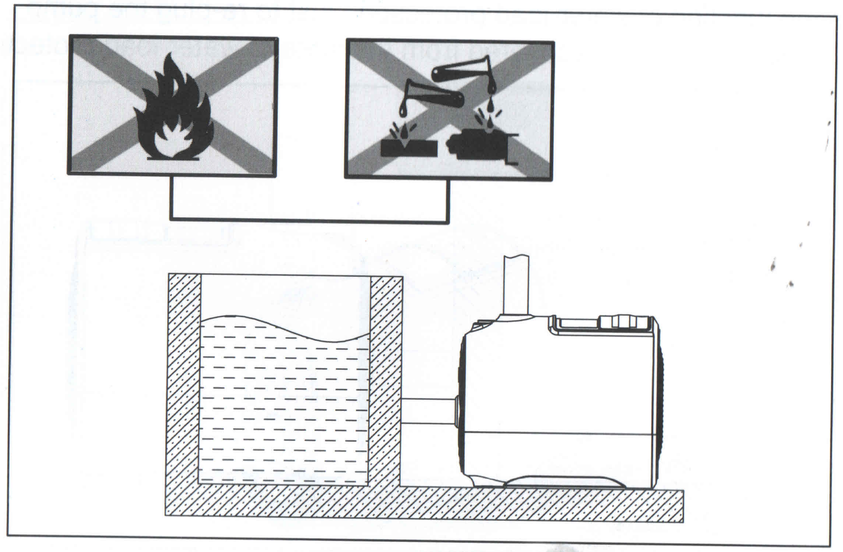




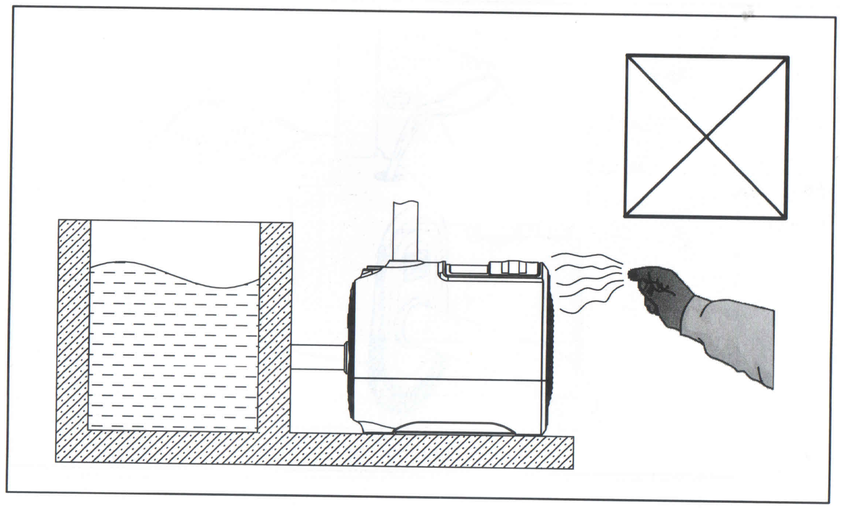
1.Electric power must be cut off when the pump is install or maintenance.Pump should be placed on the ground and be sure to install leakage protection switch to prevent shock.
If there's water on the plug, you might get an electric shock. Be careful!



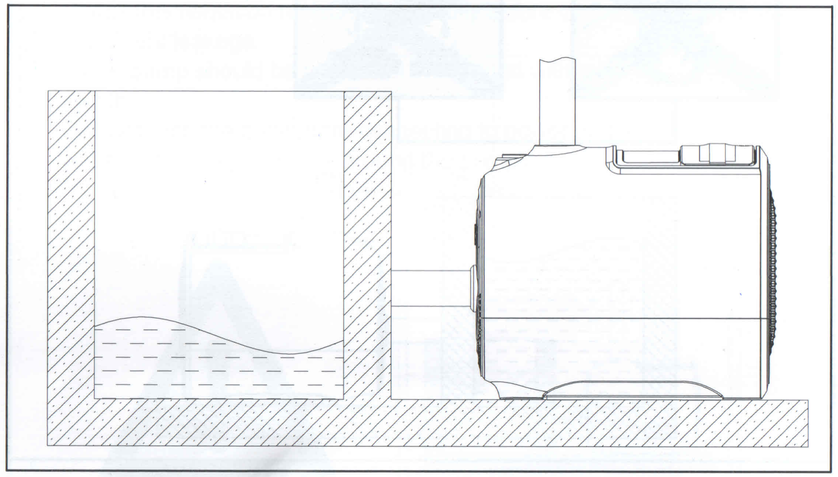
2.Do not use on any other liquid expect for water. If use flammable or abrasive liquid might cause fire, pump is easy to damage and will shorten the service life.



