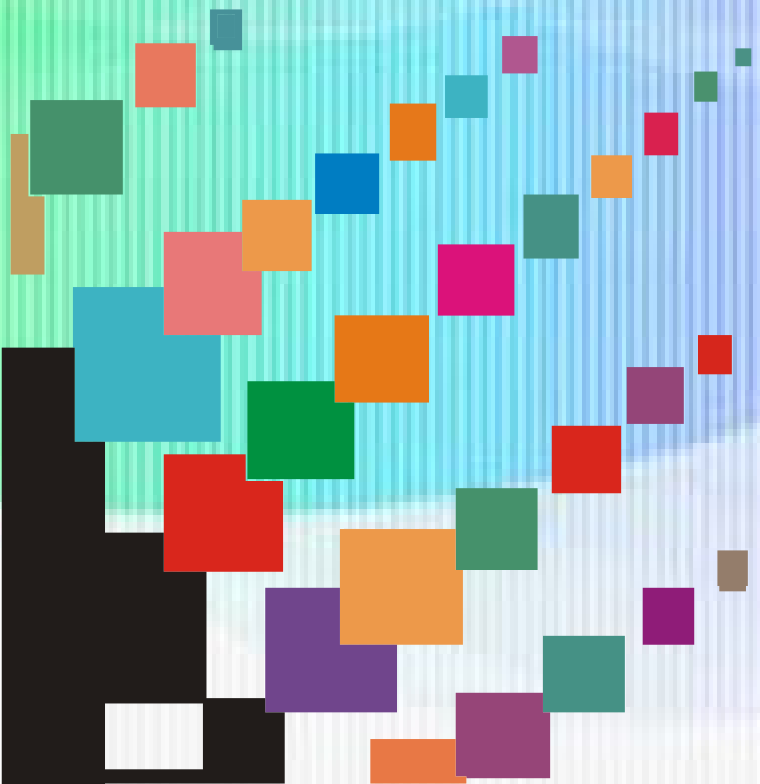
HEAT PUMP WATER HEATER

Top Discharge With Double Ducts - (All In One - 2b)

- **Installation And Operating Instructions**
- **Model : KS35-C300**



MAR 2011

THE 6 ESSENTIAL POINTS

1. Control the delivery: before any handling, to check the state of the heat pump after having removed the packing of protection. Any degradation related to transport will have to be announced on the form of transport and by Letter Registered AR under 48 hours to the conveyor.

2. Importance of this note: it is essential that it is given to the fitter. We advise to read and follow with attention the entirety of the instructions appearing there.
Preserve this note for being able to consult it constantly.

3. Standards of installation: the installation must be carried out in accordance with the standards in force for this type of apparatus, and by respecting the instructions of the manufacturer, a person qualified in the handling of thermodynamic machines or air-conditioning. The person must have the lawful material and guarantee of a training of approved refrigeration technician. Any defect in the installation can cause damage on the individuals, the animals or the objects.
On no account, the importer of this apparatus could not be made responsible for this damage.

4. Use of the heat pump: this heat pump is intended exclusively with use for which it was conceived. Any other use non in conformity and random will be regarded as dangerous and unsuitable.

5. Breakdown: not consider any attempt at breakdown service; any even inopportune breakdown will have to be announced to your retailer or your fitter.
Wintering, maintenance: instructions appear in this note, it is essential to conform to it; before these operations, the power supply of the heat pump must be cut.
Maintenance: To perpetuate and guarantee the performances of the heat pump, it is necessary to make carry out a regular maintenance; to refer for that to the instructions of maintenance.

6. In the event of resale with a third, it is imperative that this note is included with the material if the new owner or the fitter wishes to consult it.

CONTENTS

1. Introduction

We hank you trusting us and buying our heat pump.

Before using, carefully read and master the installation and operating instruction manuals. They will give you information on the intended purpose, functionality and handling procedure.

The manuals will give you information on all necessary activities before and during the usage.
If you give the device to a third person, be sure to include the installation and operating instruction manuals.

We trust that the device will serve you well and that you will be satisfied.

While reading the manual, be especially careful on the chapters and paragraphs, mark will the following sign.

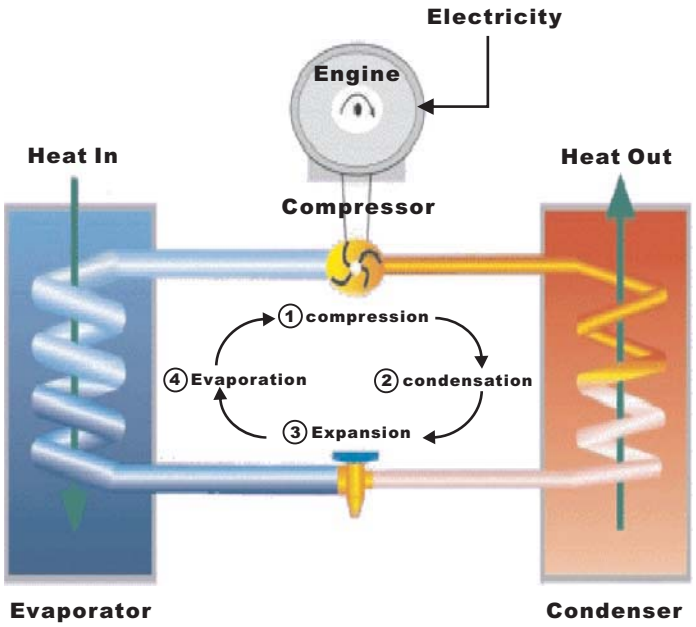
If these signs are next to a text, it stresses the importance of the text in a specific manual chapter. Besides that, the sign can also appear next to other symbols and text that warn of eventual danger.

The device can be used only by people that are over 18 and that are acquainted with the content of the installation and operating instruction manuals

2. Principle of Heat Pump

Heat pump is a device in which the refrigerant R410A is continuously changing the shape from gas to liquid. It pumps out the solar energy from the air in the room and together with electrical energy consumed by compressor it gives out the total heating capacity which is accumulated in the water storage tank.

Evaporator is an air-refrigerant heat exchanger. In the evaporator the refrigerant is vaporized at low pressure and relative low temperature. Because of vaporization the heat transfer form air to refrigerant starts. Vaporized refrigerant comes in the compressor where the pressure goes higher and also the temperature. From compressor the vaporized and high temperature steam goes in the condenser (refrigerant-water) where again the heat is transferred from refrigerant to water. The refrigerant is now in liquid shape idler high pressure. After it flows thought the expansion valve it reaches the basic shape and he process goes around again. The circuit is in process until the water temperature in the water storage tank reaches the set point.



3. The Device Main Advantages

- High COP due to adopt R410A and high efficient compressor of Japanese famous brand name.
- Displays water temperature.
- Displays error code when having problem.
- Automatic control of defrosting-cycle.
- Pretty and compact in appearance. Stainless steel shell and various color galvanized sheet for option.
- Quiet running due to low speed fan.
- Duct length of 7 meters.
- Easy to install or maintain.

4. Caution

⚠ CAUTION

Do not climb on the unit or try to move it when installed.

Keep out of the reach of children do not let us playing near the unit.

Never introduce a stick, your finger or others in the air inlet/outlet. The ventilator runs at high speed: that would cause a very serious incident.

Do not connect / unconnected the unit when running; press before all the button OFF.

If an abnormality (smell of burning) occurs, stop the unit, unplug or switch off the electricity.

Do not clean the appliance with water. Water will go into the unit and will destroy the insulation.

Important: Well clean the plug, If dirtiness adheres to the plug or if it is badly inserted: that can cause a fire or electric shocks.

