



Watering the Life

AQUA series Automatic Booster Pump



Watering the Life

Contents

1.Foreword	1
2.Product Overview	2
3.Model	2
4.Product Structure	3
5.Warnings	4
6.Pipeline Installation	6
7.Electrical Connection	7
8.Start-up & Maintenance	8
9.Common Troubleshooting	9
10.Maintenance Diagram	10

1. Foreword

- Please read carefully this Specification before using the product.
- The manufacturer will not assume any responsibility for any malfunction or loss caused by failure to comply with the precautions specified in the Specification. Please keep all the documents in good condition. If you have any questions, please call us or contact the local dealer.
- The Specification details the installation, use and maintenance of the electric pump and provides important safety information. For the safety of you and others, we kindly request that you read this Specification carefully and strictly follow its recommendations to install, use and maintain the products you purchase. We would like to take this opportunity to thank you for your choice. Your satisfaction is our greatest success!
- If you have any valuable comments, please call the customer service hotline or write to us. We will deliberate on your comment and reply in time whether we will adopt it or not. Thank you for your support!

Note:

- All information, illustrations and specifications herein are subject to the latest product information obtained at the time of publication. As the product is constantly updated, if the nameplate parameters are found to differ from this Specification, the nameplate shall prevail.

2. Product Overview

AQUA series high-pressure self-priming pump is a compact water supply system suitable for home water intake, well water lifting, pipeline pressurization, garden watering, vegetable greenhouse watering and aquaculture. It is also suitable for water supply and drainage in rivers, wells, rural areas, hotels, canteens and high-rise buildings. The power supply frequency is 50Hz, the single-phase voltage is 160-260v, and the three-phase voltage is 380v; see the product nameplate.

Note: The single-phase high-pressure self-priming pump is divided into automatic pump and non-automatic pump. All non-automatic pumps can be converted to automatic pumps. The automatic pump is made up of a non-automatic pump that is added an automatic device which consists of a pressure switch and a pressure tank. The function features: when the power is on and the faucet is opened, the pump will work automatically, and vice versa. If it is used with a water tower, through the connection with an upper limit switch, it can automatically work or stop based on the water level in the water tower.

PH Value: 6-8.5

Ambient Temperature: 0-40 degrees

Liquid Temperature: 0-100 degrees

Relative Humidity: Max. 85% (RH)

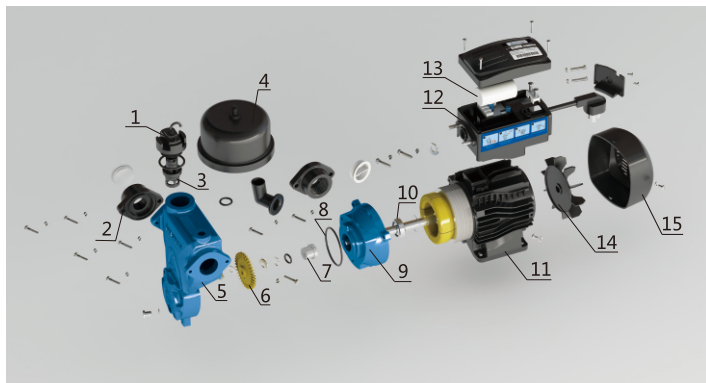
Inlet Pressure: Must be lower than the start value of the pressure switch

3. Model

Model	Voltage/ Frequency (V/Hz)	Output Power (w)	Max.Flow (m ³ /h)	Max.Head (m)	Rated Flow (m ³ /h)	Rated Head (m)
AQUA25	160-260V/50Hz	250	1.8	25	1	12
AQUA30	160-260V/60Hz	370	2.5	30	1.3	13.5
AQUA35		450	2.5	35	1.5	15
AQUA45	220-240V/50Hz	750	3	45	1.5	22
AQUA50	100-120V/60Hz	850	3.5	50	1.5	28

