Cylia 250

Domestic hot water heat pump

on ambient air

Installation manual

Cylia 250
Ref. 353601

The information contained in this document is non-contractual. We reserves the right to modify the technical specifications or characteristics of any of their appliances without prior notice.

ORIGINE FRANCE® GARANTIE

BVCert. 6020118

Made in FRANCE

CE

Manual ref. : 1898588
Edition n° 26.07

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Preserving these documents

• This manual and all other relevant documents should be given to the system user.

The system user should keep these manuals for future reference.

1 - SAFETY

• Any intervention on the thermodynamic water heater should only be performed by qualified personnel.

• Follow the safety instructions!

• Any intervention on the refrigeration circuit must be made by a qualified person who holds a Category 1 certificate of fitness.

Refrigerant R290, contained in the heat pump circuit, does not pose an environmental hazard but is flammable.

→ Refrigerant R290 is odourless.

→ Do not damage the refrigeration circuit tubes,

→ Do not handle flame or other flammable sources inside the device,

→ In the event of a leakage of the refrigerant, unplug the plug, ventilate the room and contact the customer service,

→ Do not pierce or burn the appliance: the recovery of the fluid is mandatory in case of intervention on the refrigeration circuit.

Danger of death by electrocution

Touching live electrical wires can cause severe injury.

- Before undertaking any work on the appliance, ensure to switch off the power supply to the appliance.
- Ensure that there is no possibility of the power supply becoming active again.

Danger of injury or death due to the absence of, or defective, safety devices.

Absence of safety devices can be dangerous and may result in burns or other injuries. Injuries could be caused by pipes bursting for example.

The information provided in this document does not represent all of the diagrams required for a professional installation of the safety devices.

- Install all required safety devices in the circuit.
- Inform the user of where the safety devices are placed, and how they work.
- Follow all relevant national and international health and safety rules and regulations.

Danger resulting from improper use

Any work carried out by an unqualified person can result in damage to the installation or in physical injury.

- Do not perform any maintenance work on this appliance unless you are a qualified professional.

Intended use and applicable areas of use

This appliance is intended for use as an appliance for domestic hot water production.

The intended use of the appliance includes the following points:

- Following the instructions for operating, installing, and maintaining this appliance and all other parts and components of the system.
- Ensuring the compliance with all conditions of inspection and maintenance which are listed in this manual.

Humidity and water splashes

The appliance should be installed in an area where it is not exposed to humidity and without risk of being splashed by water.

Rules and regulations (directives, laws, and standards)

Once the appliance is installed and switched on, all decrees, directives, technical rules, safety measures and standards, must be respected in their current version in effect.

- This appliance should not be used by: children under 8 years old; anyone with reduced physical, sensory or mental capabilities; or by anyone who has insufficient experience or knowledge of the appliance; unless they are being supervised by someone who is responsible for their safety and in possession of the operating instructions of the appliance.
- Children should be supervised to ensure that they do not play with the appliance.
- Cleaning and maintenance of the appliance should not be undertaken by children without proper supervision.
- Children from 3 to 8 years are only allowed to actuate that the tap connected to the water heater.

A method of disconnection ensuring a complete cut-off according to Category III conditions must be installed in the fixed piping to conform to installation regulations.

Protect the appliance with:

- an 10 A (D-curve) or an 16 A (C-curve) all-pole circuit breaker with a contact opening of at least 3 mm.
- a protective circuit breaker with a 30 mA. differential.

WARNING

Do not use any methods to accelerate the defrosting or cleaning process other than those recommended by the manufacturer.

The appliance must be stored in a room which does not contain a perpetual flame or other source of ignition (for example: open flame, gas powered appliances or electric radiators in use).

Do not pierce or burn.

Warning: refrigerant fluids may be odourless.

This product is not intended to be operated at an altitude greater than 2000 m.

Water may drain from the discharge pipe of the pressure limiting device. This pipe should be kept open to open air.

- Verify that the ventilation openings are not obstructed.
- A **new** pressure-relief valve (not included) **must** be installed and set to 6 bar on the domestic cold water supply of the appliance. The use of a membrane valve is recommended.

  This valve must conform to all national standards in effect.
- The pressure-relief drainage outlet should be installed in a frost-free place and in a downward sloping position.

Maintenance - Troubleshooting

- Drainage : Turn off the power supply and the cold water, open the hot water valves and then set the safety group to the drainage position.
- The pressure-relief valve should be activated regularly so as to eliminate limescale and check for blockages.
- If the electrical supply cable is damaged, it must be replaced by the manufacturer, their customer service technicians, or by a qualified professional to avoid risk of injury.
- See the § «Dimensions» and the § «Installation» of this manual to find the necessary dimensions for proper installation of this appliance.
- See the § «Hydraulic connections» of this manual to find the minimum and maximum water pressures and temperatures.
- Repair and maintenance of electrical components must include initial safety checks and component inspection procedures.
- If there is a defect that could compromise safety, then no power supply should be connected to the product until it is satisfactorily processed. If the defect cannot be corrected immediately but must be allowed to work then an adequate interim solution must be used. This must be reported to the equipment owner so that all parties are informed.
- Initial security controls must include:
- Discharge of capacitors: Discharge safely to avoid sparking.
- Verification that no electrical components are energized and that no wiring is exposed during system charging, recovery or purging.
- That there is continuity of connection to the ground.

Repair of intrinsically safe components

Intrinsically safe components are the only components that can be used in the presence of a flammable atmosphere. The equipment used must be properly sized.

2 - PLEASE READ IMMEDIATELY

This technical installation manual forms part of the appliance which it refers to. In order for the warranty to be valid, the instructions must be read prior to using the appliance.

The safety advice and instructions provided in this manual must be strictly respected.

Our society is not liable for any damages caused from not following the instructions provided, or improper handling, installation or use.

This technical installation manual can be modified without prior notice.

2.1 - Conservation of documents

This manual must be safeguarded and passed on to successive users for future reference.

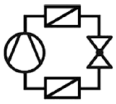
It will be considered as evidence in case of litigation.

2.2 - Symbols used

Indicates warnings and important recommendations.

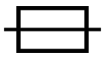
Consult the installation manual before any intervention on the product, before handling, installation, use , and maintenance.

Contains regulated substances, do not throw in the garbage. If disposing, please respect all regulations pertaining to the recovery of electric and electronic equipment.



Type and refrigerant charge.
PS : Max high service pressure

Heat power output produced.



Max current protection (A)

Caution : contains a flammable refrigerant fluid.
Please make sure to respect the installation and handling precautions.

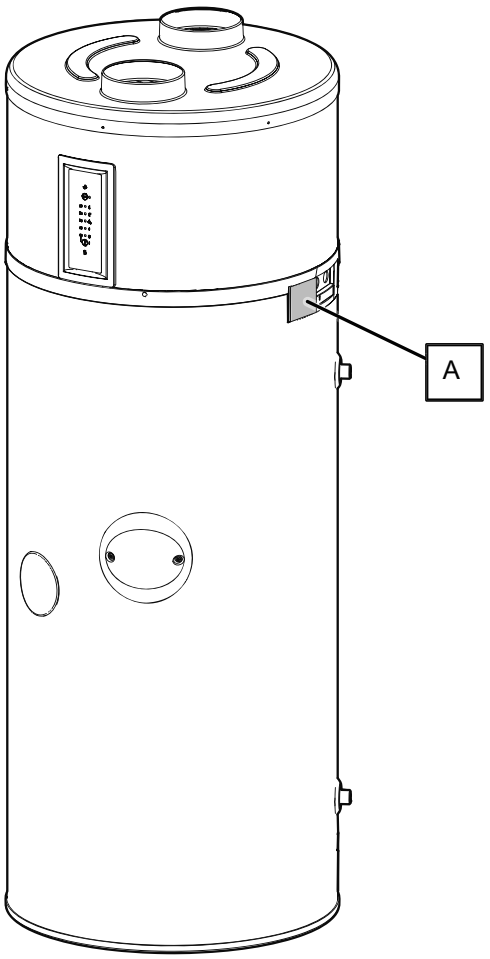
A3

Classification of the refrigerant used in the heat pump (R290/Propane)

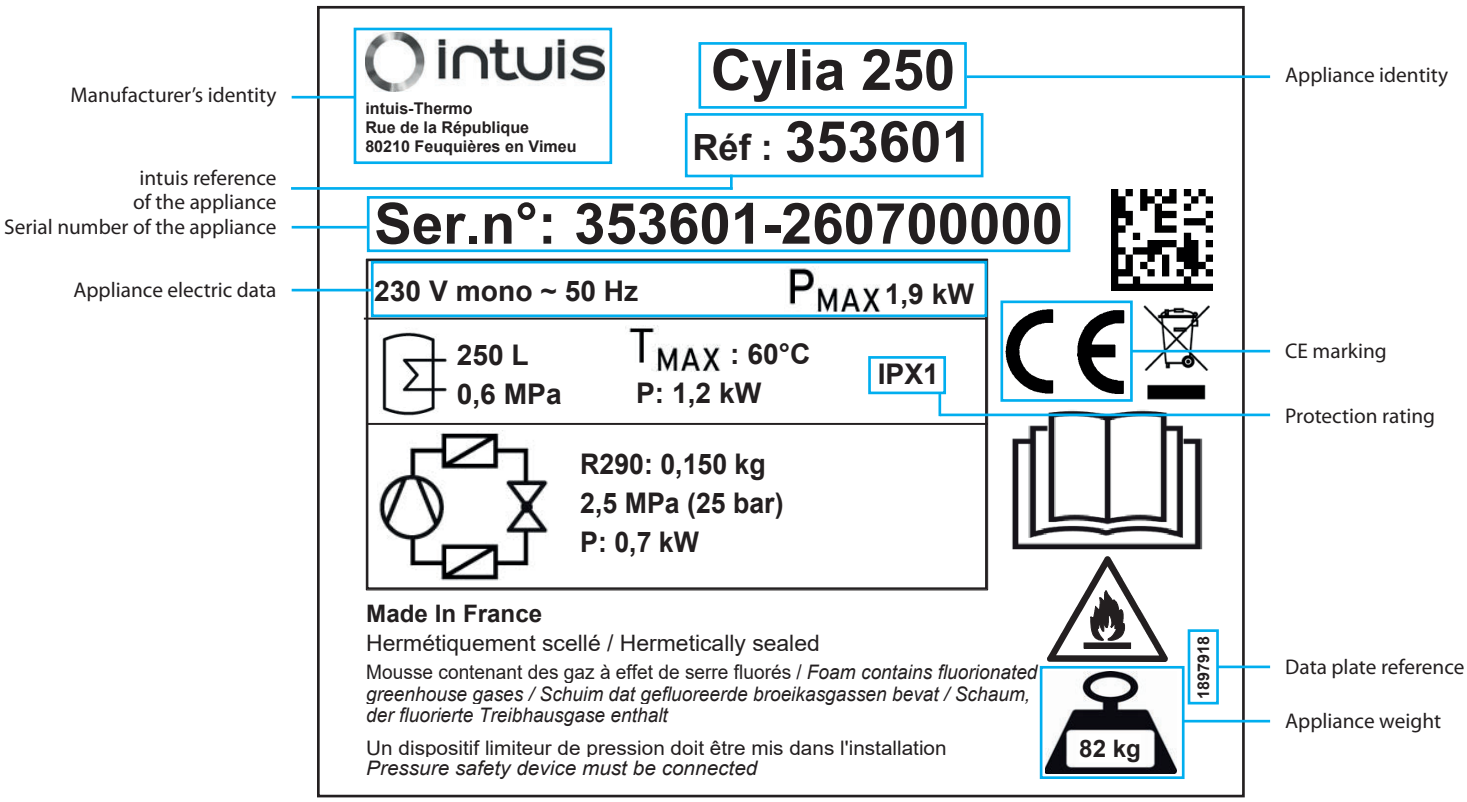
2.3 - Abbreviations and acronyms

DHW ..... Domestic Hot Water
DCW ..... Domestic Cold Water
T°..... Temperature
HP..... Heat pump
DHW ..... Domestic hot water heat pump

2.4 - Data plate



A. Data plate

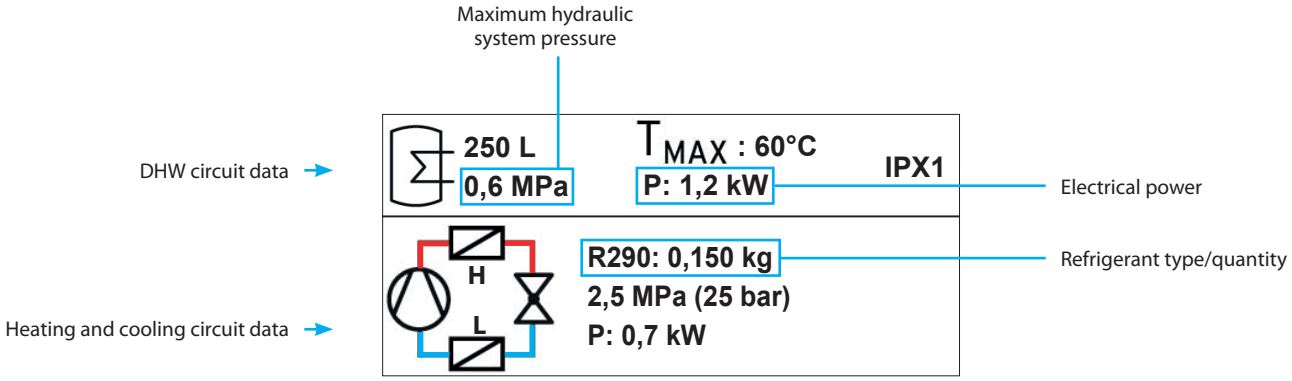


Description :

Serial number of the appliance

353601 - 26 07 00000

- 353601 : Reference of the appliance
- 26 : Year of manufacture 20**26**
- 07 : Week of manufacture
- 00000 : Appliance number in the series



3 - RECOMMENDATIONS

The appliance can only function when filled with water. Never turn on the appliance if the tank has not been properly filled with water and completely purged of air.

