

USER'S MANUAL

Electric water heater

STORAGE ELECTRIC WATER HEATER

B



CBCE 
Made BY MLELECTRONICS

ML-FHES1-60L

Dear customers

Sincerely thank you for choosing this electric water heater, please read before use and properly keep this manual, correctly grasp the installation and use of electric water heater, in order to make full use of its excellent performance. Thank you for your cooperation!

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Product description

Application and characteristics

1. The inner tank is made of high-quality steel plate + enamel, anticorrosive and durable; high-density polyurethane materials, the overall foam into a smaller thermal conductivity of the Insulation layer, good heat preservation performance.

2. Intelligent computer control, with "Compact, Half tank heating, Whole tank heating, Endless hot water, Timer, Anti-bacteria" and other modes of operation . LED large screen display current water temperature, set water temperature, fault alarm code, etc. A variety of indicator lights to indicate the working state, with remote control, intelligent anti-freezing and power failure memory function.

3. Wide range of applicable water pressure. Large capacity can be used for several water points at the same time; with anti-corrosion device to make the product durable.

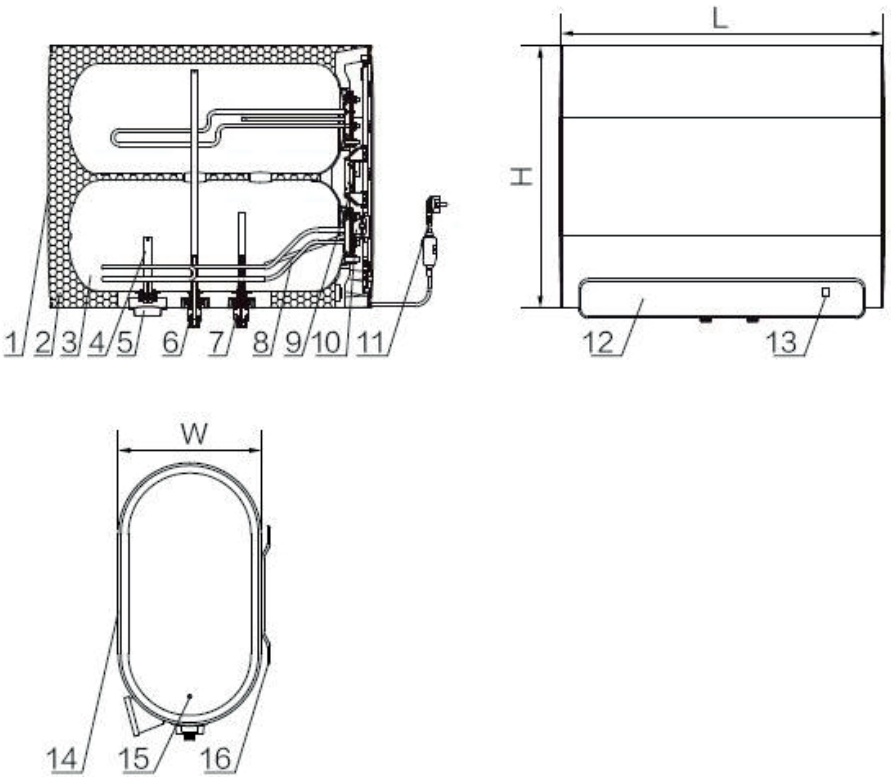
4. Water pressure overpressure protection (when the water pressure is higher than or equal to 0.7MPa, automatic pressure relief); the use of electric fence technology to protect you and your family. With independent sewage outlet, you can clean the inner tank at any time to take care of you and your family's health.

5. With over-temperature protection, anti-hot water backflow and other multiple protection, safety is more secure.

Technical specification

Model	ML-FHES1-60L
Rated voltage	220V~
Rated frequency	50Hz
Rated power	3300W
Capacity	60L
Dimension (mm)	794×558x305
Waterproof degree	IPX4
Rated pressure	0.7MPa

