

KALI KO

Thermodynamic water heater

TWH 200E

TWH 300E

TWH 300EH



C003182-B



Installation, User and Service Manual

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1 Introduction

1.1 Symbols used

In these instructions, various danger levels are employed to draw the user's attention to particular information. In so doing, we wish to safeguard the user's safety, obviate hazards and guarantee correct operation of the appliance.



DANGER

Risk of a dangerous situation causing serious physical injury.



WARNING

Risk of a dangerous situation causing slight physical injury.



CAUTION

Risk of material damage.



Signals important information.



Signals a referral to other instructions or other pages in the instructions.




Before installing and commissioning the device, read carefully the instruction manuals provided.

1.2 Abbreviations

- ▶ **HP or PAC:** Heat pump
- ▶ **DHW:** Domestic hot water
- ▶ **LP:** Low pressure
- ▶ **HP:** High pressure
- ▶ **CFC:** Chlorofluorocarbon
- ▶ **Qpr:** Static losses (Thermal losses from the DHW tank when it is off for 24 hours)
- ▶ **COP:** Performance coefficient
- ▶ **HP/HC:** Peak hours / Off-peak hours

1.3 General

1.3.1. Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various applicable European Directives. They are therefore delivered with  marking and all relevant documentation.

In the interest of customers, we are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

Our liability as the manufacturer may not be invoked in the following cases:

- ▶ Failure to abide by the instructions on using the appliance.
- ▶ Faulty or insufficient maintenance of the appliance.
- ▶ Failure to abide by the instructions on installing the appliance.

1.3.2. Installer's liability

The installer is responsible for the installation and initial start up of the appliance. The installer must respect the following instructions:

- ▶ Read and follow the instructions given in the manuals provided with the appliance.
- ▶ Carry out installation in compliance with the prevailing legislation and standards.
- ▶ Perform the initial start up and carry out any checks necessary.
- ▶ Explain the installation to the user.
- ▶ If a maintenance is necessary, warn the user of the obligation to check the appliance and maintain it in good working order.
- ▶ Give all the instruction manuals to the user.

1.3.3. User's liability

To guarantee optimum operation of the appliance, the user must respect the following instructions:

- ▶ Read and follow the instructions given in the manuals provided with the appliance.
- ▶ Call on qualified professionals to carry out installation and initial start up.
- ▶ Get your installer to explain your installation to you.
- ▶ To carry out inspections and maintenance required by a qualified professional.
- ▶ Keep the instruction manuals in good condition close to the appliance.

This appliance is not intended to be used by persons (including children) whose physical, sensory or mental capacity is impaired or persons with no experience or knowledge, unless they have the benefit, through the intermediary of a person responsible for their safety, of supervision or prior instructions regarding use of the appliance. Care should be taken to ensure that children do not play with the appliance.

1.4 Homologations

1.4.1. Certifications

■ Electrical compliance / Marking CE

This product complies to the requirements to the european directives and following standards:

- ▶ 2006/95/EC Low Voltage Directive
Reference Standard: EN 60.335.1.
- ▶ 2004/108/EC Electromagnetic Compatibility Directive
Reference Standard: EN 50.081.1 / EN 50.082.1 / EN 55.014.

1.4.2. Directive 97/23/EC

This product conforms to the requirements of european directive 97 / 23 / EC, article 3, paragraph 3, on pressure equipment.

1.4.3. Factory test

Before leaving the factory, each appliance is tested for the following:

- ▶ Water tightness
- ▶ Air tightness
- ▶ Electrical safety.

2 Safety instructions and recommendations

2.1 Safety instructions



DANGER

If smoke is released or in case of refrigerant leak:

1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc..).
2. Open the windows.
3. Switch the appliance off.
4. Avoid contact with the refrigerant. Danger of frost injuries.
5. Trace possible leaks and seal them immediately.



WARNING

Depending on the settings of the appliance:

- ▶ Do not touch the refrigeration connection pipes with your bare hands while the appliance is running. Risk of being burnt.



CAUTION

- ▶ Do not neglect to service the appliance. Contact a qualified professional or take out a maintenance contract for the annual servicing of the appliance.
- ▶ In order to limit the risk of being scalded, the installation of a thermostatic mixing valve on the domestic hot water flow piping is compulsory.

2.2 Recommendations



WARNING

Only certified professionals having received adequate training are permitted to work on the appliance and the installation.



WARNING

Before any work, switch off the mains supply to the appliance.

2.3 Safety data sheet: R-134a refrigerant

2.3.1. Product identification

- ▶ Product name: R-134a

2.3.2. Hazard identification

- ▶ Effects harmful to health:
 - The vapours are heavier than air and may lead to asphyxia owing to reduced oxygen levels.
 - Liquefied gas: Contact with the liquid may cause serious frost and eye injuries.
- ▶ Product classification: This product is not classified as a "hazardous preparation" according to European Union regulations.