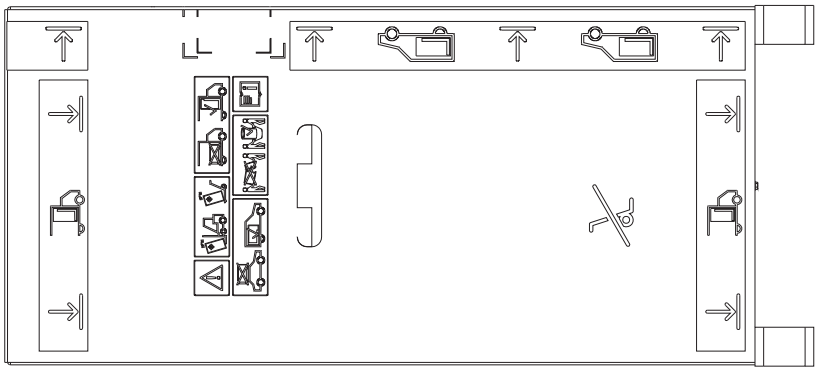
3.1 - Storage

STORAGE PRECAUTIONS:
• Admissible storage and transport temperatures of the domestic hot water heat pump are from -5°C to +35°C.

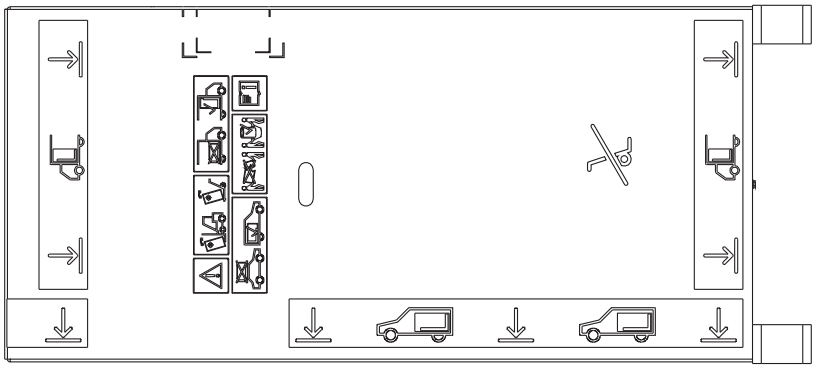
3.2 - Transport

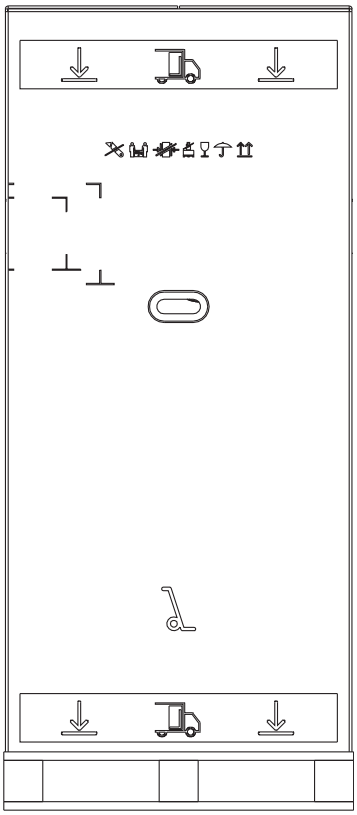
The product can be tilted on a 90° face. This is indicated on the cardboard packaging.
In case of horizontal transport, the product must be tilted gradually. It is forbidden to tilt the product on the other sides.

Forbidden



Accepted



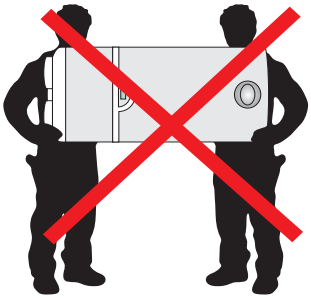


We do not guarantee the damage caused by a transport or handling of the product that is not in accordance with our recommendations.

3.3 - Handling

The appliance is supplied with a transport strap, to facilitate handling to the installation site.

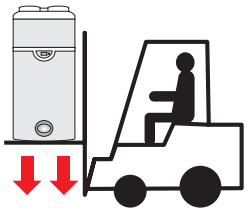
Admissible transportation positions :
All other transport positions are forbidden.



Non-admissible transportation positions :

The upper covers of the appliance are not made to withstand force and should not be used for handling purposes.

All other transport positions are FORBIDDEN.



Do not drop or lower suddenly

Risk of tipping

If tipped, the centre of gravity will shift towards the top: handle with care.

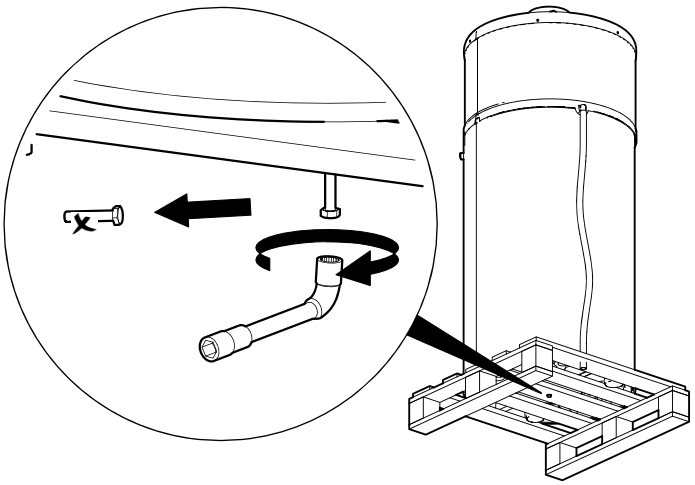
Once the domestic hot water heat pump is installed in its definitive position, it is imperative to wait 60 minutes before it is turned on.

3.4 - Contents of packaging

- 1 domestic hot water heat pump.
- 1 documentation packet containing 1 installation and user manual, 1 warranty form and two dielectric fittings.
- 1 transport strap.

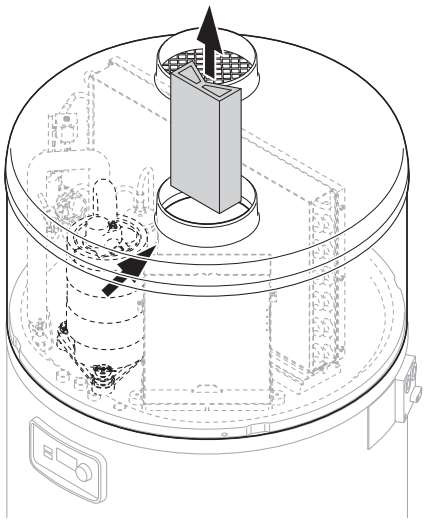
3.5 - Unpacking

- Remove cardboard packaging.
- Remove the centring cardboard.
- Remove the bag of accessories and the transport bag.
- Without tilting the appliance, use the appropriate tool to remove the screw from underneath the wooden pallet.
- Use the transport bag to move the appliance to its final location.



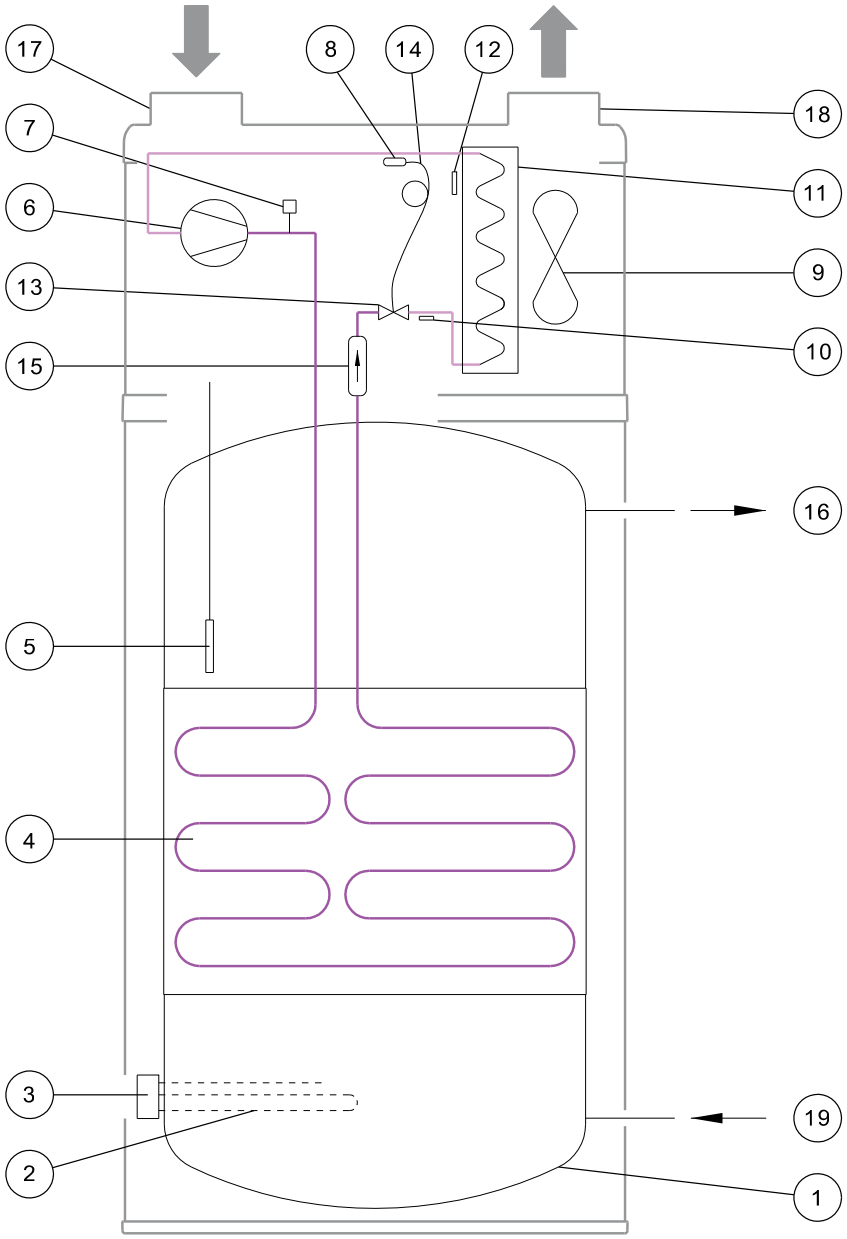
Keep the transport bag out of the reach of children (risk of suffocation).

- Remove the inner and outer compressor .



