

9.6 - BASIC FUNCTION

How is the unit running

If unit is OFF, press  unit will be waken, press   to set target water temperature (38-70°C), press  unit will automatically select mode and start to heat water to target temperature.

Vacation mode

After pressing "Vaction" button, Unit will automatically heat water to 15°C for the purpose of energy saving during vacation days.

Weekly disinfect function

Under disinfection mode unit immediately start to heat water up to 65°C to kill the potential legionella bacteria inside water of storage tank, "" icon will light on the display screen during disinfection; Unit will quit disinfection mode if water temperature is higher than 65°C and extinguish "" icon.

Query function

For the convenience of maintenance and debug, query function is available by press 2 buttons together: "" + "", then system running parameters will be shown one by one with following sequence by each pushing of "" or "" button.

N.	Hour low bit	Min. higt bit	Min. low bit	Temp. / Days	Description
1	٤	5	U	Temp.	T5U: Storage tank temperature sensor (Upper)
2	٤	5	L	Temp.	T5L: Storage tank temperature sensor (Lower)
3		٤	3	Temp.	T3: Evaporator temperature sensor
4		٤	4	Temp.	T4: Ambient temperature sensor
5		٤	P	Temp.	TP: Discharge temperature sensor
6		٤	h	Temp.	Th: Suction temperature sensor
7		٤	E	Current	Compressor
8	1				Last error code
9	2				Previous 1 st error or protection code
10	3				Previous 2 st error or protection code
11					Software number

9.7 STARTING REPORT

Reading the objective operating conditions is useful for checking the unit over time. 

With unit of full load, namely in stable conditions and close to those of work, take the following data:

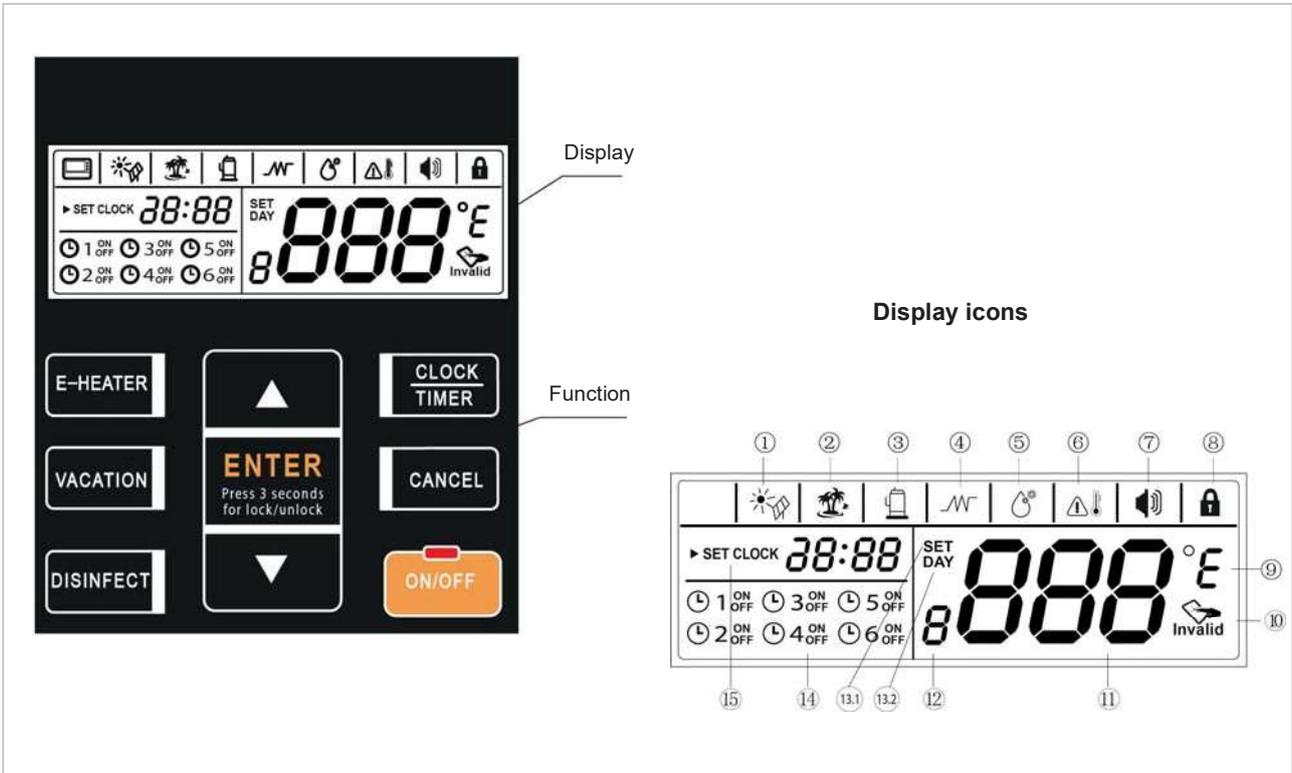
- Voltage and general absorptions with unit at full load
- Absorption of varied electrical loads (compressors, fans, etc)
- Temperature and air flow, both inlet and outlet from unit, fridge data
- The readings should be stored and made available during maintenance .