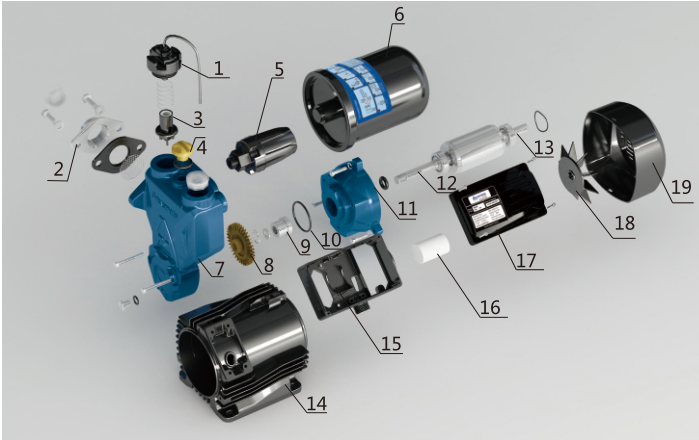
4. Product Structure

AQUA25



1	Flow sensor
2	Inlet flange
3	Check valve carrier
4	Pressure tank
5	Pump
6	Impeller
7	Mechanical seal
8	O-ring

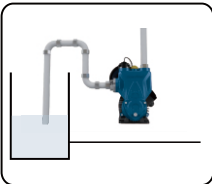
9	Bracket
10	Bearing
11	Rotor and stator
12	Circuit board components
13	Capacitor
14	Fan
15	Fan cover



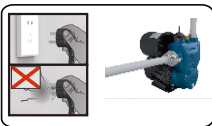
1	Flow sensor
2	Inlet flange
3	Check valve carrier
4	Water fill in plug
5	Pressure switch
6	Pressure tank
7	Pump
8	Impeller
9	Mechanical seal
10	O-ring

11	Bracket
12	Rotor
13	Bearing
14	Stator
15	Circuit cuit board components
16	Capacitor
17	Circuit board
18	Fan
19	Fan cover

5. Warnings

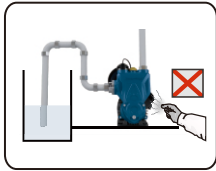
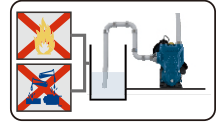


Please follow the Specification strictly when using the product.
 Before connecting to power, please check the insulation resistance carefully to prevent electric leakage.
 The pump should be grounded reliably and equipped with a leakage protection switch.
 Do not touch the product after it is powered on. Do not wash, swim or put live stock in water in the vicinity to avoid electric shock.
 The pump must be first powered o ffbefore repairs in case of any malfunction.



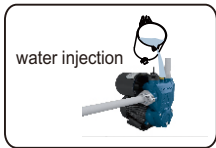
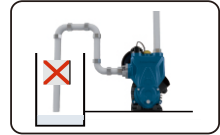
1. The power must be turned o ffbefore installation and maintenance. The pump should be grounded reliably. To prevent electric shock, be sure to install a leakage protection switch. If there is moisture on the plug, it will cause electric shock. Please be careful.

2. Do not use any liquid other than water. When using readily soluble substances like benzoic acid, flammable materials like gasoline and viscous bottleneck liquids, it is easy to cause a fire.



3. During operation, it is strictly prohibited to touch the pump. Do not wash, swim or put livestock in water in the vicinity of the work area in case of accidents. If abnormalities are found during operation, such as abnormal noise, less water outlet and intermittent water flow, the power should be cut off immediately to check and eliminate the fault. When the pump is wet, do not touch the pump when it is powered on in case of accidents. Avoid splashing water on the pump and prevent the pump from immersing in water.

4. Avoid operation in a waterless state, for it will shorten the service life of the pump. When the motor is overheated, it is easy to have malfunctions. Do not expose the pump to direct light during operation, for it will affect the service life of the pump. The automatic pumps will enter the water shortage protection system to protect the pump, so when the user uses the pump for a second time, he only needs to re-plug the plug to use normally (the tap will open automatically).



5. Before starting, first move the fan blade to check whether the pump can operate flexibly; then unscrew the water injection plug, fill the pump with clean water from the water injection hole, then tighten the water injection plug after the air is exhausted. Keep the valve almost closed at startup; when there is water discharged, adjust the valve to have the required flow.

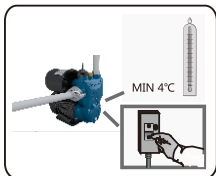
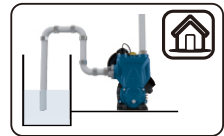


6-1. During installation and maintenance, ensure that the pump won't be accidentally powered on. If it is not used for a long time, close the pipe valves at the water inlet and outlet, and pay attention to cut off the power first.

6-2. The pumped liquid may be hot and under high pressure. Before moving and disassembling the pump, the valves must be closed before draining the pump and the pipe to avoid burns.

