LIBERTE DE GESTION

# Air Source Heat Pump Unit with Air Duct

## Model applicable:

**010CA-100/010CA-150/010CA-200/010CA-250/010CA-300**

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**www.energierenouvelable55.com**

Air source hot pump unit is in the process of production,strictly following desiging standard,to make sure the high quality, high reliability and good suitability.This manual includes all the necessary information for right installation,debugging,starting and maintenance.Please read this manual carefully before you start or check the unit;The installation has to be made by disciplined technicians;Will not stand responsibility of the damage to human or units with wrong installation and debugging or not abidingby the manual.

The vital conditions to guarantee are as the following:

-The units are started or repaired by the people from service centres or appointed company man;

-Accoding to the manual,the running or maintenance of all the units has to be made,stricty in stated time and by sated times;

-The spare parts from factorg have to be used to repair.

If disobeying the conditions above,the guarantee will be invalidated automatically!

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| Models | Mahrw | 010CA-100 | 010CA-150 | 010CA-200 | 010CA-250 | 010CA-300 |
|---|---|---|---|---|---|---|
| Water tank volume | L | 100 | 150 | 200 | 250 | 300 |
| Hot water produced volume | L/H | 75 | 75 | 75 | 75 | 75 |
| Thermostat factory setting | °C | 55 | 55 | 55 | 55 | 55 |
| Thermostat maximum setting | °C | 60 | 60 | 60 | 60 | 60 |
| Rated heating capacity | W | 3000 | 3000 | 3000 | 3000 | 3000 |
| | BTU | 10230 | 10230 | 10230 | 10230 | 10230 |
| Power supply | V/PH/Hz | 220/1/50 | 220/1/50 | 220/1/50 | 220/1/50 | 220/1/50 |
| Rated Input power | W | 950 | 950 | 950 | 950 | 950 |
| Heating input power | W | 1500 | 1500 | 1500 | 1500 | 1500 |
| Maximum input power | W | 2735 | 2735 | 2735 | 2735 | 2735 |
| Running current | A | 4,32 | 4,32 | 4,32 | 4,32 | 4,32 |
| Working ambient temperature | °C | -7° ~ 43° | -7° ~ 43° | -7° ~ 43° | -7° ~ 43° | -7° ~ 43° |
| Noise | dB | 43 | 43 | 43 | 43 | 43 |
| Hot water outlet | inch | G3/4 | G3/4 | G3/4 | G3/4 | G3/4 |
| Cooling water inlet | inch | G3/4 | G3/4 | G3/4 | G3/4 | G3/4 |
| Tank rated water pressure | Mpa | 0,2-0,6 | 0,2-0,6 | 0,2-0,6 | 0,2-0,6 | 0,2-0,6 |
| Net Dimensions | mm | 570x1450 | 570x1600 | 570x1700 | 700x1684 | 700x1864 |
| Shipping dimensions | mm | 630x630x1620 | 630x630x1720 | 630x630x1820 | 780x780x1824 | 780x780x2004 |
| Net weight | Kg | 54 | 58 | 72 | 79 | 86 |

## 2)、The unit appearance and features

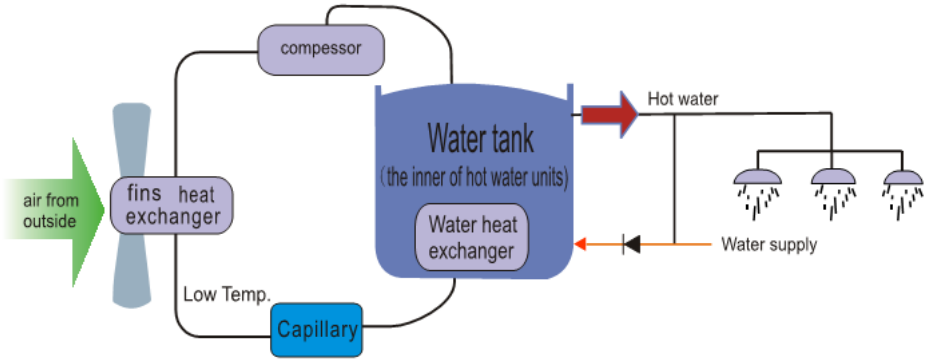

* **High efficiency**: smart design make normal working efficiency more than 300%.

