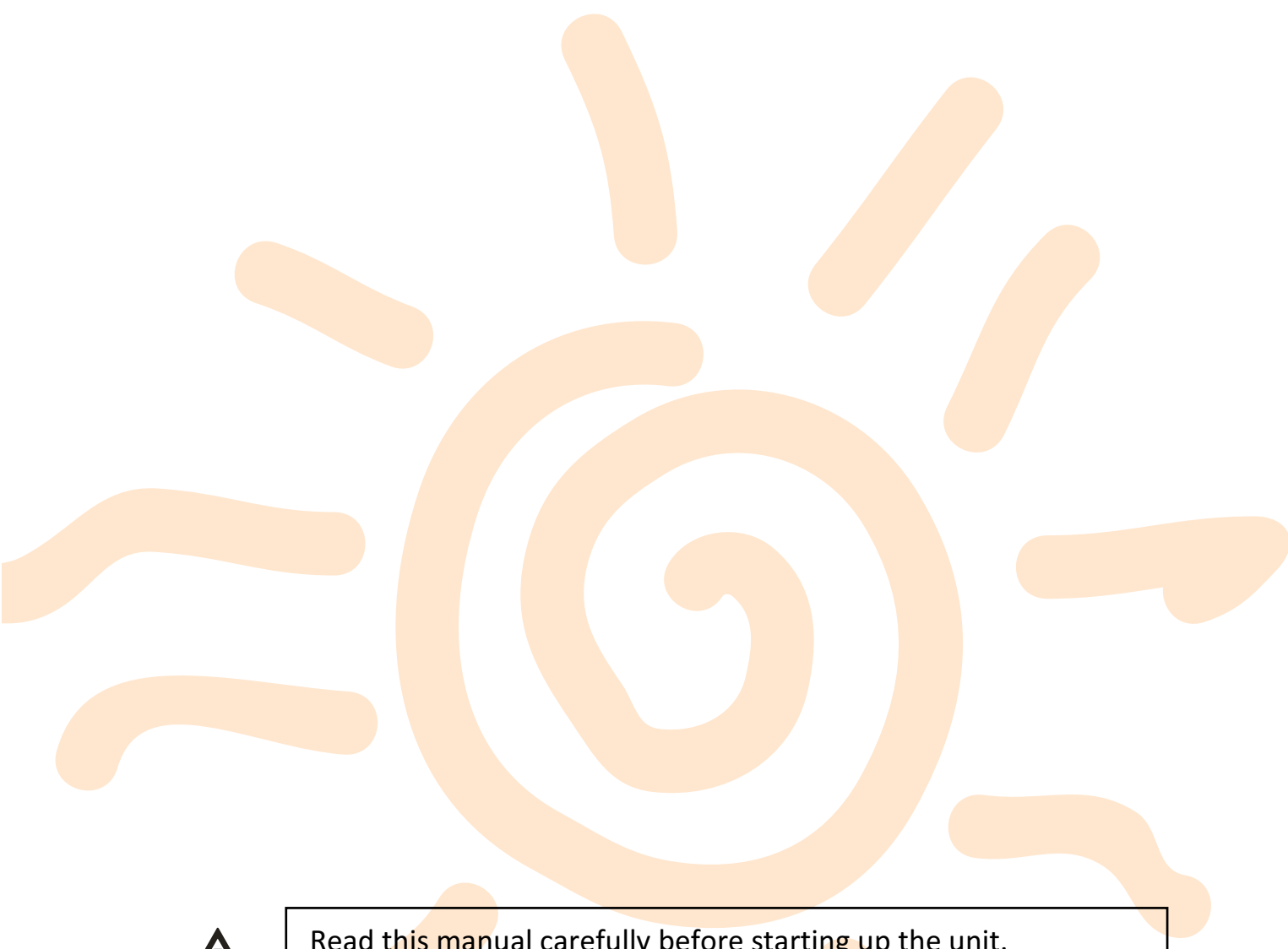


Domestic Hot Water Heat Pump

Operation and Installation Manual





Read this manual carefully before starting up the unit.
Retain this manual for future reference.



Before operating the unit, make sure the installation has been carried out correctly by a professional dealer. If you feel unsure about operation, contact your dealer for advice and information.

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This manual

This manual includes the necessary information about the unit. Please read this manual carefully before you use and maintain the unit.

The unit

The hot water heat pump is one of the most economical systems to heat the water for family domestic use.

Using free renewable energy from the air, the unit is highly efficient with low running costs. Its efficiency can be up to 3 ~ 4 times more than conventional gas boilers or electrical heaters.

- **Waste Heat recovery**
Units can be installed near the kitchen, in the boiler-room or the garage, basically in every room which has a large number of waste-heat so that the unit has the higher energy efficiency even with very low outside temperatures during the winter.
- **Hot water and dehumidification**
Units can be placed in the laundry room or clothing room. When it produces hot water it lowers the temperature and dehumidifies the room as well. The advantages can be experienced particularly in the humid season.
- **Storage room cooling**
Units can be placed in the storage room as the low temperature keeps the food fresh.
- **Hot water and fresh air ventilation**
Units can be placed in the garage, gym, basement etc. When it produces hot water, it cools the room and supplies fresh air.
- **Compatible with different energy sources**
Units can be compatible with solar panels, external heat pumps, boilers or other different energy sources.
- **Ecological and Economical Heating**
Units are the most efficient and economical alternative to both fossil fuel boilers and heating systems.
By making use of the renewable source in the air, it consumes much less energy without direct CO2 emission.
- **Compact design**
Units are especially designed for offering sanitary hot water for family use. It's extremely compact structure and elegant design are suitable for indoor installation.
- **Multiple Functions**
The special design of the air inlet and outlet makes the unit suitable for various ways of connections. With different ways of installation, the unit can work as just a heat pump but also as a fresh air blower, a dehumidifier, or an energy recovery device.
- **Other features**
 - Stainless steel tank and a magnesium stick assure the durability of components and the tank.
 - Highly efficient compressor with the R134a refrigerant.
 - Electrical element available in the unit as a back-up, assuring constant hot water even in extreme cold winters.

SAFETY INSTRUCTIONS

To prevent injury to the user, other people, or property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage.

Install the unit only when it complies with local regulations, by-laws and standards. Check the main voltage and frequency. This unit is only suitable for earthed sockets, connection voltage 220 – 240 V ~ / 50Hz.

The following safety precautions should always be taken into account:

- Be sure to read the following WARNING before installing the unit.
- Be sure to observe the cautions specified here as they include important items related to safety.
- After reading these instructions, be sure to keep it in a handy place for future reference.



WARNING

Do not install the unit yourself.

Incorrect installation could cause injury due to fire, electric shock, the unit falling or leakage of water. Consult the dealer from whom you purchased the unit or a specialized installer.

Install the unit securely in a place.

When insufficiently installed, the unit could fall causing injury. The minimum support weight of 20g/mm² of the installation place is required. When installing the unit in a small room, please take measures (like sufficient ventilation) to prevent the asphyxia caused by the leakage of refrigerant.

Use the specified electrical wires and attach the wires firmly to the terminal board (connection in such a way that the stress of the wires is not applied to the sections).

Incorrect connection and fixing could cause a fire.

Be sure to use the provided or specified parts for the installation work.

The use of defective parts could cause an injury due to possible fire, electric shocks, the unit falling etc.

Perform the installation securely and please refer to the installation instructions.

Incorrect installation could cause an injury due to possible fire, electric shocks, the unit falling, leakage of water etc.

Perform electrical work according to the installation manual and be sure to use a dedicated section, fused with 16A.

If the capacity of the power circuit is insufficient or there is an incomplete electrical circuit, it could result in a fire or an electric shock.

The unit must always have an earthed connection.

If the power supply is not earthed, you may not connect the unit.

Never use an extension cable to connect the unit to the electric power supply.

If there is no suitable, earthed wall socket available, have one installed by a recognized electrician.

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Do not move/repair the unit yourself.

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard. Improper movement or repair on the unit could lead to water leakage, electrical shock, injury or fire.

The unit is no intended for use by children.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.



CAUTION

Do not install the unit in a place where there is a chance of flammable gas leaks.

If there is a gas leak and gas accumulates in the area surrounding the unit, it could cause an explosion.

Perform the drainage/piping work according to the installation instruction.

If there is a defect in the drainage/piping work, water could leak from the unit and household goods could get wet and be damaged.

Do not clean the unit when the power is 'ON'.

Always shut 'OFF' the power when cleaning or servicing the unit. If not, it could cause an injury due to the high speed running fan or an electrical shock.

Do not continue to run the unit when there is something wrong or there is a strange smell.



The power supply needs to be shut 'OFF' to stop the unit; otherwise this may cause an electrical shock or fire.

Do not put your fingers or others into the fan, or evaporator.

The ventilator runs at high speed, it could cause serious injury.