2.3.3. Composition / Information on the ingredients

- ▶ Chemical nature: 1,1,1,2-Tetrafluoroethane R-134a.
- ▶ Ingredients that may lead to hazardous situations:

Substance name	Concentration	CAS number	CE number	Classification	GWP
1,1,1,2-Tetrafluoroethane R-134a	100 %	811-97-2	212-377-0		1300

2.3.4. First aid

- ▶ **If inhaled:** Evacuate the subject from the contaminated area and take him into the open air.
If feeling unwell: Call a doctor.
- ▶ **In the event of contact with the skin:** Treat frost injuries as burns. Rinse in abundant water, do not remove clothing (risk of adhesion to the skin).
If skin burns appear, call a doctor immediately.
- ▶ **In the event of contact with the eyes:** Rinse immediately in water, holding the eyelids well apart (at least 15 minutes).
Consult an ophthalmologist immediately.

2.3.5. Fire prevention measures

- ▶ Appropriate extinguishing agents: All extinguishing agents can be used.

- ▶ Inappropriate extinguishing agents: None to our knowledge. In the event of fire nearby, use the appropriate extinguishing agents.
- ▶ Specific hazards:
 - Rise in pressure.
In the presence of air, an inflammable mixture may form under certain temperature and pressure conditions
 - Toxic and corrosive vapours may be released by the effect of the heat.
- ▶ Special intervention methods: Cool the volumes exposed to heat with water spray.
- ▶ Protection of the firemen:
 - Full facepiece self-contained breathing apparatus
 - Complete body protection.

2.3.6. In the event of accidental spillage

- ▶ Individual precautions:
 - Avoid contact with the skin and eyes
 - Do not intervene without appropriate protective equipment
 - Do not inhale the vapours
 - Evacuate the hazardous area
 - Stop the leakage
 - Eradicate all sources of ignition
 - Ventilate the spillage area mechanically (Risk of asphyxia).
- ▶ Cleaning / Decontamination: Allow residual product to evaporate.

2.3.7. Handling

- ▶ Technical measures: Ventilation.
- ▶ Precautions to be taken:
 - No smoking
 - Prevent the accumulation of electrostatic charges
 - Work in a well ventilated place.

2.3.8. Personal protection

- ▶ Respiratory protection:
 - If insufficient ventilation: AX type cartridge mask
 - In confined spaces: Full facepiece self-contained breathing apparatus.
- ▶ Hand protection: Protective gloves in leather or nitrile rubber.
- ▶ Eye protection: Safety glasses with side protection.
- ▶ Skin protection: Clothing made mostly of cotton.
- ▶ Industrial hygiene: Do not drink, eat or smoke at the place of work.

2.3.9. Considerations on disposal

- ▶ Product waste: Consult the manufacturer or the supplier for information on recovery or recycling.
- ▶ Soiled packaging: Reuse or recycle after decontamination. Destroy in authorised installations.

**WARNING**

Disposal must be done in compliance with prevailing local and national regulations.

2.3.10. Regulations

- ▶ EC Regulation 842/2006: Fluorinated greenhouse gases under the Kyoto Protocol.

3 Technical description

3.1 General description

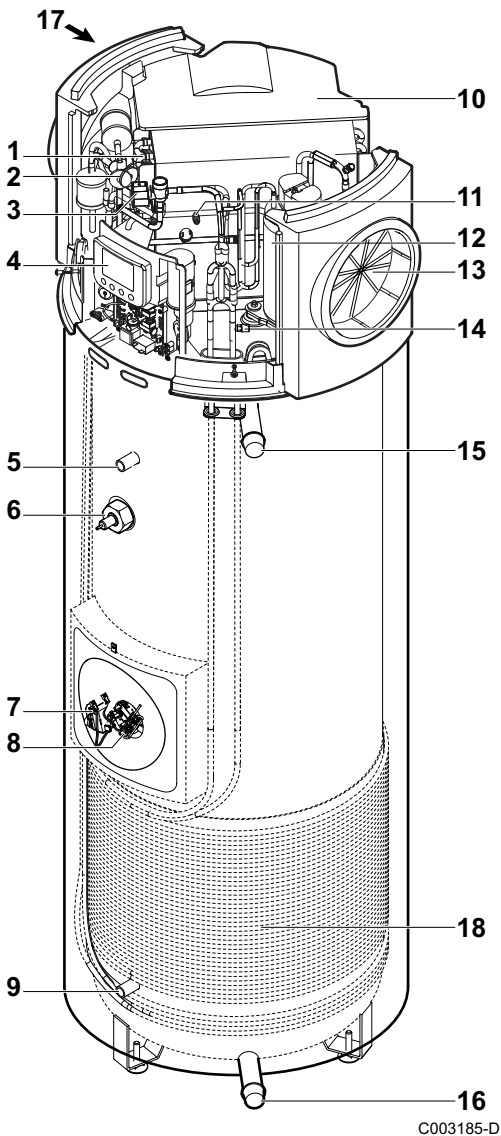
The DHW tanks in the **TWH** range have the following characteristics:

- ▶ Floor-standing thermodynamic storage DHW tank
- ▶ Thermodynamic unit extracting energy from unheated ambient air or outside air
- ▶ Control panel with display of the volume of water heated and hourly programming
- ▶ Heat exchanger for connection to a boiler or a solar circuit (Version EH)
- ▶ Steatite electrical resistor 2.4 kW
- ▶ Enamelled tank protected by impressed current anode
- ▶ Very thick insulation (0% CFCs)

The thermodynamic water heater is a hot water tank that can be heated by:

- ▶ The Heat Pump (up to 65°C)
- ▶ The electric heating resistance (Electrical back-up - AUTO and Boost mode) (up to 70°C)
- ▶ The additional heat exchanger (Version EH)

3.2 Main parts



- 1 Evaporator
- 2 Expansion valve
- 3 Solenoid valve for defrosting
- 4 Regulation
- 5 temperature sensor
- 6 Impressed current anode
- 7 Safety thermostat
- 8 Steatite electrical resistor
- 9 temperature sensor
- 10 Air conduits
- 11 Low pressure (LP) pressure switch
- 12 Compressor
- 13 Ventilation grid
- 14 Pressure measurement point - High pressure (HP)
- 15 Domestic hot water outlet
- 16 Cold water inlet
- 17 Fan
- 18 Condenser

3.3 Operating principle

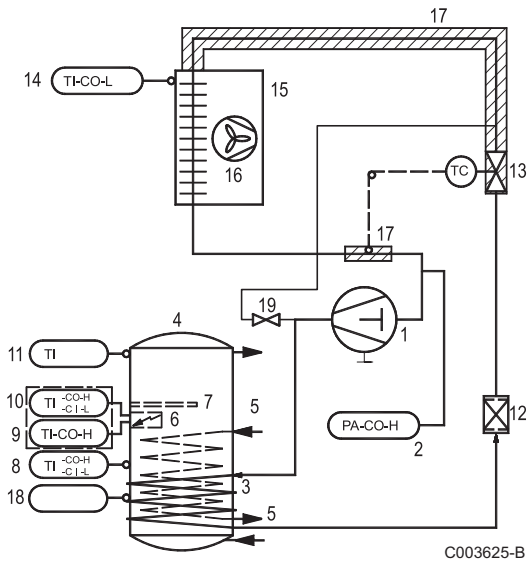
The thermodynamic DHW tank uses unheated ambient air or outside air to prepare DHW.

The refrigerant circuit is a closed circuit in which the R-134a refrigerant plays the role of an energy carrier.

The heat from the intake air is transferred to the refrigerant in the finned heat exchanger at a low evaporation temperature.

The refrigerant is sucked in by a compressor in vapour form, which raises it to a higher pressure and temperature and sends it to the condenser. In the condenser, the heat extracted in the evaporator and some of the energy absorbed by the compressor are released into the water.

The refrigerant is depressurised in the thermostatic expansion valve and is cooled. The refrigerant can again extract the heat contained in the inlet air into the evaporator.



- 1 Compressor
- 2 Low pressure (LP) pressure switch
- 3 Condenser
- 4 tank
- 5 Heat exchanger (Version EH)
- 6 Steatite electrical resistor
- 7 Impressed current anode
- 8 Temperature regulator (HP or PAC)
- 9 Limiting thermostat
- 10 Temperature regulator (Electric heating resistance)
- 11 Temperature display
- 12 Filter-drier
- 13 Thermostatic expansion valve
- 14 Ambient air thermostat
- 15 Evaporator
- 16 Fan
- 17 Insulation
- 18 Sensor tube
- 19 Solenoid valve for defrosting

3.4 Technical specifications

3.4.1. Characteristics of the appliance

Model		TWH 300 E	TWH 300 EH	TWH 200 E
Capacity	litres	270	265	210
Output (HP or PAC) by 15°C Air	W	1700	1700	1700
Absorbed electrical power (HP or PAC)	W	500	500	500
COP (1)		3.7	3.6	3.5
COP (2)		2.94	2.75	2.70
Electrical resistor output	W	2400	2400	2400
Operating pressure	bar	10	10	10
Power supply voltage	V	230	230	230
Circuit breaker	A	16	16	16
Exchanger surface	m ²	-	1.00	-

