



Water Distillation Unit

FM-WDU-A103

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1. Safety Measures

Safety Guidelines for Water Distillation Unit

- 1) **Water Quality Requirements:** Only use natural or well water that has been chemically treated to meet the water quality standard before use.
- 2) **Water Pipe Material:** Use high-temperature-resistant materials for the piping between the distilled water outlet and the overflow outlet to prevent deformation or collapse due to prolonged exposure to hot water.
- 3) **Continuous Water Supply:** Ensure a stable and uninterrupted water supply during operation. Fluctuating pressure or water outages may result in overflow or damage from dry burning.
- 4) **Grounding Requirement:** The equipment must be properly grounded to ensure safe operation.
- 5) **High Surface Temperature Warning:** Avoid contact with the surface of the equipment during operation, as it can become extremely hot and may cause burns.
- 6) **Distilled Water Outlet Pipe:** The outlet pipe should be short and must not be inserted into the receiving container. Clean and flush the pipe with distilled water before use, and ensure it remains unblocked to avoid steam failure, leakage, or overflow.
- 7) **Overflow Pipe Precautions:** The pipe connected to the overflow outlet should also be short and unblocked. Obstructions can lead to boiling over and cause water to escape from the exhaust or intake outlets.
- 8) **Electrical Component Inspection:** Regularly inspect all electrical components to ensure they are functioning correctly and safely.
- 9) **Trained Operation:** Only trained personnel should operate the distilled water equipment. When changing operators, ensure a thorough handover and clear explanation of procedures.
- 10) **Outlet Positioning:** The distilled water outlet must be positioned higher than the receiving container to allow proper drainage and prevent backflow.
- 11) **Discharge Valve Caution:** Do not open the discharge valve while the equipment is operating.

2. Introduction

Water Distillation Unit FM-WDU-A103 produces 10 liters of distilled water per hour. It features an advanced condenser that effectively converts steam into pure distilled water while maintaining consistent purity levels. Our Distillation Unit includes a built-in monitoring system that provides real-time alerts to ensure safe operation.

3. Features

1. Precision-Crafted Premium Stainless Steel
2. Superior Corrosion Resistance
3. High-Efficiency Heat Exchange
4. Rapid Power Cut-Off for Safety & Efficiency

4. Specifications

Model No.	FM-WDU-A103
Water Yield	10L/H
Heating Power	7.5KW
Voltage	380V 50Hz
Dimension	360×250×770 mm
Package Dimension	450×340×880 mm
Gross Weight	8 kg
Net Weight	7 kg

5. Applications

Water Distillation Unit is ideal for Scientific Laboratories, Pharmaceutical Industry, Cosmetic Industry, Environmental Testing, Medical and Healthcare Industry, Chemical Industry, Food and Beverage Industry.

6. Structure Introduction

- 1) This product is made of imported high-quality stainless steel and adopts the technology of stamping.
- 2) It has functions of water-deficient and power-off alarm and automatically makes up water and heat again.
- 3) With power, heating instructions, and water display.
- 4) It adopts the working principle of the electrode to prevent electrode fouling due to long working hours, and a lack of water power cannot function properly.