ITEMS INSIDE PRODUCT BOX

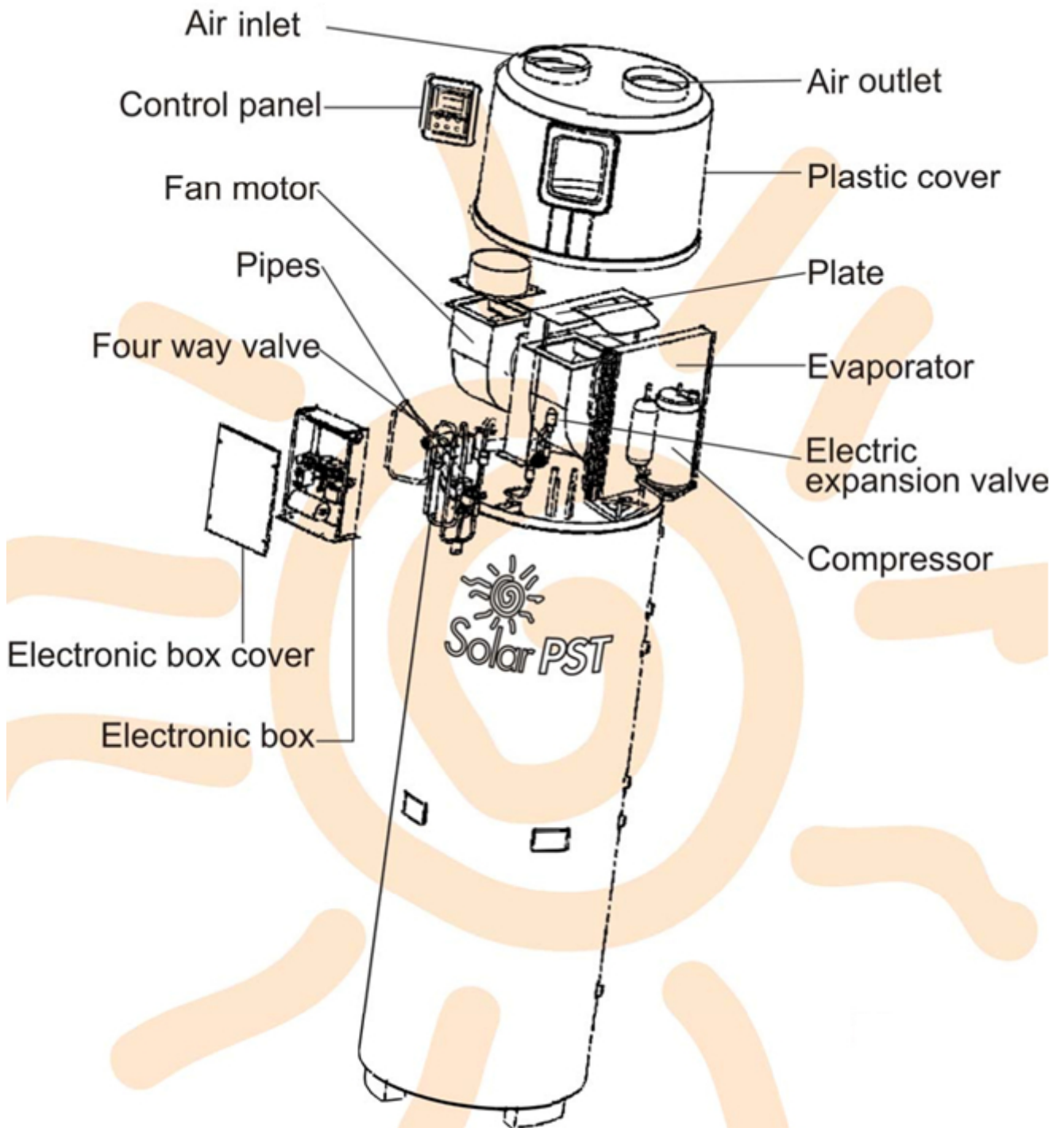
Before starting the installation, please make sure that all parts are found inside the box.

The Unit Box		
ITEM	IMAGE	QUANTITY
Domestic hot water heat pump		1
Operation and Installation Manual		1

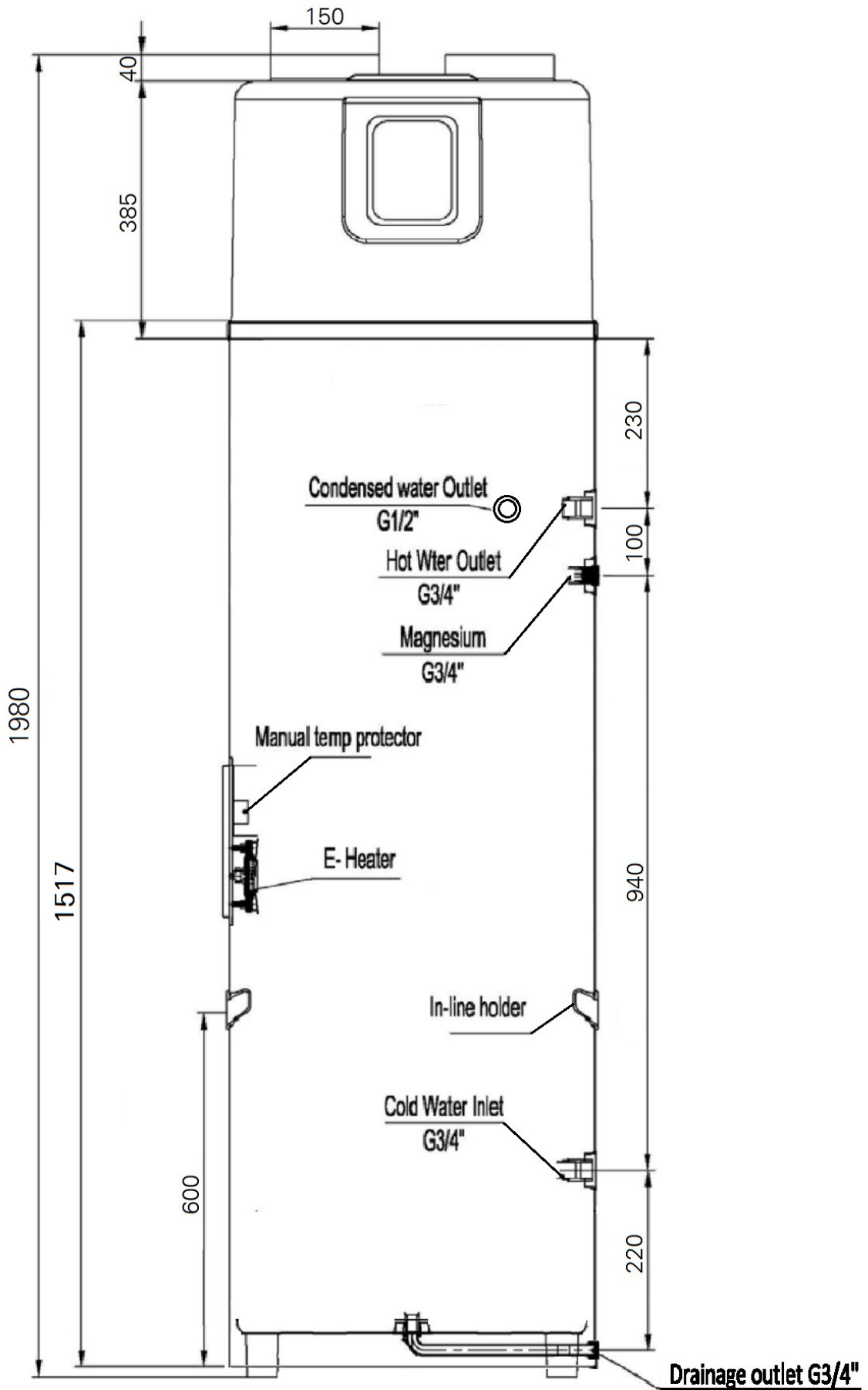
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OVERVIEW OF THE UNIT

Parts and descriptions.



Dimensions



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Remark:

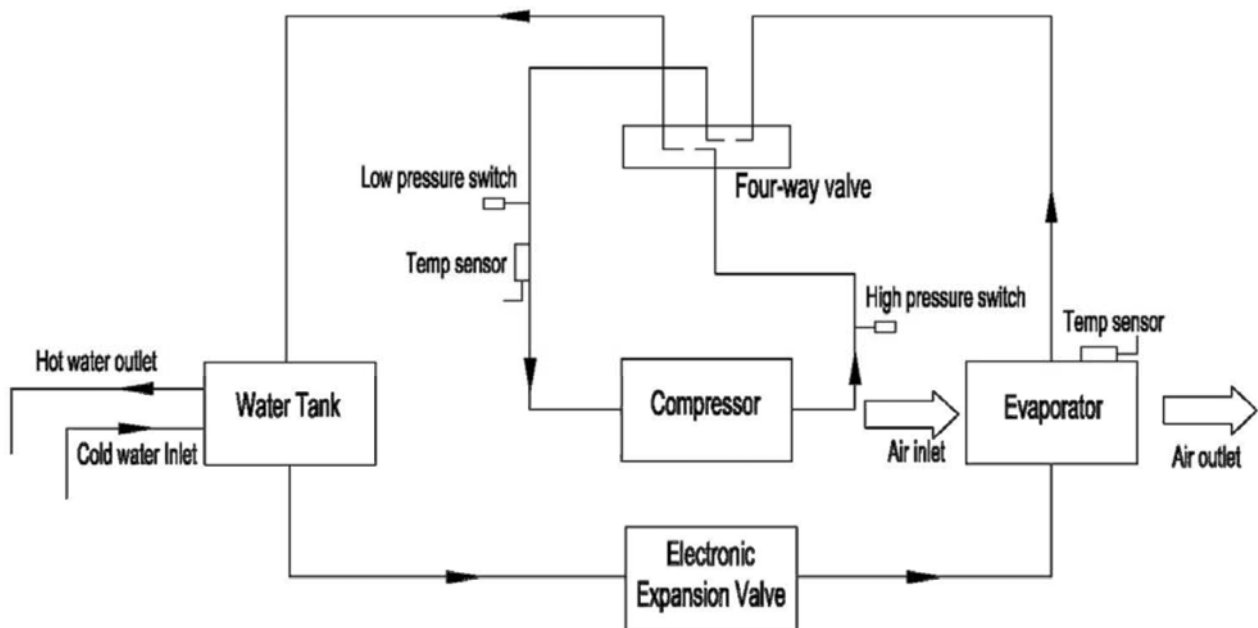
The Magnesium stick is an anti-corrosion element. It is assembled in the water tank to avoid the creation of fur around the inside tank and to protect the tank, and other components. It can help to extend the life-span of the tank. Please replace it once a year.