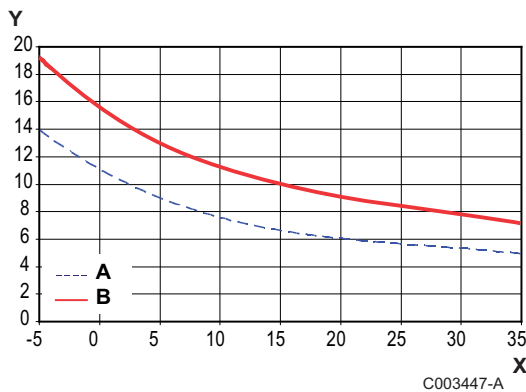
- (1) Value obtained at an air temperature of 15°C and a relative humidity of 70%. Water inlet temperature at 15°C in accordance with EN255-3.
 (2) Value obtained with an air temperature of 7 and a water inlet at 10 °C, as per EN16147 based on Specification LCIE N°103-15/B:2011
 (3) Domestic cold water input at 10°C - Primary inlet temperature at 80°C
 (4) Output: 34.1 kW
 (5) The installation of suction and backflow conduits on the heat pump lessens its performance

Model		TWH 300 E	TWH 300 EH	TWH 200 E
Continuous output $\Delta T = 35 K$ ⁽³⁾ ⁽⁴⁾	litres per hour	-	955.6	-
Flow rate over 10 minutes with $\Delta T = 30 K$ ⁽³⁾	l/10 mm	-	420	-
Heating time (15-51 °C) ⁽¹⁾	Hours	7	7	5
Qpr ⁽¹⁾	kWh/24h	0.67	0.75	0.73
V40 ⁽¹⁾	litres	357	358	240
Vmax ⁽²⁾	litres	388	383	295
Pes ⁽²⁾	W	34	36	29
Air flow rate	m ³ /h	385	385	385
Available air pressure	Pa	50	50	50
Maximum length of the air connection Diameter 160 mm ⁽⁵⁾	m	10	10	10
Maximum length of the air connection Diameter 200 mm ⁽⁵⁾	m	20	20	20
R134a refrigerant	kg	1.45	1.45	1.45
Weight (empty)	kg	105	123	92

(1) Value obtained at an air temperature of 15°C and a relative humidity of 70%. Water inlet temperature at 15°C in accordance with EN255-3.
 (2) Value obtained with an air temperature of 7 and a water inlet at 10 °C, as per EN16147 based on Specification LCIE N°103-15/B:2011
 (3) Domestic cold water input at 10°C - Primary inlet temperature at 80°C
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 (5) The installation of suction and backflow conduits on the heat pump lessens its performance

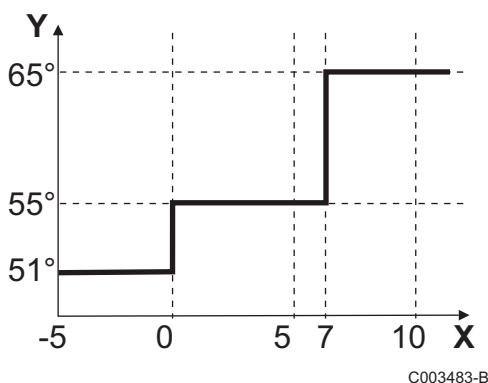
3.4.2. Heating time of the DHW tank depending on the air temperature

Scenario for complete heating of the DHW tank



- A** Heating time for a set point of 51°C
- B** Heating time for a set point of 62°C
- Y** Heating time (Hours)
- X** Air temperature (°C)

3.4.3. Max domestic hot water set point reached by the heat pump depending on the air temperature



- Y** Max domestic hot water temperature (°C)
- X** Air temperature (°C)

4 Installation

4.1 Regulations governing installation



CAUTION

Installation and maintenance of the appliance must be done by a qualified professional in accordance with prevailing statutory texts and codes of practice.

4.2 Package list

4.2.1. Standard delivery

The delivery includes:

- ▶ The thermodynamic DHW tank
- ▶ The installation, operation and service manual

4.2.2. Accessories

Accessories	package
Elbow at 90° (diameter 160 mm)	EH 77
Adapter sleeve (diameter 160 mm)	EH 205
Insulated flexible duct (diameter 160 mm, Length 3 m)	EH 206
Set of 2 retaining clamps (diameter 160 mm)	EH 207
Passing through walls (diameter 160 mm) + Closing plate	EH 208
Outside grid (diameter 160 mm) (aluminium)	EH 209

4.3 Storage and transport



CAUTION

- ▶ Have 2 people on hand.
- ▶ Use a 3-wheel hand truck.
- ▶ Handle the appliance with gloves.
- ▶ The appliance cover cannot be used for transport operations. The cover is not capable of withstanding heavy weights.
- ▶ Model 300 : Allow a minimum room height of approximately 2.15 m
Model 200 : Allow a minimum room height of approximately 1.84 m.

- ▶ The thermodynamic DHW tank must be stored and transported in its packaging and not filled with water.
- ▶ Ambient transport and storage temperatures admissible: from -20 to +60°C.