6-3. Supply power according to the voltage indicated on the nameplate. If the pump is not used for a long time, it should be stored in a dry, ventilated and cool place at room temperature.

7. If the pump is installed indoors, a drainage system must be arranged near the pump. Prevent the pump from immersing in water, for it may cause the motor to burn out or electric shock. If the pump is not installed as required, which results in the user's property and safety loss, the company will not bear the responsibility.



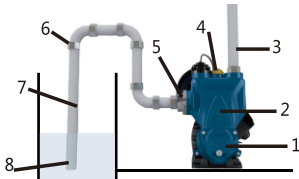
8-1. When the ambient temperature is lower than 4°C, please take antifreeze measures to prevent the pump from frost crack;
8-2. Keep ventilation

9. If you have any questions, please refer to the Specification or contact us.



6. Pipeline Installation

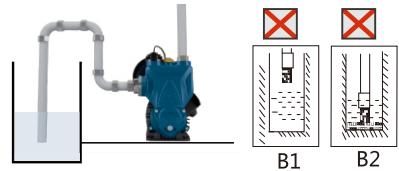
Correct Installation Diagram A



- | | |
|-------------------------|-----------------|
| 1. Drain plug | 5. Water inlet |
| 2. Electric pump | 6. Elbow |
| 3. Outlet pipe | 7. Inlet pipe |
| 4. Water injection plug | 8. Bottom valve |

B: Precautions for water inlet installation:
The inlet diameter should be at least the same as the outlet diameter, so that its pressure drop, high flow and noise can be minimized.

Wrong Installation Diagram B



A: Precautions for installation of water inlet pipe

- When installing the pump, it is forbidden to use soft rubber hose in the water inlet pipe to avoid deviated suction;
- Install the bottom valve vertically and 30cm away from the bottom, so as not to absorb the sediment.
- Each joint of the inlet pipe must be sealed; try to reduce the number of elbows, or it won't be able to absorb water.
- The diameter of the inlet pipe should be at least similar to the diameter of the water inlet to prevent excessive water loss and affecting the performance of water discharge.
- During operation, pay attention to the water level drop, the bottom valve should not be exposed to the water surface.
- The length of the water inlet pipe is greater than 10m, or when the inlet pipe lifting height is greater than 4m, the inlet pipe diameter shall be greater than the diameter of the water inlet.
- When installing the pipeline, ensure that the pump will not be subjected to the pipeline.
- In case of special circumstances, the pump series are allowed to not install the bottom valve, however, in order to prevent particles from entering the pump, the inlet pipe must be installed a filter.

7. Electrical Connection



Do not wire the junction box unless the power is off.

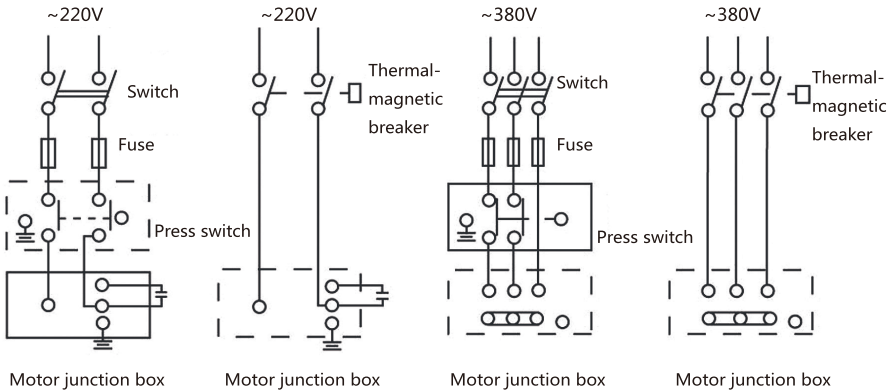
The pump should be grounded reliably to prevent leakage and be equipped with a leakage protection switch.

Electrical connection and protection shall comply with the local regulations.