How to replace the magnesium stick.

- Turn the power of the unit 'OFF' and pull out the plug.
- Drain all the water out of the tank.
- Remove the old magnesium stick from the tank.
- Replace the new magnesium stick.
- Recharge the water.



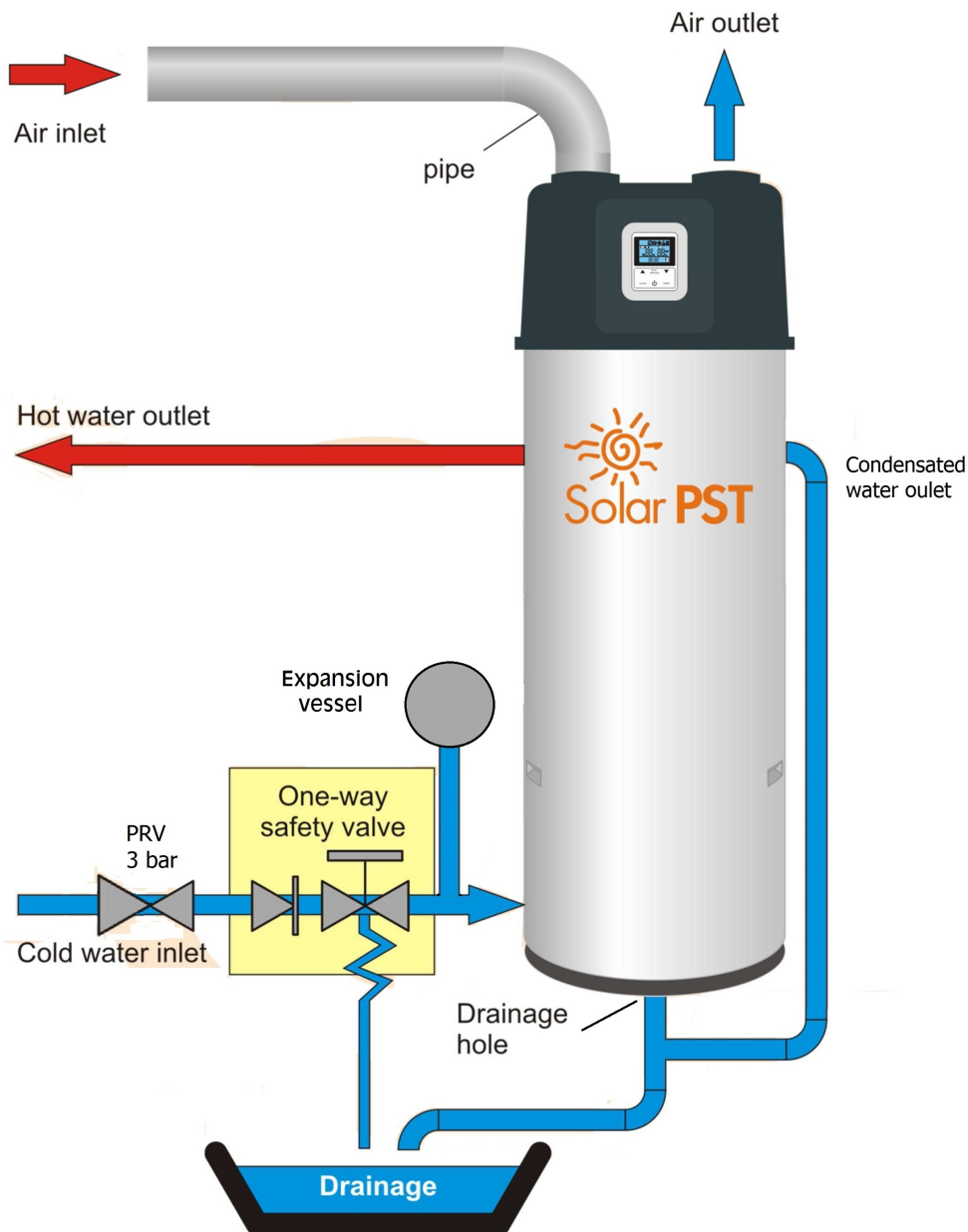
Schematic overview of the water and refrigeration circuit



INSTALLATION

The unit must be installed indoor, and the ambient temperature must be over 0 degree. If the unit is not used for a long time and the environment temperature is below 0 degree, please drain the water in the tank to prevent the freezing.

Installation overview



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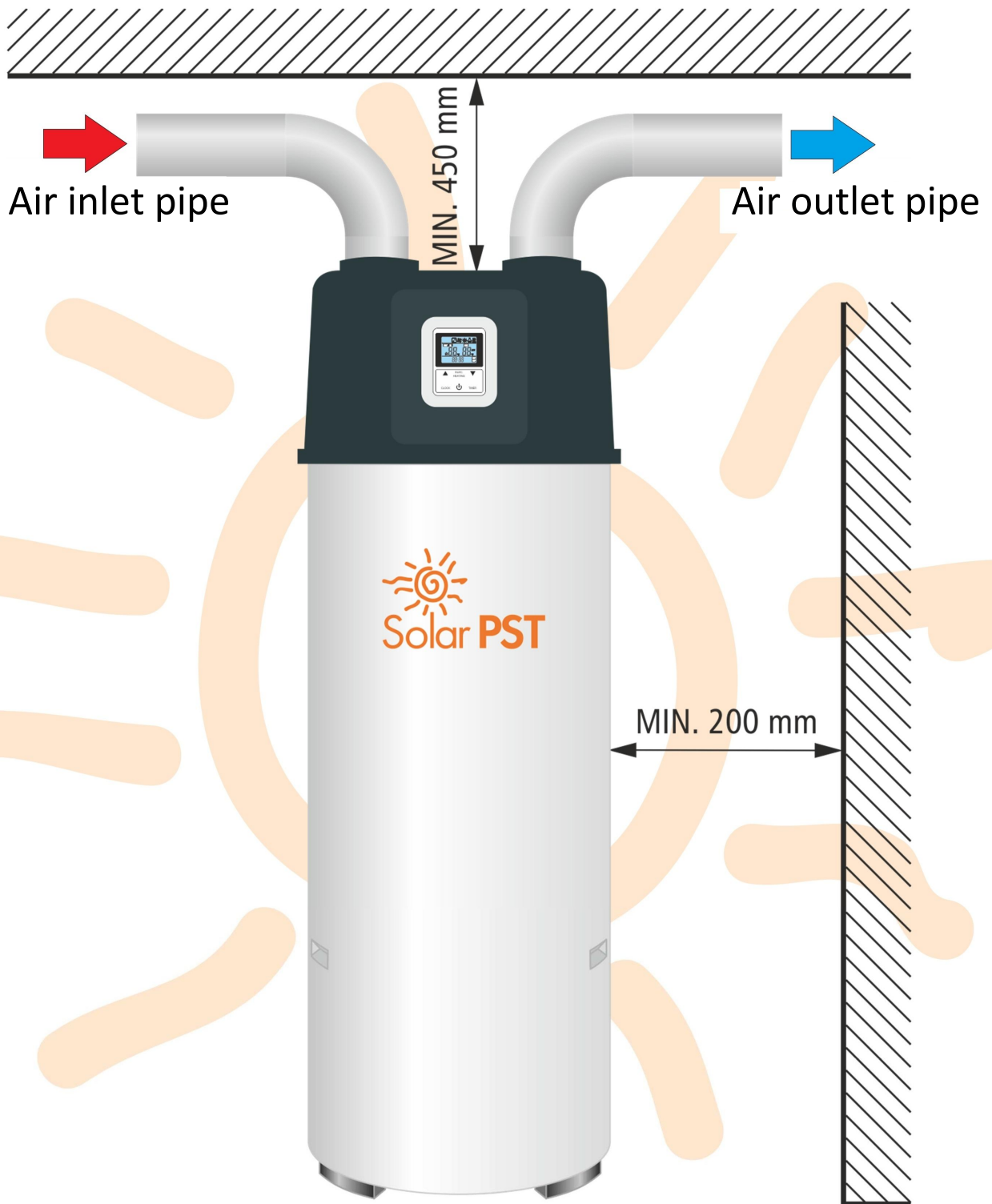


ATTENTION

- The one-way safety valve, PRV and expansion vessel must be installed. If not, it could cause damage to the unit. The set point of the safety valve is 0.7 MPa and the PRV is 0.3 MPa.
- The discharge pipe connected to the one-way safety valve is to be installed in a continuously downward direction and in a frost-free environment.
- The water may drip from the discharge pipe of the one-way safety valve and that this pipe must be left open to the atmosphere.
- The one-way safety valve is to be operated regularly to remove lime deposits and to verify that it is not blocked.
- The tank water can be drained through the drainage hole on the bottom of the tank.

Required service space

Below you will find the minimum space required to be able to complete service and maintenance tasks on the units.



Choose the suitable unit

Please refer to the table below to choose the suitable unit.

Family members	Tank capacity
1 ~ 2 people	150L
2 ~ 3 people	200L
4 ~ 5 people	250L
More than 6 people	300L

Note: The table is just for reference.

Energy saving tip: Start the unit from 12:00 to 17:00 to heat up the water. As during this period the sunshine is more powerful and the heat pump can absorb more heat from the ambient air which results in a higher efficiency.