10.1 - DISPLAY

After powered on, the display lights up.

Users can operate the unit through the buttons under the display.



1 - Outside solar heat source

If an outside solar heat source has been connected to the unit, icon will flash with 0.5 sec. frequency; otherwise will be extinguished.

2 - Vacation mode (Vacation)

Icon will be lightened if the unit is under vacation mode, will flash with 2 sec. frequency when setting vacation mode, otherwise will be extinguished.

3 - Compressor

Icon will be lightened when compressor is running, otherwise will be extinguished

4 - Electrical resistance mode (E-Heater)

Icon will be lightened if e-heater is activated, otherwise will be extinguished.

If e-heater is automatically activated by unit, will be lightened;

If e-heater is manually activated, will flash with 2 sec. frequency.

When setting e-heater manually ON/OFF, will flash with 2 sec. frequency.



5 - Anti-legionella mode (Disinfect)

Icon will be lightened when the unit is under disinfect mode, otherwise will be extinguished.

Icon will be lightened if disinfect mode is automatically activated by unit;

will flash with 0.5 sec frequency, if disinfect mode is manually activated;

will flash with 2 sec. frequency when setting disinfect mode or setting disinfect timer.

6 - High temperature Alarm

If setting water temperature is higher than 50°C, icon will be lightened, otherwise will be extinguished.

7 - Alarm

When unit is under protection/error, icon will flash with 5 sec. frequency as well as buzzer will sound 3 times every 1 minute until protection/error eliminated or press **CANCEL** for 1 second.

8 - Lock

If button is locked, icon will be lightened, otherwise will be extinguished.

9 - Temperature unit

If setting temperature unit as celsius, °C will be lightened, icon will show celsius degree;

If setting temperature unit as Fahrenheit, °F will be lightened, icon will show Fahrenheit degree.

Press **E-HEATER** for 10sec, it will change between °C and °F

10 - Invalid

If button is under lock mode, press any button except unlock button, this icon will be lightened.

11 - 888

Icon will be lightened if screen is unlocked.

It shows water temperature on normal mode;

It shows remaining vacation days on vacation mode;

It shows setting temperature under setting mode;

It shows unit setting/running parameters, error/protection code under query mode.

12 - 8

Reserved



10 - CONTROL

13.1 - Water Temperature setting (SET)

Icon **SET** will be lightened when setting water temperature or setting days for vacation.

13.2 - Date setting (Day)

Icon **DAY** will be lightened when setting days for vacation;

Icon **DAY** will be lightened when under vacation mode.

14 - Programmes (Timer)

There are six timers can be set.



If anyone of them has been set, icon will lighten the corresponding one when screen is unlocked;

If there is none of timers has been set, will keep extinguished.