Do not draw on the power supply cable. Well have in hand the plug to disconnect it. Fire hazard could occur due to the wrenching of the electric cable.

Do not touch the plug with wet hands. It will caused an electric shock.
By stormy weather, cut off the pump to avoid the damaged caused by the lightning.

First off all the heat pump is stopped, put out leaves or others little particles blocking the air inlet vanes.

Verify the compatibility of the network with the data written on the heat pump before beginning the installation.

The other disinfection systems such as electrolysis, chemical… are not recommended for a good running of the pump. The pump must be ready before these systems.

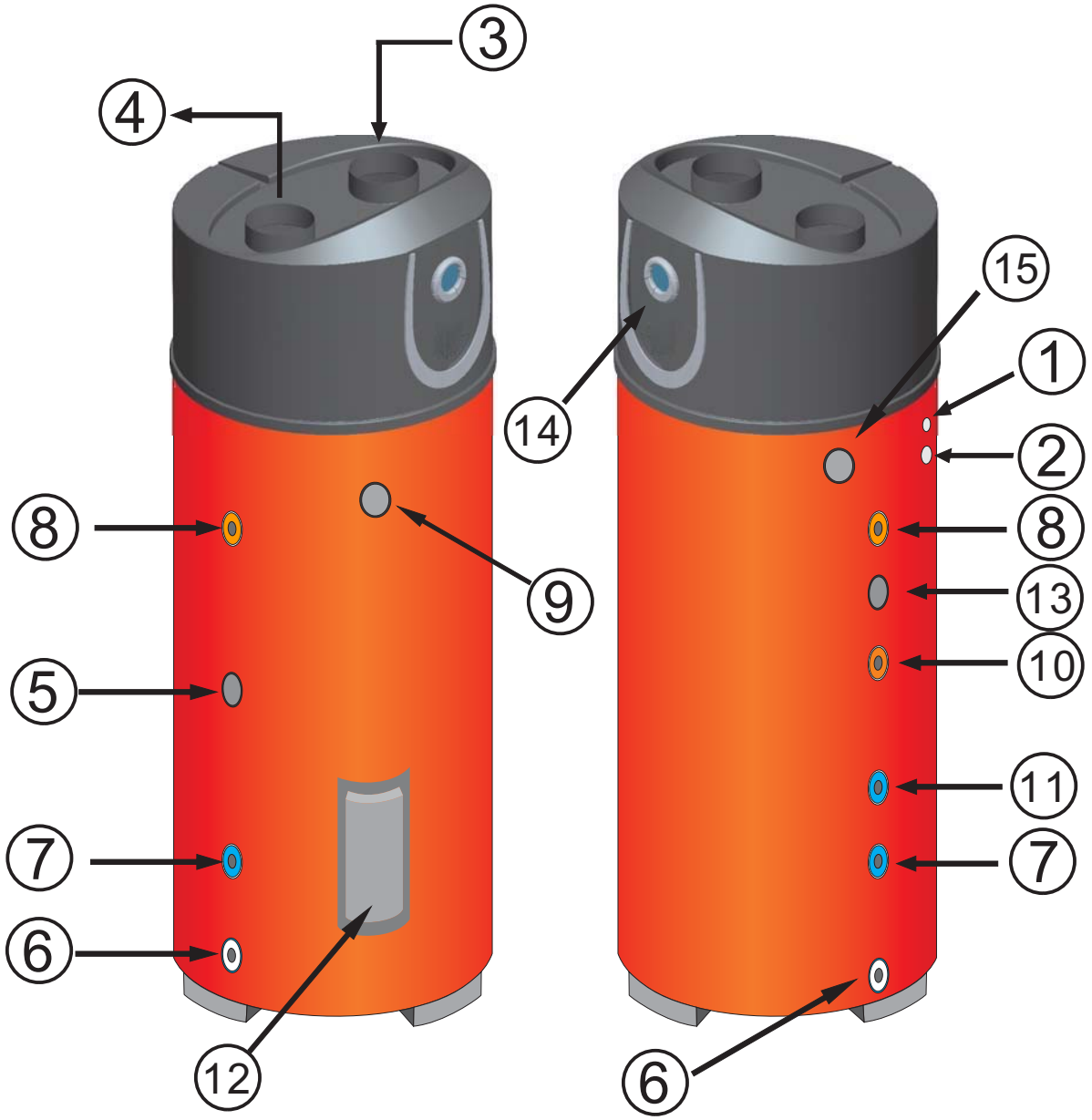
Failure to turn off the main (remote) electrical disconnect device could result in personal injury or death.
Before installing, modifying or servicing system, turn OFF the main (remote) electrical disconnect device.
There may be more than one disconnect device.

To prevent the possibility of severe personal injury, death, or equipment damage due to electrical shock, always be sure the power supply to the appliance is disconnected before doing any work on the appliance.
This can normally be accomplished by switching the breaker for the air conditioner to off, disconnecting all external electrical connections and cords, switching on board electrical generators and INVERTOR to off, and removing the cable from each positive terminal on all storage and starting batteries.

5. Technical Data

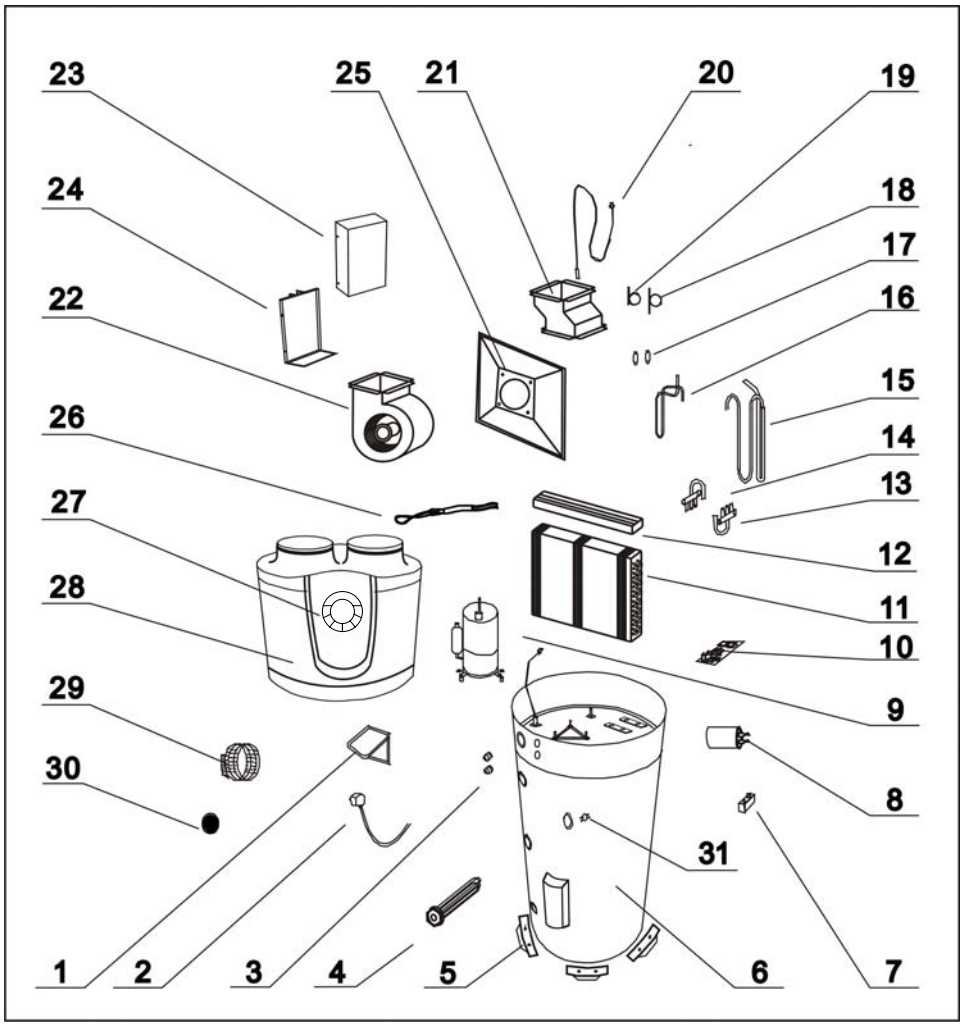
Model		KS35-C300
Electrical Supply	V/Ph/Hz	230/1/50
Rating Heating Capacity	W	3450
Rating Heating Power Input	W	1090
Heating Current	A	5.0
Integrated Electrical Heater	W	2000
Refrigerant / Filling	/g	R410A/820
Water Storage Tank Volume	L	300
Temperature of Output Water	℃	10 ~ 60
Max Water Pressure In the WT	Bar	6.0
Air Ducts Connections Dimensions	mm	150
Device Dimensions (D x H)	mm	Φ680X1805
Shipping Dimensions (L/W/H)	mm	695/695/1855
Water Connections Dimensions	inch	1
Protection Class		IPX1
Ambient Temperature	℃	0 ~ 35
Electricity Control Way		Mini-computer intelligent control
Controller		LED Display
Net Weight / Gross Weight	Kg	81/90
Noise Level	dB	47