Transportation

As a rule, the unit is to be stored and/or transported in its shipping container in upright position and without water charge. For a transport over short distance (provided that it is done with care), an inclination angle up to 30 degrees is permitted, both during transport and storage. Ambient temperatures of -20 to +70 degrees Celsius are permitted.

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Transport using a forklift

When transported by a forklift, the unit must remain mounted on the pallet. The lifting rate should be kept to a minimum. Due to its top-heaviness, the unit must be secured against tipping over. To prevent any damage, the unit must be placed on a level surface.

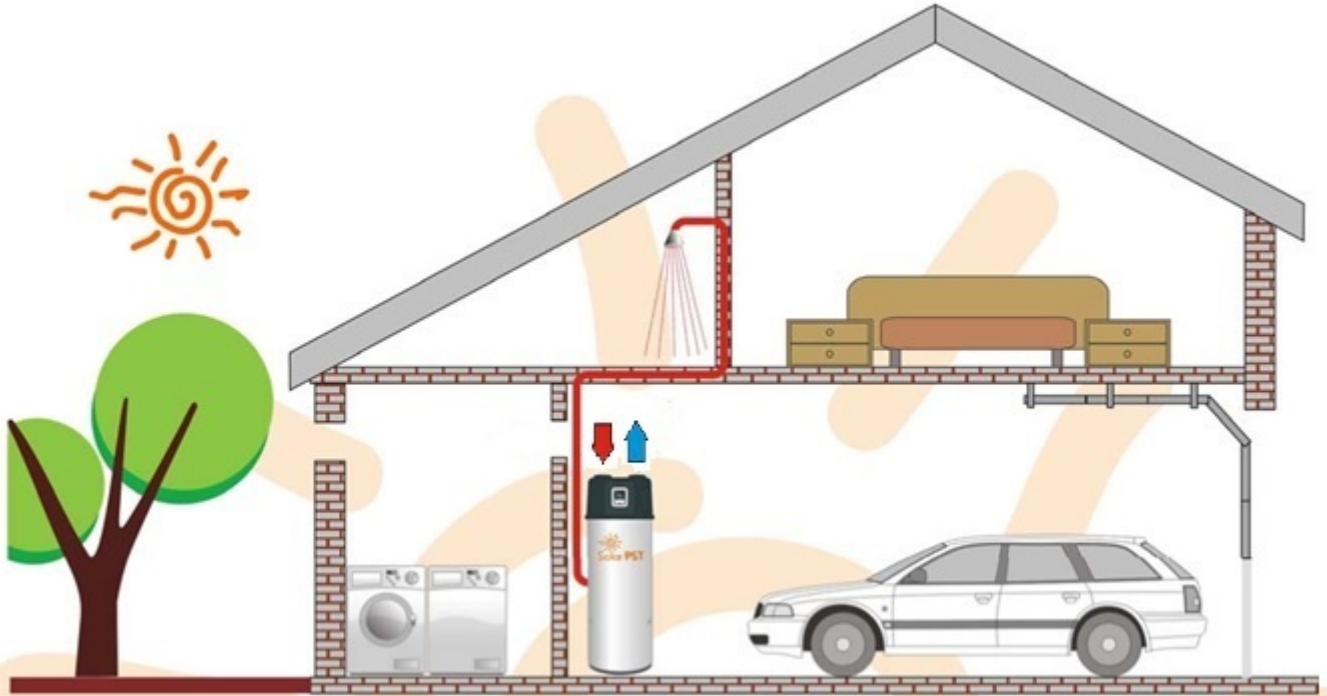
Manual transport

For the manual transport, a wooden/plastic pallet can be used. Using ropes or carrying straps, a second or third handling configuration is possible. With this type of handling, it is advised that the maximum permissible inclination angle of 30 degree is not exceeded. If transport in an inclined position cannot be avoided, the unit should be taken into operation one hour after it has been moved into final position.

Installation positions

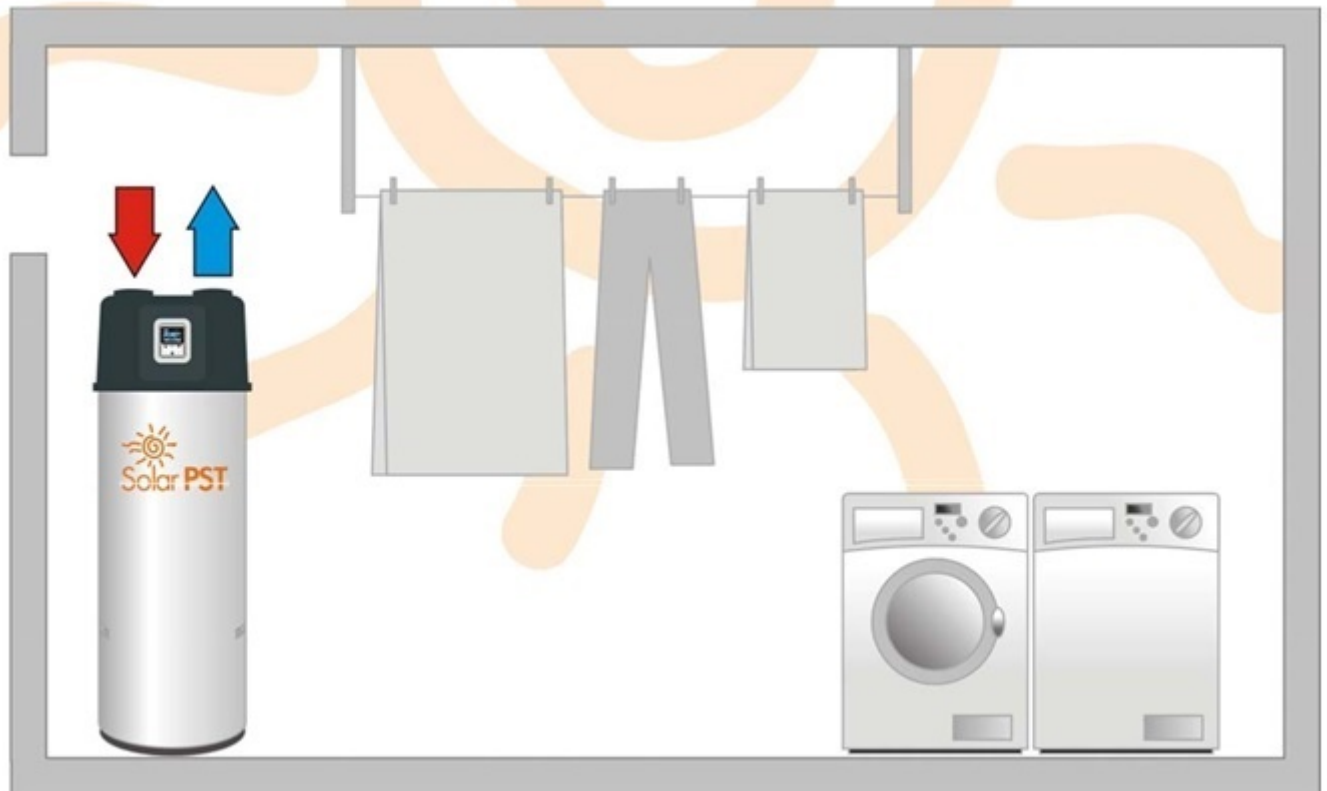
1. Waste heat can be useful heat

Units can be installed near the kitchen, in the boiler-room or the garage, basically in every room which has a large number of waste-heat so that the unit has the higher energy efficiency even with very low outside temperatures during the winter.



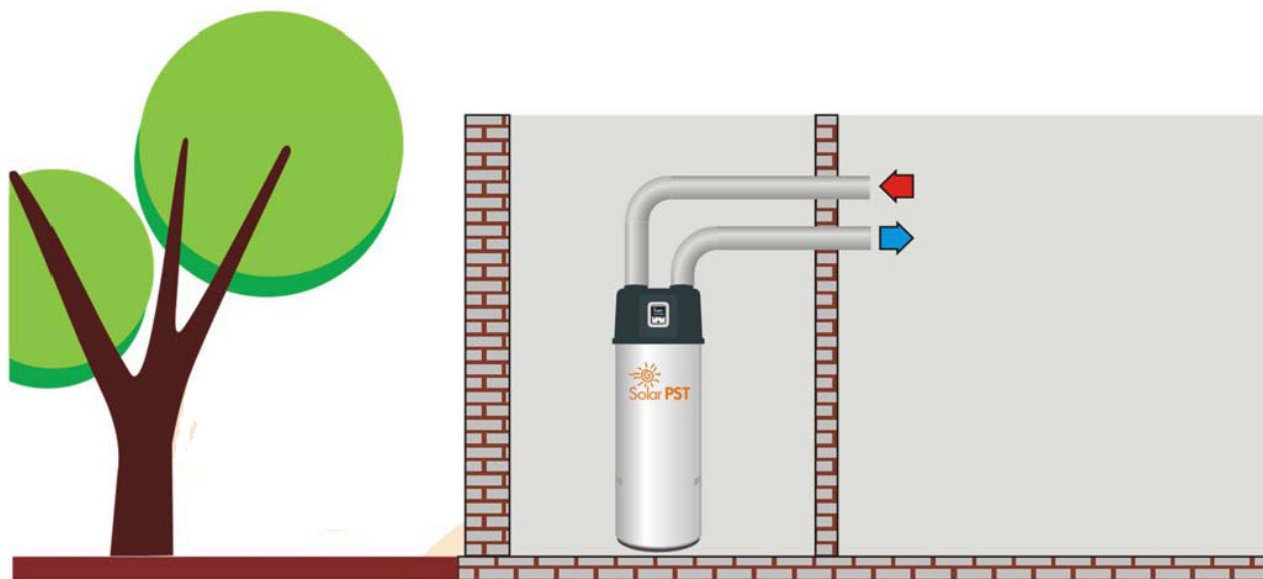
2. Hot water and dehumidification

Units can be placed in the laundry room or clothing room. When it produces hot water it lowers the temperature and dehumidifies the room as well. The advantages can be experienced particularly in the humid season.