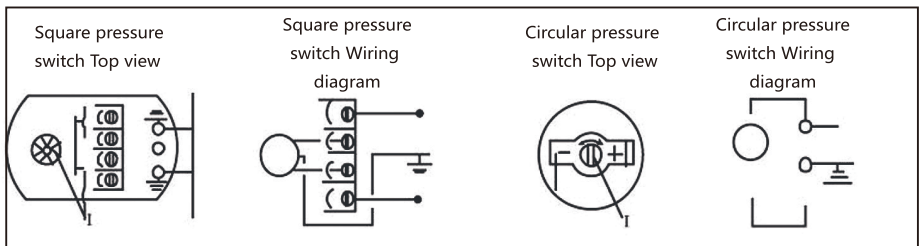
The operating voltage is marked on the nameplate, please ensure that the motor matches the power supply. If the pump operation area is far away from the power supply, the power cord should be properly thickened, otherwise, the great voltage drop will affect the normal operation of the pump. If the pump is used outdoors, the extension cord must use a special rubber cable dedicated for outdoor use.

Check the motor rotation (three-phase motor)

Check if the pump is running normally and the rotation is correct. It can be seen from the vane end: rotating clockwise indicates that the pump is running normally. If the rotation is not correct, cut off the power and swap the two power supply leads.



Automatic Device



(Figure 8 Pressure switch wiring diagram)

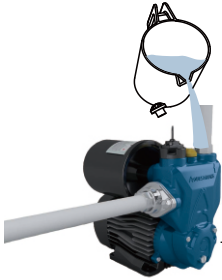
1. When the automatic pump is in use, if it keeps running when the faucet is closed, turn down the breaking voltage of the pressure switch, that is, to rotate the variable nut counterclockwise to obtain a lower switching-on pressure (if it is a circular switch, turn the screw in the ??direction).
2. If the pump starts frequently (starts and stops) when the faucet is closed, check whether the pipeline and the bottom valve are leaking, which should be eliminated in time.
3. If the pressure switch is turned on and off (starts frequently) when the faucet is opened, the user must increase the breaking voltage of the pressure switch. that is, to rotate the variable nut clockwise to obtain a higher switching-on pressure (if it is a circular switch, turn the screw in the ??direction).

8. Start-up & Maintenance



Do not start the pump until the pump chamber is filled with water.
Do not touch the pump unless the pump has been powered off for at least 5 minutes.
Do not remove the pump body unless the water in the pump chamber is fully drained!

Before starting, move the fan blade to check whether the pump can rotate flexibly; then unscrew the water injection plug and fill the pump with clean water. When the air is exhausted, tighten the water injection plug. When starting, the valve should be closed. When the pump is running normally, adjust the valve to have the required flow (the flow and head range shown on the nameplate).



Notice:

1. If there is no water discharged when the pump has been started for 5 minutes, turn off the pump, refill the pump with water, or check the inlet pipe for leaks;
2. If there is any danger of frosting or freezing, please open the drain screw plug to drain the water in the pump chamber. However, when the pump needs to be started again, the water injection plug must be opened to fill the pump with water before starting, and then be tightened before operation;
3. If the pump is not used for a long time, the water in the pump should be drained and the pump body, impeller and bracket must be cleaned, applied anti-rust oil, and put in a ventilated and dry place for standby;
4. When restarting the pump after a long downtime, please follow the above diagram;
5. When it is summer or the ambient temperature is high, pay attention to ventilation. Prevent dew from the electrical parts, for it will cause electrical failure.
6. If the motor is found to be burning hot or abnormal, cut off the power immediately and check the fault according to the following table.

9. Common Troubleshooting

Please carry out troubleshooting only after the power is cut off.