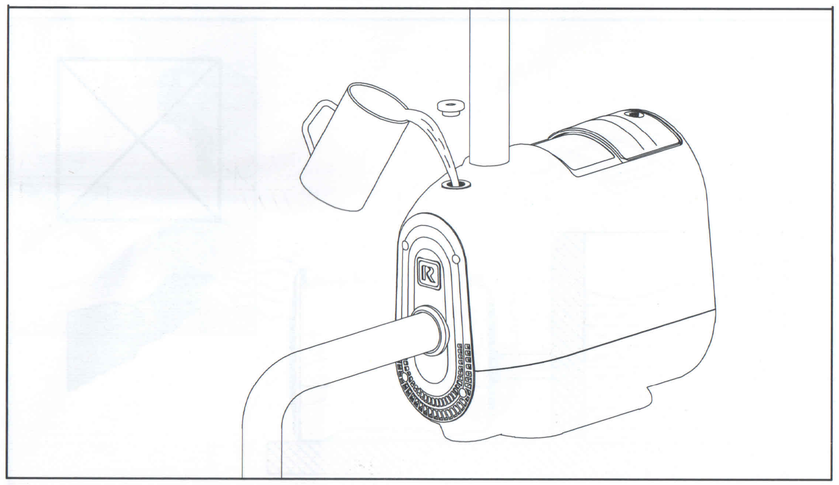
3.Do not touch the pump while it is working and avoid any washing and water activities near the pump. The pump should be checked when the following phenomenon happen during the pump working: abnormal noise, little flow, intermittent flow. Do not touch the pump while it is power on. Do not touch the pump while it is wet, in case of any accident. Avoid any force liquid splashing on the pump and never get the pump immersed in the water.



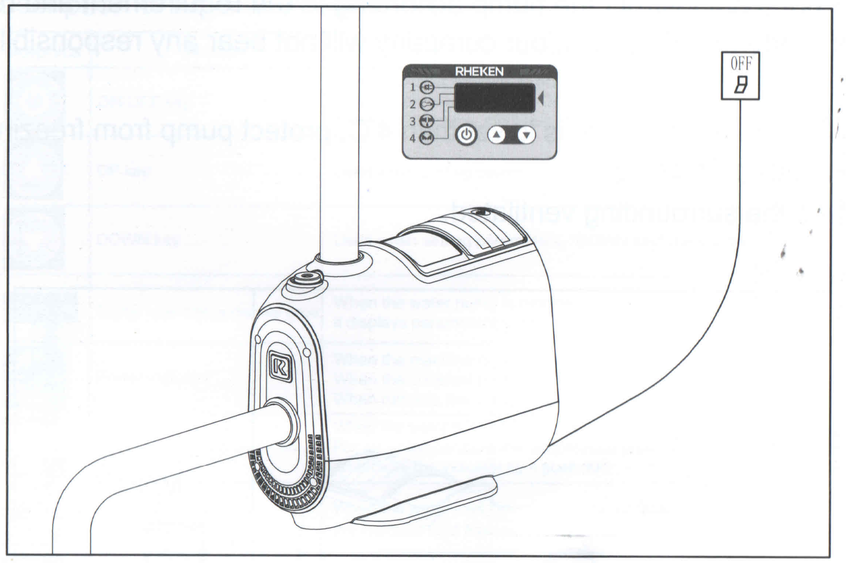
4.The pump should not be used without water inside, which will cause the motor heat and shorten the pump's life . Also, the pump shall not be used in the sunlight directly. The automatic RJs series has the function of water-load protection. Just to re-plug the pump could have the pump recovered from the state of water-load protection.