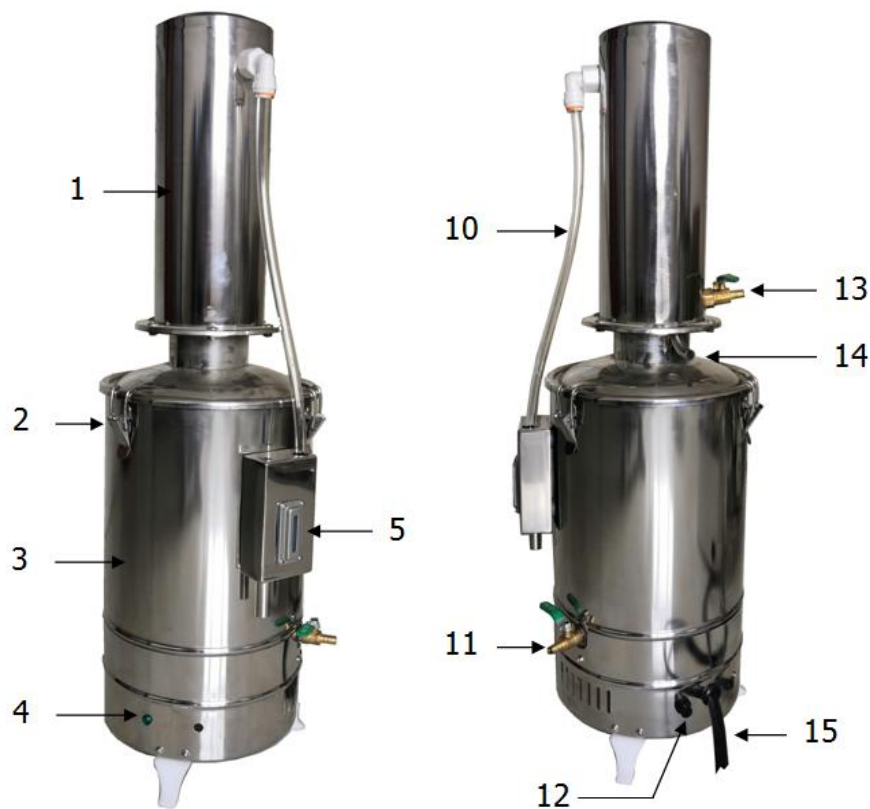


Figure-1 (Front and side)

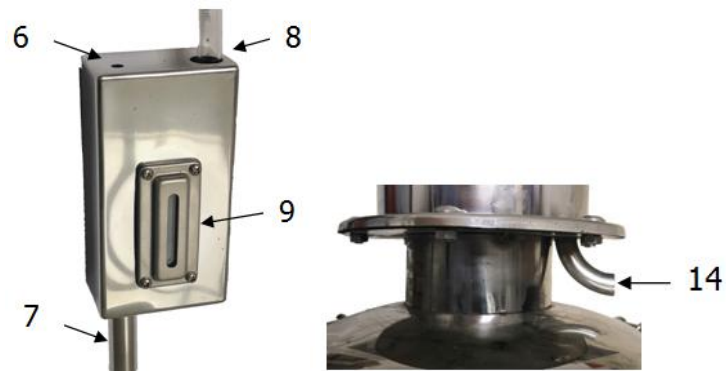


Figure-2 (Level Control and Distilled water outlet)

- | | |
|-------------------------|----------------------------|
| 1. Condenser | 9. Liquid level indicator |
| 2. Hook | 10. Return pipe |
| 3. Evaporation chamber | 11. Water discharge valve |
| 4. Heating indicator | 12. Reset button |
| 5. Water level observer | 13. Water inlet valve |
| 6. Vent | 14. Distilled water outlet |
| 7. Overflow port | 15. Power supply |
| 8. Inlet | |

7. Installation

Installation Assembly

- 1) Take each part of the product out of the package and place the evaporation chamber on the ground.



Figure-3

- 2) Put the white sealing ring on the top so that it is completely stuck to the edge of the chamber.



Figure-4

- 3) Put the evaporator on the sealing ring, adjust the return water pipe connector so that it is in a straight line with the water inlet of the water level observer, and then buckle the hook.
- 4) Remove the orange card from the fast connector of the backwater pipe, insert it into the backwater pipe, and then re-clamp it.



Figure-5

8. Operations

The following is to introduce the water automatic control type. The common type uses the same method with steps 8 and 9.

