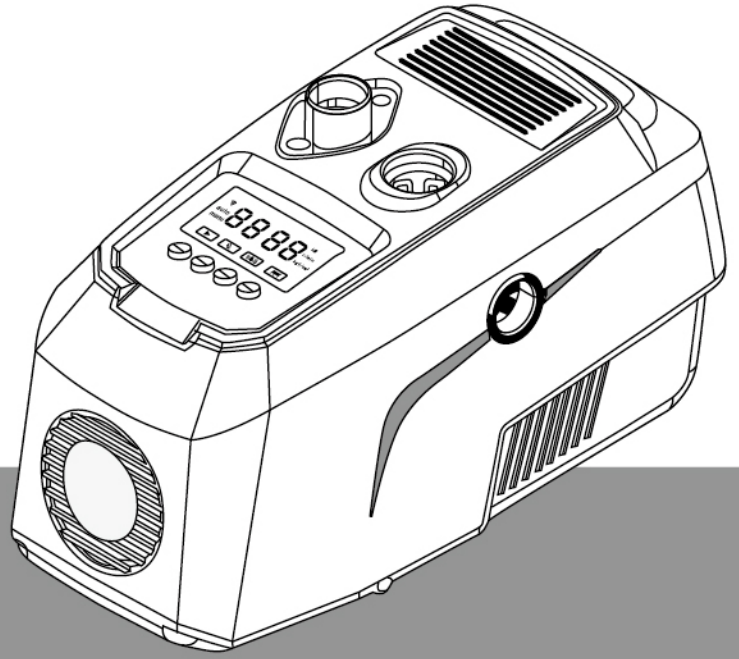
HafPompe

HYDROBOX 900

ALL IN ONE STRUCTURE
INTELLIGENT PUMP



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1 SAFETY CAUTIONS

In this manual or on the machine, the following symbols are used:

DANGER: Denotes risk of personal injury or deaths.

CAUTION: Denotes medium risk of personal injury or damage to the tool.

1.1 Check before installation

Please read this manual carefully before installation.
Installation and operation must comply with current safety regulations in the country where the product is installed.
If the product is damaged or parts are missing, do not install or operate it. Failure to do so may result in equipment damage or personal injury.

1.2 Installation

1.2.1 Please support the bottom of the product when installing and moving. Do not just hold the case to prevent the product from being damaged. Never use the power cable to carry or move the product.

1.2.2 The product should be installed away from flammable and explosive materials, away from heat sources, and installed on flame retardant materials such as metal.

1.2.3 When using in an enclosed environment, install fans or other cooling equipment and set vents to ensure that the environment temperature of the product is lower than 45℃. Otherwise, the service life of the product may be reduced or the product may be damaged due to the high environment temperature.

1.2.4 There must be a shield to prevent sunlight and rain when the controller is installed outdoors.

1.3 Wiring

1.3.1 Please confirm that the rated voltage and frequency of the product are consistent with the voltage and frequency of the input power supply before wiring,otherwise the controller may be damaged and result in serious injury.

1.3.2 Theground wire of product must not be connected incorrectly and must be reliably grounded; otherwise, the pump case may be charged with electricity and lead to serious injury.

1.3.3 The carrying capacity of the supply cable must be greater than the rated current of the product.

1.4 Debugging ⚠

1.4.1 When the product is powered on, the controller will resetautomatically and restart the function. Please take safety protection measures to the corresponding equipment in advance.

1.4.2 It is strictly forbidden to disassemble the cover while the product is running, otherwise it may cause electric shock.

1.4.3 The product should be set according to the operation steps in the manual when debugging. If it is not operated properly, the product may be damaged. The parameters preset when the product leaves the factory have met most of the pump operating requirements. If not necessary, do not modify the control parameters randomly.Otherwise, it may cause equipment damage.

1.5 Maintenance and inspection ⚠

1.5.1 If the product is damaged, it must be replaced by the manufacturer or its authorized technical support service to avoid any risk.

1.5.2 Wait for at least 5 minutes after power failure and observe that the indicator lights are completely off before performing maintenance and inspection, otherwise it may cause electric shock.

1.5.3 Do not pull the cable and remove the plug from the socket.

Failure to observe safety cautions may pose a risk to persons or property and invalidate the product warranty.