* **Easy installation and operation**: With LCD display, easy to handle and check all kind of temp and operation information.

* **Stainless steel tank**: ensure clean water to users.

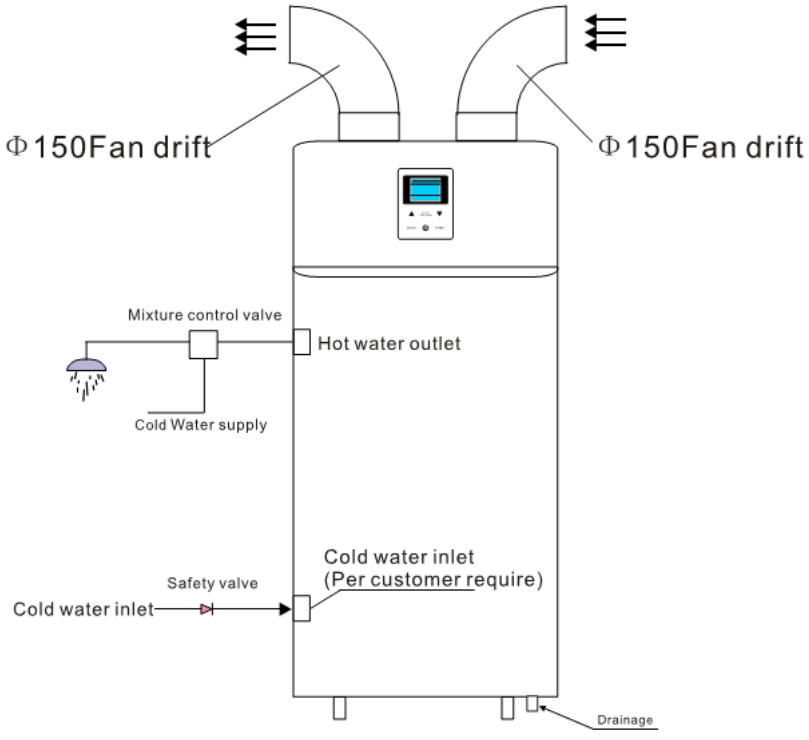
- **Waste heat is useful heat**
  The standard heat exchanger of the hot-water heat pump enables direct connection to a second heat generator, e.g. a solar heating system or a boiler.
- **Dehumidification in the recirculating air mode**
  Dehumidified air in the laundry room supports laundry drying and prevents moisture-induced damage.
- **Cooling in the recirculating air mode**
  The room air is extracted from the storage room or a wine cellar,subsequently cooled and dehumidified in the heat pump and finally re-introduced into the room.Recreation rooms, boiler rooms or utility rooms areideal installation sites. The air-ducts leading through warm sections must be insulated to prevent the formation of condensation.

## 3).Working principle of air water units.




Sketch map of central offering hot water system

## 4).Installation of sketch map



1). to choose a right model

- Please choose the model with right water tank capacity according to the actual need for the energy saving and convenient use;
- This air source hot water heat pump is used for providing hot water for home use;

2). installation requirement and location

- The unit must be installed indoor and free from rain;There must be sufficient water supply near the unit;The unit must be installed horizontally.At air inlet and outlet, please connect ducted pipes to avoid that the return air goes into air outlet!

3). water pipe connection

Please keep below points in mind when the water pipe is connected:

- To make the water resistance inside of the pipe as low as possible
- To keep the water pipe clean and free from dirty; when the connection is made there must be testing on the leaking; Ensuring there is no leak on the pipe then the insulation can be made;
- There must be one way valve and check valve installed on the water inlet pipe.

4). electrical wire connection

- There is a power cable in the bottom of the unit which can be connected to the electric power by the users.