6. Description of The Device



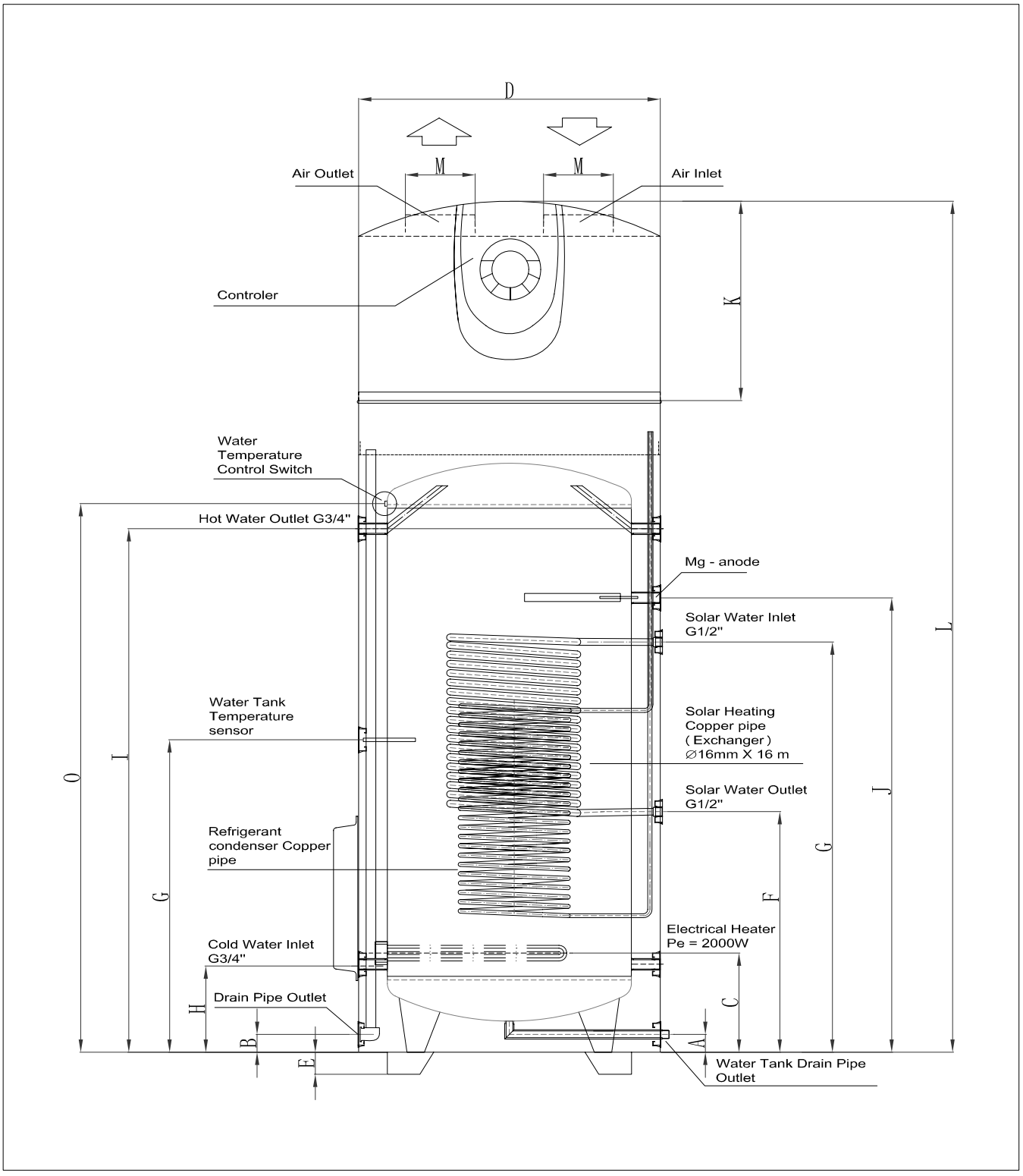
1	Power Cable Hole	9	Water Tank temperature protector
2	Control Wire Hole	10	Solar Coil Inlet
3	Air Inlet	11	Solar Coil Outlet
4	Air Outlet	12	Electrical Heater
5	Temperature Sensor	13	Mg-Anode
6	Drain Hole	14	Control Panel
7	Cold Water Inlet	15	Service Valve
8	Hot Water Outlet		

Inside



1	*Control panel cover*	**15**	*Gas returning pipe*	**29**	*Drainage Pipe*
2	*Power plug*	**16**	*Exhaust pipe*	**30**	*Rubber Cover*
3	*Clip of Power Cable*	**17**	*Filter*	**31**	*Water tank temperature protector*
4	*Electrical heater **	**18**	*Auxilliary capillary*	**32**	
5	*Plastic Base*	**19**	*Capillary*	**33**	
6	*Water tank*	**20**	*Defrost sensor*	**34**	
7	*Motor Capacitor*	**21**	*Assistant unit of air outlet*	**35**	
8	Compressor capacitor	**22**	*Fan motor*	**36**	
9	*Compressor*	**23**	*Electrical Box*	**37**	
10	*Circuit Board*	**24**	*Circuit board base*	**38**	
11	*Condenser*	**25**	*Air deflector*	**39**	
12	*Condenser top polyfoam*	**26**	*Condenser heater*	**40**	
13	*Four way valve 1*	**27**	*Control panel*	**41**	
14	*Four way valve 2*	**28**	*Plastic shell*	**42**	

7. Dimensions of The Device And The Components

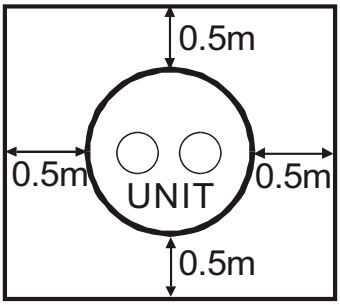


Dimensions	A	B	C	D	E	F	G	H	I	J	K	L	M	O
(mm)	40	40	213	680	50	300	350	218	991	906	460	1758	150	991