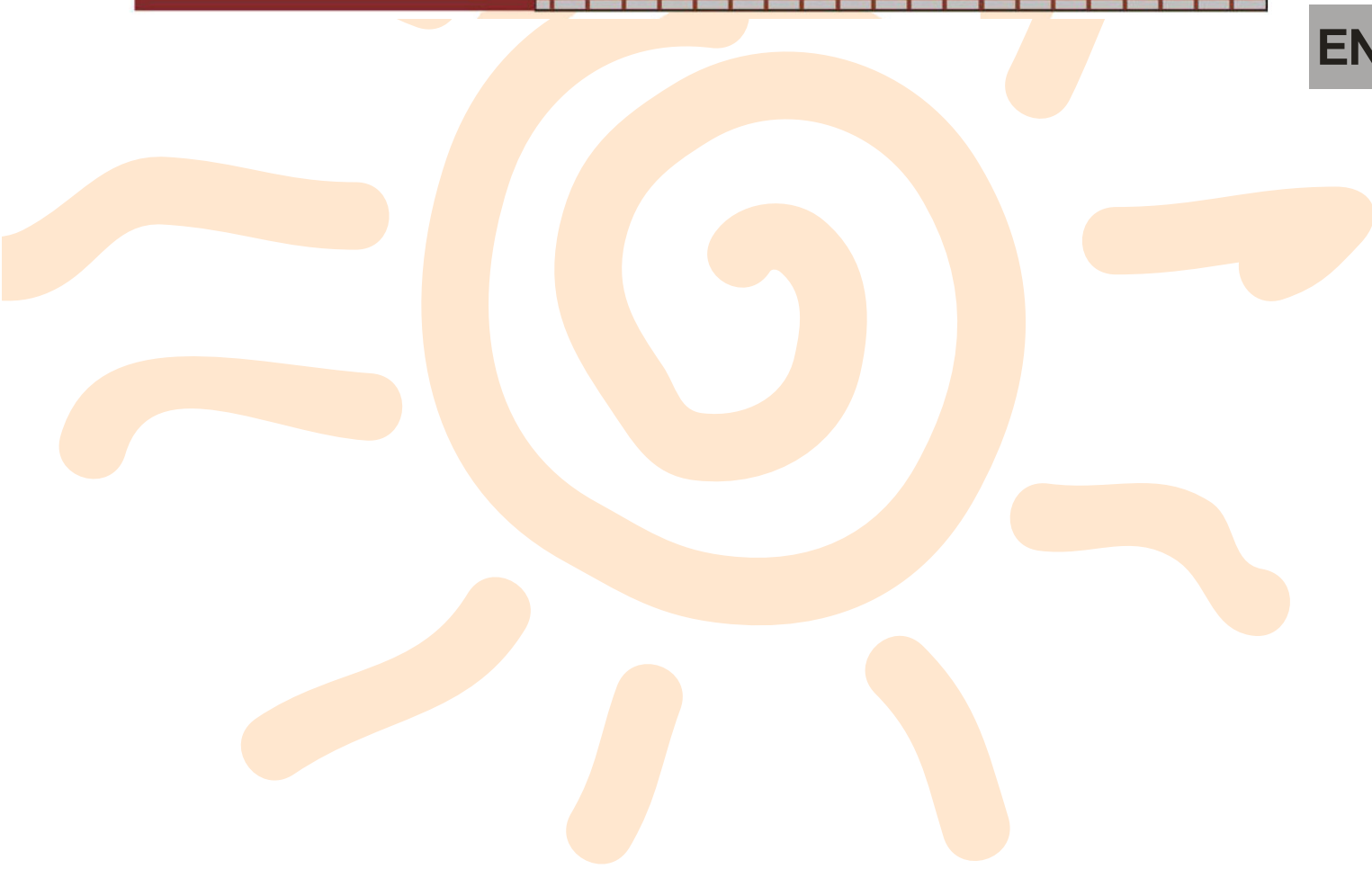


3. Flexible choice of intake air

Units can be placed in the storage room as the low temperature keeps the food fresh. Also units can be placed in the gym, basement, etc. When it makes hot water, it cools the room and supplies the fresh air.



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Water loop connection

Please pay attention to the below points when connecting the water loop pipe:

1. Try to reduce the water loop resistance
2. Make sure there is nothing in the pipe and the water loop is smooth, check the pipe carefully to see if there is any leak, and then pack the pipe with the insulation.
3. Install the one-way safety valve, PRV and expansion vessel in the water circulation system.
4. The nominal pipe wide of the field- installed sanitary installations must be selected on the basis of the available water pressure and the expected pressure drop within the piping system.
5. The water pipes may be of the flexible type. To prevent corrosion damage, make sure that the materials used in the piping system are compatible.
6. When installing the pipe-work on the customers' site, any contamination of the piping system must be avoided.

Wire connection

- The specification of the power supply wire is 2.5 mm².
- Fuse specification is T 3.15A 250V
- There must be a switch when connecting the unit to the power system.

THE APPLIANCE SHALL BE INSTALLED IN ACCORDANCE WITH NATIONAL WIRING REGULATIONS.

Trial running

Checks before trial running

- Check both the water in the tank as well as the water pipe connection.
- Check the power system, make sure that the power supply is normal and the wire connection is ok.
- Check the unit; make sure everything is ok before turning 'ON' the power of the unit, check the light on the wire controller when the unit runs.
- Use the wire controller to start the unit.
- Listen to the unit carefully when turning 'ON' the power of the unit. Turn the power 'OFF' when you hear an abnormal sound.
- Measure the water temperature, to check the undulation of the water temperature.
- Once the parameters have been set, the user cannot change the parameters optionally. Please use a qualified service person to do this.

OPERATING THE UNIT

Operating the unit comes down to operating the digital controller.



NEVER LET THE DIGITAL CONTROLLER GET WET. THIS MAY CAUSE AN ELECTRIC SHOCK OR FIRE.



NEVER INSPECT OR SERVICE THE DIGITAL CONTROLLER YOURSELF, ASK A QUALIFIED SERVICE PERSON TO DO THIS.



NEVER PRESS THE BUTTONS OF THE DIGITAL CONTROLLER WITH A HARD, POINTED OBJECT. THIS MAY DAMAGE THE DIGITAL CONTROLLER.

Features and functions

High Temp. Disinfection Function

1. Electric heating can auto start at the set time (Set by parameter 13) each week. (Either in the off status or standby status of the unit)
2. When the temp. of the water tank top $T2 \geq TS3$ (Parameter 04), the electric heating stops. When the temp of the water tank top $T2 \leq TS3 - 2^{\circ}\text{C}$, the electric heating starts.
3. When the water temp $T2$ keeps between $TS3 - 2$ & $TS3$ for $t2$ minutes, the program stops, and timer reset to enter next timing cycle.

Note: When the running time of the disinfection program lasts more than 3 hours, it exits automatically.

Basic controller functions

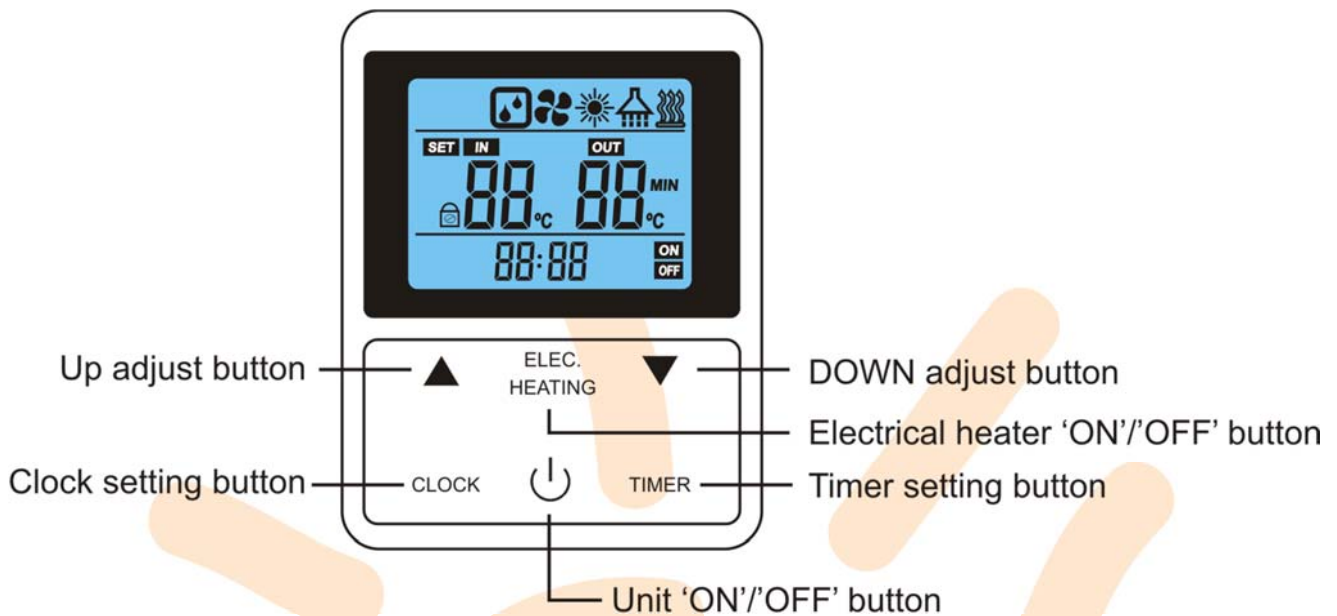
The basic controller functions are:

- Turning the heat pump 'ON'/'OFF'.
- Turning the electrical heater 'ON'/'OFF' (*)
- 24 hours real time clock.
- Timer 'ON' and timer 'OFF'.
- Parameter adjustment

(*)NOTE: The function "electrical heater" can only be selected when the corresponding equipment is installed.