Product Schematic

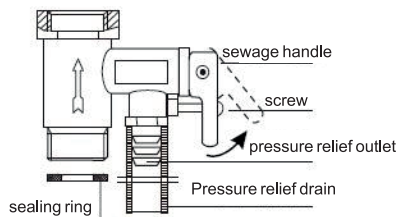
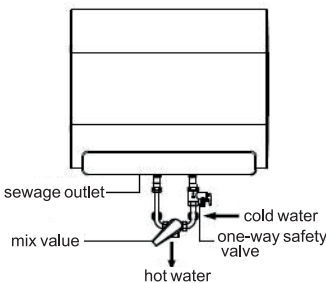


(Outline structure for reference only)

- 1、 Left end cap 2、 Insulation layer 3、 Enamel tank 4、 Magnesium rod 5、 Drainage pipe cover
- 6、 Water outlet anti-electric wall assembly (red) 7、 Water inlet anti-electric wall assembly (blue)
- 8、 Heating element 9、 Power board 10、 Thermal circuit breaker 11、 Leakage insurance power cord
- 12、 Operating panel 13、 Anti-electricity protection safety mark 14、 Right end cover
- 15、 Maintenance cover 16、 Outside hangers

Precaution

1. In the event of an abnormal condition of the grounding system other than the appliance, stop using this electric water heater immediately. Unplug it from the power supply or disconnect all connections with the power supply circuit and contact our maintenance personnel to deal with it.
 2. The power socket must be connected strictly according to the correct position of the fire wire, zero wire and ground wire, or it may lead to abnormality.
 3. The electric water heater must be reliably grounded! Connect to a separate, unswitched fixed socket with good grounding, using 220V ~/50Hz power supply.
 4. The rated current value of the fixed socket should not be lower than the rated current value of the electric water heater. The structure of the fixed socket should match the power plug of the electric water heater to be installed. The fixed socket should match the power plug of the electric water heater to be installed and the fixed socket and power plug should be kept dry to prevent leakage.
 5. The water inlet must be fitted with the original 0.7MPa one-way safety valve, and regular manual discharge (once a quarter) to prove that there is no blockage.
Action method: remove the screw on the one-way safety valve, drain the handle upward trigger to the horizontal position, if there is water from the pressure relief port, then it proves that there is no blockage; if there is no water flow out, note that the drain handle must be reset and notify our maintenance personnel to overhaul.
 6. The first time you use it or use it again after emptying the water, you must first fill up the water (water flowing out of the outlet) before turning on the electricity to heat. When filling water, the electric water heater has at least one faucet at the outlet. There is at least one faucet open to exhaust air. Normal use of the drain must be plugged tightly, can not leak.
 7. During the heating period, water droplets may drip from the one-way safety valve, which is a normal phenomenon. Please note that the pressure relief port of the one-way safety valve is at a higher temperature to avoid burning the body.
- Note:** Never block the pressure relief port, so as not to discharge the pressure normally, resulting in the burst of the inner tank of the electric water heater.



**8. The pressure relief lead pipe on the connection relief port should be kept downward sloping installed in a frost-free environment and ensure that it is connected to the atmosphere, the pressure relief lead pipe
There must be a floor drain with sufficient drainage capacity near the pipe so that it cannot be drained.**

9. If the setting temperature exceeds 50 °C, in order to avoid scalding, please do not first use the nozzle to the human body, must be mixed with cold water, to be adjusted to the appropriate water temperature before using.

10. If the user's water pressure is too large (one-way safety valve often drain water), you need to try to install a pressure-reducing valve away from the electric water heater.

11. Electric water heater in and out of the water piping and other connecting pipes, fittings must be used temperature ≥ 100 °C, pressure ≥ 0.85 MPa non-conductive plastic pipe, such as PPR pipe.

Installation Notes

Installation precautions

This machine must be installed by professional installers!

1. Professional installers are prepared to install tools and the necessary measurement of qualified inspection instruments. Check whether the electric water heater is intact, random documents and accessories are complete.

2. Carefully read this "instruction manual" to understand the function of the electric water heater to be installed, the use of methods, installation requirements and installation methods.

3. Check the user's power supply, which must be 220V~/50Hz.

A. The electrical connection of the electric water heater should generally be a dedicated branch circuit, the capacity of which should be greater than 1.5 times the maximum current value of the electric water heater.

B. Individual fixed sockets should be located in a safe place where there is no risk of electric shock, especially where water cannot be splashed. The socket should be installed in a safe location where there is no risk of electric shock.