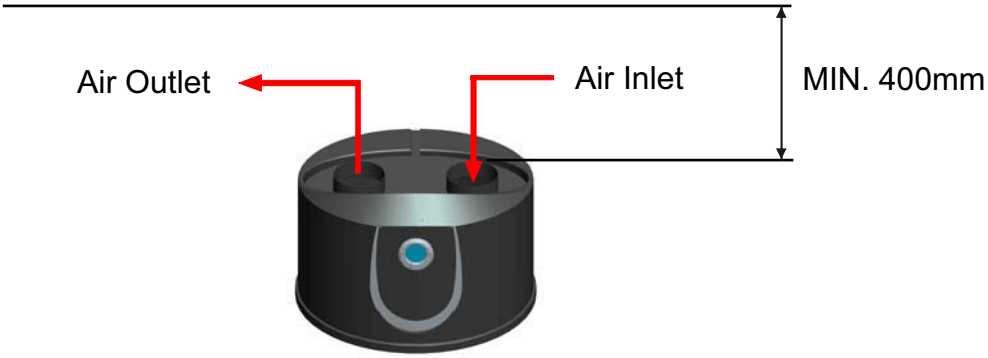
8. Fitting and putting into service of the heat pump

Rules of establishment:
Many measures define the place of the device, it is essential to respect them:

- The device can be installed Inside or outside.
- Electric and hydraulic connections must be carried out according to national wiring regulation.
- It is the best to choose a room that we also wish to keep cool (a cellar, basement, a room where all other cooling devices are – refrigerator, freezer and other). The temperature in that kind of rooms is not precisely defined and can not be maintained will the heat pump (it depends on the kind of room and the volume)
- The obstacles such as wall and vegetation must be separated from the apparatus as indicated on the diagram below.



- The ventilator should not blow towards the windows or crossing place.
- There must be more than 400mm space on the top of the unit.



- The fixing board of the unit must be fixed by bracket.
- Connect drainpipe to the outlet of condensate water, then draw the drainpipe into blow off pipe.

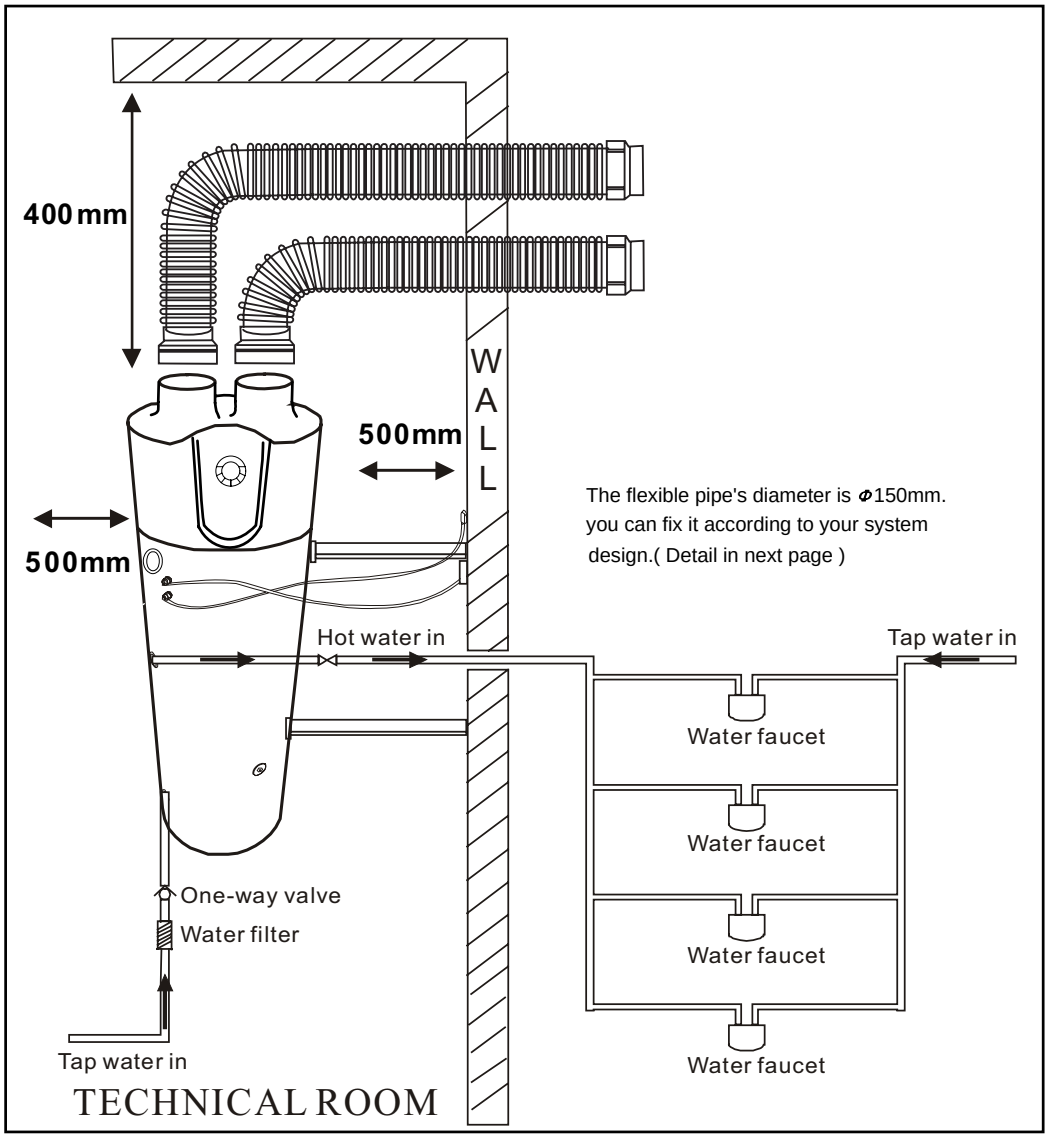
Other precautions of establishment:

- Do not install the device near a way with circulation of cars in order to avoid mud projections.
- Avoid directing blowing counters the dominant winds.
- If the device is intended to be used in period winter, put it at the shelter of the falls of snow.
- The device must be able to be watch on especially so that children do not play around.

9. Hydraulic connections:

Refer imperatively to the diagram below:

1. Connect the mouth for hot- water- in to the water tank with PP-R pipe, with other metal pipe. Pay attention to heat preservation if use metal pipe.
2. Install water filter and one-way valve in the Tap water pipe, then connect the tap water pipe to the tank mouth of tap water inlet.
3. Fill water into the tank: Open the tap- water-in valve to fill water; Mean while, open the hot water-out valve, till water spill over from the hot-water-out valve. It means the tank is full of water. Close the tap-water-in valve, check leakage by storing full water, Ensure there is no water leak age in the all system.



WARNING

Before start machine to heating, it must ensure that water tank is filled with water, otherwise will cause dangers.

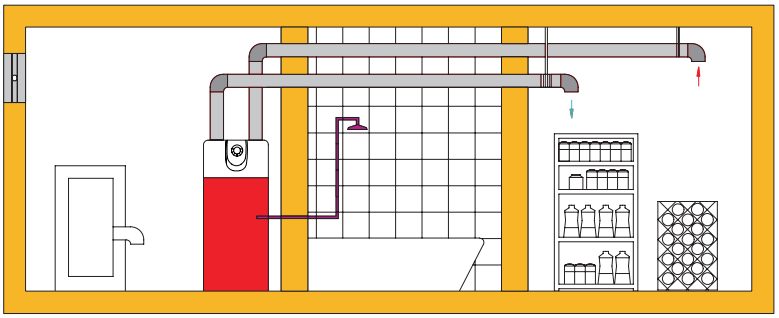
To ensure that water never flow backwards, it must install a Water Non-returning Valve in the water inlet of the water tank.