4 - OPERATING PRINCIPLE

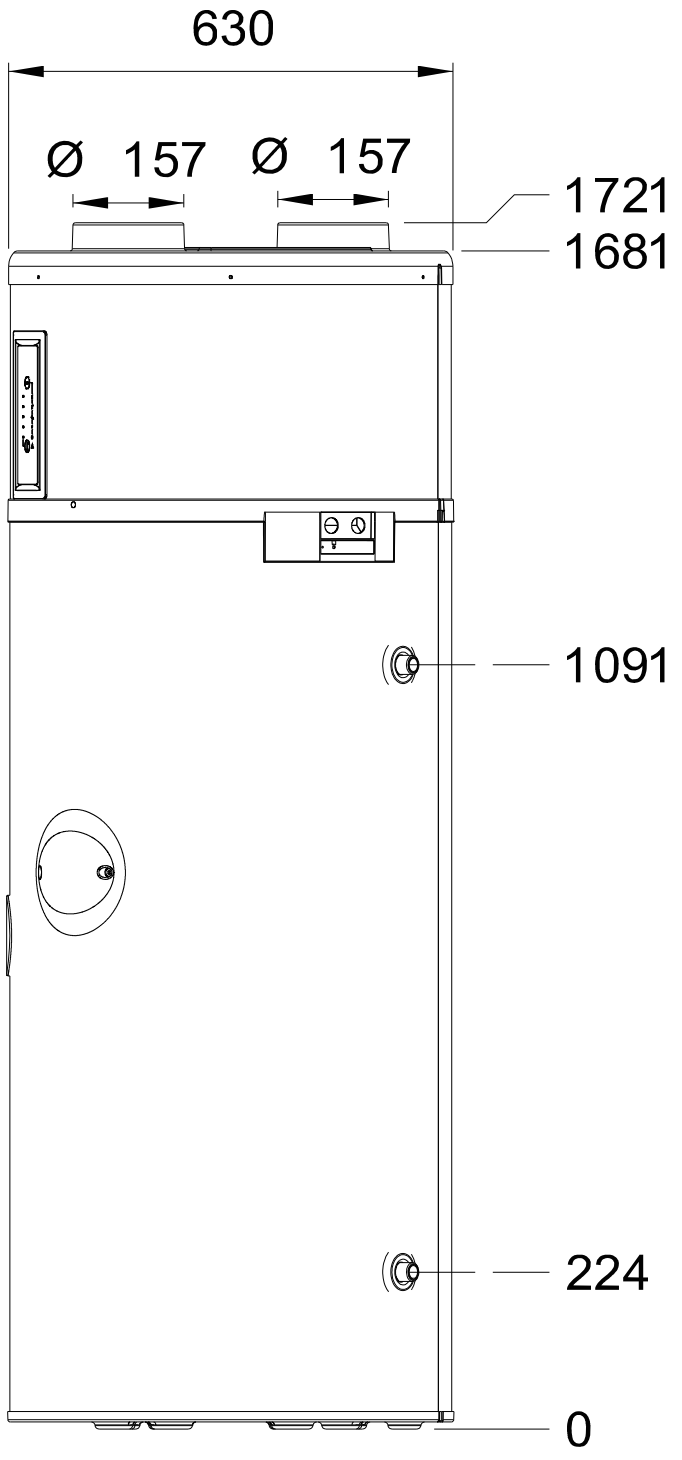
The domestic hot water heat pump is a small-capacity heat pump dedicated to the production of domestic hot water.
The appliance uses the air to capture calories and then transfers them to the water in the tank.
That is made possible by the use of refrigerant fluid allowing the transfer from one medium to another. This appliance has the particularity of operating on the R290 gas, guaranteeing good thermodynamic performance and negligible environmental impact.



Rep.	Description	Rep.	Description
1	Tank	11	Evaporator
2	Electrical resistance	12	Air sensor
3	Safety aquastat	13	Expansion valve
4	Condenser	14	Capillary expansion valve
5	Domestic hot water sensor	15	Manual purger
6	Compressor	16	Domestic hot water outlet
7	Pressure switch	17	Air inlet
8	Expansion valve bulb	18	Air exhaust
9	Fan	19	Domestic cold water inlet
10	Evaporator sensor		

5 - PRESENTATION

5.1 - Dimensions



5.2 - EU declaration

This device complies with international electrical safety standards IEC 60335-1, IEC 60335-2-21, IEC 60335-2-40. The CE marking present on the device attests to its conformity with the following Community Directives, of which it meets the essential requirements:

- Low Voltage Directive (LV): 2014/35/EU.
- Electromagnetic Compatibility Directive: (EMC): 2014/30/EU.
- Ecoconception Directive for Energy-related products: 2009/125/EC.
- Limiting Hazardous Substances (ROHS): 2011/65/EU.

5.3 - Technical specifications and performances

		Domestic hot water heat pump 250l
Heat pump performance		
Nominal volume	L	250
Max. input power	W	1900
Air temperature range	°C	+5 to +35 °C
DHW* temperature with heat pump	°C	40 to 60 °C
Max. heat pump power consumption	W	700
Indoor sound power level**	dB(A)	56
Refrigerant	-/kg	R290 / 0,150
Global warming potential	kg	0,450 kg CO_2
Type of air connection	-	Ambient air
Normative Data (EN 16147)		
Tapping profile	-	L
COP*	-	3.2
Standby input power	W	32
Daily electricity consumption	kWh	3.64
Hot water reference temperature	°C	53.8
Heating time	-	8 h 00
Energy class	-	A+
Seasonal energy efficiency	%	133
V40	L	321
V40 td	L	713
Dimensions and connections		
Dimensions	mm	Ø 630 x H 1721
Weight when empty	kg	82
Connection diameter for DCW* and DHW*	inches	3/4
Electrical power supply	V-Hz	230 V - 50 Hz
Protection rating	-	IPX1
Circuit breaker	A	10 (D-curve) or 16 (C-curve)
Frequency band***	MHz	868 - 868.6
RF power***	dB.m	10.65
Tank		
Materials / protection	-	Enamelled steel
Maximum service pressure	MPa	0.6 (6 bar)
Max. condensates flow rate	L/h	0.3
Built-in electrical back-up power (87°C safety setting)	W	1200
Max.temp with electrical back-up	°C	60

** DHW = Domestic Hot Water*
DCW = Domestic Cold Water
COP = Performance efficiency

***Sound power level tested in semi-anechoic chamber*
****If equipped with the radio option*

6 - INSTALLATION

6.1 - Placement and positioning

6.1.1 - Placement choice

INSTALLATION PRECAUTIONS :

• The appliance must not be installed near a perpetual flame or other source of ignition.

• The appliance must be installed in such a way so as to avoid mechanical damage to the appliance.

• It is PROHIBITED to install the appliance:

- Outside.
- In rooms exposed to frost, where the temperature is less than 5°C, including when the appliance is operating.
- In humid rooms which have significant steam or vapour emissions.
- In rooms where there is any risk of explosion due to gas, pollution or dust.

• Avoid placing the appliance close to bedrooms to minimise noise pollution.

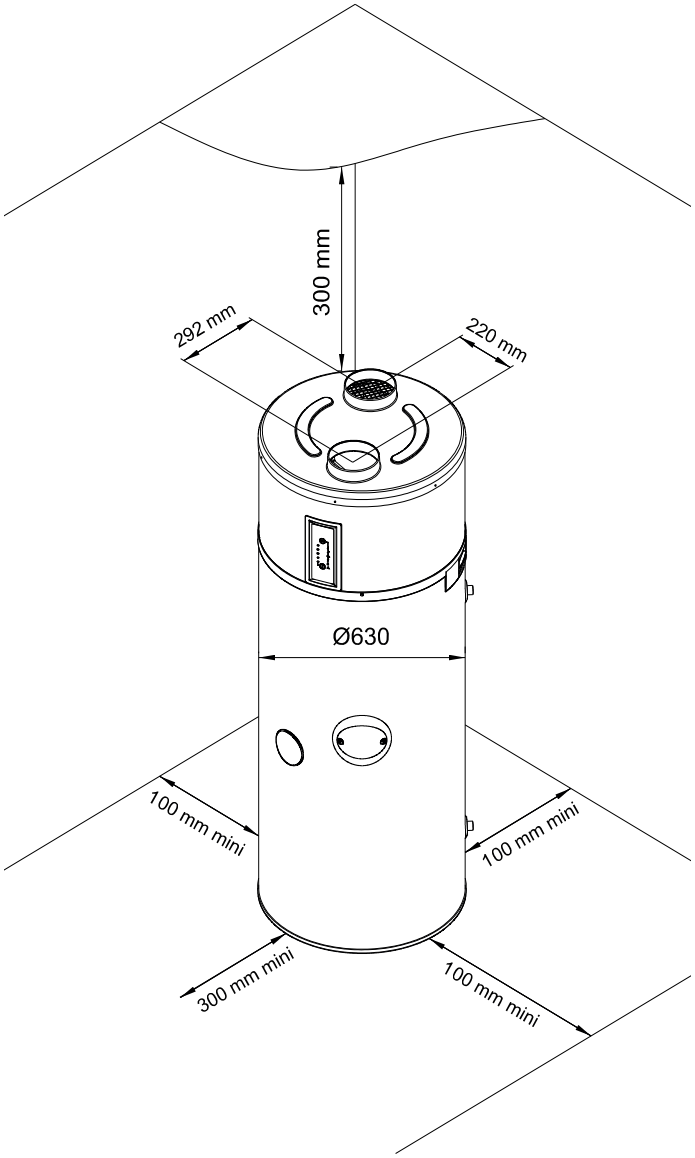
• Do not install the air intake nozzle near a vapour exhaust (minimum distance of 0,6m).

• It is PROHIBITED :

- To let the appliance operate using air intake which contains solvents or explosive materials.
- To use air intake which contains grease, dust or aerosol particles.
- To connect vented exhaust hoods to the ventilation system.
- To use air intake containing combustion materials from a boiler.

6.1.2 - Positioning and anchoring

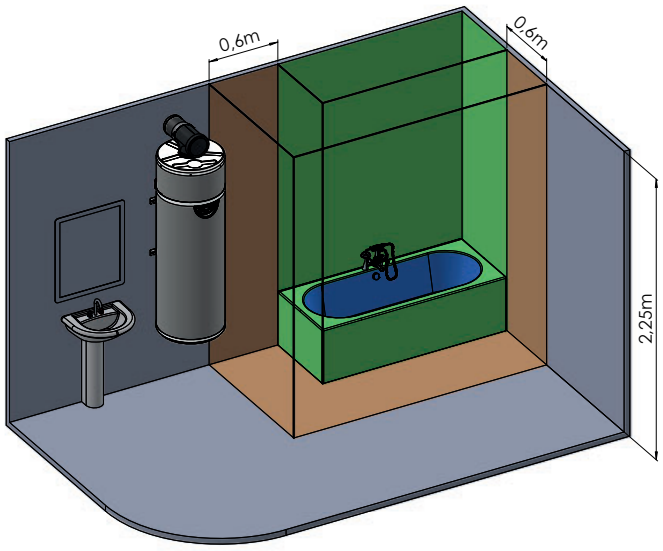
• To ensure the proper functioning of the domestic hot water heat pump and to facilitate maintenance work, a space must be left free around the appliance, as well as a minimum ceiling height so that the hood can be removed.



• The floor must be able to support the weight of the domestic hot water heat pump (weight of the domestic hot water heat pump filled with water 250 l = 335 kg).

The vertical position of the domestic hot water heat pump must be strictly respected. If not, there is a risk of condensates leaking and resulting in a water leak at the base of the appliance.

In a bathroom, it is forbidden to install the appliance at less than 60 cm from the bathtub/shower water area.)



6.2 - Air connection

The appliance is designed for use with indoor air.
It can be ducted to indoor air, provided the following requirements are met :

- Air temperature between 5°C and 35°C;
- Ø 160 mm insulated duct;
- Total length of duct < 6 metres round trip (with one elbow = one metre).

Failure to comply with these recommendations will invalidate the manufacturer's warranty.

Mounted without a duct, the device must be installed in a room not heated (minimum 20 m^3) isolated from neighbouring heated rooms.

- If the free height under the ceiling is less than 60cm above the water heater, it is recommended to install an elbow at the air outlet and orient it to the rear or to the sides.
- The thermodynamic water heater allows the recovery of the heat coming from the ground of an unheated, semi-buried room such as than the workshop or the garage.
- The thermodynamic water heater allows dehumidification and cooling of rooms such as laundry rooms or cellars.

It is forbidden to duct the appliance to outside air!

6.3 - Hydraulic connections

- A new pressure-relief valve (not included) must be installed and set to 6 bars on the domestic cold water supply of the appliance. We would recommend a membrane valve.

  The membrane valve system must conform to national and domestic standards and regulations in effect.
- The pressure-relief valve should be installed as close as possible to the appliance's cold water inlet and the water flow should **never be hampered by any accessory** (valve, pressure-reducer, etc...)
- The pressure-relief valve drainage outlet must be installed in a frost-free place, in a downward-sloping position.
- The pressure-relief valve drainage outlet should be sized according to building regulations and must never be obstructed. It should be connected to a vertical draining pipe, using a funnel which allows an open space of at least 20mm and which is at least equal in diameter to the appliance's piping connection.
- If the pressure of the domestic cold water supply is higher than 5 bars, a pressure-reducer should be installed above the pressure-relief valve near the starting point of the installation (a pressure of 4-5 bars is recommended).
- It is advised to fit a shut-off valve above the pressure-relief valve.
- For installations equipped with:
  - piping of a small diameter
  - ceramic plate valves

  A domestic water expansion vessel, or anti-hammer valves which are adapted to the installation should be installed as close as possible to the shut-off valve.

- **The following materials should be used for the domestic hot water circuit:**
  - **copper**
  - **stainless steel**
  - **brass**
  - **plastic**

If the materials used in the domestic hot water circuit are incompatible, corrosion damage may occur.

Consequently, the appliance should always be connected to copper domestic hot water pipes **with a cast-iron or steel link, or with dielectric fittings** (supplied) to avoid an iron/copper galvanic bridge.