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User interface



Operations

1. Power 'ON'

When turning 'ON' the power, whole icons are displayed on the controller screen for 3 seconds. After checking if everything is ok, the unit enters into the standby modus.



2. button

Press this button when the unit is standby, the unit can be turned 'ON' and runs on the setting mode. The running mode, temperatures, timer situation and clock time are displayed on the screen.





Press this button again when the unit is running, the unit then will be turned 'OFF'. The mode, timer situation and clock time are displayed on the screen.

3. ▲ And ▼ buttons

- These are the multi-purpose buttons. They are used for the parameter setting, parameter checking, clock adjustment and adjustment of the timer.
- Press these buttons when the unit is on clock setting status, the hour(s) and the minute(s) of the clock time can be adjusted.
- Press these buttons when the unit is on timer setting status, the hour(s) and the minute(s) of the timer 'ON'/'OFF' can be adjusted.
- During running or standby status, press or button to check the relating parameters. For example: parameter 0, the relating value is 55°C.



- Check and adjust the set parameters.
 - Press ▲ or ▼ button to check the relating set parameters.
 - Then press  and "ELEC. HEATING" buttons at the same time to adjust the set parameters.
 - Press  button to confirm the setting. If no action to the buttons for 5 seconds, the controller will exit and save the setting automatically.

NOTE:

- a) You can check and adjust the set parameters during standby modus; you cannot adjust the set parameters when the unit is running.
- b) The parameters have been set; the user cannot change the parameters optionally. Please ask a qualified service person to do this when required.

- Press ▲ and ▼ buttons at the same time and hold for 5 seconds; the buttons are locked.
- Press ▲ and ▼ buttons at the same time and hold for 5 seconds again; the buttons are unlocked.

4. "CLOCK" button

Press this button to set the clock time, the hour and minute icon "88:88" will flash at the same time, press the button again and use the ▲ and ▼ buttons to set the exact hour(s) or minute(s). After finishing the setting, press the button once again to exit.

Press this button to cancel the timer 'ON' (or timer 'OFF') function during the timer 'ON' (or timer 'OFF') programming.

5. "TIMER" button

Press "Timer" button two times for "ON" mode hour setting and press ▲ and ▼ to select. Then press "Timer" one more time for minute setting. And press "Timer" one more time for "Timer" mode setting. When finishing setting, press "Timer" button to confirm.


NOTE:

- a) The timer 'ON' and timer 'OFF' functions can be set at the same time. The timer settings are still valid after a sudden power cut.
- b) During the clock setting, the TIMER button is invalid.
- c) Press the CLOCK button to cancel the timer setting during the timer programming.

6. "ELEC. HEATING" button

Press this button to turn 'ON' or turn 'OFF' the electrical heater.

Press this button and hold for 5 seconds to enable or disable the fan ventilation function.

Press  and "ELEC. HEATING" buttons at the same time to adjust the set parameters.

7. Error codes

During standby or running status, if there is a malfunction, the unit will stop automatically and show the error code on the screen of the controller.



LCD icons

1. Defrosting

The icon indicates that the defrosting function is enabled. This is an automatic function, the system will entry or exit the defrosting according to the inner control program. The defrosting parameters cannot be changed at fieldwork. And the unit does not support manual defrosting control.

2. Fan ventilation

The icon indicates that the fan ventilation function is enabled.

By pressing the "ELEC HEATING" button and hold it for five seconds the fan ventilation function can be enabled or disabled. If this function is enabled the fan will continue working to ventilate the air, when the water temperature reaches the set point and unit is standby. If this function is disabled the fan will stop, when the water temperature reaches the set point and unit is standby.

3. Heating

The icon indicates that the current operation mode is heating. Before the compressor is started up, this icon keeps flashing, and will change to bright when the compressor is 'ON'.

4. Hot water available

The icon indicates that the domestic hot water temperature reaches the set point. The hot water is available for use. Heat pump is standby.

5. Electrical heating

The icon indicates that the electrical heating function is enabled. The electrical heater will work according to the control program.

6. Key lock

The icon indicates the key lock function is enabled. The keys cannot be operated until this function is disabled.

7. Left temperature display

The display shows the current downside temperature of the water tank.

If you want to check or adjust the parameter this section will display the relating parameter number. In case when any malfunction occurs, this section will display the related error code.

8. Right temperature display

The display shows that the current upside temperature of the water tank.

If you want to check or adjust the parameter this section will display the related parameter value. In case when any malfunction occurs, this section will display the related error code.

9. Clock display

The clock display shows the current time.

When reading or programming the scheduled timer, the clock display shows the action time.

10. Timer 'ON'

The icon indicates that the timer 'ON' function is enabled.

11. Timer 'OFF'

The icon indicates that the timer 'OFF' function is enabled.

PARAMETER CHECKING AND ADJUSTMENT

Parameter list

Some parameters can be checked and adjusted by the controller. Below is the parameter list.

Parameter No.	Description	Range	Default	Remarks
0	Tank water setting temp.	10 ~ 70°C	50°C	Adjustable
1	Inlet/Outlet water temp difference	2 ~ 15°C	5°C	Adjustable
2	E-heater starting up tank water temp	10 ~ 90°C	55°C	Adjustable
3	E-heater delay time	0 ~ 90 min	30 min	t * 5 min
4	Week disinfection temperature	50 ~ 70°C	70°C	Adjustable
5	High temp disinfection time	0 ~ 90 min	30 min	Adjustable
6	Defrosting period	30~90 min	45 min	Adjustable
7	Defrosting entry coil temp.	-30 ~ 0°C	-7°C	Adjustable
8	Defrosting exit coil temp.	2 ~ 30°C	13°C	Adjustable
9	Max defrosting cycle period	1 ~ 12 min	8 min	Adjustable
10	Electronic expansion valve adjustment	0/1	1	Adjustable (0-manual , 1-auto)
11	Target over-heat degree	-20 ~ 20°C	5°C	Adjustable
12	Steps of manually adjusting the electronic expansion valve	10 ~ 50 Step	35 step	Adjustable
13	High Temp. Disinfection Start Time	0 ~ 23 Hour	23 Hour	Once a week by set time with power on
A	Inlet water temp.	-9 ~ 99°C	Actual testing value. Error code PP1 will be shown in case of a malfunction	
B	Outlet water temp.	-9 ~ 99°C	Actual testing value. Error code PP2 will be shown in case of a malfunction	
C	Evaporator coil temp.	-9 ~ 99°C	Actual testing value. Error code PP3 will be shown in case of a malfunction	
D	Return gas temp.	-9 ~ 99°C	Actual testing value. Error code PP4 will be shown in case of a malfunction	
E	Ambient temp.	-9 ~ 99°C	Actual testing value. Error code PP5 will be shown in case of a malfunction	
F	Electronic expansion valve step	0 ~ 50 step	N*10 step	

Malfunctioning of the unit and error codes

When an error occurs or the protection mode is set automatically, the circuit board and the wired controller will both display the error message.

Protection/Malfunction	Error code	LED indicator
Standby		Dark
Normal running		Bright
Lower tank water temp. sensor failure	PP1	☆●(1flash 1 dark)
Upper tank water temp. sensor failure	PP2	☆☆●(2 flashes 1 dark)
Evaporator coil temp. sensor failure	PP3	☆☆☆●(3 flashes 1 dark)
Return gas temp sensor failure	PP4	☆☆☆☆●(4 flashes 1 dark)
Ambient temp. sensor failure	PP5	☆☆☆☆☆●(5 flashes 1 dark)
High pressure protection	EE1	☆☆☆☆☆☆●(6 flashes 1 dark)
Low pressure protection	EE2	☆☆☆☆☆☆☆●(7 flashes 1 dark)
Over heat protection ①	EE3	☆☆☆☆☆☆☆☆●(8 flashes 1 dark)
Defrost	Defrosting indicate	☆☆☆☆☆☆☆☆.....(all long flashes)
Communication failure	EE8	Bright

① The temperature sensor outlet occurs the malfunction that fails to exit When the electric heater begin to heat the water. The water will be heated to 85°C as the electric heater cannot stop in the normal working condition. Then the temperature protection switch breaks to stop the electric heating and shows Error EE3. When the water temperature decrease till the temperature protection switch close, the electric heating can be auto started.

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MAINTENANCE

Maintenance activities

In order to ensure an optimum operation of the unit, a number of checks and inspections on the unit and the field wiring have to be carried out at regular intervals, preferably yearly.