When install pipeline for heat pump, user need to install an additional pressure reducing valve (working pressure is less or equal to 3bar) in the water inlet pipe, for pressure reduction and pressure stabilizing in the water supply system.

10. Many system-design options for architects

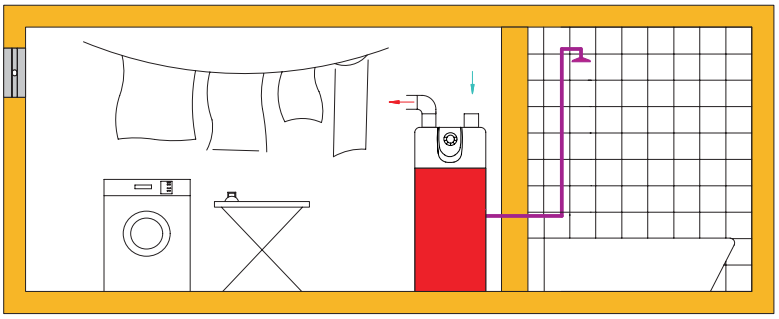
Option A:

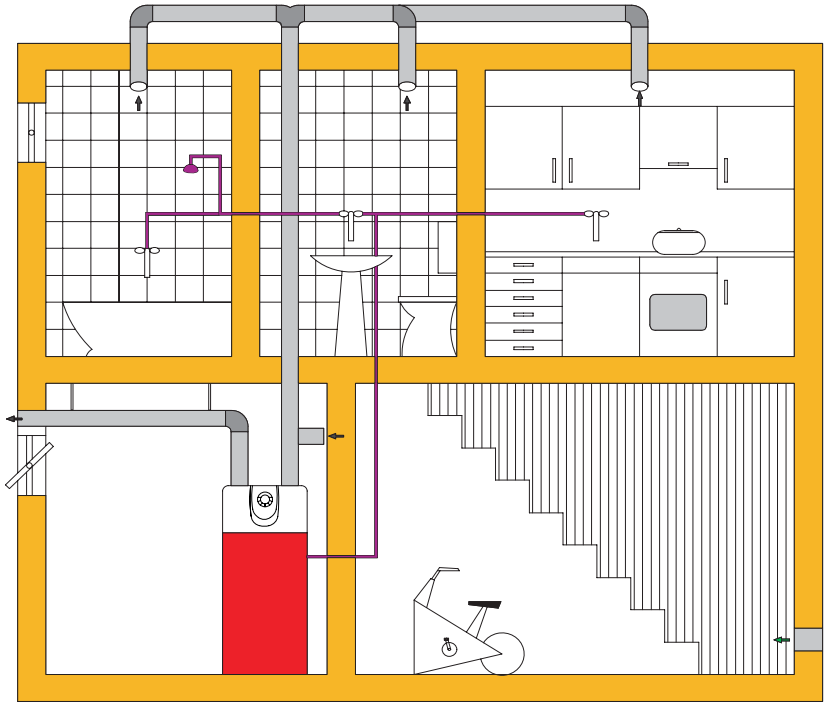
-Installation in the heating room.
-Hot water heating from room air.
-Optional use:
cooling of the food storage or wire cellar.
cooling of the room of your choice.



Option B:

-Installation in the laundry washing room.
-Hot water heating from room air.
-Optional use:
laundry-drying,decalcified water for steam-iron.
-Dehumidification,





Option C:

-Installation in the same room as heating heat pump.
-Heat recovery from return air; sanitary hot water production.
-Optional use:
Removal of used,humid,charged air from bath,toilet,kitchen;
Fresh ambient air enter home by slots.

11. Electric connections

CAUTION: before connecting the appliance, make sure that the supply power line is disconnected from the network.

Characteristics of the general power supply:

- mode of neutral TT and TN.S; the circuit of heat pump must be connected to an earthing circuit

Connections:

- The electric installation must be carried out by a professional qualified (like an electrician) according to the rules and standards in force in the country of installation.
- The power supply of the heat pump must come preferably from an exclusive circuit and having the bodies of lawful protection.
- Controller must be installed or indoor wall and the place is easy for use.

Electric protection of which must lay out the heat pump:

- circuit breaker curves D or standard fuse of protection Am, gauged with 16A
- differential protection of 30 mA

In the event of connection to an electrical plug by the user:

- The heat pump is being provided with an electric cable, it is possible to connect it with a plug.
- The plug must be checked in conformity with the power of the appliance by a qualified technician.
- The plug must be safe from the rain, of easy access to be cleaned and one will have to regularly check the good condition of this plug.

BEFORE THE STARTUP OF HEAT PUMP, IT IS SIGNIFICANT TO INCLUDE/UNDERSTAND THE OPERATING AND THE SETTINGS OF WHICH YOU WILL TAKE NOTE IN THE FOLLOWING PARAGRAPHS

12. Running of reversible heat pump

By using the free energy contained in the ambient air, the heat pump enables to heat the water of the water in a very economic way.

Your heat pump is a heat machine that can transfer the heat from a low temperature place (ambient air) to a higher temperature place.

Running in heating mode :

The heat of the air is absorbed by the cold, liquid refrigerant, through the evaporator (radiator with wings), in which it's vaporized; then the compressor increases the pressure and the temperature, and sends it into the condenser (exchanger) where it loses its heat by transmitting it to the water and it comes back in the liquid state; it loses its pressure and cools again into the pressure reducer before returning to the evaporator for a new cycle.

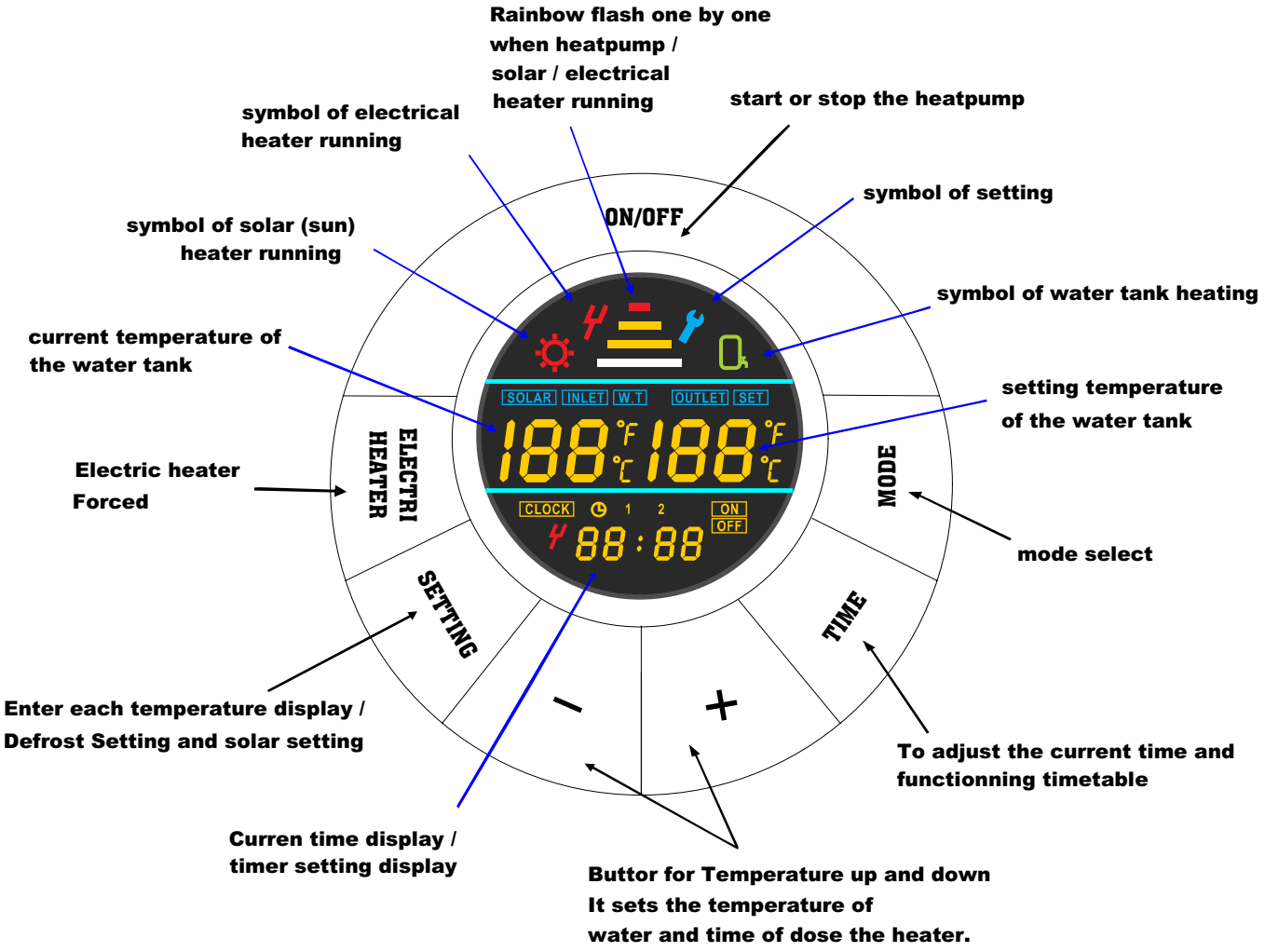
* Running in cooling mode or defrosting mode :