Faults	Causes	Measures
The motor runs but does not produce water	The pump is rotating in the wrong direction	Swap the leads of two phases of the motor (three-phase motor)
	The pump is not filled with water	Refill the pump with water
	The impeller is damaged	Replace the impeller (sent to be repaired)
	The water level is lower than the bottom valve	Adjust the inlet pipe to immerse the bottom valve in water
	Suction pipe leakage	Check the sealing of each joint of the suction pipeline
	The water level is too low, which is lower than the limit of suction lift	Adjust the pump installation height or choose proper
	Freezing of the water in the pipeline or pump chamber	Start the pump after the ice melts
Insufficient pressure	Wrong pump model	Choose appropriate pump
	The inlet pipe is too long, or there are too many turns, and the inlet pipe diameter is not selected as required.	Choose pipelines of the specified diameter, shorten the inlet pipeline as much as possible
	Foreign matter blocks the intersection pipe, filter or pump chamber	Cleanse the pipeline, the bottom valve or pump chamber, eliminate the foreign matter
	The motor voltage is too low, and the wire is too long	Check the end voltage of the motor and the length of the wire
Pump vibration	The pump base is not well fixed	Screw the anchor bolts tightly
	There is foreign matter in the pipeline or the pump chamber	Check and cleanse the pipeline and the pump
	Insufficient stability of the pump	Install a more stable base
The motor runs intermittently or the stator winding burns out	Motor overload operation time is too long	Install a valve at the water outlet to reduce water yield
	Impeller stuck or long-time overload operation	Clean the foreign matter in the pump chamber, make the pump run at the rated flow
	Grounding error or cable is broken or the pump is struck by lightning	Find the cause and replace winding coil
Bracket leakage	The mechanical sealing is worn by impurity	Clean or replace mechanical sealing
No pressure in the air tank or it is damaged	Continuous onset for 13 times and enter the 1-hour protection program	Replace the pressure tank and re-connect it
The motor cannot be started	Flow sensor: a. The check valve is stuck b. The flow sensor is damaged	Disassemble the sensor nuts to clean the coagulum and debris Replace the flow sensor (check valve)
PBC panel fault	a. Poor contact with the flow sensor b. PBC panel damage	Disassemble the cover box and screw up the signal cable tightly; repair and replace the PBC panel
The pump stops during normal operation	The pressure loss causes the pressure switch to start and stop continuously for 13 times, and automatically stops for 1 hour. Check the pressure switch and make up. The water inlet has no flow for 480 seconds, and the machine automatically stops for one hour.	Check the water source and the inlet pipe to see whether there is any congestion

If you still can't solve any specific fault according to the above table, please call the local dealer or our customer service hotline.

10. Maintenance Diagram

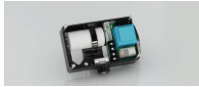
Problem	Resolution
Pump non-stop failure (premise)	1. Pipeline inlet and outlet must be sealed;
	2. Pressure value of pressure switch must reach stop pressure;
	3. Area of water inlet pipeline must not be too small; blockage shall be avoided; water source shall be secured;
	4. Water pump seal problem;
Pump Non-stop failure	1. Circuit board problem;
	2. Pressure switch problem;
	3. Flow sensor problem;

1. Resolution of circuit board problem

Check circuit board problem during the running of pump.



first, open the box cover with screwdriver



expose the circuit board



connect the 1st and 4th screws with power cord



connect the 2nd and 3rd screws with power cord

Check steps	1. Open the box cover with screwdriver as shown in Figure 1;
	2. Remove the box cover and expose the circuit board as shown in Figure 2;
	3. Check the positions of the 1st and 4th screw with universal meter as shown in Figure 3; observe whether output voltage is 220v? ??will be displayed if there is no power; in such a case, replace the circuit board;
	4. Check the positions of the 2nd and 3rd screw with universal meter as shown in Figure 4; observe input voltage; ??will be displayed if there is no power; in such a case, replace the circuit board;

2. Resolution of pressure switch problem

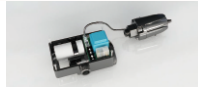
Check pressure switch problem during the running of pump.



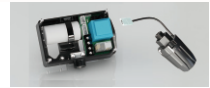
first, open the box cover with screwdriver



expose the circuit board



lift up the pressure switch plug with screwdriver



pull out the pressure switch plug; if the water pump stops, then, the pressure switch has been damaged



check any poor contact of the plug



adjust the pressure of the switch reach stop pressure with screwdriver



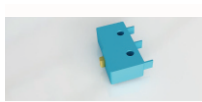
first, remove 4 screws



take out the white rubber gasket



check whether the gasket has been damaged



stick against the small yellow point at the bottom of micro-switch with screwdriver to check any abnormality

Check steps	1. First, open the box cover with screwdriver as shown in Figure 1;
	2. Remove the box cover and expose the circuit board as shown in Figure 2;
	3. Lift up the pressure switch plug with screwdriver as shown in Figure 3;
	4. Pull out the pressure switch plug as shown in Figure 4; if the water pump totally shuts down, it means that the pressure switch has been damaged;
	5. Check any poor contact condition of the pressure switch plug as shown in Figure 5;
	6. If loose of hexagonal socket head occurs as shown in Figure 6, hexagonal socket head wrench shall be employed to make the pressure of the pressure switch reach the stop pressure;
	7. Remove four screws and take out the white rubber gasket as shown in Figure 7-8;
	8. Check whether water leakage is caused by the damaged rubber gasket as shown in Figure 9; if yes, replace the gasket;
	9. Stick against the small yellow point of the micro-switch with screwdriver as shown in Figure 10 to check any abnormality; if any, replace the micro-switch;

3. Resolution of flow sensor problem

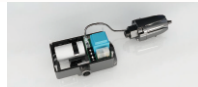
Check flow sensor problem during the running of pump.