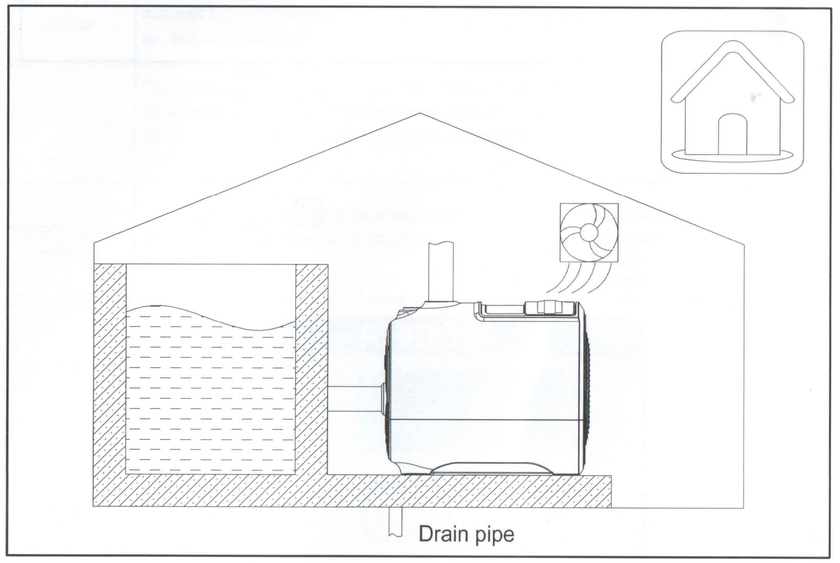
5.Before starting the pump, check whether the pump could operate well by stirring the fan.Then open the injection nut and fill the clean water into the pump body. Make sure there is no air into the pump body and then put the injection nut back.While using a new automatic pump, it's better to turn off the valve to check whether the pump could stop. If the pump stop, it means the pump is well operated.



6.1Ensure the pump will not get connected by accident while installing or maintaining. If the pump will not be used for long,please turn off the inlet and outlet valve. Cut off the power source.

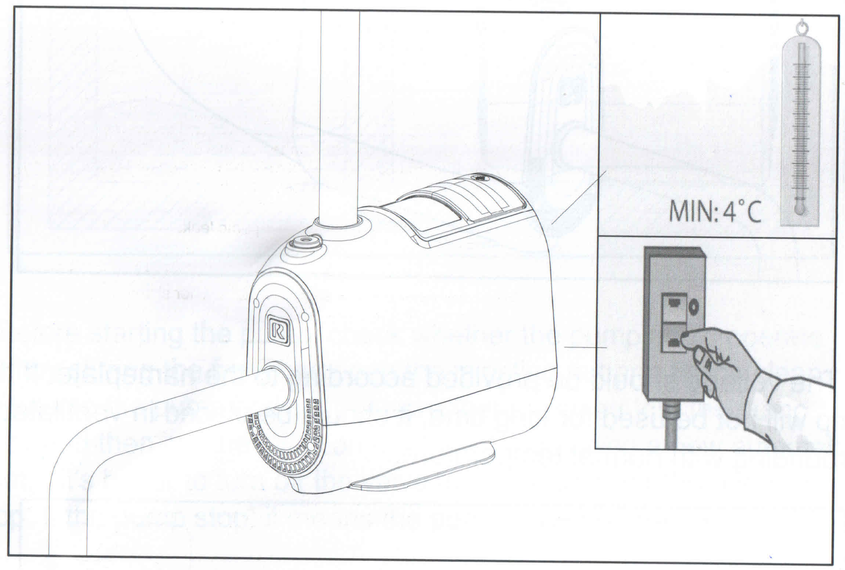


6.2 The voltage should be provided according to the nameplate. If the pump will not be used for long time, it should be placed in ventilated surrounding with normal temperature.