C. Visually inspect and use special measuring devices (phase meter, test pen, earth resistance meter, etc.) to check the individual fixed plugs used for electric water heaters to make sure that the fire and zero wires are installed correctly and grounded reliably.

D. Check in detail whether the energy meter, electrical wiring and individual fixed socket capacity

meet the requirements of the electric water heater.

4. Check the water pressure of the tap water with a pressure gauge, if the tap water pressure is more than 0.7MPa, install a pressure reducing valve on the water inlet pipe and the valve should be installed far away from the electric water heater.

Installation position

<p>Electric water heaters should not be installed over fire-prone appliances such as gas stoves, microwave ovens, washing machines with plastic casings, etc.</p>	<p>Avoid places where flammable gases may leak or environments with strong corrosive gases.</p>	<p>Avoid places where strong electric and magnetic fields are in direct contact with you.</p>
<p>Avoid direct sunlight, rain and windy places</p>	<p>Avoid vibration-prone areas as much as possible</p>	<p>Minimize the length between the electric water heater and the water intake point to reduce piping heat loss</p>
<p>There must be a floor drain with sufficient water volume near the installation to avoid failure to drain the water</p>	<p>In order to facilitate future repair, maintenance, removal, etc., electric water heater installation location must be reserved a certain amount of</p>	<p>The loading capacity of the installation surface should not be less than 4 times the total mass of the electric water heater after filling with water,</p>
	<p>space</p>	<p>otherwise users need to install electric water heater support bracket underneath the electric water heater to ensure safety.</p>

Special Note: For insulated walls or sand brick walls, extended steel expansion bolts must be used.

Installation steps:

1. The installation of electric water heater should use random accessories, professional installers should not be replaced, omitted and reformed at will.
2. The installation should pay attention to not destroy the building's security structure.
3. The pipes and fittings used for the installation and connection to the user must comply with the relevant national standards and be agreed or specified by the electric water heater manufacturer.
4. If a one-way valve is added to the pipeline, an expansion tank with standard volume and pressure must be installed behind the one-way valve.
5. Determine the installation position of the electric water heater, avoid the reinforcement and pre-buried pipelines in the wall, and drill two holes with an impact drill on the solid wall, with the size of $\phi 16\text{mm}$ and depth of 110mm, and require the two holes to be at the same level, and the distance between them can be seen in the table below, which shows the distance between the holes.

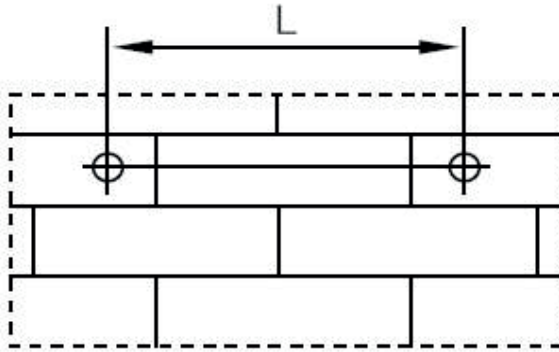
Note: The right side of the electric water heater should leave more than 500mm space for easy maintenance.

6. Insert the steel expansion bolts (with hooks) into the holes, tighten the hooks, and make the hooks upward, and then install the insulation isolation sheath on the hooks.

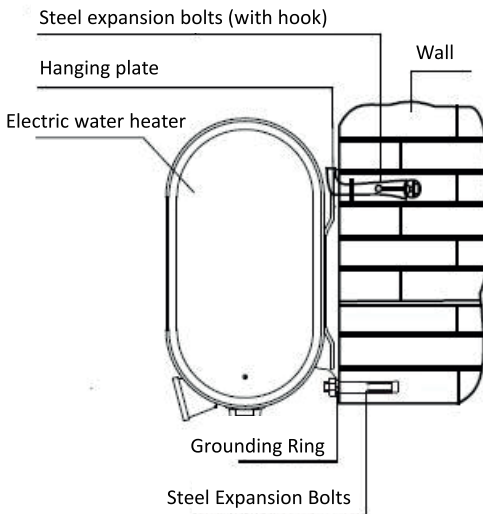
7. Lift up the electric water heater, align the two square holes above the two hanging plates with the hooks of the steel expansion bolts (with hooks). Check whether the steel expansion bolts (with hooks) are loose to ensure that the electric water heater is firmly installed.
8. Install the inlet valve at the inlet end of the electric water heater. The one-way safety valve must be properly installed on the inlet pipe of the electric water heater (pressure relief port facing down).