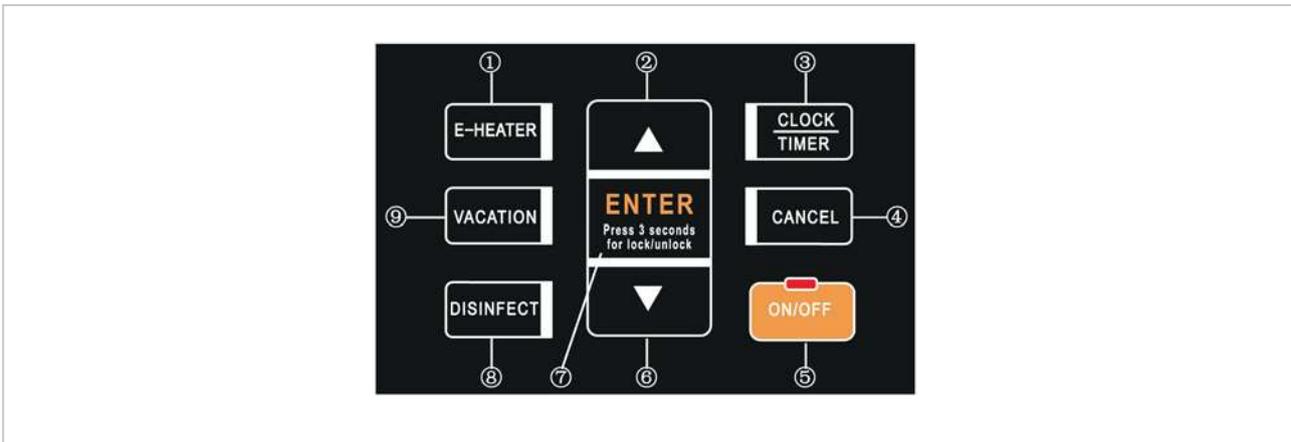


If timer is being set, icon will flash the corresponding one with 2 sec. frequency as well lighten the timer which has been set.

15 - Clock and clock setting

Icon **28:88** shows the clock.

Whenever there is any setting for clock, **SET CLOCK** will be lightened.



Any press of button is effective only under button and display unlocked state.

1 - Manually turn e-heater ON (E-heater)

If E-heater is OFF, follow these steps below to manually turn it on.

Press	E-HEATER
Icon will flash.	
Press For confirm manually turning E-heater on, then E-heater is activated to Heat up water to the target temperature. After that, if need manually turn E-heater on again, please repeat these steps.	
If E-heater is already ON, Press "E-HEATER" will lead to show invalid icon on the display. Long pressing the "E-HEATER" key for 10 sec. then can shift to set the temperature display unit; from "°F" to "°C" or from "°C" to "°F"; the default is "°C"; (when it's shifted to display "°F", it still will display "°C" while it operates spot check).	



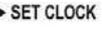
2 - Increase / up

If screen is unlocked, corresponding value will increase by pushing	
When setting temperature, press more than 1sec., temperature value will be increased continuously	
When Setting clock/timer, press more than 1sec., clock/timer value will be increased continuously	
When setting vacation days, press more than 1sec., day value will be increased continuously	
Under query mode, check items will page up by pressing	

3 - Set Clock

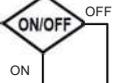
Press button CLOCK/TIMER for 3 sec to enter clock setting. Then icon  will be lightened and the hour value of clock will flash slowly.	
Set the hour value of clock.	 
Press For confirm the hour setting. Then the minute value of clock will flash slowly	
Set the minute value of clock	 
Press For confirm the minute setting and quit clock setting.	

3.1 - Set Timer (Scheduling)

Press Enter timer setting.	
Select timer ( ~ ) which needs to be set. The timer icon will flash slowly if it is selected.	 
Confirm the selected setting timer . Then icon  will be lightened. Then the hour value of timer will flash slowly.	
Set the hour value of timer.	 
Confirm the hour value of timer. Then the minute value of timer will flash slowly.	
Set the minute value of timer.	 
Confirm the minute value of timer. Then ON or OFF icon following the setting timer will flash slowly.	
Set the action(ON or OFF) of the timer.	 
Confirm the action(ON or OFF) of the timer.	