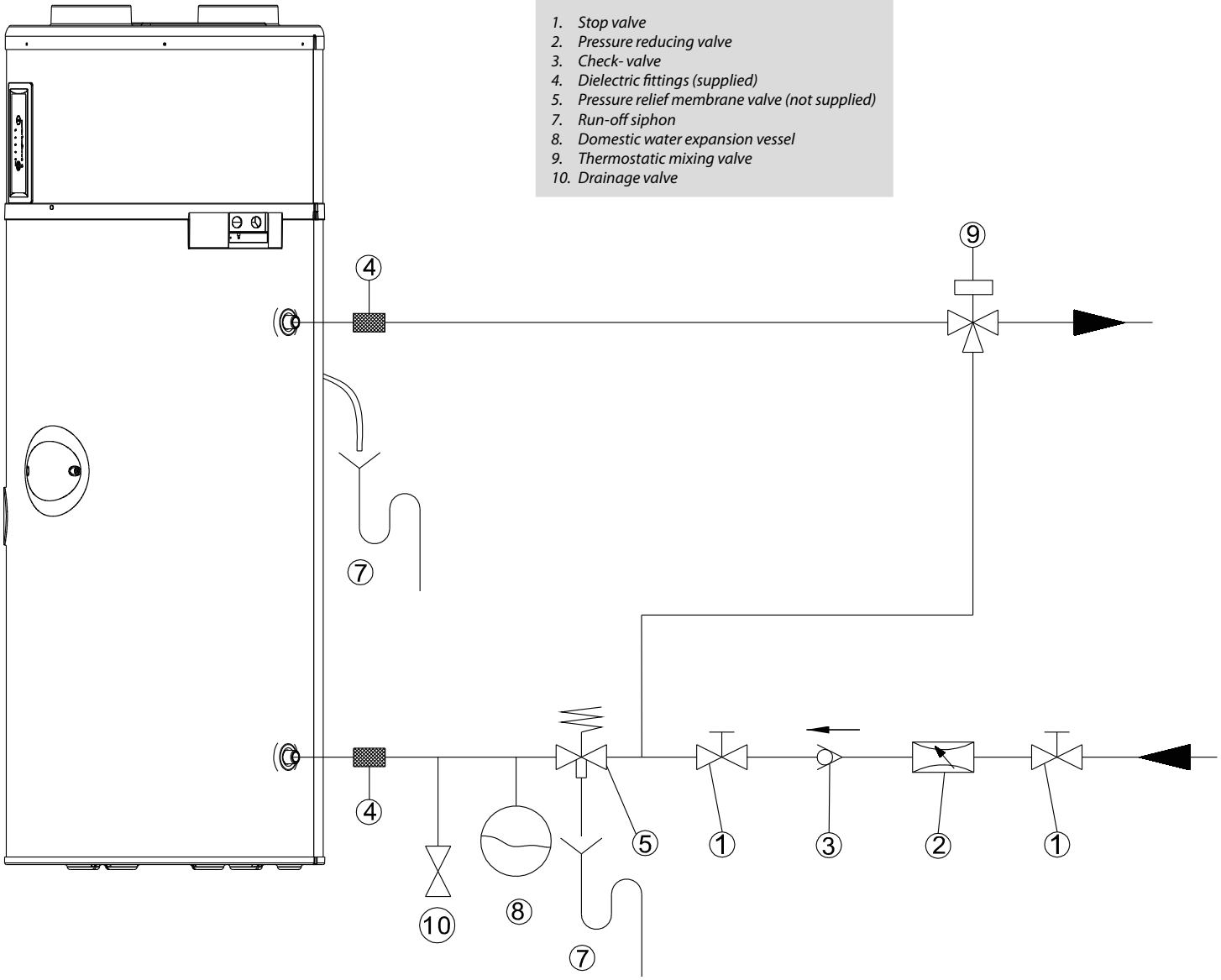
- Thoroughly flush the supply line piping before connecting the appliance to the domestic installation so as not to introduce any particles, metallic or other, into the appliance.
- Respect the standards in effect in the country of use, notably hydraulic regulations and pressure safety regulations.
- The maximum temperature of domestic hot water at the tap points must never exceed 50°C for the toilet and 60°C for other uses. Install adequate thermostatic mixers to avoid burn hazards.
- The appliance must operate with water between 12°F and 30°F. With particularly hard water (TH>25°F) it is advised to use a water softener.
- If any of these points have been neglected the warranty will be null and void (values given are for water at a temperature of 20°C). (See DTU-60-1 for more information).

Resistivity	<2200 Ω.cm or >4500 Ω.cm	
Complete alkalimetric title	< 1.6 meq/L	8°F
CO_2	> 15 mg/L	-
Calcium (Ca^{++})	< 1.6 meq/L	8°F
Sulphates (SO_4^{--})	> 2 meq/L	10°F
Chlorides (Cl^-)	> 2 meq/L	10°F
Sulphates and Chlorides(SO_4^{--}+Cl^-)	> 3 meq/L	15°F

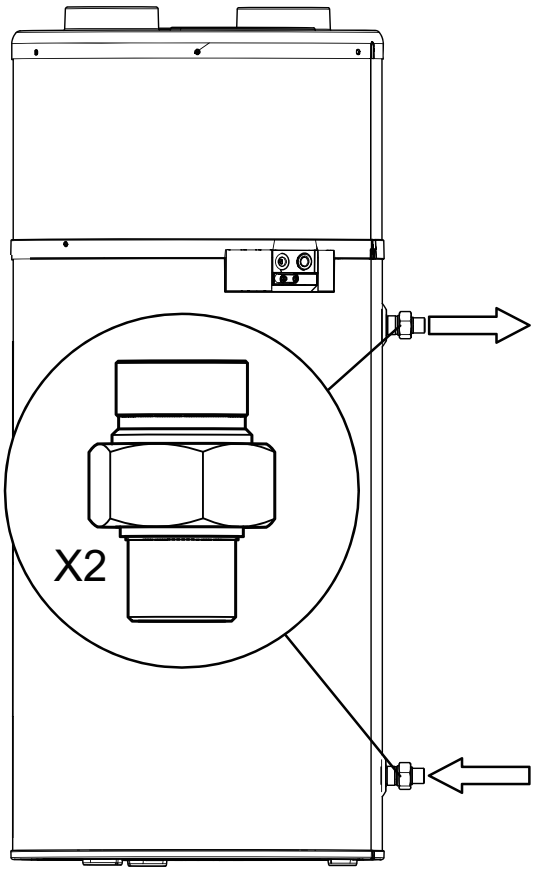
Use of a recirculation pump should be avoided. Recirculating can cause a lack of hot water and overconsumption of energy. If using a recirculation pump, the piping should be insulated and the pump should be controlled by a timer or another system which will prevent domestic hot water from circulating continuously.

If any of these points have been neglected or if the water quality did not allow correct treatment within the legal framework the warranty will be null and void.

1. *Stop valve*
2. *Pressure reducing valve*
3. *Check- valve*
4. *Dielectric fittings (supplied)*
5. *Pressure relief membrane valve (not supplied)*
7. *Run-off siphon*
8. *Domestic water expansion vessel*
9. *Thermostatic mixing valve*
10. *Drainage valve*



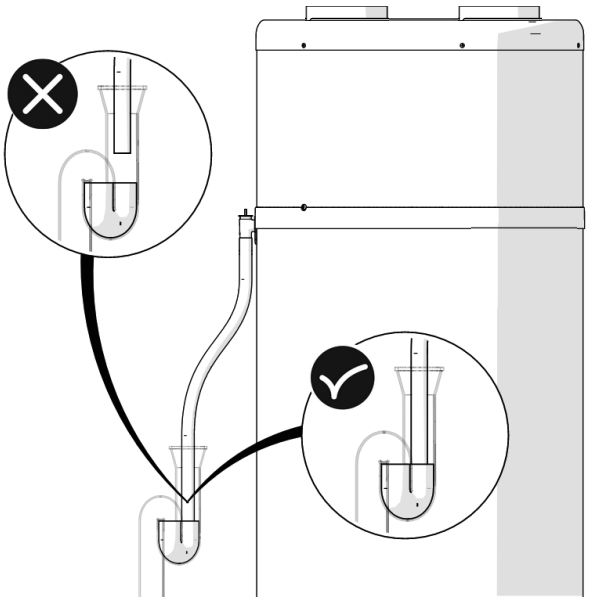
Domestic water connections must not be connected directly to the pipes. They must be fitted with a dielectric fitting (supplied with the appliance).

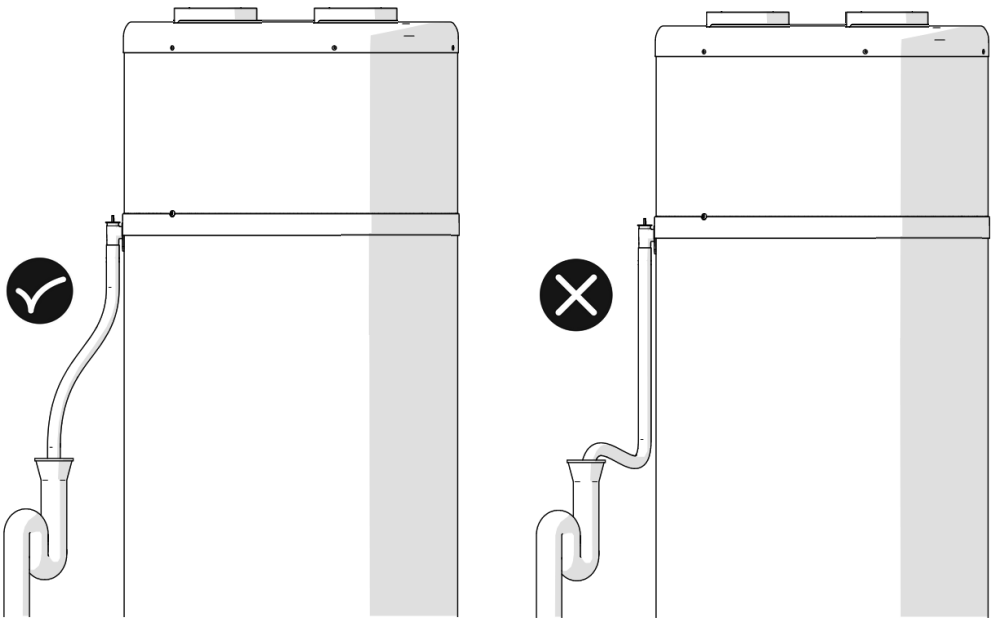


6.4 - Condensates drainage

The cooling of the air circulating in the evaporator can lead to the formation of condensate, the quantity of which varies according to the level of humidity in the air.
Condensate must be evacuated via a drain pipe at the rear of the appliance to a waste water drain.
To ensure correct drainage, the following points must be observed:

- Drainage must be via a siphon (the hose must not be used as a siphon) to the waste water system ;
- Fill the siphon with water ;
- The drain pipe must be immersed in the water in the siphon ;
- A minimum 3° slope must be maintained ;
- It is forbidden to bend the hose ;
- Do not connect to a hose barb.





The siphon is essential, as if it is connected directly to the waste water, rising sewage can damage the appliance's refrigeration circuit!

6.5 - Electrical connections

Do not connect the domestic hot water heat pump to wiring from an older water heater using the peak/off-peak hours contact. The domestic hot water heat pump must be continuous powered on and control the peak/ off-peak hours is done by an independent wiring. Grounding is obligatory.

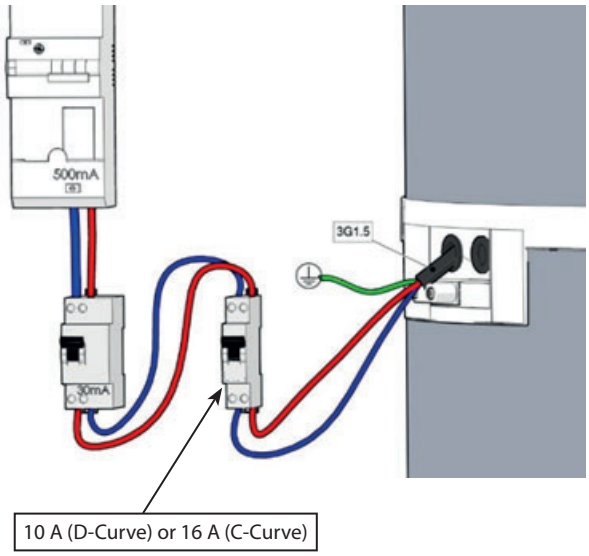
Power supply is managed through a 230 V single-phase and grounding cable.

The power supply should comply with all regulations in effect in the country of installation, as well as the NFC 15-100 standard.

A method of disconnection which ensures total power-cut in Category III conditions should be installed in fixed piping in compliance with the installation rules.