Install the pressure relief lead pipe to the pressure relief port of the one-way safety valve. For ceiling installation, the pressure relief port should be connected to an appropriate length of hose leading to the floor drain, and enough maintenance space should be reserved for future maintenance and repair.

9. Drill a hole of $\phi 9\text{ mm}$ and 80mm deep in the wall, and fix the exposed terminal ring on the body with steel expansion bolts. Be careful not to connect with the steel expansion bolts (with hooks) and the electric water heater.
10. All pipe threads are G1/2 (except for the drain), in the one-way safety valve inlet installed on the sealing washer (such as equipped with a mixing valve, in the mixing valve inlet installed on the sealing washer), the one-way safety valve and the water pipe threaded connections, as well as the connection of the water pipe to note that the addition of sealing washer, raw material tape to ensure that the seal.



Rated Capacity(L)	60
Hole distance L(mm)	345

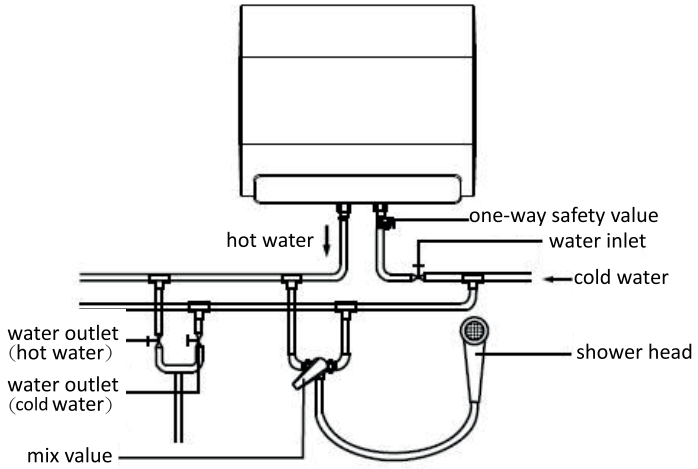


11. After the installation is completed, the electric water heater container will be filled with water: first open the outlet of the electric water heater, and then open the inlet valve (such as equipped with a mixing valve. Please adjust the handle of the mixing valve to the high temperature position), at this time, the electric water heater will start to fill up the water, and when water comes out of the outlet normally, it means that the water has been filled up, and you can close the outlet.

The water outlet can be closed.

Note: The water inlet valve in normal use to be in an open state.

12. If the user wants to supply water to more places, please refer to the following diagram to take over the water supply.



(The appearance pattern shall prevail)

Inspection and commissioning

1. The piping connection and direction should be reasonable, and there is no water leakage at each connection.
2. The electrical configuration should be safe and correct, the electric water heater should be reliably grounded, and the power plug and socket should be closely matched.
3. Mechanical connections should be firm and reliable.
4. Use test pen or multimeter to check the possible leakage parts of the shell to ensure that the electric water heater is safe and normal.

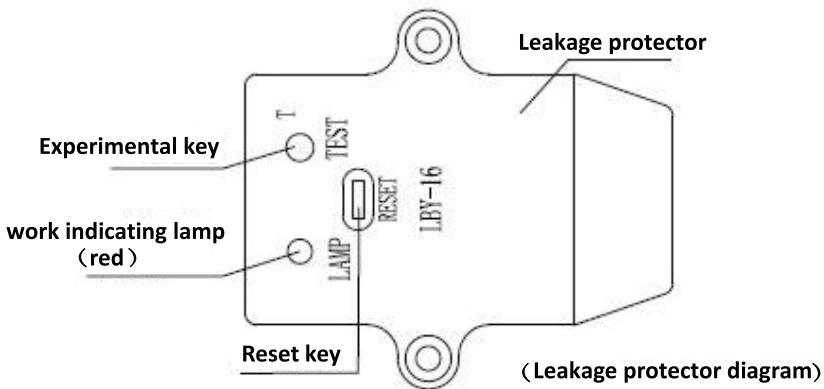
Usage

1. Fill with water: the first time you use it or empty it and then use it again, it must be filled with water before energizing.
2. Connect to the power supply: plug in the power plug energized.