4 way valve enables to reverse the cycle of the refrigerant ; the liquid fluid is vaporized into the exchanger (that becomes the evaporator) by taking the heat of the water of the water, passes into the compressor which heats it then into the radiator (which becomes the condenser) where it comes back at the liquid state.

Note: Single water heater without cooling water mode.

13. Description of the screen of dispaly and control:

Description of the order and display panel :



Standby :

to display water setting temperature , real water temperature, and clock

Operation :

1. Heat pump heating only mode: to display water setting temperature, real water temperature, clock, and symbol of water tank. The rainbow generator will flash one by one when compressor is running.
2. Solar system heating only mode: to display water setting temperature, real water temperature, clock, and symbol of sun. The rainbow generator will flash one by one when solar water pump is running.
3. Solar system + heat pump mode: to display water setting temperature, real water temperature, clock, and symbol of water tank, sun. The rainbow generator will flash one by one when compressor or solar water pump is running.
4. Electrical heater : the symbol " " will display when the electrical heater start, settings examination will display symbol " " ; the rainbow will flash one by one when electrical heater is heating .
5. The rainbow will light off when there an alarm or protection.

14. Use in standard mode

Time/Timer settings:

1. Time setting : press button TIMER once, then match with button + and – to set HOUR, MINUTE.

2. Timer setting :

Press button Timer 3 seconds, to set the timer for heat pump, then match with button + and – to set HOUR, MINUTE, at the time display symbol "◷ "

Press button Timer and electrical heater at the same time for 3 seconds, to set the time for electrical heater, then match with button + and – to set HOUR, MINUTE; at the time display symbol" ◷ " and " ϟ"

ON1 or OFF 2 will display as soon as timer setting done.

Fuctions of button

（1）“ON/OFF”

Start/stop heat pump; exit settings menu.

（2）ELECTRIC HEATER

Manually start or stop electrical heater

（3）Button “ SETTING ”

Press button “ setting ” once, to read the following temperature data

Item	Definition	Range
C1	Water tank temperature	(-29)～99℃
C2	Solar water sensor temperature	-F(-0)～125℃
C3	Exhaust air temperature	-F(-0)～125℃
C4	Pipe temperature (evaporator temperature for defrosting)	-F(-29)～99℃
C5	Ambient temperature	-F(-29)～99℃

Remark: if C1,C4 or C5 temperature ≤ -20℃, will display L0～L9.

Press button " SETTING " for a long time, to enter parameters settings as following :

Item.	Definition	Adjustable	Default
01	Solar water pump start water temperature difference	3-15℃	8℃
02	Solar water pump stop water temperature difference	0—2℃	2℃
03	Compressor restart according to water temperature degeneration	2-15℃	5℃
04	Electrical heater start water temperature (e.g: when water temperature get to 55℃, then allow to start electrical heater)	10-60℃	55℃
05	Electrical heater delay (if the compressor can not increase the water temperature after it runs 30 minutes, then allow to start electrical heater)	0-90 min	30min
06	Sterilize water temperature (kill bacteria with 60℃ water)	60-80℃	60℃
07	Sterilize duration (kill bacteria last 120 minutes)	10-180 min	10 min
08	Sterilize period (each 30 days, system will kill bacteria once)	0-99days	30days
09	Interval of defrosting (45 minutes after the first defrosting, then allow the second defrosting to start)	30-70 min	45 min
10	Defrosting start temperature (when the evaporator's temperature -7℃, the defrosting starts)	-30℃-0℃	-7℃
11	Defrosting stop temperature (when the evaporator's temperature 15℃, the defrosting stops)	2-30℃	15℃
12	Duration of defrosting	1-12 min	8 min
13	Compressor delay time (when solar system is running, if the water temperature can not increase after 90 minutes, then allow to start compressor)	10-180 min	90 min
14	Solar water pump clean function (termly clean the solar system by runs solar water pump)	0(on), 1(off)	1
15	Duration of solar water pump when it is cleaning solar system	1-10 min	2 min
16	Period of solar water pump cleaning system	10-90days	30days

Press "SETTING" to enter settings, press " SETTING " again to exit settings.

Remark: besides water temperature, all the settings only can be adjustable when heat pump is standby.

（4）Button “ - ” and “ + ”

When unit is running, press “ + ” once will increase the water setting temperature 1℃

When unit is running, press “ - ” once will decrease the water setting temperature 1℃

Change the item or page when it is reading or settings.

（5）Button “ TIME ”

Press once to Hour setting, press again to Minute settings, press again for saving and go back

Press TIME for 3 seconds, to enter Timer settings for heat pump auto start and auto stop; press button “ mode ” could cancel timer settings, display “ - - : - - ”

Press TIME and ELECTRIC HEATER for 3 seconds, to enter Timer settings for electrical heater auto start and auto stop; press button “ MODE ” could cancel timer settings, display “ - - : - - ”

（6）Button “ MODE ”

When heat pump is running, press it for changing operation mode;

When timer is setting, press it for Cancel timer settings.

Control

1. water tank settings temperature :adjustable from 20～60℃, factory default is 45℃;

Heat pump heating only mode: the compressor will stop as soon as water get to 45℃ (default), then compressor only restart when the water temperature drop 5℃(default). The electrical heater only starts when the water get to 55℃(default), or the compressor can not increase water temperature in 30 minutes; the electrical heater will stops as soon as get to water setting temperature.

Solar heating only mode: when solar water temperature higher than water tank temperature, solar water pump will start, then the water pump will stops as soon as water get to setting temperature; the water pump will restart if the water tank temperature drop 8 ℃ (default). Then the water pump will stop when water temperature difference is 2℃ (default) to water setting temperature.