4.3.1. Transport



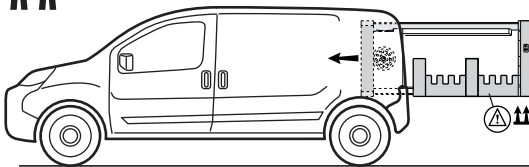
We recommend shipping the appliance vertically.

It is possible to ship the appliance horizontally **over short distances** but only on its back.



CAUTION

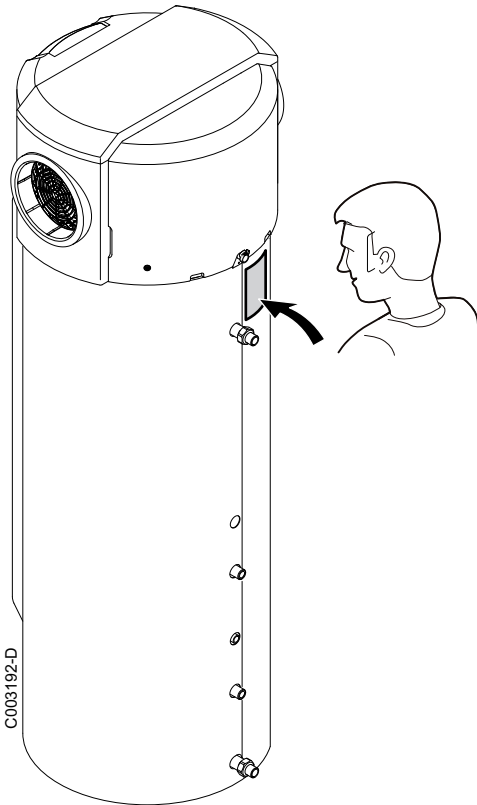
The appliance must never be stacked or laid on another side; it may otherwise malfunction or break down.



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4.4 Choice of the location

4.4.1. Data plate



- ▶ The rating plate must be accessible at all times.
- ▶ The rating plate identifies the product and provides the following information:
 - Appliance type
 - Manufacturing date (Year - Week)
 - Serial number.

4.4.2. Location of the appliance



CAUTION

When installing the appliance, respect the IP21 environmental rating.



CAUTION

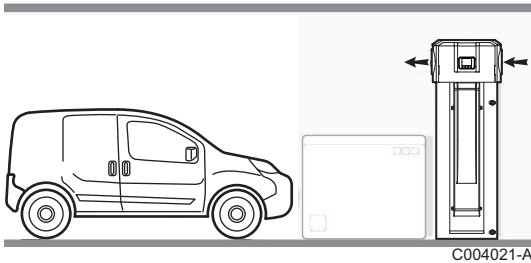
- ▶ Do not install the thermodynamic water heater in premises exposed to gas, vapours or dust. Do not install the thermodynamic DHW tank in an atmosphere which is chlorinated (swimming pool) or fluorinated (aerosols, detergents, solvents, etc.).
- ▶ The air taken in must in no event be dusty.
- ▶ Adequate thermal insulation in relation to adjacent living spaces is recommended.
- ▶ Temperature of the ambient air or of the air taken in by the heat pump for optimum running: from 10 to 35°C.

- ▶ Install the appliance in a dry, frost-free room at a minimum temperature of 7°C.
- ▶ Install the appliance on a flat, solid surface.

- ▶ Install the appliance on a base frame. The base frame must at all times present sufficient resistance to the load.

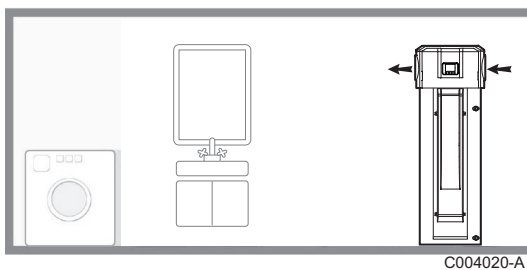
■ **Advised positions**

Garage:



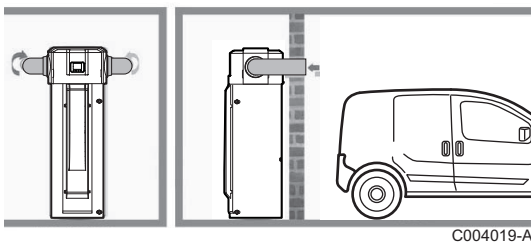
- ▶ Unheated room.
- ▶ Enables recovery of the free energy released by your vehicle's engine when switched off after use or by household appliances in operation.