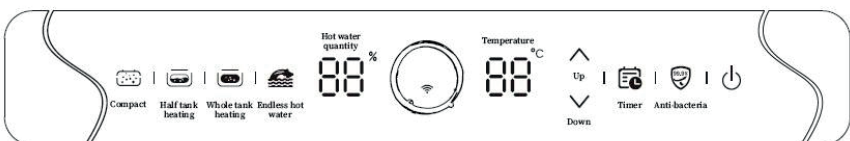
a. The leakage protection plug needs to be experimented regularly every month, test method: the leakage protection plug is connected to the power supply under normal condition, the indicator light is on. Press the test button, the power supply should be automatically disconnected, the indicator light is off. Press the reset button power on, the indicator light is on, it can be used normally. Otherwise, immediately stop using the water heater and press the power plug or disconnect all connections with the power supply circuit, and immediately call the service hotline.

b. When the leakage current is higher than the rated value, the leakage protection plug is automatically disconnected to protect, and cannot be reset before the fault is removed. After troubleshooting, press the reset button, you can work normally. When the water heater is not used for a long time, it should be unplugged immediately, and the body should not touch the other metal parts during the process of unplugging.

Do not touch the body and other metal parts, and notify the professional maintenance personnel to repair.



Functional Description



(Control panel schematic)

● Power on/off

After power on, touch and press " " to turn on or off the power.

● Function Mode Setting

1. Whole tank heating mode: after power on, touch the whole tank heating key, it will enter this mode. In the whole tank heating mode, the water of the whole inner tank is heated.
2. Endless hot water mode: After power on, touch the endless hot water key, it will enter this hot water mode. In endless hot water, the water in the whole tank is heated up to 80°C.
3. Anti-bacteria mode: After power on, touch the anti-bacteria key, it will enter this mode. In anti-bacteria mode, the water in the inner tank is heated to 85°C, and maintain heat preservation for 30 minutes, then automatically exit the mode and then enter the whole tank heating mode.
4. Half tank heating mode: After power on, touch the tank heating key, it will enter this mode. In half tank heating mode, the water in the upper part of the tank is heated.
5. Compact mode: After power on, touch compact key, it will enter this mode. In compact mode, the water in the upper part of the tank is heated to 55°C.
6. Timer mode: After power on, touch the timer key, it will enter this mode. In timer mode, the water in the whole inner tank is heated.

When entering the timer mode, the system will heat the water to the set temperature at the reservation time (countdown setting) and maintain the temperature preservation status for 30 minutes. If you do not exit this mode, the water will be heated to the set temperature at the same time every day.

Heating water temperature setting

1. In whole tank heating mode , the temperature setting range is from 30 to 75°C
2. In endless hot water mode, the temperature setting is fixed at 80°C and cannot be adjusted freely.
3. In anti-bacteria mode, the temperature setting is fixed at 85°C and cannot be adjusted freely.
4. In half tank heating mode , the temperature setting range is 30~75°C.
5. In compact mode, the temperature setting is fixed at 55°C and not freely adjustable.
6. In timer mode, timer mode press the temperature set before not entering this mode.

● Timer countdown setting

In the timer mode, you can use the up key or down key to set the appointment countdown, the countdown setting range: 1 to 24h.

● Other

1. Anti-freezing function: In order to prevent the tank from freezing outside in winter, after powering on (regardless of whether it is on or not), as long as the water temperature is $\leq 5^{\circ}\text{C}$, it will start heating by itself until the water temperature reaches 10°C.

When the water temperature reaches 10°C, the heating will be disconnected automatically

2. Fault code description:

E2: no water dry burning fault;

E3: temperature sensor failure;

E4: over temperature fault.

WiFi APP use

According to "Electric Water Heater Mobile APP Control Guide", download and install the mobile APP software, and let the electric water heater and the home WIFI signal device (such as router, etc.) source equipment (e.g. router, etc.) for network connection, you can remotely control the electric water heater through your cell phone.