10 - CONTROL

<p>The display screen will automatically display different value at 888 by different action. It will display the last set temperature and icon SET ,if the action is ON, and will display - - - if the action is OFF.</p>	
<p>Set the water temperature of the setting timer.</p>	
<p>Confirm and complete the timer. Then repeat this process to set another timer.</p>	

3.2 - Cancel Timer (programmazione)

<p>Press Enter timer setting.</p>	
<p>Select timer ( 1 ~  6) which needs to be cancel. The timer icon will flash slowly if it is selected.</p>	
<p>Confirm to cancel the timer Then repeat selecting timer and cancelling. If the timer has not been set, when press button CANCEL the display will show  Invalid After complete cancelling timer, press button CANCEL for 3sec to quit timer cancelling.</p>	
<h4>Check Timer (Scheduling)</h4>	
<p>Press Enter timer checking.</p>	
<p>Select time ( 1 ~  6) which needs to be checked The timer icon will flash slowly if it is selected, and the timer action (ON or OFF) and set clock will be shown. If the action is ON, target temperature will be shown. And if the action is OFF, icon - - will be shown.</p>	
<p>Press button CANCEL for 3 sec. or no button pressing for 30 sec. to quit timer checking.</p>	
<p>If there is confliction between Timer and Manually ON: 1. The moment of Manually ON has priority; 2. The moment of timer OFF has priority;</p>	

4 - Cancel

<p>Press To cancel setting, quit setting, clear alarm, ect.... To clear alarm buzzer, need to press for 1sec.</p>	
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5 - Start-up/shutdown

 button and LED indicator	
If unit is standby, press, then unit will be OFF.	
If unit is ON, press, then unit will be OFF.	
If unit is OFF, press, then unit will be ON.	
LED indicator will be lightened if unit is ON or standby and extinguished if unit is OFF.	

6 - Decrease/down

If screen is unlocked, corresponding value will decrease by pushing	
When setting temperature, press more than 1sec, temperature value will be decreased continuously.	
When Setting clock/timer, press more than 1sec, Clock/timer value will be decreased continuously.	
When setting vacation days, press more than 1sec, day value will be decreased continuously.	
Under query mode, check items will page down by pressing.	

7 - ENTER (Confirm/unlock)

<p>If screen and buttons are unlocked, press to upload setting parameters after setting any parameter:</p> <ul style="list-style-type: none"> • If press within 10sec, setting parameters will be uploaded to unit; • If press beyond 10sec, please resetting all parameters. <p>If screen and buttons are locked, press for 3sec. to unlock them.</p>	
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8 - DISINFECT (anti-legionella)

Manually turn on disinfect function Press	
Icon will flash.	
Confirm manually activate disinfection function . The unit will heat up water to 65°C at least for disinfection.	
Disinfect Clock Setting	
Press for 3sec., to enter Disinfect clock setting.	



10 - CONTROL

Icon  will flash, and icon  SET CLOCK will be lightened and the hour value of clock will flash slowly.	
Set the hour	 
Confirm the hour setting. Then the minute value of clock will flash slowly.	
Set the minutes	 
Confirm the disinfect clock setting and quit out.	
Unit will automatically start disinfect function at the above-set clock every 7 days. If user don't set disinfect clock, unit will automatically start disinfect function at 23:00 every 7 days. If unit is OFF or under disinfect mode, press  will lead to show  on the display.	

9 - VACATION

Enter vacation setting. Press	
Icon will flash	
Icon will be lightened.	
Will show the last setting vacation days.	
Set vacation days. The days range is 1~99 days (default as 14 days).	 
Confirm vacation setting and quit out. The unit will immediately go into vacation mode.	
In vacation mode, the setting target water temperature is 15°C as default.  will show the remanent vacation days. On the last day of vacation, unit will automatically start Disinfect function, and automatically reset the target temperature to the last one before vacation. If unit has already been under vacation mode or OFF, press  will lead to show  on the display.	

8.2 COMBINATION BUTTON

Clear error code	Press the two buttons at the same time to clear all stored error & protect codes, and the buzzer will buzz one time.	 + 
Diagnostic function	Press the two buttons at the same time for 1sec to go into diagnostic function. Under diagnostic mode user can check unit setting & running parameters by pressing   circularly. Press button for 1sec. or no button  operation for 30 sec, then quit diagnostic function.	 + 



10.3 AUTO-RESTART

If electricity power failed, unit can memorize all setting parameters, unit will be back to the previous setting when power recover.

10.4 BUTTON AUTO LOCK

When there is no operation of button for 1 minute, button will

be locked except Unlock button ()

Press  for 3 sec., unlock buttons.

10.5 SCREEN AUTO LOCK

If there is no operation of button for 30sec., screen will be locked (extinguished) except for error code and alarm light. Press any button will unlock the screen (lighten)

10.7 WHEN ERROR HAPPENED

If some normal errors happen, unit will automatically shift to E-Eheater for emergent DHW supply.