Solar + heat pump mode: solar system always has priority to runs; when solar water temperature higher than water tank temperature, the solar water pump starts; heat pump(compressor) can only starts when solar water temperature lower then water tank temperature, or the solar system can not increase water tank temperature in 90 minutes (default)

2. supplementary electrical heater (electric heater)

(1) Automatic : it is automatic when the operation mode is Heat pump heating only;

(2) Manual: manually start electrical heater to heat the water, it stops when water get to setting temperature. Then electrical heater will restore automatic mode

3. High water temperature sterilize function. (kill bacteria)

The symbol of water tank will flash when system is sterilizing;

If the water tank temperature never reach 60℃ in 30 days (default), sterilize start; system will try to heat the water to be 60℃ (default), the electrical heater will start when water temperature get to 50 ℃, then until water get to 60℃ and last 10 minutes (default), or the water can not reach 60℃ in 3 hours, sterilize exit.

4. Solar water pump clean function (termly clean the solar system by runs solar water pump）

When set it to 0, if the solar water pump never runs in 30 days (default), it will start solar water pump to clean solar system, water pump will runs 2 minutes (default) then stops.

When set it to 1, this function is not available.

5. Defrosting

The symbol of sun will flash when system is defrosting.

Interval of defrosting : 30-70 minutes adjustable, default is 45 minutes, means 45 minutes after the first defrosting, then allow the second defrosting to start;

Defrosting start temperature: -30℃-0℃ adjustable, default is -7℃, means when the evaporator's temperature -7℃, the defrosting starts

Defrosting stop temperature : 2-30℃ adjustable, default is 15 ℃, means when the evaporator's temperature 15℃, the defrosting stops

Duration of defrosting: 1-12 minutes adjustable, default is 8 minutes, means the defrosting will last 8 minutes.

6 . Timer

Press TIME for 3 seconds, to enter Timer settings for heat pump auto start and auto stop; press button " mode " can cancel timer settings, display " - - : - - "

Press TIME and ELECTRIC HEATER for 3 seconds, to enter Timer settings for electrical heater auto start and auto stop; press button " mode " can cancel timer settings, display " - - : - - "

15. Instruction for the fitter:

The fitter has to read the following notice and explain the instructions to the user.

1 - Devices of control and safety:

The heat pump is equipped with:

2 control devices:

- A defrost temperature probe located on the evaporator, starts the defrost sequence.
- A thermal probe located on the exchanger, ensures the cut of the heat pump when the temperature of the water reaches the temperature instructed

The meaning of code name:

T1: water temperature

T2: ambient temperature

T3: exhaust temperature from compressor

T4: coil temperature in outdoor heat exchanger

TC: water temperature setting

Control funtion:

1. TC can be set between 20℃-60℃ in heating mode. Original TC is 45℃. When T1≤TC-5℃, Compressor and fan motor start; When T1≥TC ℃, Compressor and fan motor stop.

2 - Defrost operation:

1. Defrost:

The system begins to defrost if the following three terms are met in the same time:

a. T4≤-7℃ lasts for a while;

b. compressor runs continuously for more than 5 minutes

c. Compressor runs accumulative total for 45 minutes(the interval between two defrost is a cycle, time accumulates)

While the system begin to defrost, compressor and fan motor stop at first and four way valve1 is on after 1 minutes and begins to work, compressor restarts after it stop for 3 minutes. If the sensor for T4 is damaged, the system begins defrosting after compressor runs continuously for 45 minutes.

2. Terms of defrost exiting:

- When defrosting time reach 3 minutes and T4 reaches 15℃ or defrosting time reaches 8 minutes, defrost exits and enter heating water mode. While defrost exiting, after compressor and fan motor stop for 1 minute, four way valve1 is off. Compress restart after it stops for 3 minutes, the system will run the mode the same as before defrost.

3 - Instruction of the solar coil:*

Type / Data	150L	200L	300L
Thickness (mm)	1.0	1.0	1.0
Length (m)	19	19	19
Diameter(mm)	15.88	15.88	15.88
Connecting Size (inch)	1/2' male thread	1/2' male thread	1/2' male thread

4 - The defaults messages and what to do

Alarm or protection

Alarm or protection	Code display
Water tank temperature sensor error	E1
Solar water temperature sensor error	E2
Compressor exhaust air temperature sensor error	E3
Pipe (evaporator) sensor error	E4
Ambient temperature sensor error	E5
water flow error	E6
Compressor exhaust air over-heat	E7
High pressure protection	E8
Low pressure protection	E9
Electrical heater over-heat protection	EA
Anti-freeze protection	P1
Communications error	EE

Recommendation: Call your fitter to check or change the controller of flow.

5 - Instructions of maintenance:

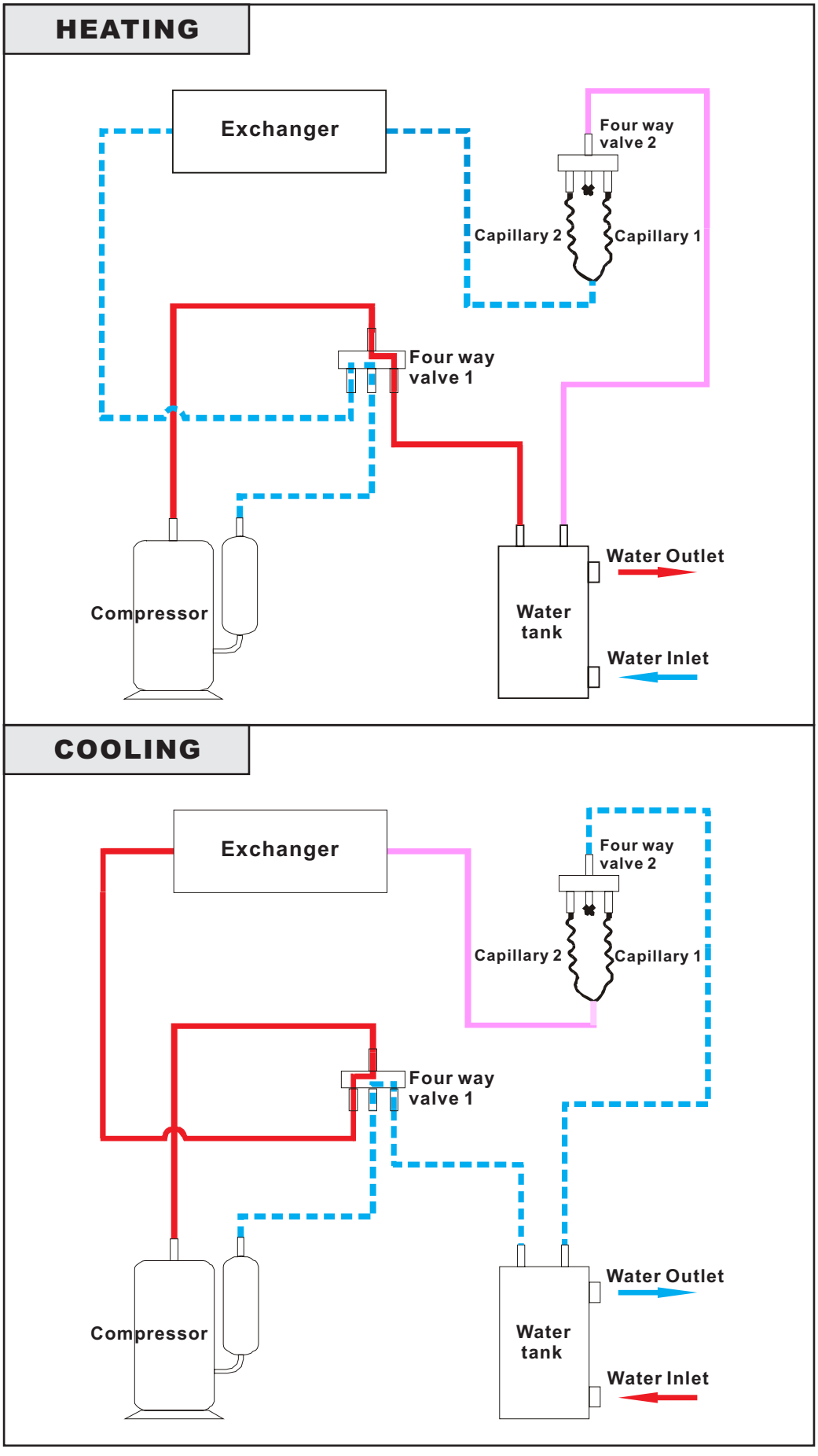
This operation must be done by a professional, qualified person, each year.