Precautions for use

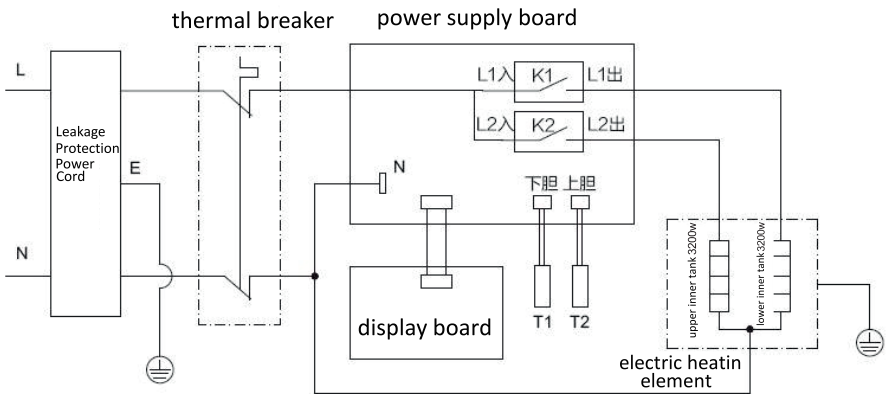
1. Before the electric water heater is energized, it must be confirmed that it has been filled with water (i.e., there is water flowing out of the outlet)!
2. When the one-way safety valve leakage of water for the drip-like is a normal phenomenon, if the leakage of water for the jet-like or with a loud noise, you should immediately cut off the power and water source, and notify our after-sales service department of your maintenance.
3. When using hot water, cold water must be mixed, such as equipped with a mixing valve, adjust the handle of the mixing valve to the low-temperature position and then trigger up. The first thing that comes out is cold water, and then slowly turn the handle clockwise, so that the water temperature gradually rises. Use your hands to debug the water temperature you are satisfied with, and then proceed to use it again.
4. After the user has finished using, please close the water inlet valve first, and then close the water outlet valve. When opening and closing the valve, please stay away from the nozzle to avoid scalding. When the electric water heater is not used for a long time, please unplug it from the power supply and empty the water in the inner tank.

troubleshooting

Failure phenomenon	Possible causes of malfunction	Handling method
Anti-electricity protection safety sign lights up red	Ground is energized or grounded abnormally	Immediately disconnect the power supply, unplug the water heater, stop using the water heater, and notify the after-sales service department for repair.
Display does not light up	Internal circuit failure	Please notify the after-sales department for repair

	Power not turned on	Check whether the power supply line is normal
Low water temperature	Setting temperature too low	Increase the set temperature
	Internal circuit failure	Please notify the after-sales service department for repair
	Thermostat broken	
	Short heating time	Keep warm before use
	Faulty mixing valve	Replace the mixing valve
	Faulty heater	
Faulty internal circuit	Please notify the after-sales service department for repair	
One-way safety valve sounds	Excessive water pressure	Adjust the water inlet pressure
		Please notify the after-sales service department for repair
Water leakage	Poor sealing of tank opening	Please notify the after-sales service department for repair
	Water leakage from the tank	
Alarm "E2" appears.	Dry burning fault protection	Please notify the after-sales service department for repair
Alarm "E3" occurs	Sensor failure protection	Please notify the after-sales service department for repair
Alarm "E4" occurs.	Over temperature protection	Please notify the after-sales service department for repair

electrical schematic



Routes are subject to change without notice!

packing list

accessories	quantities	accessories	quantities	accessories	quantities
safety valve	1pcs	rubber gasket	2pcs	Grounding Expansion Bolts	1pcs
Instruction manual	1pcs	Expansion bolts with curved hooks	2pcs	pressure relief hose	1pcs
warranty card	1pcs				

Maintenance

Before performing maintenance on the electric water heater, be sure to disconnect the power supply! To ensure that the electric water heater has been working at a high efficiency, it is necessary to carry out regular sewage on the electric water heater is recommended once every two months, and at the same time to remove the scale deposited in the electric heater and the bottom of the inner tank. Drainage method is the same as the emptying method: 1. close the water inlet valve, remove the drain cover, 2. use a socket wrench to spin down the drain nut (pay attention to avoid hot water scalding), 3. open the water outlet valve (such as equipped with a mixing valve, please adjust the mixing valve handle to the high-temperature position in a clockwise direction). you can empty the water inside the electric water heater.