- 1) Place the distilled water device in a position convenient for supply and drainage, check whether the power supply voltage is consistent with the rated voltage of the product, and install the leakage protection switch and grounding wire in the power line.
- 2) Use the hose to connect the tap water valve and the water inlet valve. After the hose is inserted into the water inlet valve, it is recommended to install a hose hoop or clamp and other fastening materials to prevent the hose from falling off the valve due to the excessive water pressure.
- 3) Insert the overflow outlet into the hose, and connect the other end to the sewer. Note that the length of the hose should not be too long, and there should be no bend to block the flow of water.
- 4) Connect the outlet of distilled water with the bucket of distilled water, and the outlet should not be put into the water.
- 5) Connect the water discharge valve to the sewer with the hose. This valve is only used to release the wastewater in the heating barrel, and it can be closed at ordinary times.
- 6) Open the water inlet valve. (**Note:** Tap water pressure is relatively large; do not open the tap water valve too much. Opening it a little can flow through the water.) Tap water from the inlet valve into the cooler, from the return pipe into the level viewer, and finally into the evaporator. When the water level rises to the center of the liquid level observation window or the overflow port begins to overflow, close the inlet valve.
- 7) Switch on the power, the green light is on, and the water device starts to work. When the water in the bucket is about to boil, open the inlet valve (but it should be noted that the water flow should not be too large at this time), and slowly adjust the injection amount of cooling water until the water in the bucket is in a slightly boiling state or the distilled water can continue to flow out normally. (At this point, water will flow out of the overflow, which is a normal phenomenon.)



Normal state



Alarm state

Figure-6

- 8) When the water pressure decreases, the water in the bucket is constantly heated and consumed. When the water level is lower than a certain level (generally about one centimeter lower than the highest point of the heating tube), the water device stops working, the green indicator light goes off, and the black rod in the middle of the reset button pops out.
- 9) For safety reasons, the reset operation must be carried out if it is necessary to continue the work; otherwise, the water device will not continue to work even if the water pressure returns to normal. Unscrew the black protective cover outside the reset button and press the black pole in the middle. At this time, the green indicator light will be on, and the water device will return to normal. The state of the reset button is shown in the figure below:

9. Maintenance

Maintenance and Cleaning Guidelines for Water Distillation Unit

- 1) **Daily Cleaning of Heating Barrel:** After each use, the inside of the heating barrel should be thoroughly rinsed and the remaining water completely drained. Refill with fresh water before the next use to maintain water quality and ensure optimal performance.
- 2) **Condensing Cooler Pre-Steamming:** As the condensing cooler is made of metal, it requires pre-steaming before use.
Initial Use: Run the equipment for 10–16 hours for pre-steaming. Distilled water should only be used after it passes the required quality test.
Routine Use: After each operation, perform a 30-minute pre-steam cycle before the next use.
- 3) **Removal of Mineral Residue and Impurities:** During operation, impurities from evaporated water especially untreated tap water will accumulate in various parts of the system, including
 - The bottom of the heating barrel.
 - The electric heating element surface.
 - The inner walls of the condenser shell.
 - The return pipe and external surfaces of the condenser.
- 4) Over time, this buildup can restrict water flow, reduce condenser efficiency, and lower the distilled water output rate.

Cleaning Procedure:

- Begin by gently brushing off surface sediment.
- Depending on the type and amount of residue, use an appropriate descaling or specialized cleaning solution.
- Take care not to apply excessive force to avoid damaging components.

10. Troubleshooting

Fault phenomenon	Reason analysis	Solution
No distilled water or boiling, level viewer to turn the water outwards.	The accumulation of scale blocked the pipeline.	Clean up the scale.
	Clogged or long and bent piping connected to the overflow.	Shorten the pipe length and clear the blockage.
	The tap water pressure is unstable.	Control the water pressure.
Distilled water comes out at first, but after cooling, water is injected, and no distilled water comes out.	Cooling water is too much.	Open the inlet control valve to the minimum and slowly adjust the water in the barrel to a slightly boiling state.
The green light is flashing.	Low water level causes alarm.	Press the reset button.
	No power.	Turn on the power.
No heating or heating time extension.	Heating pipe broken	Replace the heating pipe.
Insufficient water yield of distilled water.	The cooling water is too large or not enough.	Adjust the water injection rate.
	The water pressure instability.	Adjust the water pressure.