5). transit

- There must notbe something on top of the unit, and keep it free from strike and extru sion during the transit

6). trial running

6.1 Checkup before the trial running

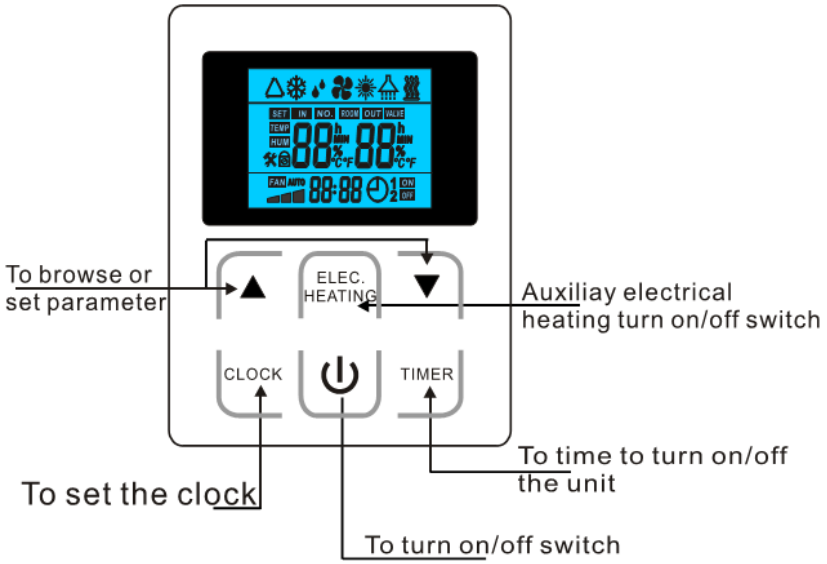
- Check whether the water tank is full, or whether the insulation for the pipe is good;
- Check the electrical connection: check whether the voltage is normal, whether the wire connection is good and whether the earthing is made;
- Check the unit: check whether the screw and parts is good enough; and check if the indicator light on the controller is working fine or any failure alarm as it get power;

6.2 trial running

- Turn on the unit with the wire controller
- Keep ear on the sound from the compressor when it start; if there is any sound abnormal the unit must be stoped and checked;
- Look into the tank water to see whether the water temperature fluctuation is normal;
- The parameter of the wire controller has been settled in the factory, they cannot be reset by the users; Please return to the qualified service man if the parameter need to be changed.

1).Function of water tank controller

User Interface and Usage as the following:




2). Use of the controller of water tank

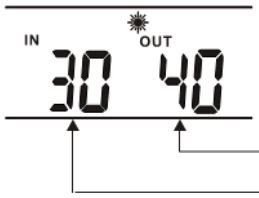
1） Electrify

After checking everything is ok, electrify and enter into standby state , with the screen showing as the following:


Time dispaly（24 hours,e.g.the screen shows 20:00 P.M.）

2)Turn-on。

Press “⏻” to turn on the unit with the screen showing as the following:

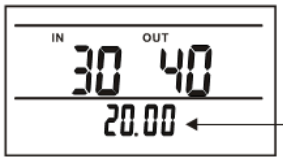



Up of the tank temperature

Lower of the tank temperature

3）Turn-off

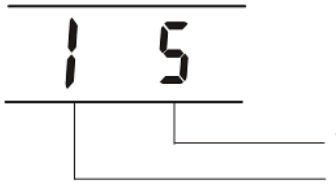
Press "⏻" to turn off the unit with the screen showing as the following:




Time dispaly（24 hours,e.g.the screen shows 20:00 P.M.）

4）Check parameters

During running or standby state, press ▲ or ▼ to check the related parameters with the screen showing as the following:




The parameter value

"1" means the parameter code

5）check and change the set parameters (Note: you can check and change the set parameters during standby state but you can only check the set parameters when the unit running )

1. Press "▲▼" again and again to check the related set parameters;

2.Then press "ELEC. HEATING" "⏻" at the same time ,to change the parameters; If without press within 5 seconds, it will exit setting state;

The screen displays as the following :


To show the set parameter

To show parameter No. 0 — 9 (please check the system parameter table for the related meanings)

6）Malfunction Display

During standby or running state , if malfunction happens to the system, the system will stop to show the malfunction code as the following:


To show the malfunction code (refer to malfunction code table)

## 1). Maintenance

- A water filter must be working with the unit, and it must be cleaned periodically in order to provide clean water and avoid dirty and block to the unit.
- There must be dry, clean and good ventilation around the unit; the heat exchanger must be cleaned every 1 or 2 month to keep the heat exchanger efficiency and save energy;
- Please check with every part of the unit regularly; and check whether the system pressure is normal, it muse be maintained or replaced if there is any abnormal;
- Please check with the power supply and wire connection regularly, and look whether there is any abnormal action or odor, it must be replaced if necessary;
- If the unit is not running for a long time, it must be sealed and maintained, and also drain the water in the unit; When the unit is restarted, the water must be refilled to the unit and check the unit entirely;