7.If the pump has been placed inside house, a drain system has to be set up nearby the pump, in case there will be any ponding, which may get the pump immersed in the water and cause the motor heat or electric shock.
If user does not instruct the pump according to the requirement and resulting any property or safety loss, our company will not bear any responsibility.

8.1 When the temperature is lower than 4℃, protect pump from freezing to prevent pump cracking.
8.2 Keep the surrounding ventilated.



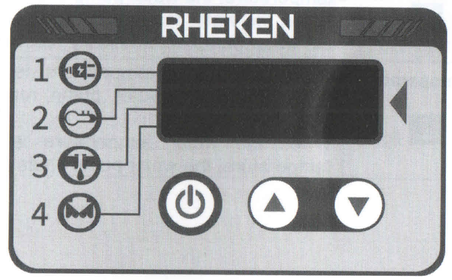
Operating instructions

1 Names and functions of the keys on the display panel
1.1 Description of keys and fault lights

Graphics	Name	Meaning
	ON/OFF key	Controller ON/OFF switch. After the water pump is installed and powered on, press the "ON/OFF key" and the water pump will start running; Otherwise, the water pump will stop running.
	UP key	Used when setting parameters, "UP key" means increase.
	DOWN key	Used when setting parameters, "DOWN key" means decrease.
	Digital tube status display area	When the water pump is running, it displays parameters such as pressure.
	Power indicator	When the machine is turned off, the indicator light goes out. When the constant pressure stops, the indicator light flashes. When running, the indicator light is always on.
	Over-temperature protection	When the water temperature sensor is faulty, the indicator light flashes. For water temperature low temperature protection and high temperature protection, the indicator light goes out.
	Leakage protection	When the water inlet pipe or water pump leaks, the indicator light flashes.
	Water shortage protection	When the water pump is short of water and for shutdown protection, the indicator light goes on.

1.2 General function key operations

Operations	Operating method	Remarks
Start-up and standby	Short press , to turn on the machine, and the power indicator light will light up. Then short press , to stand by, and the power indicator goes out.	1. Shutdown: the indicator light goes out. 2. Standby: the indicator light flashes. 3. Running: the indicator light is always on.
Target pressure	Short press or to adjust the corresponding parameters and exit the pressure setting without operating for 5s. The water pump starts to operate at the new target pressure.	
Restore factory settings	Long press and for 5s at the same time until UXX (software version number is displayed) to restore the factory settings.	All parameters are reset, and the digital tube displays the version number.

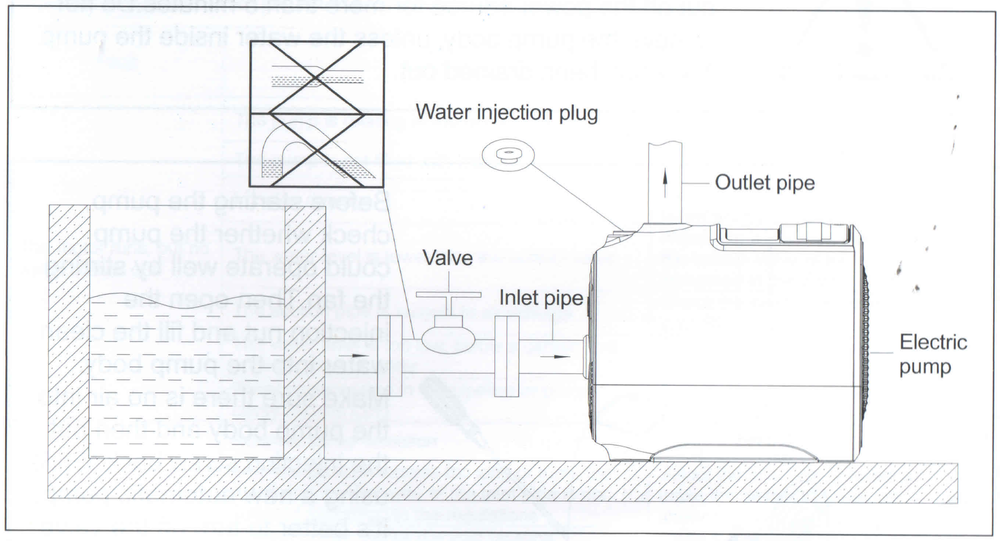


1.3 Common fault codes and solutions

If the label is not displayed, the digital tube will not display the fault code and the corresponding alarm indicator light will go on.