Please contact qualified staff to repair.

If some sever error happen, unit will not start, please contact qualified staff to repair.

If some errors happen, the buzzer will buzz 3 times every other minute and the  will flash fast.

Press  for 1 sec to stop the buzzer but the alarm icon will keep glittering.

Trouble shooting

Error	Possible reason	Solution
Cold water tapped out and display screen extinguished	Bad connection between power supply plug and socket; Setting water temperature too low; Temper sensor broken ; PCB of indicator broken.	Connect again the supply plug Setting water temp. higher; Contact service center.
No hot water tapped out	Public water supply ceased; Cold water inlet pressure too low (<0,15 Bar) (<0,015 MPa); Cold water inlet valve closed.	Waiting for public water supply recover; Waiting for inlet water pressure increase; Open water inlet valve.
Water leakage	Hydraulic pipeline joints are not sealed well.	Check and reseal all joints.

10.6 SOMETHING ABOUT SELF-PROTECTION OF UNIT

When the self-protection happens, the system will be stopped and start self-check, and restart when the protection resolved. When the self-protection happens, the buzzer will buzz in

every other minute, the  will flash and error code will be shown at water temperature indicator.

Press  button for 1sec to stop buzz, but the  and error code does not disappear until protection resolved. In the following circumstance, self-protection may happen:

- Air inlet or outlet is blocked;
- The evaporator is covered with too much dust;
- Incorrect power supply (exceeding the range of 220-240V $\pm 10\%$).

Contact service center.





10.8 ALARMS

TAB

Code	Description	Solution
E0	Error of sensor T5U (upper water temperature sensor)	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E1	Error of sensor T5L(lower water temperature sensor)	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E2	Storage tank and Wired Controller communication error	Maybe the connection between controller and PCB has released or PCB has been broken.
E4	Evaporator temperature sensor T3 error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E5	Ambient temperature sensor T4 error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E6	Compressor discharge temperature sensor TP error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
E8	Electric leakage error If PCB current_induction_circuit check the current difference between L,N >14mA, system consider it as "electric leakage error"	Maybe some wires have been broken or bad wire connection. Contact a qualified person to service the unit.
E9	Compressor suction temperature sensor TH error	Maybe the connection between sensor and PCB has released or sensor has been broken. Contact a qualified person to service the unit.
EE	E-heater open-circuit error IEH (Current difference E-heater on and off)<1A	Maybe the E-heater has been broken or bad wire connection after repair. Contact a qualified person to service the unit.
EF	Clock chip error	Maybe the chip has been broken, but unit can work well without clock-memory, so it is needed to reset clock when power put on again. If necessary, contact a qualified person to service the unit.
Ed	E-EPROM chip error	Contact a qualified person to service the unit.



10.8 ALARMS

TAB

Code	Description	Solution
P1	System high pressure protection: Unit 300 : >=3.0Mpa active; <=2.4MPa inactive. Unit 190 : P1 error code never appear because pressure switch	Maybe because of system blocked, air or water or more refrigerant in system (after repair), water temperature sensor malfunction, ect. Contact a qualified person to service the unit.
P2	High discharge temperature protection Unit 190/300 : >115 °C Protection active; <90 °C Protection inactive	Maybe because of system blocked, air or water or less refrigerant(leakage) in system(after repair), water temperature sensor malfunction, ect. Contact a qualified person to service the unit.
P3	Compressor abnormally stopped protection The discharge temperature is not so higher than evaporator temperature after compressor running a term.	Maybe because of compressor broken or bad connection between PCB and compressor.
P4	Compressor overloaded protection (10 sec after compressor startup, Current checking starts , 1) only compressor running, if it is >10A , the compressor will be stopped and protected.) 2) Compressor + e-heater opened, if it is >IEH+10,the compressor will be stopped and protected.) Possible absorption or abnormal activation of the electrical resistance.	Maybe because of compressor broken, system blocked, air or water or more refrigerant in system(after repair), water temperature sensor malfunction, ect. Check that the resistance does not absorb current when the display is turned off. This circumstance is interpreted by the unit as a compressor anomalous absorption. Contact a qualified person to service the unit.
LA	When the ambient temp T4 is out of Heat Pump running range (-7 ~ 43 °C) Heat Pump will stop, unit will show LA on the position of clock on display until T4 back to (-7 ~ 43 °C). Only valid for the unit without e-heater. Unit with e-heater will never show "LA".	It is normal, and no necessary to repair.