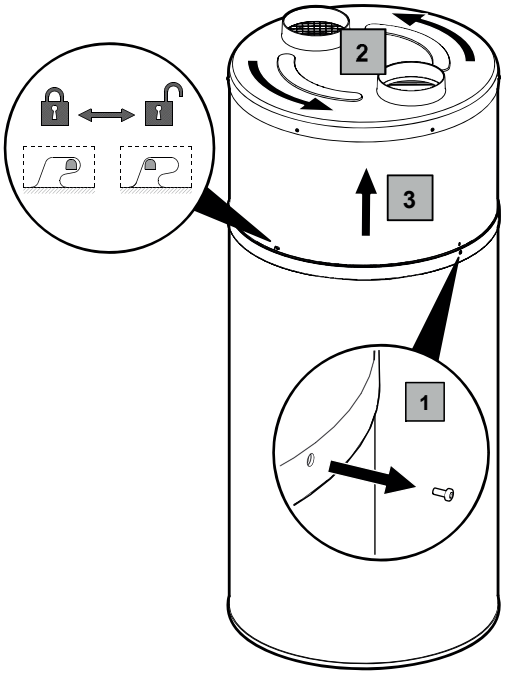
The domestic hot water heater power supply must be protected by a dedicated circuit breaker. The value of this circuit breaker must be adapted to the power rating of the water heater.

As a minimum, we recommend the use of a 10 A D-curve circuit breaker to protect the power supply dedicated to the domestic hot water heater. They can also be connected to a line protected by a conventional 16 A C-curve circuit breaker.



If the power supply cable is damaged it must be replaced by the manufacturer, their customer service technicians, or by a qualified technician to avoid any risk of injury or danger.

6.5.1 - Remove the top cover



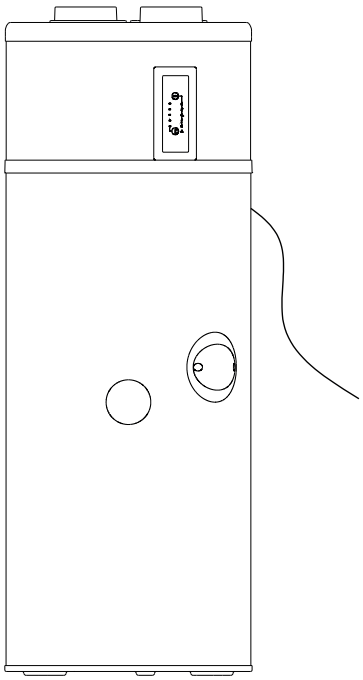
6.5.2 - External control

Only a dry contact, voltage-free, external connection may be used. Otherwise you risk damage to the electronics board.

It is not advised to operate the domestic hot water heat pump during off-peak hours so as to optimise its functionality.

To access the electrical connections hub:

- Remove the cover and the shell.
- Remove the cover of the appliance by removing the screws which fix the shell onto the lower part of the appliance.
- Remove the black protective cover from the electronics board.



7 - SET-UP AND USE

Deterioration risk: the water tank must be filled before the appliance is switched on or connected to a power supply.

- Leave the appliance unplugged.
- Open the hot water outlet which is located the highest on the appliance.
- Open the cold water inlet on the pressure-relief valve.
- Fill the tank until water is coming out of the highest outlet.
- Close the hot water outlet.

Before turning the appliance on, ensure that the entire circuit is watertight.

The domestic hot water heat pump operates **primarily** with **the heat pump** as long as the air intake temperature remains in the authorised range from +5°C à +35°C. Outside of this range, the electrical back-up ensures the heating of domestic hot water.

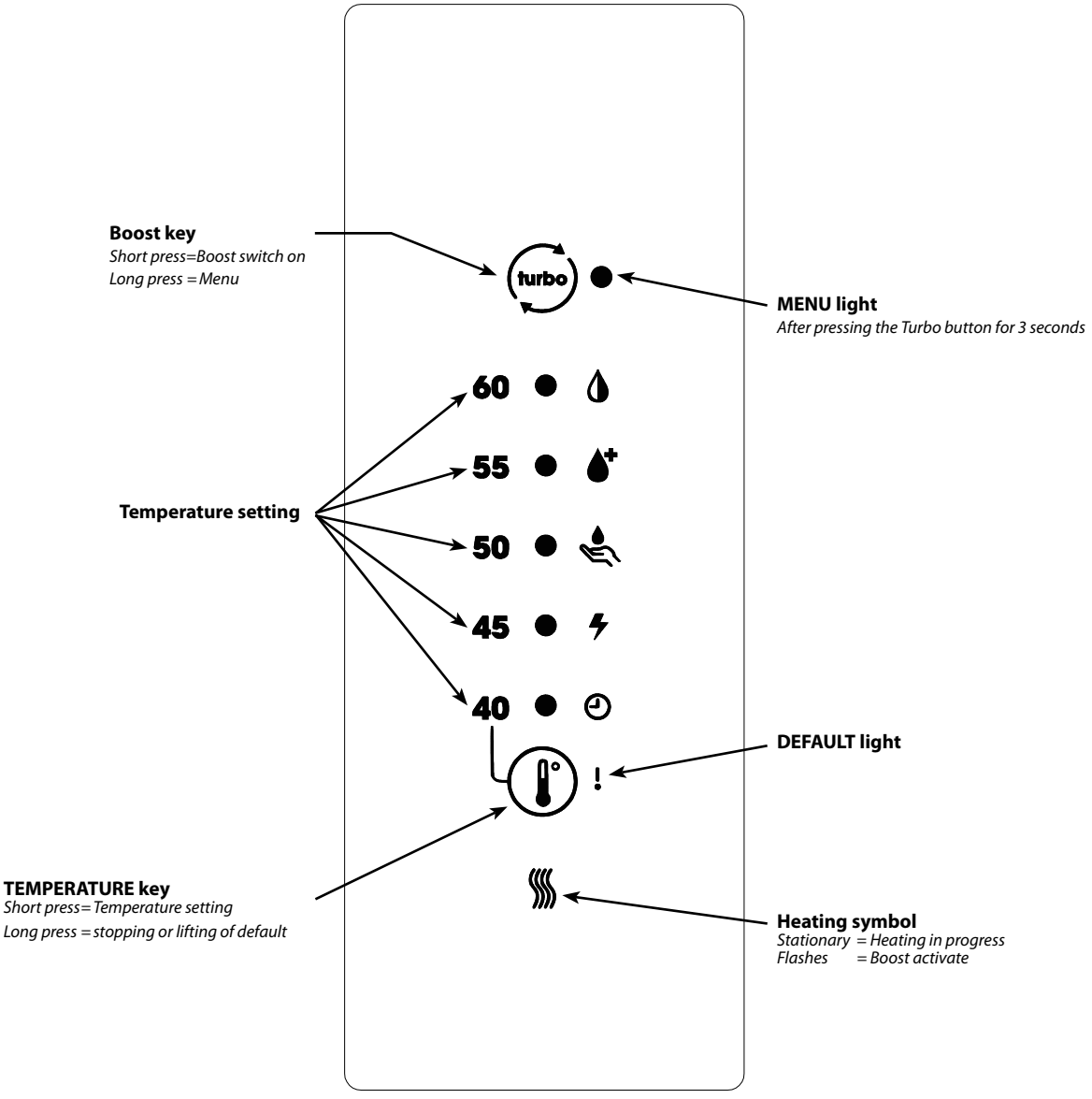
The temperature of the domestic hot water provided by the heat pump is adjustable up to 60°C.

In the case of high domestic hot water consumption, the domestic hot water heat pump has a comfort function, which increases the heating capacity when there is less than 1/3 of the tank's volume left at over 38°C.

If more domestic hot water is required from time to time, the domestic hot water heat pump has a « BOOST» function (activated by the user) which ensures that the water heats to the desired temperature (*for example: 50°C*) quickly with the help of the heat pump and electrical back-up. This function is deactivated as soon as the required temperature is reached (*for example: 50°C*).

From time to time, check that there are no alerts (in case of an alert, please refer to § «Error messages»).

7.1 - Control panel



7.2 - Utilisation

On / Standby

• Short press = Switch on
• Long press = Standby

In standby, the product continues to provide frost protection.

Temperature setting

• Brief successive presses on = temperature setting

In order to get the best of the heat pump, it is recommended to do not set the water temperature setpoint too high if the needs aren't important.

By default, the water temperature is set at 55°C.

If the water temperature is set at 50°C or below, we recommend programming an anti-Legionella cycle.

After a few seconds without use, the display turns off (discrete mode) with the exception of the heating indicator.

A simple press on one of the keys (turbo or) starts the display and you can read the current instruction.

Boost activation

• Brief press on turbo = "Boost" function is activated the "Heating" symbol flashes

The "Boost" function is a temporary override of the electrical back-up and the heat pump in simultaneous operation. It speeds up the rise in temperature over a heating cycle.

The "Heating" symbol flashes to indicate that the "Boost" function in progress.

The "Boost" function is automatically deactivated as soon as the DHW setpoint temperature is reached (end of the heating cycle).

Menu (Long press (3 sec.) on turbo)

= "***Smart***" function (manages heating according to estimated needs).

= "***Comfort***" function (back up heater activation in case of high water consumption).

= "***Protect***" function (activation of a weekly anti-legionella cycle).

= "***Electrical***" function (for operation on the electrical back-up only).

= "***Off-peak hours***" function (for operation only on an off-peak signal).

• Brief press on turbo : to go to the next function.

• Brief press on : to activate (LED on) or deactivate (LED off) the function.

"SMART" function

The "***Smart***" function allows you to keep only part of the temperature from the tank when the device detects a lower need for hot water.

WARNING : In the event of heavy use of hot water, this function may bring discomfort. We recommend that you activate it only after familiarizing yourself with the device and the actual hot water needs is provided.

"COMFORT " function

The "Comfort" function authorizes operation of the electrical back-up in same time as the heat pump to prevent the water from going below a minimum comfort temperature of 38°C.

The electric back-up heater will operate until the water temperature reaches 43°C then it will stop and only the heat pump will complete the heating of the water heater.

If the "Off-peak hours" function is activated, the "Comfort" function is cancelled during "peak hours" periods (external contact open).

"PROTECT " function

During the anti-legionella cycle, the water temperature is raised to 60°C by the heat pump. If the domestic hot water setpoint is already set at 60°C (see § "Water temperature setting"), then there will be no antilegionella cycle since it is permanent. If a cycle is interrupted by a prohibition period (external contact), it will be restarted at the next period authorization.

"ELECTRIC " function

When the "Electric" function is activated, the appliance only uses the electric back-up heater to heat the water.

It allows emergency operation in case of impediment use of the heat pump (air ducts awaiting connection, dusty work near the device, etc.).

"OFF-PEAK " function

The heat pump and the electrical back-up heater are not-authorised to operate when the external contact is open except in the following cases :

- frost protection ;
- Boost function.

8 - MAINTENANCE AND TROUBLESHOOTING

In order to maintain efficiency and improve durability it is advised that an annual maintenance check be carried out by a qualified professional.

• Any work on the heat pump must be carried out by a qualified professional.

• Observe all health and safety rules !

- **Any work on the refrigerant circuit must be carried out by a qualified professional with a Category 1 certificate of aptitude.**
- **It is strictly prohibited to release refrigerant gas into the atmosphere.**
  The refrigerant must be collected before any work is carried out on the circuit.
- **Switch off the domestic hot water heat pump before opening it.**
- **Wait for the fan to come to a complete stop before starting work on the appliance.**
- **Do not get water on any of the electrical parts.**
- **The pressure limiting device must be operated regularly to eliminate limescale and to check for blockages.**
- **Check the condition of the corrosion-proof anode at minimum once per year.**

When draining the tank, ensure that there is a large enough air inlet at the top to avoid any depression in the tank. The following materials and products should be avoided:

- Brushes with steel bristles or pads
- Scouring powder
- Any bleach-based product or chlorinated derivative

In case of maintenance or if taking the **domestic hot water heat pump** out of service, please respect the environmental protection regulations regarding recovery, recycling and disposal of consumables and components.

The R290 refrigerant in the heat pump circuit poses no risk to the environment, but it is flammable.

→ The R290 refrigerant is odourless.

→ Do not damage the pipes in the refrigerant circuit.

→ Do not handle a flame or any other flammable source on the inside of the appliance.

→ If the refrigerant is leaking, unplug the appliance, air out the room, and contact customer service.

→ Do not use any mechanical means to speed up the defrosting process.

→Do not pierce or burn the appliance: in case of intervention on the refrigerant circuit, the refrigerant must be recovered.

→ The refrigerant circuit containing flammable refrigerant complies with national gas regulations.

→ In case of operating on the refrigerant circuit:

1) Secure the area you will be working in

2) Inform people of the potential danger involved in the work

3) Check that the risk of inflammation is minimised

4) Avoid working in a confined space; the area must be sufficiently ventilated

5) Check the area with an appropriate leak detector before and during the work

6) Place a CO_2 or dry powder extinguisher near the work area

7) Do not smoke

8.1 - Water circuit / Condensate draining

To check that the condensates are draining correctly:

- Remove the upper cover (see § «Electrical connections» procedure).
- Check for blockages in the drainage outlet.
- Clean the condensate recovery trough, where deposits from the air intake may have gathered.
- Clean the flexible drainage hose.