Fault code	Corresponding fault	Troubleshooting
E-01	Communication failure between panel and motherboard	Please check whether the panel cable is connected properly and re-plug the test. If it cannot be solved, the panel or motherboard is faulty.
A-14	Low-voltage warning Low-voltage protection (Panel indicator lights up)	When the input voltage is lower than 180VAC, shut down for protection.
A-15	High-voltage warning Low-voltage protection (Panel indicator lights up)	When the input voltage is lower than 260VAC, shut down for protection.
E-10	Stall	Check whether or not the motor is stuck.
E-11	Controller overcurrent	1. Check the motor for short circuit and wrong motor. 2. The drive is damaged.
E-18	Phase loss (Panel indicator lights up)	Check whether or not the motor wire is loose and not connected properly.
E-19	Speed loss	Excessive motor load.
E-12	IPM temperature sensor fault	The IPM temperature protection circuit is disconnected.
E-20	Overheating fault of driver board	IPM detects that the temperature is too high, shut down for protection.
E-13	Water shortage (Panel indicator lights up)	Check whether or not there is real water shortage. If there is water, check water flow switch with water flow switch model and for model with no water flow switch, enter the factory menu to adjust the water shortage pressure and adjust it below the current pressure.
A-16	Leakage	When the pressure drops slowly, repeatedly start the water pump for more than 15 times, check whether or not there is any leakage in the pipeline or the check valve, which does not affect the water consumption, but only prompts.
A-17	Pressure sensor fault	Check whether or not the pressure sensor interface is in poor contact, check the interface and unplug and plug it again. If it cannot be resolved, replace the pressure sensor.
E-23	Water temperature sensor fault (Panel indicator lights up)	The water temperature sensor line is disconnected
A-21	High water temperature protection (Panel indicator lights up)	When the water temperature is higher than the protection temperature, the water pump shuts down for protection. When the water temperature drops to the recovery temperature, the water pump automatically recovers.
A-22	Low water temperature protection (Panel indicator lights up)	When the water temperature is lower than the protection temperature, the water pump runs at low speed to prevent freezing. When the water temperature is higher than the recovery temperature, the water pump shuts down automatically.

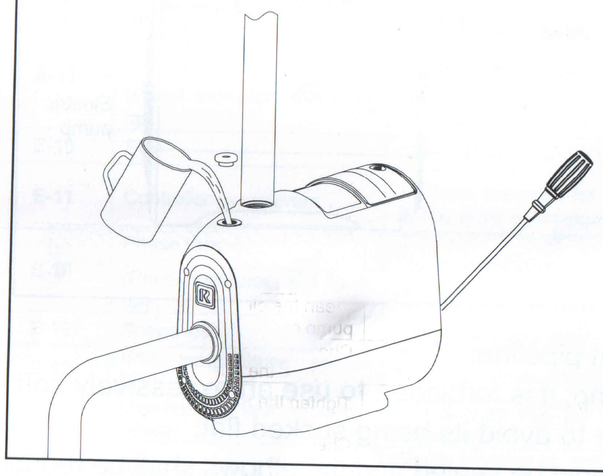
Pipeline installation



Precautions for installation of inlet pipeline:

1. When installing an electric pump, it is forbidden to use an excessively soft rubber tube in the inlet pipeline to avoid its being sucked flat;
2. The joints of the inlet pipeline must be sealed and the elbows shall be reduced as much as possible, otherwise the water will not be sucked or the pressure will be insufficient;
3. The diameter of the inlet pipeline shall be at least similar to the inlet diameter to prevent the water conservancy loss from being too large and affecting the outlet performance;
4. When installing the pipeline, ensure that the electric pump will not be subjected to pipeline pressure;
5. In order to prevent solid particles from entering the electric pump, a filter must be installed in the inlet pipeline;
6. The water inlet pipeline shall be filled with water and it is not recommended to lift water for wells.