Laundry room:



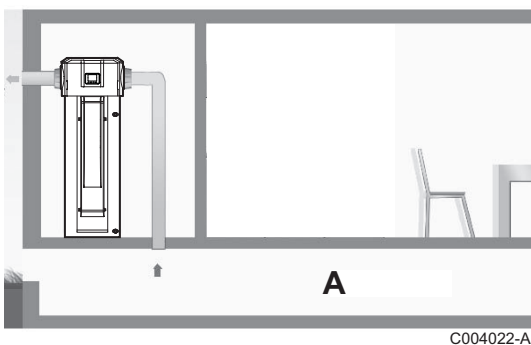
- ▶ Unheated room.
- ▶ Enables the dehumidification of the room and recovery of the energy wasted by washing and drying machines.

Habitable room:



- ▶ Can obtain free heat from the garage.

Via crawl space:

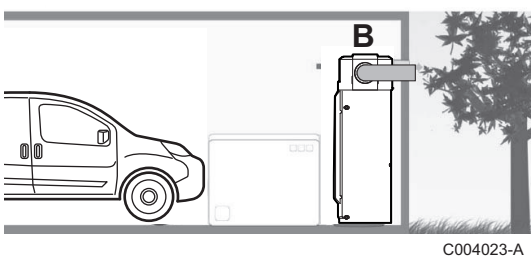


- ▶ Connection to the crawl space is possible if the volume is greater than 30 m³.
- ▶ The crawl space must be frost-free (temperature > 1°C).



If the crawl space is poorly insulated, thermal losses from the home will be greater.

Via outside air:



- ▶ Connection to the outside air may lead to overconsumption of electricity if the outside air temperature falls outside the operating range.
- ▶ Minimum distance to be observed for the ducts if intake and backflow are done on the same façade: 700 mm.



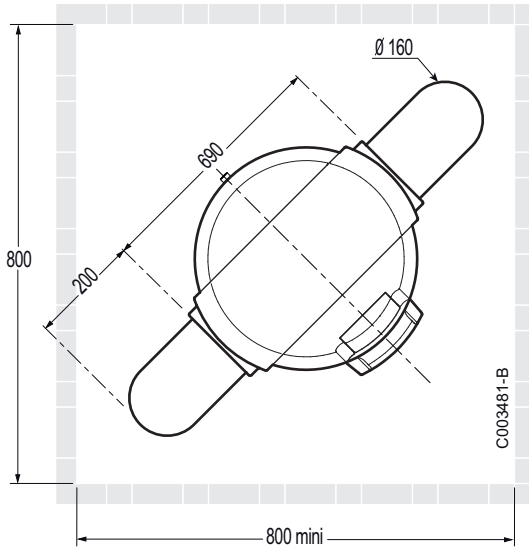
Risk of discomfort in the Eco operating mode.

Cupboard:

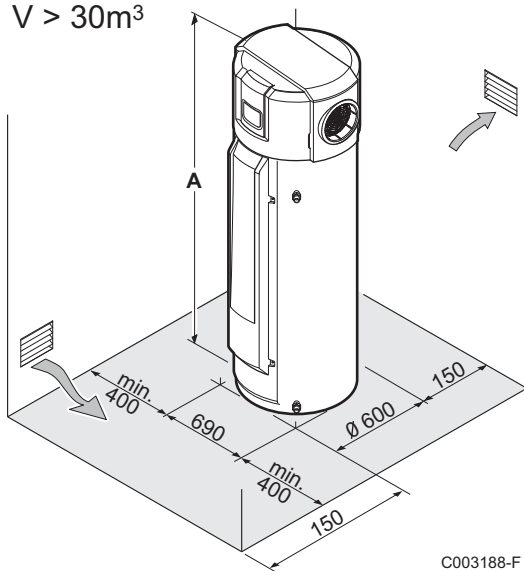
- ▶ 800 mm x 800 mm - Ducted version. Be sure to make the aeraulic connections absolutely leakproof in order to prevent the cupboard from losing heat.



We strongly recommend installing the control system in the living room.



V > 30m³



	TWH 200E	TWH 300E	TWH 300EH
A (mm)	1690	2000	2000

- ▶ To ensure adequate access and facilitate maintenance, allow sufficient space around the appliance.
- ▶ Model 200: Allow a minimum distance of 0.4 m at both sides of the appliance and a minimum room height of around 1.84 m for operation without air ducts.
- ▶ Model 300: Allow a minimum distance of 0.4 m at both sides of the appliance and a minimum room height of around 2.15 m for operation without air ducts.