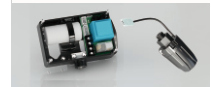
first, open the box cover with screwdriver



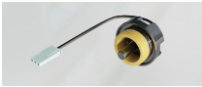
expose the circuit board



lift up the flow sensor plug with screwdriver



pull out the flow sensor plug; if the water pump totally stops, then, the flow sensor has been damaged



check any poor contact of the plug



disconnect check valve with sensor to check whether it is energized



connect the check valve with the sensor to check whether it is energized; if not, then, the reed switch in the sensor has been damaged

Check steps	1. First, open the box cover with screwdriver as shown in Figure 1;
	2. Remove the box cover and expose the circuit board as shown in Figure 2;
	3. Lift up flow sensor plug with screwdriver as shown in Figure 3;
	4. Pull out the flow sensor plug as shown in Figure 4; if the water pump totally shuts down, it means that the pressure switch has been damaged;
	5. Check whether the 3-plug is properly plugged in the circuit board; if not, plug in place;
	6. Check any poor contact condition of the sensor plug as shown in Figure 5;
	7. Disconnect the check valve and sensor to check whether it is energized as shown in Figure 6;
	8. Connect the check valve and sensor to check whether it is energized as shown in Figure 7; if not, it means that the reed switch in the sensor has been damaged, then, replace the reed switch;

Problem	Resolution
Water pump startup failure	Circuit board problem
	Power cord problem; check any poor contact and voltage falling below 130V;
	Motor problem; check whether secondary winding has been burned, or protector been damaged or scrapped;
	Impeller jammed; check any debris; if any, clean the debris
	Mechanical seal problem; check, clean, or replace the mechanical seal;
	Capacitor damaged; check and replace the capacitor;
	Bearing jammed; check and replace the bearing;
Frequent startup of water pump	Flow sensor, (low flow not in function);
	Check water/air leakage of the pressure tank; if air pressure falls below requirement, inflate as per actual pressure value
	Water outflow volume is eminently lower than inflow volume at the water tap; valve on the water inflow pipeline of the water pump shall be adjusted until approximate balance has been reached;
	Leakage of high/low pressure zone (leakage of diaphragm); check or replace pump casing;
Pump works normally but water fails to be pumped out	In this case, first, check the water pump seal: unplug the power plug, block the water suction port by hand, fill up the water pump with water, blow air into the water outlet by mouth, and observe any water leakage; the position where water leakage occurs means its seal has been damaged; common fault parts include water suction gasket, water outlet gasket, impeller cover gasket, etc., which shall be properly replaced during maintenance;
	Check air leakage of the water inflow pipeline; if any, correspondingly resolve;
	Suction lift is too high or suction pipeline is too long; adjust the suction lift or shorten the suction pipeline;
	If full water phenomenon is unavailable, it may be caused by damaged impeller, corrosion of inner water retaining diaphragm between the water suction room and water outflow room, worn flat of water retaining diaphragm for the pump head, increase of gap between the impeller and pump housing, etc.; properly replace the impeller and pump housing; when replacing impeller, residual copper blade in the pump shall be thoroughly removed, so as to prevent damaging new impeller;
Motor continues operation while water tap has been closed	Rotation speed of the motor is too slow; check whether the voltage is normal;
	Water level falls below the suction lift (decrease the pump installation height)
Motor heating	Pressure of water outflow pipeline falls below close pressure of the switch, such that complete disconnection of switch cannot be secured (request technician to properly decrease pressure value of the pressure switch: first, cut off power supply, remove cover of pressure switch, slowly turn towards the direction until proper position);
	Valve housing is not perpendicular with the horizontal plane, which cause the piston being jammed; perpendicularity shall be properly adjusted;
	Loose or unsealed of bolt for weighing block at inside of valve housing; tighten the bolt for weighing block;
Why low flow occurs when water pump is placed on roof	Check whether it is tight between the valve port and pipeline joint; tighten the joint of bottom valve;
	Water pump should be arranged near to the well and pipeline should not be too long;