2 PRODUCT DESCR IPTION

2.1 Product Overview

Not like traditional water pumps, HYDROBOX 900 is featured with home appliance design, ultra-silence, easy control, simple installation, intelligent constant pressure control, and widely used in home and villa water supply pressurization.

- Applying Permanent magnet motor, wide voltage, 85% motor efficiency
- Frequency inverter control, frequency up to 60HZ, effective noise control
- Global Top design, exquisite appearance, compact structure, easy operation
- "TWO" control modes: automatic and manual mode
- Built-in soundproof cotton, reduce noise effectively
- Intelligent control system, comprehensive automatic protection, reliable use

2.2 Model Description

HYDROBOX900

- Input Motor Power（W）
- All-in-one Structure Intelligent Pump

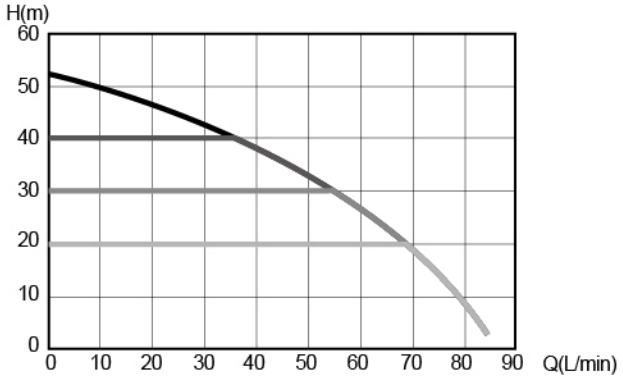
2.3 Performance Parameters

Electrical parameters
Power supply：1~ 160-250V/50HZ~60HZ
Input Power：900W
Output Power：0.66KW

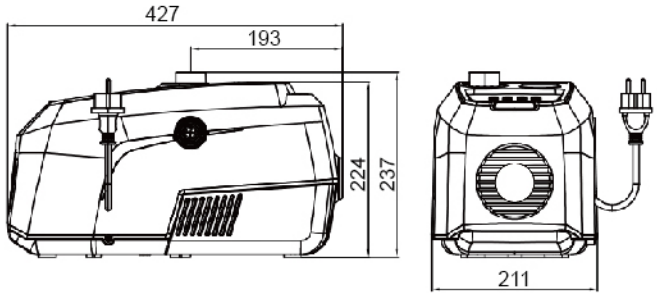
Performance parameter
Maximum head: 50m
Maximum flow: 5.2m³/ h
DNA:1 "G
DNM: 1 "G
Maximum pressure: 6bar
Protection level: IP54

Materials
Pump body: Plastic MPPO
Impeller: Plastic MPPO
Machine seal: ceramic / graphite
Shaft: Stainless steel
Bearing: NSK
Motor housing: aluminum alloy
Pressure tank: stainless steel diaphragm tank
Sensor: Pressure type

2.4 Performance Curve



2.5 Overall Dimension



2.6 Working Condition

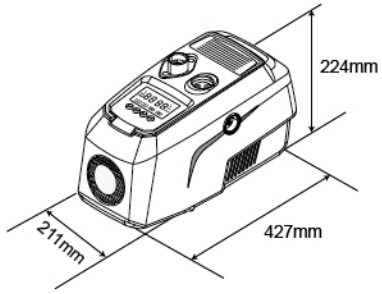
Pumped medium: Clear water and other liquids with physical properties similar to clear water
Environment temperature: 0-45℃
Environment humidity: max.85% (RH)
Medium temperature: 0-55℃

3 Installation instructions

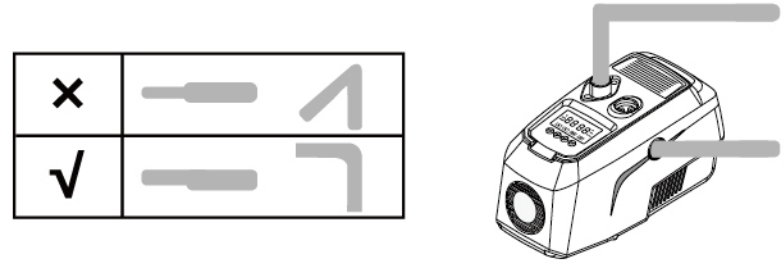
3.1 Product Structure

3.2 Installation Steps

3.2.1 Put the product in place. Please ensure that the product is placed in a safe and stable place with enough space aroundit.