Do not start the pump before filling water into the full pump body. Do not touch the pump, unless the pump has been cut off the power source for more than 5 minutes.Do not remove the pump body, unless the water inside the pump body has been drained out.



Before starting the pump, check whether the pump could operate well by stirring the fan.Then open the injection nut and fill the clean water into the pump body. Make sure there is no air into the pump body and then put the injection screw back.While using a new automatic pump, it's better to turn off the valve to check whether the pump could stop. If the pump stop, it means the pump is well operated.

Note:

1.After filling the water into the pump body for more than 6 minutes, the pump can not start up, then the pump should be stopped working and refill the water into pump body or to check whether there's any leakage in the pipe.
2.If there's any freezing possibility, please open the drain plug,and drain out the water inside the pump body. Before restarting the pump, it's required to refill the water into the full pump body.
3.If the pump will not be used for long time, the water inside the pump body should be drained out. And clean the pump body, impeller and bracket They should also be painted with anti-rust oil and keep the pump in ventilated surrounding.
4.The restart up for pump should be operated as above picture.
5.When the temperature is high, such as in summer, please keep the surrounding ventilated, in case there will be any dew on the motor and cause the malfunction of motor.
6.Please cut off the power immediately while the motor heat or any abnormal condition, you can follow the form below to check the problem and find solution.

Troubleshooting guide

Please turn off the power before repairing the water pump

Fault	Causes	Solutions
The motor runs, but no water comes out	The pump is rotating in the wrong direction	Connection of the west phase of the conversion motor (three-phase motor)
	The pump is not filled with water	Recharge water into the pump
	Impeller damage	Replace the impeller (send it to the repair point for repair)
	The water level is lower than the bottom valve	Adjust the water inlet pipeline so that the bottom valve of the water pump is immersed in the water.
	The suction pipe is subject to air leakage	Check the sealing condition of each joint of suction water pipeline
	The water level is too low, below a certain limit suction range of water	Adjust the installation height of water pump or select a suitable water pump
	Water accumulated in the pipeline or pump cavity causes icing	Do not turn on the machine until the ice is frozen
Under pressure	Incorrect pump selection	Select a suitable water pump
	The inlet pipeline passes too long or turns too much and the diameter of the inlet pipe is not selected according to the regulations	Select the specified pipe diameter to make the design of water inlet pipeline shorter.
	Foreign matter blocks the inlet pipeline, cross-sea network or pump cavity	Clean the pipeline, bottom valve or pump cavity to remove impurities.
	The motor voltage is too low and the wire is too long	Check the motor terminal voltage and lengthen the wire section
Pump vibration	The pump is not fixed on the base	Tighten the anchor bolts
	There are foreign matters in the pipe or pump cavity	Check and clean pipes and pumps
	Insufficient stability of base	Install a more stable base
Intermittent operations of motor Or the stator winding is burnt out	The motor overload operating time is too long	The valves are installed at the water outlet to reduce the water output.
	The impeller is stuck or overloaded for a long time	Remove the sundries in the pump cavity and make the pump work at the rated flow as much as possible.
	Grounding error or cable damage, electric pump is struck by lightning	Find the reason and replace the winding coil.
Water leakage at the bracket	The mechanical seal is worn by impurities	Clean or replace the mechanical seal
There is no pressure or damage to the air pipe	Cause 13 consecutive jumps to enter the 1-hour protection program	Replace the pressure tank and plug it in again
Motor cannot start	Flow sensor: a. The check valve is stuck b. The flow sensor is damaged	Disassemble the induction nut and clean up the condensate and sundries Replace the flow sensor (check valve)
PBC board fault	a. Poor contact of flow sensor b. Damage of PBC board	Disassemble the cover box and tighten the signal wire Repair and replace the PBC board
The pump works and stops normally	The pressure loss caused the pressure switch to start and stop for 13 times and automatically stop for one hour. Check the pressure switch and the make-up water inlet is without flow for 480s and automatically shut down for one hour	Check whether or not the water source and water inlet pipe are blocked

If you still cannot eliminate a fault according to the tips in the above table, please call your local dealer or call our customer service.