- Check the water supply and air vent frequently, to avoid lack of water or air in the water loop.
- Clean the water filter to keep a good water quality. Lack of water and dirty water can damage the unit.
- Keep the unit in a place where it is dry and clean, and which has good ventilation. Clean the heat exchanger every one to two months.
- Check each part of the unit and the pressure of the system. Replace the defect part if there is any, and recharge the refrigerant if it is required.
- Check the power supply and the electrical system, make sure the electrical components are good, and the wiring is well. If there is a damaged part or a strange smell, please replace it in time.
- If the heat pump is not used for a long time, please drain out all the water from the unit and seal the unit to keep it good. Please drain the water from the lowest point of the boiler to avoid freezing in winter. Water recharge and full inspection on the heat pump is required before it is restarted.
- Do not turn the power 'OFF' when you use the unit continuously, or the water in the pipe will freeze and split the pipe.
- Keep the unit clean by means of soft damp cloth, no maintenance is required by the operator.

TROUBLESHOOTING

This section provides useful information for diagnosing and correcting certain troubles which may occur. Before starting the troubleshooting procedure, carry out a thorough visual inspection of the unit and look for obvious defects such as loose connections or defective wiring.

Before contacting your local dealer, read this chapter carefully, it will save you time and money.



WHEN CARRYING OUT AN INSPECTION ON THE SWITCH BOX OF THE UNIT, ALWAYS MAKE SURE THAT THE MAIN SWITCH OF THE UNIT IS SWITCHED 'OFF'.

The guidelines below might help to solve your problem. If you cannot solve the problem, consult your installer/local dealer.

- No image on the controller (blank display). Check if the main power is still connected.
- One of the error codes appears, consult your local dealer.
- The scheduled timer does work but the programmed actions are executed at the wrong time (e.g. 1 hour too late or too early). Check if the clock and the day of the week are set correctly, adjust if necessary.

ENVIRONMENTAL INFORMATION

This equipment contains fluorinated greenhouse gases covered by the Kyoto Protocol. It should only be serviced or dismantled by professional trained personnel.

This equipment contains R134a refrigerant in the amount as stated in the specification. Do not vent R134a into the atmosphere: R134a is a fluorinated greenhouse gas with a Global Warming Potential (GWP) = 1975.

DISPOSAL REQUIREMENTS

Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.

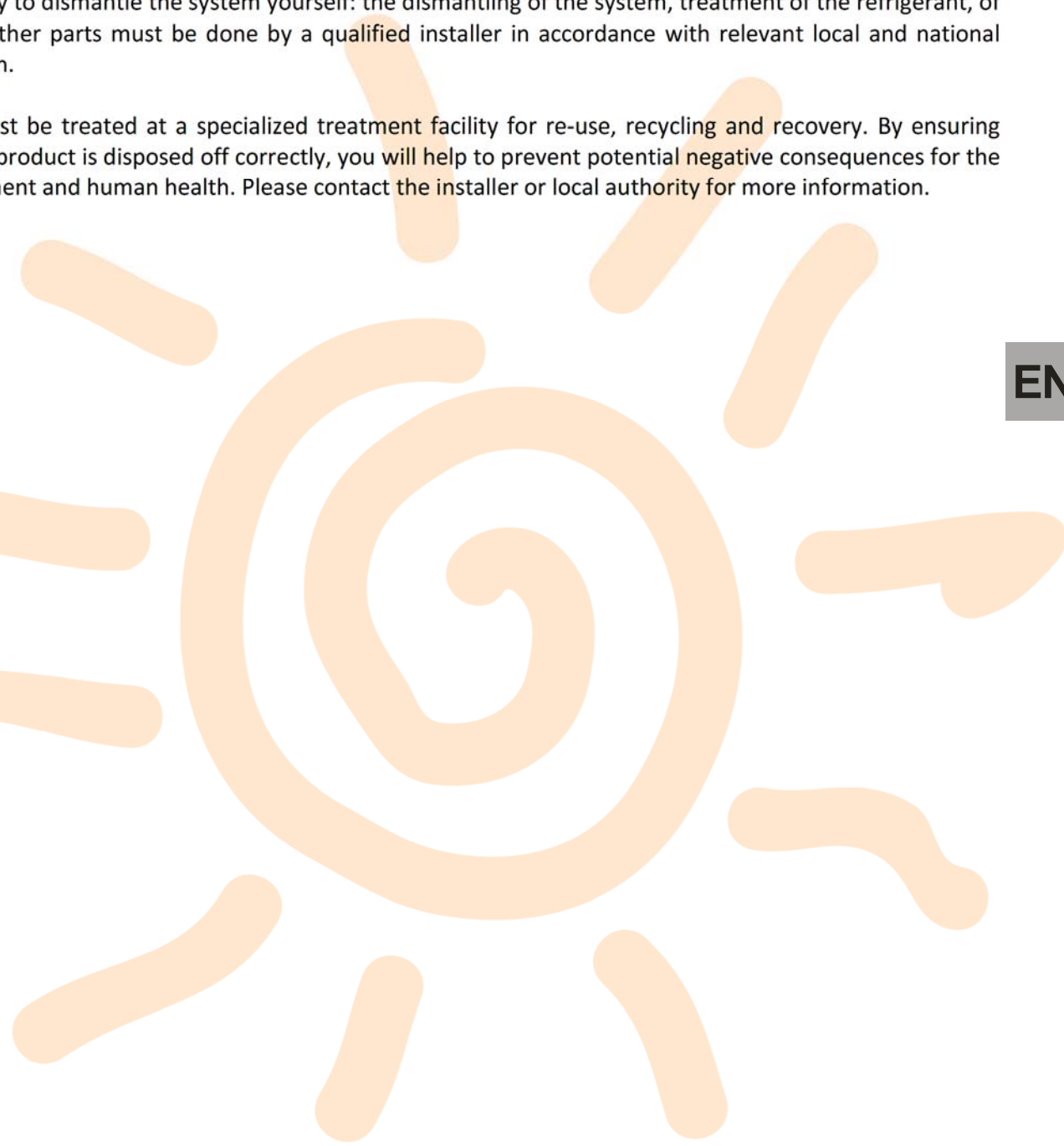


Your product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.

Do not try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, of oil and other parts must be done by a qualified installer in accordance with relevant local and national legislation.

Units must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring that this product is disposed off correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.

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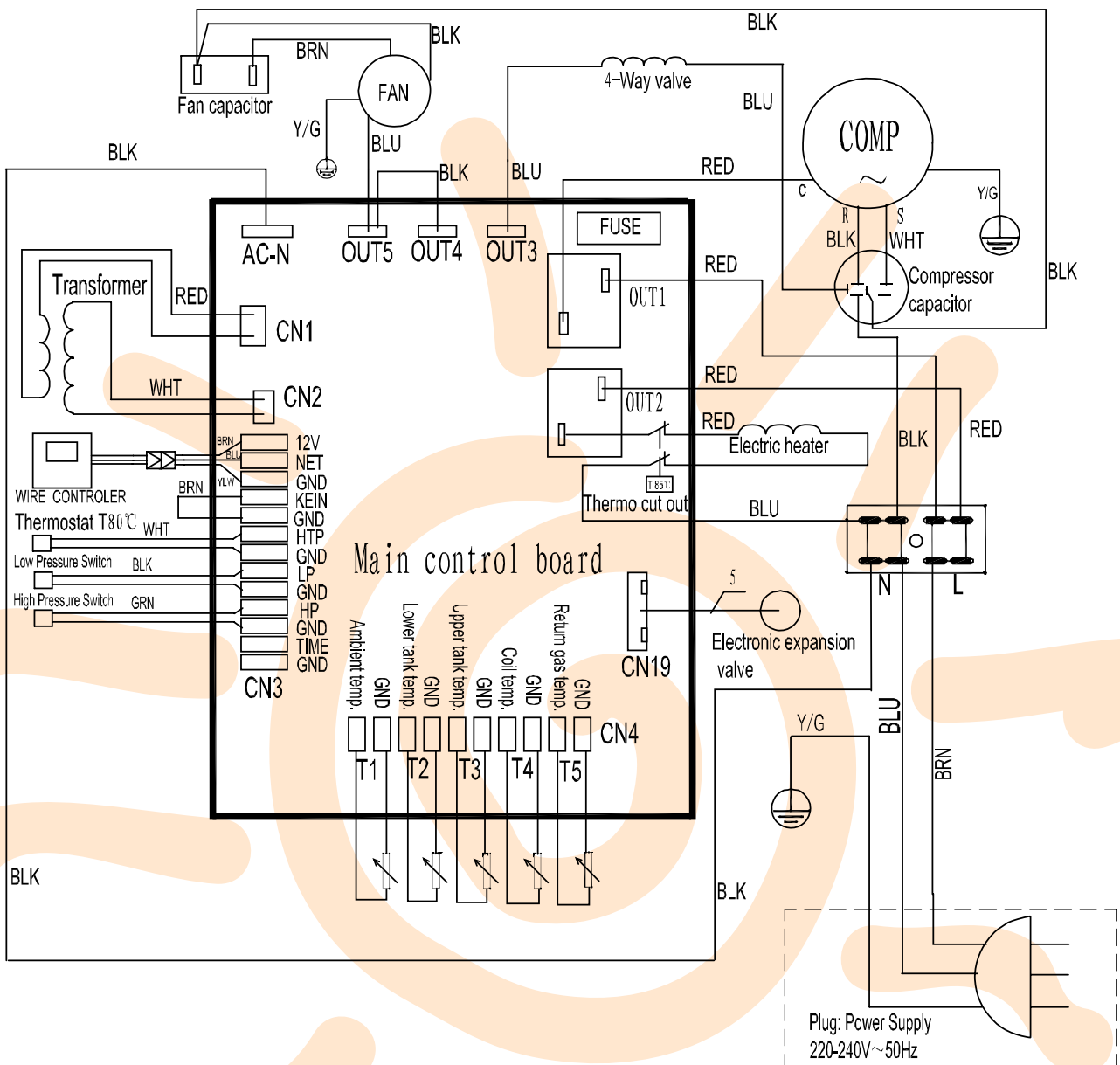
EN 60335-1:2002+A1+A11+A12+A2+A13
EN 60335-2-40:2003+A11+A12+A1+A2
EN 60335-2-21:2003+A1+A2
EN 55014-1:2006
EN 55014-2:1997+A1+A2
EN 6100-3-2:2006
EN 6100-3-3:2008
EN 62233:2008
EN 16147



CE DOC 16021399 002

WIRING DIAGRAM

Please refer to the wiring diagram on the electric box.