■ Pipe length



CAUTION

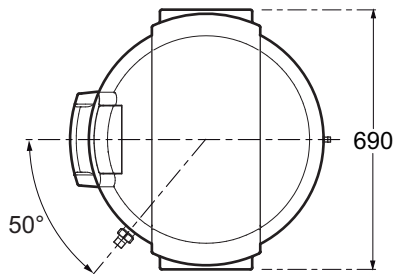
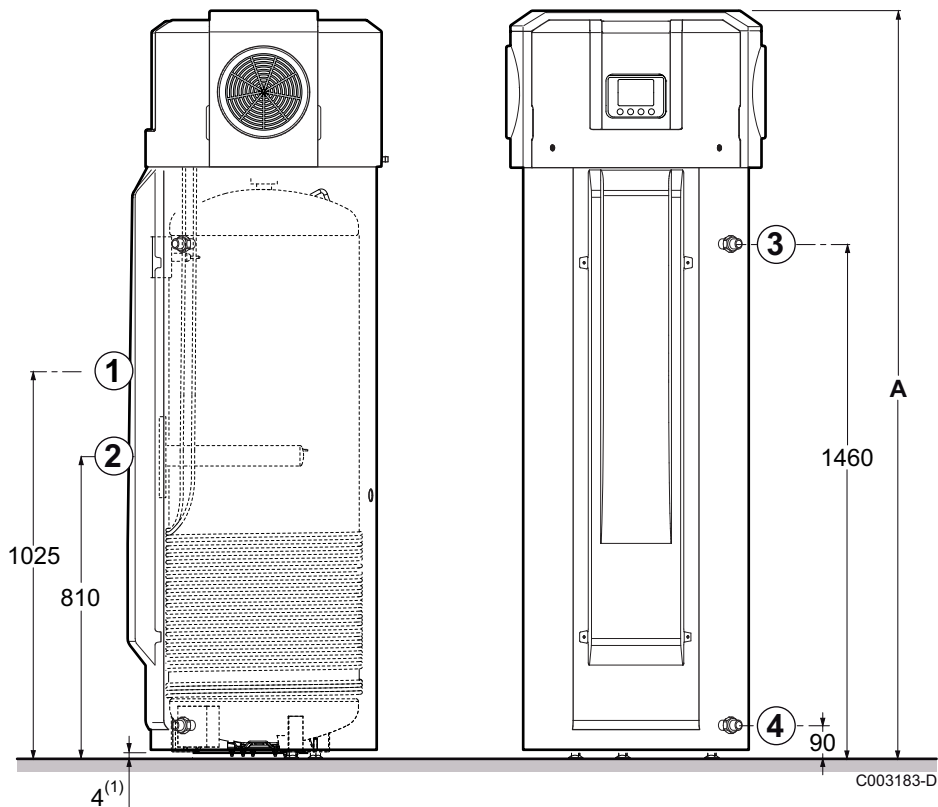
Do not use accessories that may cause considerable pressure drops (extraction grid with mosquito screen, partially extended flexible duct, etc.). Pressure drops from accessories must be lower than or equal to the static pressure of the fan (50 Pa). If the pressure drops are greater, the performance of the appliance will be impaired and the loading times increased.

Maximum length of the air connection	m
diameter 160 mm	10
diameter 200 mm	20

Accessories	Equivalent length in m
Elbow at 90° (diameter 160 mm)	3
Elbow at 90° (diameter 200 mm)	2
Reduction 200 mm x 160 mm	1
Outside grid (diameter 160 mm) (aluminium)	2


4.4.3. Main dimensions

■ TWH 200E - TWH 300E

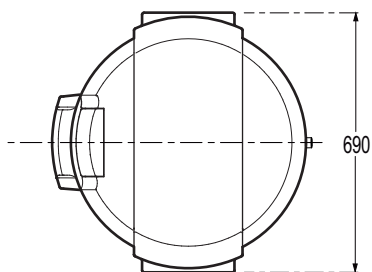
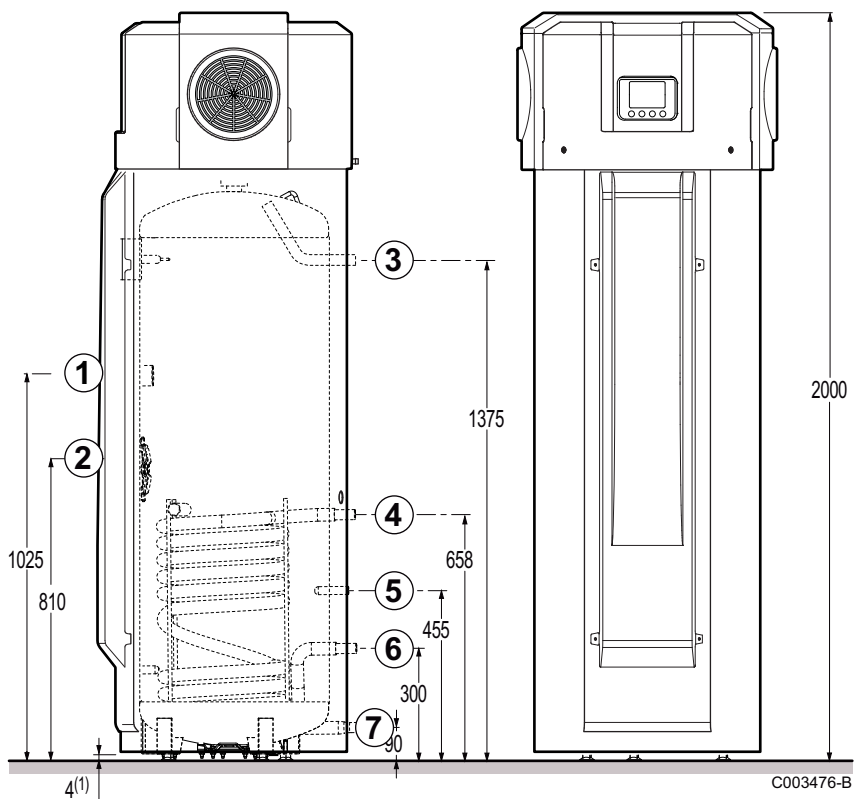