- Clean the back evaporator with a delicate brush and a water jet without any pressure (karcher prohibited).
- Check the instructions and working points of the apparatus
- Check the safety measures
- Check the pressure of the refrigerating gas
- Clean the electic box and control the connections
- Check the connections of the masses to the earth

NOTICE !

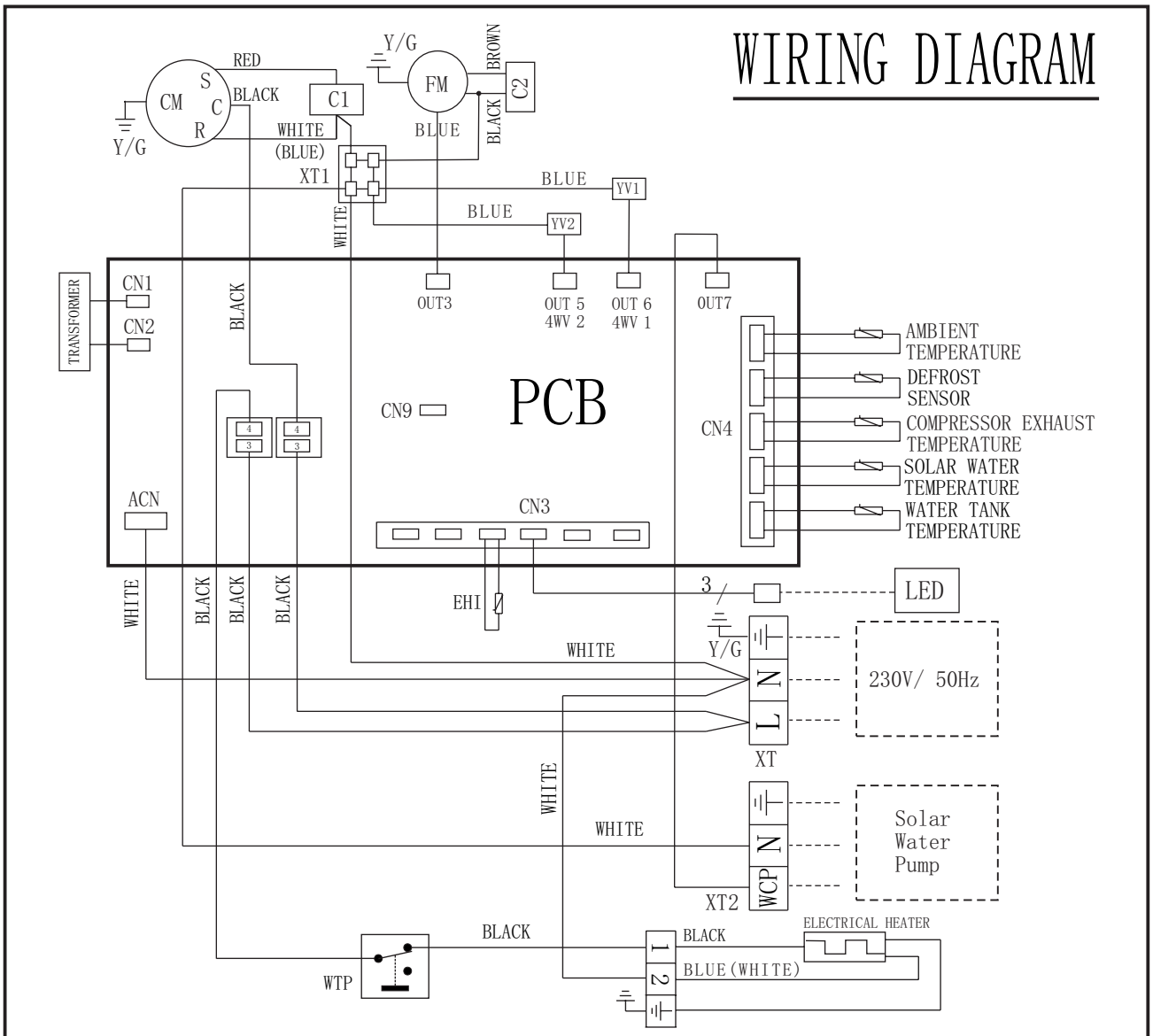
The machine would give an alarm if the water tank's sensor finds water temperature is 2 °C or less, User need to drain all inside water out to prevent unit damage from ice, also do it if machine not be used a long time in winter .

16. Gas Flow Diagram



17. Wiring Diagram

With Water Tank Electrical Heater



PCB	CONTROL BOARD	CM	COMPRESSOR	C1	COMPRESSOR CAPACITOR 1	FM	FAN MOTOR
YV1	FOUR WAY VALVE 1	XT1	PUBLIC TERMINAL	C2	FAN MOTOR CAPACITOR 2	XT	POWER TERMINAL
YV2	FOUR WAY VALVE 2	EHI	ELECTRICAL HEATER TEMPERATURE CONTROL SWITCH			WTP	WATER TEMPERA-TURE PROTECTOR

18. Problems /solutions

The difficulties met the most often can be solved by reading the table below.

If nothing corresponds to the list, or if the solutions applied do not solve the problem, refer to the notice or contact your retailer.

Problem	Observation	Probable cause	Explanation/Solution
The heat pump does not start	Screen extinct	No electric food	Check the connection with the catch or / and the interlocking of the circuit breaker at the head of line
The heat pump does not start	Screen on	Voltage to low	Find out the reason and repair
The heat pump starts and stops within a few minutes		Find out the reason and repair Compressor failure Refrigerant circuit is damped Four way valve failure	Check leakage, charge refrigerant with right amount Change compressor Find the damp reason and make some changes Change
The temperature of the water increases very slowly	The heat pump works		Water temperature and ambient temperature too low Water amount used continuously too large.
Water is running under the heat pump	Water comes from the low vat	The black, plastic conduit to evacuate the condensates is not connected or is stopped	The condensates are entailed by the condensation of the humid air on the wings of the evaporator. It's quite natural. Install the conduit or destop it.
Some frost appears outside, on the wings of the evaporator	The thickness of the frost is thin	Ambient temperature is too low	The frost is entailed by the freezing of the humid air on the wings of the evaporator. It's quite natural and the heat pump is going to defrost. Consider the wintering of the heat pump.
	The thickness of the frost is thick (the blades of the ventilator may rub on the ice much more thicker inside)	The deicing probe or the thermic circuit breakier does not work	Stop the heat pump and call your retailer
The heat pump works but the temperature of the water does not rise (*)	The pressure of the refrigerant shown on the manometer is very low	Escape of the refrigerant	Stop the heat pump and call your retailer or a refrigeration technician
	The pressure of the manometer is right	Breakdow or abnormal wear of the compressor	
The heat pump emits noises of vibration or sheet	The sheets of the casing do not seem to be shoked	The screws are untightened	Tighten the screws of the carter or call your retailer