## 2). The normal failure and solutions

| Failure | Controller on the water tank | Indicator light | Cause | Solutions |
|---|---|---|---|---|
| Power on | | Off | | |
| Unit running | | On | | |
| Lower tank water temp. sensor failure | P1 | 1 on 1 off | The temp. sensor is open or short circuit | Check and replace the temp. sensor for the upper tank water |
| Upper tank water temp. sensor failure | P2 | 2 on 1 off | The temp. sensor is open or short circuit | Check and replace the temp. sensor for the lower tank water |
| Inlet evaporator. temp. sensor failure | P3 | 3 on 1 off | The temp. sensor is open or short circuit | Check and replace the temp. sensor for the evaporator inlet |
| Outlet evaporator temp. sensor failure | P4 | 4 on 1 off | The temp. sensor is open or short circuit | Check and replace the temp. sensor for the evaporator outlet |
| Exhaust temp. sensor failure | P5 | 5 on 1 off | The temp. sensor is open or short circuit | Check and replace the temp. sensor for the exhaust |
| High pressure protect | E1 | 6 on 1 off | 1,too much refrigerant in the unit<br>2,bad heat exchange on the air | 1. discharge the redundant gas<br>2. clean the air side heat exchanger |
| Low pressure protect | E2 | 7 on 1 off | 1,the refrigerant is not enough<br>2,block on the filter or capillary<br>3,water flow is not enough<br>4,expansion sensor is broken | 1.check if there is any leak and refill the gas<br>2.replace the filter or capillary<br>3.clean the water side exchanger or discharge the air in the water loop<br>4.use new expansion valve |
| AUX-heating thermal protect | E3 | 8 on 1 off | The electronic heating temp. protect | Check the water supply or tank whether have enough water |
| Compressor exhaust temp. too high | E4 | 9 on 1 off | Compressor exhaust temp.too high | Check through the refrigerant system |
| Communication failure | E8 | On | Communication failure between wire controller and main board; | Check the wire connection between the wire controller and the main board |
| Defrosting | Defrosting indicate | flash | | |

1).Parameters for unit running

| Parameter | Meaning | Range | Default | Remarks |
|---|---|---|---|---|
| 0 | return water temp. in the tank | 10-70℃ | 55℃ | Adjustable |
| 1 | heating differential | 2-15℃ | 5℃ | Adjustable |
| 2 | tank water temp. for starting e-heater | 10-90℃ | 55℃ | Adjustable |
| 3 | e-heater delay time T | 0-90min | 40min | Adjustable |
| 4 | high water temp. for antisepsis per week | 60-90℃ | 65℃ | Adjustable |
| 5 | high water temp. period for week | 10-90min | 30min | Adjustable |
| 6 | defrosting period | 30-90min | 45min | Adjustable |
| 7 | coil temp. for starting defrosting | 0-30℃ | -7℃ | Adjustable |
| 8 | coil temp. for exit defrosting | 2-30℃ | 13℃ | Adjustable |
| 9 | defrosting period | 1-12min | 8min | Adjustable |
| 10 | To adjust the electrical expansion valve | 0/1 | 1 | Adjustable |
| 11 | Target over-heat degree (when parameter10=1, it will take effect) | -20℃- 20℃ | 5℃ | Adjustable |
| 12 | Step to adjust the electrical expansion valve by hand | 10-50 | 35 | Adjustable |
| A | Inlet water temp. | -9-99℃ | True testing figure; show P1 if there is any failure | |
| B | Outlet water temp. | -9-99℃ | True testing figure; show P2 if there is any failure | |
| C | Evaporator coil temp. | -9-99℃ | True testing figure; show P3 if there is any failure | |
| D | Evaporator temp. | -9-99℃ | True testing figure; show P4 if there is any failure | |
| E | Exhaust temp. | -9-199℃ | True testing figure; show P5 if there is any failure | |
| F | Eletronic expansive valve step | 0-50 | N*10 | |

Remarks: Electric-heater starting time after compressor is parameter 03 plus 5 .

2). Controlling board access