TECHNICAL SPECIFICATION

TECHNICAL SPECIFICATION		PST AT250i
Heating capacity	kW	2.0 (+1.5*)
Power input	W	513 (+1500*)
Running Current	A	2.3 (+6.8*)
COPT	kWh/kWh	3.9
Water tank Volume	L	250
Power supply	V/Ph/Hz	220-240/1/50
Max power input	W	742 (+1500*)
Max current	A	3.36 (+6.8*)
Starting current	A	12
Outlet water temperature range (without electric support)	°C	25-55
Max. water temperature (with electric support)	°C	70
Ambient working temp. (heat pump)	°C	-5-43
Refrigerant type/charge (g)		R134a/ 985g
Max. discharge pressure	Mpa	2.8
Min. suction pressure	Mpa	0.9
Compressor	Type	Rotary
	Brand	HIGHLY(HITACHI)
	Model	WHPO1900BSV-P6AU
Fan motor	Type	asynchronous motor
	W	135
	RPM	1310
Airflow without air static pressure	m3/h	510
Air flow with 60Pa of air static pressure	m3/h	397
Air static pressure	Pa	60
Duct diameter	mm	138
Max allowed pressure of tank	MPa	1
Pressure relief safety valve	MPa	0.7Mpa
Inside body material of tank / Thickness (mm)	INOX	SUS 304 / 1.9 mm
Insulation material		Polyurethane
Thickness of the tank insulation	mm	45
Coating thickness of the tank cover	mm	0.6
Auxiliary electrical heater	KW	1.5
Electronic expansion valve	HITACHI	Yes
Pressure PRV	MPa	0.3Mpa
Manual safety thermostat		Yes
Magnesium stick		Yes
Automatic disinfection (Anti-legionella)		Yes
Hot water outlet	inch	3/4 (female)
Cold water inlet	inch	3/4 (female)
Drainage	inch	1/2 (male)
Size of evaporator (L/W/H)	mm	350 x 38.1 x 378
External heat exchanger	m	55
Noise level	dB(A)	45
Net Dimensions	mm	Φ560 x 1960
Packing Dimensions	mm	630 x 650 x 2120
Net Weight	Kg	83
Weight with full water	Kg	335
Gross Weight	Kg	89
NOTES:		
Capacities and power inputs based on the following conditions: Heating, ambient T 20°C, Water temperature from 10°C to 55°C.		
* Rated to electrical heater.		

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TEMPERATURE SENSOR R-T CONVERSION TABLE

B25/50=4100±1% R (25°C) = 10K

°C	Resistance	°F
-20	115.2660	-4.0
-19	108.1460	-2.2
-18	101.5170	-0.4
-17	96.3423	1.4
-16	89.5865	3.2
-15	84.2190	5.0
-14	79.3110	6.8
-13	74.5360	8.6
-12	70.1698	10.4
-11	66.0898	12.2
-10	62.2756	14.0
-9	58.7079	15.8
-8	56.3694	17.6
-7	52.2438	19.4
-6	49.3161	21.2
-5	46.5725	23.0
-4	44.0000	24.8
-3	41.5878	26.6
-2	39.8239	28.4
-1	37.1988	30.2
0	35.2024	32.0
1	33.3269	33.8
2	31.5635	35.6
3	29.9058	37.4
4	28.3459	39.2
5	26.8778	41.0
6	25.4954	42.8
7	24.1932	44.6
8	22.5662	46.4
9	21.8091	48.2
10	20.7184	50.0
11	19.6891	51.8
12	18.7177	53.6
13	17.8005	55.4
14	16.9341	57.2
15	16.1156	59.0
16	15.3418	60.8
17	14.6181	62.6
18	13.9180	64.4
19	13.2631	66.2
20	12.6431	68.0
21	12.0561	69.8

°C	Resistance	°F
22	11.5000	71.6
23	10.9731	73.4
24	10.4736	75.2
25	10.0000	77.0
26	9.5507	78.8
27	9.1245	80.6
28	8.7198	82.4
29	8.3357	84.2
30	7.9708	86.0
31	7.6241	87.8
32	7.2946	89.6
33	6.9814	91.4
34	6.6836	93.2
35	6.4002	95.0
36	6.1306	96.8
37	5.8736	98.6
38	5.6296	100.4
39	5.3969	102.2
40	5.1752	104.0
41	4.9639	105.8
42	4.7625	107.6
43	4.5705	109.4
44	4.3874	111.2
45	4.2126	113.0
46	4.0459	114.8
47	3.8867	116.6
48	3.7348	118.4
49	3.5896	120.2
50	3.4510	122.0
51	3.3185	123.8
52	3.1918	125.6
53	3.0775	127.4
54	2.9590	129.2
55	2.8442	131.0
56	2.7382	132.8
57	2.6368	134.6
58	2.5397	136.4
59	2.4168	138.2
60	2.3577	140.0
61	2.2725	141.8
62	2.1907	143.6
63	2.1124	145.4

°C	Resistance	°F
64	2.0373	147.2
65	1.9653	149.0
66	1.8963	150.8
67	1.8300	152.6
68	1.7665	154.4
69	1.7055	156.2
70	1.6469	158.0
71	1.5907	159.8
72	1.5367	161.6
73	1.4848	163.4
74	1.4350	165.2
75	1.3870	167.0
76	1.3111	168.8
77	1.2908	170.6
78	1.2542	172.4
79	1.2133	174.2
80	1.1739	176.0
81	1.1360	177.8
82	1.0996	179.6
83	1.0645	181.4
84	1.0307	183.2
85	0.9982	185.0
86	0.9668	186.8
87	0.9366	188.6
88	0.9075	190.4
89	0.8795	192.2
90	0.8525	194.0
91	0.8264	195.8
92	0.8013	197.6
93	0.7771	199.4
94	0.7537	201.2
95	0.7312	203.0
96	0.7094	204.8
97	0.6884	206.6
98	0.6818	208.4
99	0.6186	210.2
100	0.6297	212.0



LAST GENERATION SOLAR ENERGY
HOT WATER - HEATING - SWIMMING POOLS
EVEN WINDY, RAINING OR CLOUDY - 365 DAYS TO YEAR

WARRANTY

PST 250 HEAT PUMP / PST 250 SOLAR HEAT PUMP

By this warranty, Paneles Solares Termodinámicos S.L., hereafter Solar PST, with registered office at the Polígono Industrial de Bergondo, C/ Parroquia de Rois parcela F1, Edificio Solar PST, 15165 La Coruña, Spain and CIF B-15982879, guarantees that the product specifically mentioned later is free from defects in materials and workmanship from the date of its purchase by the buyer from the retailer, or at most upon its delivery, regardless of its final date of installation and/or start-up, and for the period below mentioned per item.

This warranty is valid against any manufacturing defects. It excludes any payment of damages to persons, or for direct and indirect damages to elements and/or materials. This warranty is valid only accompanied by the original purchase receipt given to the buyer, and filled in due form, including date of purchase with the following items:

- a) Full name of the Buyer
- b) Name, Signature and Seal of the Retailer
- c) Product Model and Serial No.
- d) Date of Purchase

This warranty covers the replacement of the elements damaged during the coverage period. The replacement of any element during the framework of warranty does not extend its duration, and the replaced elements shall become the property of Solar PST.

Regarding the Warranty parts return, these must be returned in the same conditions as they were shipped, original or similar packaging. The compressors' valves must have their original copper caps on.

The exchange of the parts under warranty will be sent by the Solar PST distributor together with the device serial number and a copy of the purchase invoice.

The periods stated below shall begin on the date of purchase, or at most upon the delivery of the goods, regardless of the date of installation or start-up.

PST 250 HEAT PUMP: 2-year warranty
PST 250 SOLAR HEAT PUMP: 2-year warranty

This warranty specifically excludes:

- Periodic inspections, maintenance and repair or replacement of parts damaged as a result of normal wear and tear.
- Consumable items, or subject to wear and tear, (switches, resistances, thermostats, timers, etcetera).
- Travel charges, labor costs and carriage costs for parts.
- Thermoaccumulators which work with water containing active chlorine, + - 0'2 p.p.m., and Ph + - 6, (Sorensen scale at 25º).
- Installing and/or configuring the product according to requirements different from the ones specific of the product, (or the ones established by Solar PST official service), or not compliant with the current technical or security standards.
- Manipulation or repair attempts by non- authorized technical service providers.
- Failures or damage caused to the product due to: Electric discharges, Flooding, Hail, Dampness, Impacts, Misuse of the Equipment, Galvanic Coupling, Corrosion due to Fixing with Iron Screws or Non-Stainless Steel Holders, Badly Fixed Collectors, Fracture of the Collectors Capillary Tube due to Vibrations, Acts of God such as Accidents, Natural Disasters, Unpredictable Weather Phenomena or Any Other Cause Beyond SolarPST Control.
- The lost profits, *lucrum cessans*, arising from the non-performance of the system.

The manipulation or repair attempts by technical service providers not authorized by Solar PST may extinguish the rights granted by this Warranty.

THE DISTRIBUTOR

THE BUYER

NOTES:





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Solar PST

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