The pressure limiting device must be switched on regularly to eliminate limescale and to check for blockages.

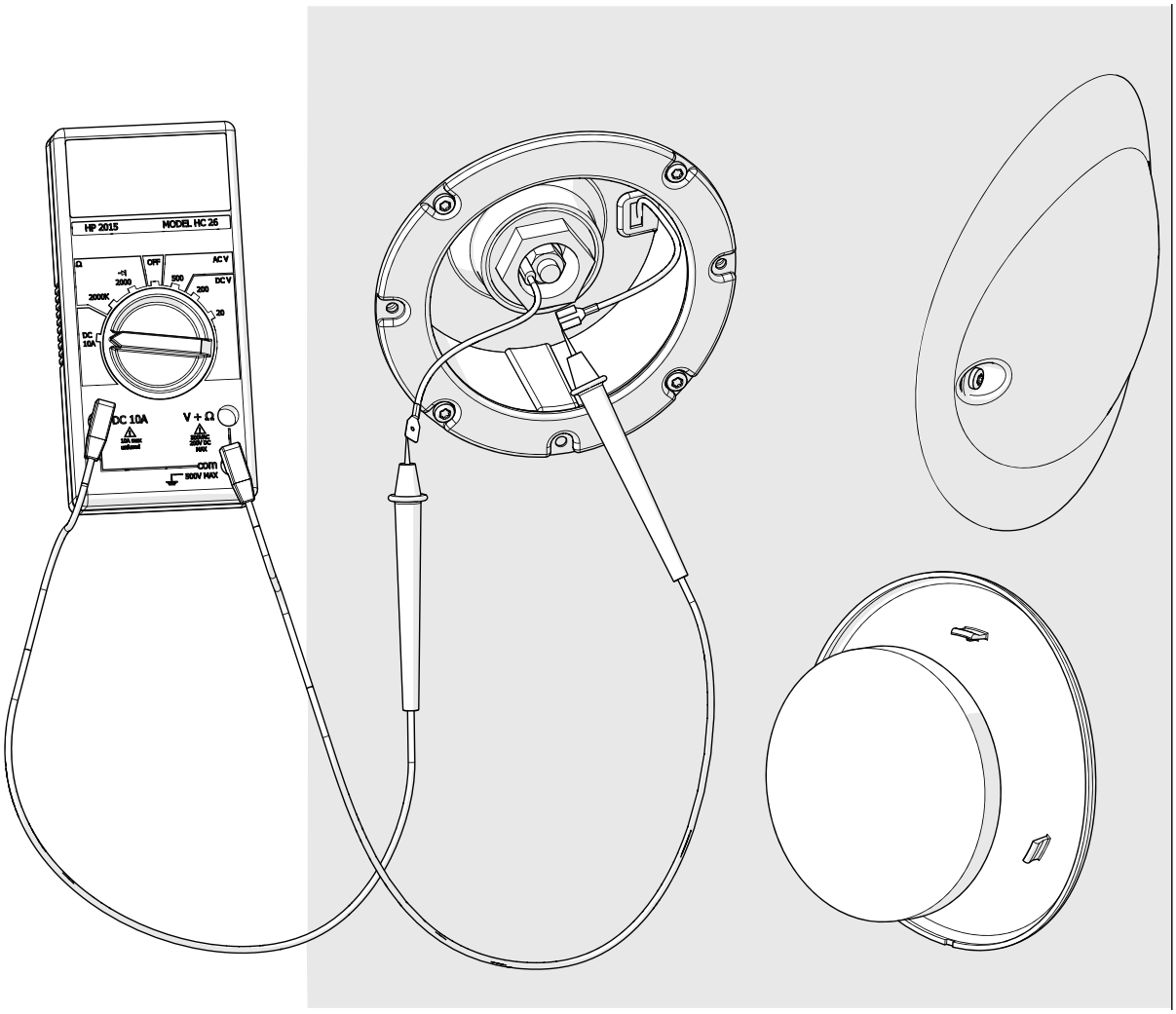
Check that all hydraulic connections on the **domestic hot water heat pump** are watertight.

If the corrosion-proof anode is in a poor state of repair it will shorten the lifespan of the appliance and render the warranty null and void.

The primary corrosion-proof anode ensures the protection of the tank, it must be inspected at regular intervals (at minimum once per year) after the initial set-up of the domestic hot water heat pump.

Check the magnesium anode by measuring the current:

- Disconnect the anode cable from the earth terminal.
- Measure the current between the anode cable and the earth terminal.



If the current is greater than 0.3 mA, the anode is operational; if the current is less than 0.3 mA, visually check the anode:

- Remove the plastic cover.
- Partially drain the appliance below the height of the anode.
- Remove the anode.
- Check the diameter of the anode at the narrowest point. This diameter must be greater than 15 mm (the initial diameter of the anode being 33 mm).
- If the diameter is less than 15 mm, replace the anode.
- Remove any deposits from the thread.
- Refit the anode.
- Rewire the anode.
- Refit the plastic cover.

8.2 - Air intake circuit

The only maintenance work needed on the air intake circuit is to clean the evaporator (at least once per year and dependent on the quality of air intake).

If using air filters check if they are clean regularly. Clean and replace if necessary.

The fan blades are sharp-edged and may cause injury; take care not to damage or deform them.

8.3 - Electrical maintenance

It is mandatory to periodically inspect for the cleanliness and the absence of dust deposits on the electronic circuit board and the electrical terminals:

- of the compressor;
- of the electrical resistance ;
- of the different capacitors.

Verify the correct tightness of all lugs. Adapt the frequency of inspection to the air quality. In a dusty environment more frequent maintenance and inspection is necessary, at minimum 1 time per year.

- Check that the wiring is not subject to wear, corrosion, excessive pressure, vibration, contact with sharp edges or any other adverse effects due to its environment.
- Maintenance must also take into account the effects of long-term continuous vibration from components such as the compressor and fan.

Neglecting to clean the circuit board and other electronic components in a dusty environment can lead to a risk of overheating and ignition.

8.4 - Drainage

When draining the tank, ensure that there is a sufficient air intake at a high point of the tank so as to avoid any depressions in the tank.

Materials and products to avoid:

- brushes with steel bristles and steel wool pads
- scouring powder
- all bleach based or chloride products

1) Switch off the power supply.

2) Shut off the cold water inlet valve on the safety group and ensure there is an air intake valve on a high point of the appliance.

3) Open the hot water valves.

4) Set the safety group to the drainage position.

8.5 - Modification

Any modification of the appliance is **prohibited**. Any replacement of components must be done by a professional with original parts from the manufacturer.

8.6 - Decommissioning

8.6.1 - Leak detection

In the event of a prolonged absence with the power supply to the housing and the product disconnected, ask a qualified professional to drain the product or protect it from freezing.

Under no circumstances should potential ignition sources be used for the detection or detection of refrigerant leaks. A halogen flare (or other detector using an open flame) shall not be used.

- Electronic leak detectors may be used to detect refrigerant leaks, but for flammable refrigerants, sensitivity may not be adequate or may require recalibration.
- Ensure that the detector is not a potential ignition source and is suitable for the refrigerant used. Leak detection equipment must be set to a percentage of the lower flammability limit of the refrigerant and must be calibrated for the refrigerant used. The value of 25% of the lower flammable limit is used as the maximum.
- Liquid leak detectors are also suitable for use with most refrigerants but the use of chlorine-containing detergents should be avoided as chlorine can react with the refrigerant and corrode copper from the piping.
- If a leak is suspected, all open flames must be suppressed / extinguished.

8.6.2 - Removal and evacuation

- When opening the refrigeration circuit to perform repairs - or for any other purpose - conventional procedures must be used.
- For flammable refrigerants, it is important to use best practice as flammability must be considered.
- The following procedure must be followed :

- Remove the refrigerant ;
- Purge the circuit with inert gas ;
- Evacuate to the atmosphere;
- Purge with inert gas ;
- Open the circuit by cutting or brazing.

- Refrigerant must be recovered in a suitable recovery bottle.
- The system must be purged with nitrogen without oxygen.
- This process may need to be repeated several times. Compressed air or oxygen should not be used to purge refrigerant systems.
- The purge of refrigerants must be performed by breaking the vacuum in the system with nitrogen without oxygen: By filling up until the working pressure is reached, an evacuation to the atmosphere, and finally by vacuum pulling.
- This process must be repeated until there is no more refrigerant in the circuit.
- When the last oxygen-free nitrogen charge is used, the circuit must be brought to atmospheric pressure to allow intervention.
- Ensure that the vacuum pump outlet is not near potential ignition sources and that ventilation is available.

8.6.3 - Charging process

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines should be as short as possible to minimize the amount of refrigerant they contain.
- Cylinders must be held in an appropriate position according to instructions.
- Make sure the refrigeration system is grounded before charging the system with refrigerant.
- Label the system when the load is complete (if not already done).
- Extreme precautions must be taken to not overload the refrigeration system.
- Before recharging the system, it must be pressure tested with the appropriate purge gas.
- The system must undergo a leak test at the end of the load but before commissioning. Another follow-up leak test must be performed before leaving the site.

8.6.4 - Decommissioning

- Before performing this procedure, it is essential that the technician knows the product and all its specificities.
- It is recommended to use best practices to ensure that all refrigerants are safely recovered. Before the task is performed, an oil and refrigerant sample must be taken in case an analysis is required before recycling the recovered refrigerant. It is essential that a power supply is available before the intervention begins.

a) Familiarize yourself with the product and how it works

b) Electrically isolate the system.

c) Before attempting the procedure, ensure that:

- mechanical handling equipment is available, if necessary, for the handling of refrigerant cylinders ;
- all personal protective equipment is available and used correctly ;
- the recovery process is being overridden at all times by a competent person.
- recovery equipment and cylinders comply with appropriate standards.

d) Perform a «pump down» on the appliance where possible.

e) If it is not possible to vacuum, make a manifold so that the refrigerant can be removed from various parts of the system.

f) Make sure the recovery bottle is on the scale before the start of fluid recovery.

g) Start the recovery group and operate it according to the instructions.

h) Do not overfill bottles (no more than 80% in volume of liquid charge).

i) Do not exceed the maximum operating pressure of the cylinder, even temporarily.

j) Once the cylinders have been filled correctly and the process completed, ensure that the cylinders and product are removed from the site quickly and that all isolation valves on the product(s) are closed.

k) Refrigerant must not be loaded into another refrigeration system unless cleaned and verified.

8.6.5 - Recovery

When transferring refrigerant into the recovery bottles, ensure that only the appropriate bottles are used. Make sure you have enough bottles to recover the entire system load. All cylinders used are dedicated to the refrigerant recovered and labelled for it (i.e., special cylinders for refrigerant recovery). Cylinders must be complete with pressure relief valve, associated shut-off valves and in good working condition. Empty recovery cylinders are evacuated and, if possible, cooled prior to recovery.

- Recovery equipment must be in good working order with all instructions at hand and must be suitable for recovery of all refrigerants including, where applicable, flammable refrigerants. In addition, a set of calibrated scales must be available and in good working order.
- Hoses must be complete with leak-free disconnects and in good condition. Before using the recovery machine, verify that it is in good working order, has been properly maintained and that all associated electrical components are sealed to prevent ignition in the event of a refrigerant leak. Consult the manufacturer if in doubt.
- The recovered refrigerant must be returned to the supplier in the appropriate recovery bottle and the transfer note filled in correctly. Do not mix refrigerants in recovery units and especially not in recovery bottles.
- If compressors or compressor oils need to be replaced, make sure they have been vacuum pulled to an acceptable level to ensure they are not left in the flammable refrigerant lubricant. Vacuum pulling must be done before the compressor is returned to the supplier. Only electric heating of the compressor body should be used to accelerate this process. When oil is drained from a system, it must be done safely.

8.6.6 - Recycling and Disposal

- The product must be labelled indicating that it has been taken out of service and emptied of the refrigerant.
- The label must be dated and signed.
- Ensure that there are labels on the product indicating that it contains a flammable refrigerant.

Entrust the disposal of the packaging to the installer who installed the product.

The above symbol requires:
- Do not dispose of the product with the household waste.
- Dispose of the product at a collection point for used electrical and electronic equipment.

8.7 - Troubleshooting

• The heat pump is not working

Check that:

- The desired water temperature is higher than the temperature of the water in the tank.
- The appliance is connected to a power supply.
- The underfloor heating temperature is not less than 18°C or greater than 50°C.
- The appliance is not blocked by a peak hours.
- An error message is displayed on the screen (see § Error message codes).
- The water supply circulator turns correctly (defect if necessary).
- The underfloor heating bypass circuit is properly purged of his air.