The alarm codes listed above are the most common. If a alarm code not listed above is displayed, contact technical assistance.

If any of P3/P4/P2/P1 continuously appear 3 times within single heating cycle, system will consider it as "Heat Pump system error". Contact a qualified person to service the unit.



10.9 NON-ERROR TIPS

Q: Why compressor can't start immediately after setting?

A: Unit will wait for 3 min to balance the pressure of system before start compressor again, it's a self protection logic of unit.

Q: Why sometimes the temperature shown on the display panel decreased while unit is running?

A: R. When hot water is sampled, it is mixed with cold water which is added from the low part of the accumulator.

Q: Why sometimes the temperature shown on the display decreased but unit still keep closed?

A: To avoid unit ON/OFF frequently, unit will activate heat source only when bottom storage tank temperature is lower than setting temperature for at least 5 °C.

Q: Why sometimes the temperature shown on the display will decreased dramatically?

A: Because storage tank is pressure-bearable type, if there is massive hot demand, hot water will quickly tapped out from upper part of storage tank as well as cold water will quickly tapped into bottom part of tank, if the cold water surface emerge the upper temperature sensor, temperature shown on the display will decreased dramatically.

Q: Why sometimes the temperature shown on the display is decreased a lot, but there is still a mount of hot water can be tapped?

A: Because the upper water sensor is located on the upper 1/4 storage tank, when tapping hot water out, it means there is at least 1/4 storage tank of hot water available.

Q: Why sometimes unit shows "LA" on display ?

A: The heat pump available running external range is -7 ~ 43°C, if external temperature is out of range, system will show above mentioned signal to let user notice it.

Q: Why something there is nothing shown on the display?

A: To maintain display screen lifespan within along term, when there is no button operation for 30 sec, it will extinguish the display except the LED indicator.

Q: Why sometimes the buttons are unavailable?

A: If there is no operation on panel for 1 min, unit will lock the panel, shows "  ", to unlock the panel, please press the "Enter" button for 3 seconds.

Q: Why sometimes there is some water flowed from drainage pipe of safety valve?

A: Because the storage tank is pressure-bearable one, when water is heated inside the storage tank, water will expand, so the pressure inside of tank will increase, if pressure goes up more than 7Bar (0,7Mpa), safety valve will activate to relief the pressure and hot water drop will be discharged correspondingly. If water drop is continually discharged from safety valve drainage pipe, it is abnormal, please contact qualified staff to repair.

11.1 CHECKLIST FOR RECOMMENDED REGULAR CHECKS

 **Disconnect the power supply before each operation.**

Checks effected onby.....of the company.....

	Checking content	Checking frequency	Action
1	Air filter (inlet/outlet)	Every month	Clean the filter
2	Anode	Every 6 - 12 months	Replace it if it has been used out
3	Inner storage tank	Every half year	Clean the storage tank
4	Electric heater	Every half year	Clean the resistance
5	Safety valve	Every year	Turn the knob
	If water doesn't flow freely when operating the handle, replace safety valve with a new one		
6	Water filter	Every year	Clean the filter
7	Expansion vessel	Every year	Check charge
8	Checking for leaks*	Every year	Check

*Refer to the local provisions for implementation; in an extremely brief and purely indicative manner, the regulation specifies the following. Companies and technicians carrying out installation, maintenance/repair interventions, checks for losses and recovery operations must be CERTIFIED in accordance with the local regulations. The check for losses must be carried out an an annual basis.

Check the connection between power supply plug and socket and ground wiring regularly;

The missing or lacking maintenance of the magnesium anode, can lead to the corrosion of the storage tank with a subsequent loss of water and the warranty coverage and the manufacturer responsibility fall.

It is recommended to clean the inner storage storage tank and e-heater to keep an efficient performance.

It is recommended to set a lower temperature to decrease the heat release, prevent scale and save energy if the outlet water volume is sufficient.

Clean the air filter every month in case of any inefficiency on the heating performance.

Notes/interventions suggested to the owner