3.2.2 Connect the inlet and outlet pipes. Use 1"G male threaded quick connector to connectthe water inlet and outlet respectively. Please ensure the connection is sealed properly and no leakage.



⚠ Note:
1. The inlet pipe should minimize the elbows and reduce the suction resistance.
2. To ensure normal water flow, the inlet pipe diameter should be at least the same as inlet diameter, so as to avoid wasting water power and weakening the water performance.
3. Make sure that the product is not affected by the pressure of the pipeline when setting up the pipeline.
4.If you are not sure whetherthe pumped water is clean or not, install a suitable filter at the inlet.

3.2.3 Open the exhaust knob, fill with water(900ml) and exhaust until the water overflows, tighten the knob; If there is pressure at the inlet (0.5Bar), open the faucet directly until the water flows out normally.

⚠ Note:
1. Complete the water-filling when you use the product for the first time.
2. During the use, the water supply is stopped due to water shortage in the inlet pipe. After the water supply is resumed, if the outlet pressure is insufficient or there is no water flow, please fill water again and resume normal use.

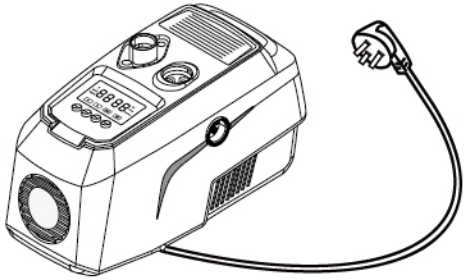
3.3 Connect Power Cable

⚠ Note: the wiring of the product must be in strict accordance with the requirements of this manual, otherwise the product will be damaged! Products must be properly and safely grounded in accordance with current regulations.

Before connecting the power supply, make sure the voltage and frequency on the nameplate are consistent with the power supply system.

Power outlets should be installed in dry areas, away from any possible water source.

Electrical installation must be performed by a professionally qualified electrician.



4. COMMISSIONING

4.1 Control Panel

The control panel of the HYDROBOX 900 is shown below:

Key Function:

keyboard	Operation Mode	Working State	Function
⏻	Short Press	Automatic	Switch betweenRun and Stop
		Manual	Switch between Run and Stop
		Set Up	Confirm and Return
⊕	Short Press	Automatic	Adjust the Setting Pressure step-by-step
		Manual	Adjust the Pump Speed step-by-step
		Set Up	Adjust the Parameters step-by-step
	Long Press	Automatic	RapidContinuous Regulation
		Manual	RapidContinuous Regulation
⊖		Set Up	RapidContinuous Regulation
	Long press at the same time	Automatic	Enter Parameter Settings
		Manual	Enter Parameter Settings
⚙	Short Press	Automatic	Cyclic Switch-over Data Display
		Manual	Cyclic Switch-over Data Display
		Set Up	Cancel And Return
	Long Press	Automatic	Switch Between Automatic And Manual Mode
		Manual	Switch Between Automatic And Manual Mode

4.2 Indicator Light

▶ In automatic and manual mode, the lightis on when pump running and off when pump stopping.

🔕 When there is no water in the pipeline, this fault light will be on. After the water shortage lasts for 30 seconds, it will start three times. After confirming the water shortage, it will stop completely. The red indicator light is continuously on, indicating the state of "water shortage".At the same time, it enters the automatic detection stage. At a certain interval, the pump start and the water shortage is determined

again. The detection time is 1 hour, 2 hours, 4 hours and 8 hours. If the water shortage continues, the detection time is 8 hours.
When there is water detected, the pump will start automatically.

When there is a failure preset by the system, the fault light will continue to light up and the display screen will display the fault code. When the failure is eliminated, the indicator light will go out automatically and the display screen will restore the real-time pressure valueautomatically.