• No hot water

Check that:

- The volume of water consumed is not higher than the volume in the tank.
- External control (peak/off-peak hours) does not limit operation to too short a period.
- The water temperature is not set too low.
- There is no recirculation pump.
- The presence and the proper positioning of the inlet pipe (the absence or improper positioning of a inlet pipe may reduce the hot water supply capacity of the tank).

• Condensates are not draining

(water present under the appliance)

Check that:

- The drainage system is not dirty or obstructed. Clean it if necessary:
  - Remove the cover (see § «External control» procedure).
  - Check the opening.
- The tubes do not have bends or "U" shapes that could collect water.
- The end of the tube gives out onto open air.
- The tank is properly positioned (vertical position and no tilting).

• Electrical back-up is not working

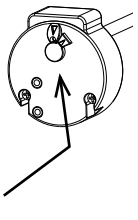
Check that:

- Your electricity provider or your timer is not preventing the appliance from functioning (❄ «Frost protection» light on).
- A heat-limiting safety thermostat for electrical back-up has not been activated after over-heating (>87°C). If this is the case, reset it.

Before resetting, check:

- That the heating element does not have limescale.
- Clean or replace if necessary.

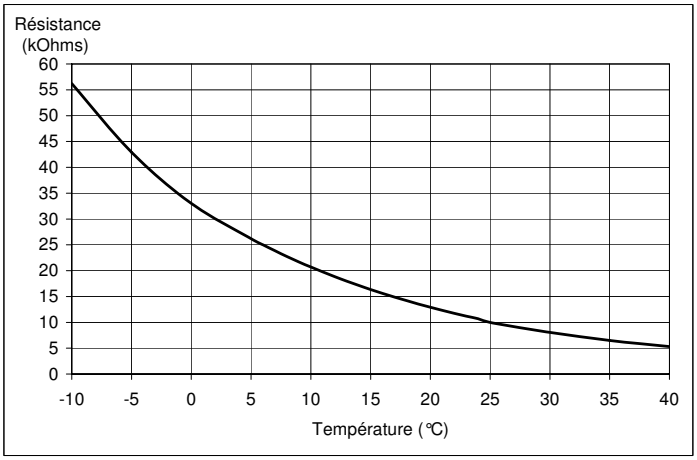
! Do not adjust settings on safety aquastat



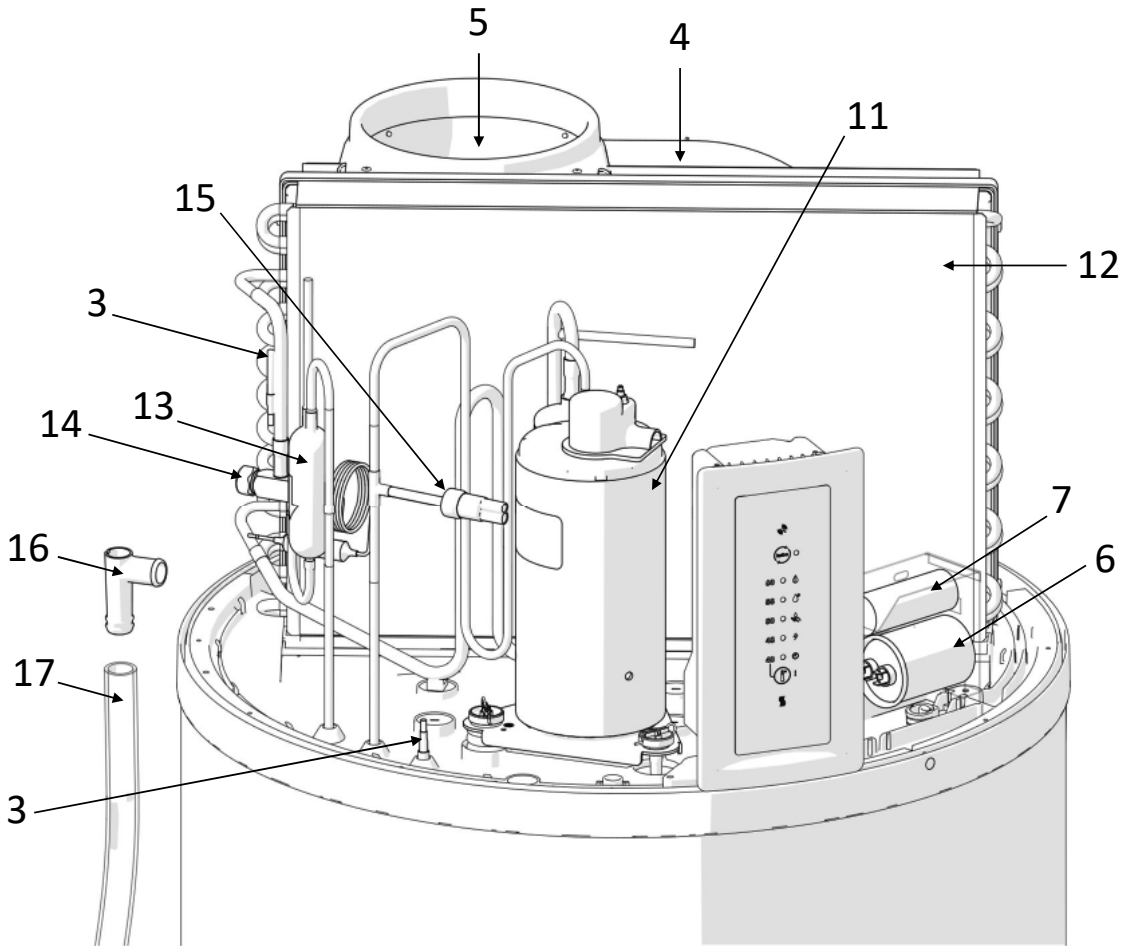
Reset button (87°C) on safety aquastat

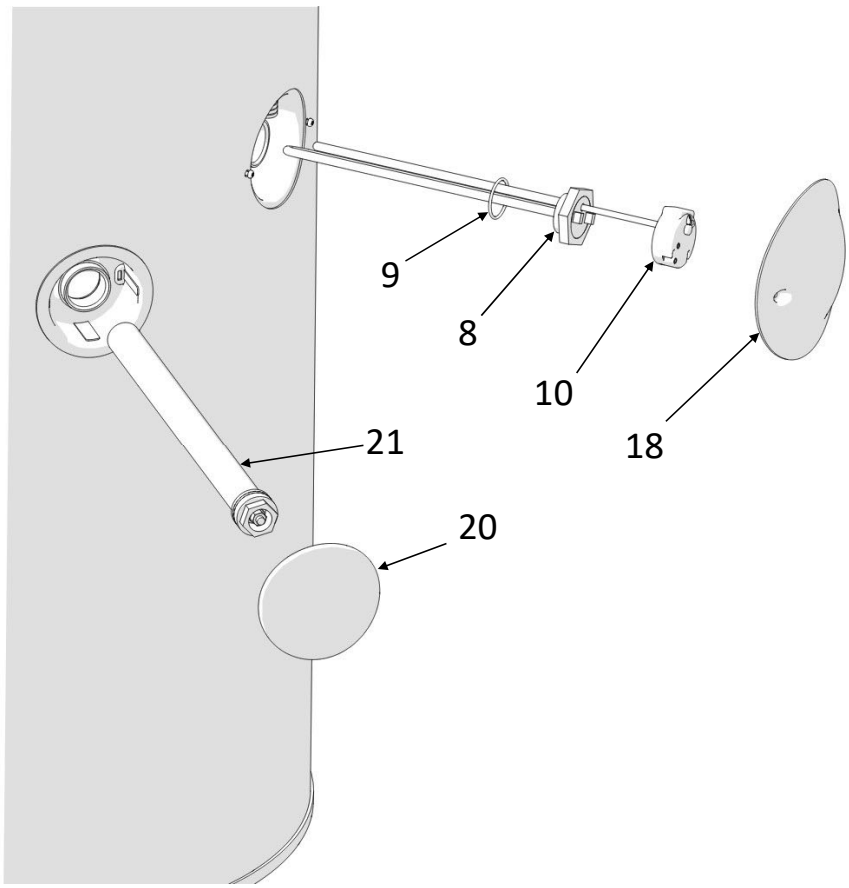
8.8 - Sensor data

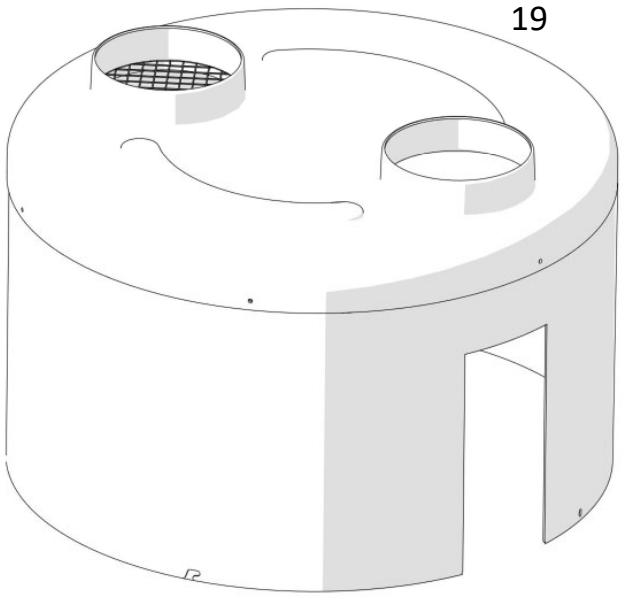
All 4 sensors have the same ohmic values.

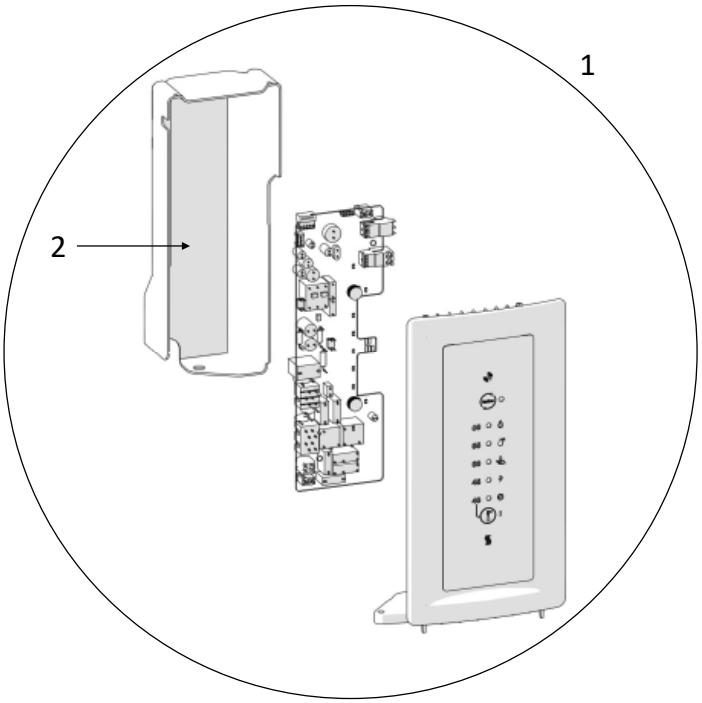


8.9 - List of spare parts









Rep.	Ref.	Description
Regulation / Display		
1	B4994577	Complete display
2	B1759499	Display protect
3	B1244827	Air / water sensor
Electrical		
4	B4995472	Fan kit
5	B1244841	AC Ø 190 Fan
6	B1244220	15 µF capacitor
7	B1244962	1 µF capacitor
not visible	B1244800	Power supply cable
not visible	B1244842	Compressor wiring kit
Electrical back-up		
8	B4992886	1200 W heating element + gasket kit **
9	B1657722	Heating element seal
10	B1239160	Aquastat
Thermodynamic components		
11	B4995095	Compressor kit
12	B1473138	Finned heat exchanger
13	B1472871	Drying filter
14	B1472917	Expansion valve
15	B1244424	Pressure switch
not visible	B1973127	Loading pipe + scharader valve *
Casing		
16	B1759620	Condensate T-pipe
17	B4948423	PVC pipe 18x23 : length 1.8 m
18	B1759399	Heating element cover
19	B4994578	Insulated hood
20	B1759586	Anode cover
Protection		
21	B1244836	Anode kit
Hydraulic		
not visible	B1135130	Dielectric fittings

Note : availability of spare parts :

The spare parts of our products are kept available for 10 years, from the date of stop of mass production, except events beyond our control.

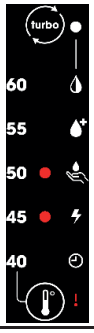
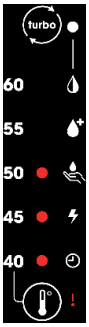
**** After working on the refrigeration circuit, the charging tube must be removed and the circuit must be made completely airtight.***

***** Recommended tightening torque for immersion heater: 45 N.m.***

8.10 - Error message codes: errors, solutions and operating in case of error

Nota : In the event of a defect, the «***Default***» ! light illuminates, the fault code is indicated by the temperature lights.

N°	Display	Error	Probable causes	Solutions	Temporary operation measures while waiting for the problem to be solved
1		Tank water sensor defect	• Sensor not functioning • Sensor unplugged from board • Sensor cable damaged	• Replace sensor	• Heat pump non-functional
2		Air temperature sensor defect (Temperature of air intake)	• Sensor not functioning • Sensor unplugged from board • Sensor cable damaged	• Replace sensor	• Heat pump non-functional • Electrical back-up heats water to 43°C (38°C minimum)
3		«***Smart***» sensor defect (Cf. concerned)	• Sensor not functioning • Sensor unplugged from board • Sensor cable damaged	• Replace sensor	• «***Smart***» function deactivated
4		Heat pump pressure too high	• No water in the tank • Water is too hot (>75°C) • Water sensor removed from tank • Defective water sensor	• Check that the tank has been properly filled with water and purged of air • Change the water sensor • Check that the water sensor is in the right position in the sensor pocket tank	• Heat pump in non-functional • Must be manually reset
5		DHW over heat	• No water in the tank • Water too hot (>75°C) • Water probe removed from the tank • Faulty water sensor	• Check that the tank is filled with water • Change the water sensor • Check that the DHW* sensor is well inserted in the sensor pocket	• Heat pump stopped • Reset is automatic • Electrical back heater can operate if allowed

N°	Display	Error	Probable causes	Solutions	Temporary operation measures while waiting for the problem to be solved
6		Heating monitoring	• Bad filling of the tank • Electrical back-up heater failure • Water sensor incorrectly positioned or defective	• Check that the tank is filled with water and well drained • Check that the tank sensor is well inserted in the sensor pocket • Measure the ohmic value of the electrical back up heater	• Heat pump stopped • Reset is automatic • Electrical back-up heater can operate if allowed
7		Compressor defect	• Wrong wiring of the compressor • Defective compressor • Charging problem	• Check the condition of the wiring • Check the fluid charge	• Operating on electrical back-up heater
8		Operating defect	• Lack of airflow • DHWHP** placed in a undersized room	• Check the correct passage of air to through the product • Check that the clearance around the appliance is respected • Check the condition of any filters or ducts connected • Check the state of cleanliness of the evaporator	• Operating on electrical back-up heater
9		Frequent defrosting	• Lack of airflow • Air inlet / outlet obstructed • Dirty evaporator	• Check the correct passage of air to through the product • Check that the clearance around the appliance is respected • Check the condition of any filters or ducts connected • Check the state of cleanliness of the evaporator	• Heat pump stopped • Electrical back-up heater heats the water up to 43°C (38°C minimum)

**DHW = Domestic Hot Water*
***DHWHP = Domestic Hot Water Heat Pump*

9 - WARRANTY

The tank is guaranteed against breakage for a period of five (5) years, starting from the date the appliance was activated, if the warranty form was sent back to the manufacturer. In the absence of this document, the date of manufacture will be used to determine the start date of the warranty. If the tank is broken, the whole appliance will be replaced.

The other parts are guaranteed for a period of two (2) years starting from the date the appliance was activated, if the warranty voucher was sent back to the the manufacturer. In the absence of this document, the date of manufacture will be used to determine the start date of warranty.

The appliance is guaranteed against all manufacturing defects, provided that it was installed by a qualified professional using our instruction manuals, the C15-100 standard for electrical connections and the hydraulic DTU 60-1 addendum 4 for domestic water.

A defective part does not warrant the whole appliance being replaced.

The warranty only extends to parts which we identify as being defective due to manufacturer defect.

If necessary, the part or product should be returned to the manufacturer but only with prior agreement from our technical department. Labour, transport, and packaging costs are the responsibility of the user. Repairs on a device will not result in compensation.

The warranty for replacement parts ends at the same time as the appliance warranty (2 years).

The warranty only applies to the appliance and its components, and excludes any part or installation external to the appliance.

Regular maintenance of the appliance by a trained professional is essential for ensuring sustained use and durability. In the absence of regular maintenance, the warranty will not apply.

If an appliance is presumed to have been the cause of any damage, the appliance and the damage must be left as they are and not tampered with.

9.1 - Limitations of warranty

9.1.1 - General information

The warranty does not apply to defects or damage caused by situations or events such as:

- Misuse, abuse, negligence, improper transport or handling.
- Incorrect installation, or installation which has been carried out without following the instructions in the manual and user guide.
- Insufficient maintenance.
- Modifications or changes carried out on the appliance.
- Impacts from foreign objects, fire, earthquakes, floods, lightning, ice, hailstones, hurricanes or any other natural disaster.
- Movement, imbalance, collapse or settling of the ground or the structure where the appliance is installed.
- Any other damage which is not due to defects in the product.

The domestic hot water heat pump is not guaranteed against :

- Variations in the colour of the appliance or damage caused by air pollution, exposure to chemical elements, or changes brought about by adverse weather conditions.
- Dirt, rust, grease or stains which occur on the surface of the appliance.

9.1.2 - Exclusion from warranty

9.1.2.1 - Use

Cases (not limited to) where the warranty is void:

- The water supply being other than cold domestic water, (such as rainwater or other water from a well), or which has particularly hostile or abnormal properties which do not comply with the national regulations and current standards in effect.
- The appliance being switched on before it is filled with water.

9.1.2.2 - Handling

Cases (not limited to) where the warranty is void:

- Any damage sustained by impacts or falls during handling after delivery from the factory.
- Deterioration in the condition of the appliance after handling where the instructions in the manual have not been followed.
- Damage occurring in the appliance when it has been switched on less than an hour after it has been leaning to the side or laid flat.

9.1.2.3 - Installation site

Cases (not limited to) where the warranty is void:

- Placing the appliance where it can be subject to frost or other adverse weather conditions.
- Non-compliance with the instructions in the manual when installing the appliance.
- Installing the appliance on a surface which cannot bear its weight when filled with water.
- Installing the appliance in a room with a volume of less than 20 m^3 where there is no piping for air intake and exhaust.
- Installing the appliance at an angle which does not allow condensates to flow out properly.

Costs incurred by access difficulties are not the manufacturer's responsibility.

9.1.2.4 - Electrical connections

Cases (not limited to) where the warranty is void:

- Faulty electrical connection which does not comply with the current national installation standards.
- Not following the connection diagrams in the instruction manual.
- Power supply being significantly under or over the required voltage.
- Failure to comply with supply cable standards.
- Absence of, or insufficient, electrical protection throughout the appliance (fuse/ circuit-breaker, grounding, etc.).
- Damage which results from deactivating the electrical back-up aquastat and/or the heat pump.

9.1.2.5 - Hydraulic connections

Cases (not limited to):

- Reversing the hot/cold water connections.
- Water pressure higher than 6 bars.
- Absence of, incorrect fitting of, or obstruction of, a pressure-relief valve.
- Not fitting the pressure-relief valve directly onto the cold water inlet of the appliance.
- Fitting a pressure-relief valve which does not comply with the current national standards (NFD 36-401).
- Installing a previously-used pressure-relief valve.
- Tampering with the pressure-relief valve.
- Abnormal levels of corrosion caused by an incorrect hydraulic connection (direct contact between iron and copper) without a sleeve (cast-iron, steel or insulator).
- External corrosion caused by the piping not being properly sealed or by condensates not draining off properly.
- Improper connection of the condensates recovery system.

No claim for compensation may be made for damage which has occurred as a result of not installing thermostatic mixing valves onto the appliance.

9.1.2.6 - Accessories

- The warranty does not cover defects resulting from:
  - Installation of accessories which do not comply with manufacturer recommendations.
  - Use of accessories not provided by the manufacturer.

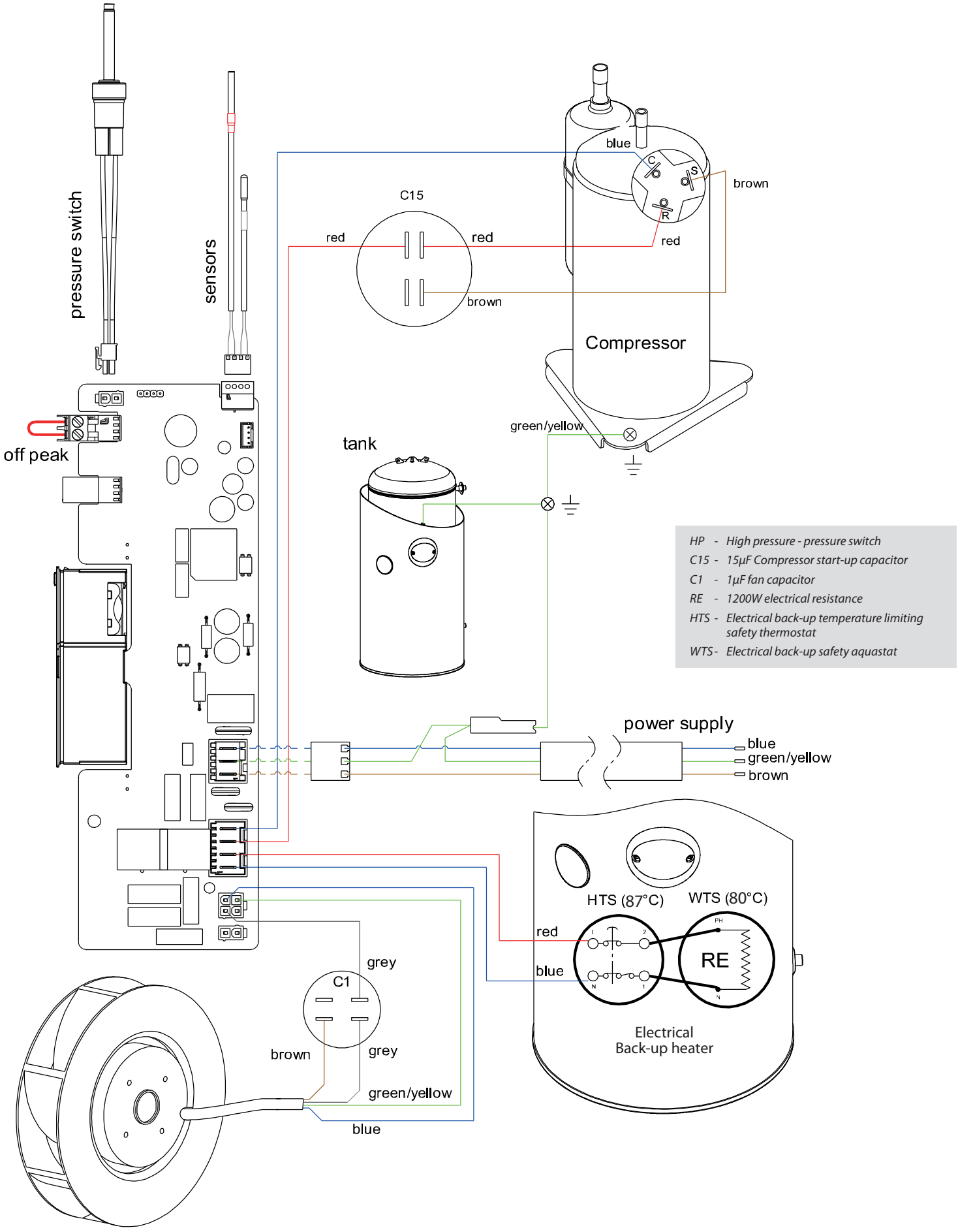
9.1.2.7 - Maintenance

Cases (not limited to) where the warranty is void:

- Not maintaining the appliance, and not changing the anode in due time.
- Not maintaining the pressure-relief valve, resulting in excessive pressure.
- Absence of a pressure-reducing valve.
- Not maintaining the evaporator or the condensates draining system.
- Abnormal levels of limescale on heating elements or safety devices.
- Not using parts supplied by the manufacturer.
- Protective outer casing being subjected to any external damage.

10 - APPENDICES

10.1 - Wiring diagram



HP - High pressure - pressure switch
C15 - 15µF Compressor start-up capacitor
C1 - 1µF fan capacitor
RE - 1200W electrical resistance
HTS - Electrical back-up temperature limiting safety thermostat
WTS - Electrical back-up safety aquastat

Any work carried out on the refrigerant circuit must be carried out by a qualified professional with a Category 1 certificate of aptitude. Releasing refrigerant gasses into the atmosphere is strictly prohibited. It is mandatory to collect the refrigerant fluid before carrying out any work on the circuit.

- **Switch off the heat pump water heater before opening it.**
- **Wait for the fan to come to a complete stop before undertaking any work on the appliance.**

www.intuis.fr

Industrial and development site
Rue de la République
CS 40029
80210 Feuquières-en-Vimeu

Customer service
+33 (0)9 78 45 10 26
service-consommateur@intuis.fr
service-client@intuis.fr