When there is leakage in the pipeline, the indicator light will continue to light up; After the leakage is eliminated or the faucet is opened, the indicator light will go outautomatically ; The indicator light with leakage does not affect the normal water use;

4.3 Quick Debugging

4.3.1 When the inverter is electrified for the first time, the default operation mode isautomatic, and the inverter starts automatically.

Set pressure at 3.0kgf /cm
Starting pressure at 2.5kgf /cm

4.3.2Pressor ⊕ or ⊖ to adjust the set pressure. Short press once, the display showing real-time pressure value is switched to the set pressure value. Meanwhile the set pressure value is flashing.Press the regulation button to adjust the working pressure value. The minimum adjustment amount is 0.1kgf/cm². After adjustment, the set working pressure flashes for 5 seconds, then exits and switches to the real-time pressure display;

The pressure value can be calculated according to the following methods:
P - set pressure
H—vertical height from the pump outlet to the highest water point(m) ;
P=H/10+1.0kgf/cm²;
Note: conversion of pressure and head: 1.0kgf/cm² ≈ 10m

4.4 Automatic and Manual Mode

4.4.1 The automatic mode is constant pressure and frequency conversion water supply mode. According to different water consumption, the system will automatically adjust the pump operating frequency to keep the pump outlet pressure at the set pressure value. If the water consumption is 0, the system will automatically stop to save energy. This method can supply water continuously and stably without human intervention.

4.4.2 Manual mode is a working mode designed for failure of sensor. In other words, when automatic constant pressure water supply is not available, it can be switched to manual mode and the pump speed can be adjusted by pressing ⊕ or ⊖ manually to realize continuous water supply in case of sensor failure.

Note: in manual mode, when the system is powered on again after power failure, it will operate fromprevious working state before power failure.

4.4.3 Switch between automatic and manual mode
Short press the button ⏻ to stop the inverter, then long press the button ⚙ to switch between automatic and manual mode:
When switching to automatic mode, the screen displays real-time pressure; When switching to manual mode, the screen displays the real-time speed.
After mode switching, the system is shut down. Press the button ⏻ to start the water pump.

4.5 Parameter Setting

Long press ⊕ and ⊖ at the same timeto enter the parameter setting, press ⊕ or ⊖ to adjust the parameter. Short press ⏻ to enter the parameter value adjustment, press ⊕ or ⊖ to adjust the parameter value.Short press ⏻ again to save and return.Short press ⚙ to return and do not save the parameter value.

5 FAILURE AND TROUBLESHOTTING

NO.	Code.	Failure	Troubleshooting
1	LP	Water shortage protection failure	Related to F002, when the pump reaches the water shortage protection value, it will enter the protection state (check whether the water source is short of water).
2	0C	Over temperature	Related toF010, the temperature is higher than the over-temperature protection value, and the protection state is effected (check whether the temperature of the radiator is too high).
3	LL	Continuous operation protection	Related to F017, when the continuous running time of the water pump reaches the protection value, it enters the protection state.
4	LU	Low voltage	Related to F020, the voltage is lower than the low voltage protection value, and the protection state is effected (check the power supply voltage value).
5	OU	Over voltage	Related to F021, the voltage is higher than the overvoltage protection value, and enter the protection state (check the power supply voltage value)
6	0CP	Overpressure protection	When the water pressure of the pipeline exceeds the maximum range of the pressure sensor, the over-pressure protection will be displayed (check whether the water pressure exceeds 1Mpa).
7	EAA	Communication Failure	The communication between the drive board and the display board is interrupted and enters the protection state (check whether the connection cable is plugged in firmly)
8	EH	Motor blocked	1. Caused by motor insulation (test the insulation value of motor coil);
			2. The impeller is stuck (check if there is any foreign matter inside the pump body, and whether the impeller is stuck)
9	EP	Motor Phase Failure	1.Poor welding of coil lead wire (repair welding point);
			2. The wire terminal falls off or has poor contact (replace the terminal or drive plate);
			3. Coil damage (replace coil)

Foreword

Thank you for choosing HYDROBOX 900 all in one structure intelligent pump. In order to use the product better and ensure your safety, this manual provides detailed operating instructions and parameters. Please read the manual carefully before installation, operation, maintenance and inspection. Save the manual for future reference.

Make sure that the electrical wiring and pump steering is correct.