- ① Impressed current anode
- ② Steatite electrical resistor 2.4 kW
- ③ Domestic hot water outlet G 3/4"
- ④ Domestic cold water inlet G 3/4"
- A 200E: 1690
300E: 2000

(1) Adjustable feet


 See chapter "Positioning the appliance", page 24

■ TWH 300EH



- ① Impressed current anode
- ② Steatite electrical resistor 2.4 kW
- ③ Secondary domestic hot water flow G 3/4"
- ④ Solar exchanger or boiler inlet G 3/4"
- ⑤ Sensor tube for solar or boiler sensor G 3/4"
- ⑥ Solar exchanger or boiler outlet G 3/4"
- ⑦ Domestic cold water inlet G 3/4"

(1) Adjustable feet

 See chapter "Positioning the appliance", page 24

4.5 Positioning the appliance

4.5.1. Unpacking the appliance



CAUTION

Remove all packaging materials. Check that the contents are intact. If you notice a defect, do not use the appliance and contact the supplier.

4.5.2. Positioning the appliance



Refer to the instructions affixed to the packaging of the appliance



CAUTION

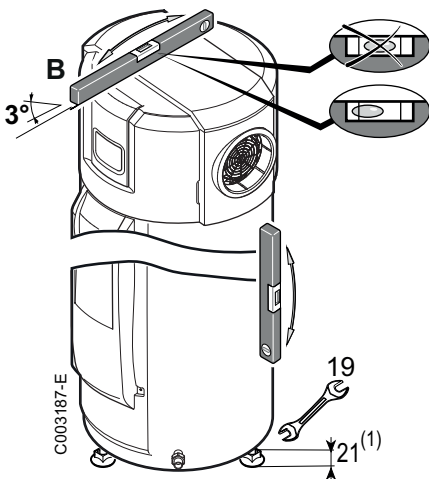
After positioning the appliance, wait **one hour** before starting it up.

4.5.3. Levelling



To improve condensates evacuation, we recommend tilting the appliance slightly backwards.

1. Level the appliance using the adjustable feet.
 (1) Adjustable feet, Basic dimension 4 mm
 Can be adjusted from 4 mm to 21 mm



4.6 Hydraulic connections



CAUTION

Before making the hydraulic connections, it is essential to rinse the circuit to get rid of any particles that may damage certain units (safety valve, pumps, valves, etc.). If rinsing has to be done using an aggressive product, neutralise the rinsing water before disposing of it in the waste water network.



Using hoses which are too short or too rigid encourages the transmission of vibrations and the production of noises.

Version EH: Make all the hydraulic connections for the DHW tank using flexible pipes.

4.6.1. Connecting the calorifer to the domestic water circuit (secondary circuit)

When making the connections, it is imperative that the standards and corresponding local directives are respected.

■ Specific precautions

Before making the connection, **rinse the drinking water inlet pipes** in order not to introduce metal or other particles into the appliance's tank.



CAUTION

Do not connect the domestic hot water connection directly to copper pipes in order to prevent galvanic couples in iron/copper (risk of corrosion). It is compulsory to fit the domestic hot water connection with a dielectric connection.

■ Safety valve or safety unit



CAUTION

In accordance with the rules on safety, a safety unit sealed at 7 bar must be fitted to the domestic cold water inlet on the DHW tank.

- ▶ Integrate the safety valve in the cold water circuit.
- ▶ Install the safety valve close to the calorifer in a place which is easy to access.

■ Size

The safety device and its connection to the DHW tank must be of at least the same diameter as the domestic cold water supply pipe of the tank domestic circuit.

There must be no cut-off element between the valve or the safety unit and the domestic hot water calorifer.

The safety device drain pipe must have a uniform and sufficient gradient and its diameter must be at least equal to that of the outlet opening of the safety device (to prevent the flow of water being hindered if the pressure is too high).

The outlet pipe in the valve or safety assembly must not be blocked.

■ Isolating valves

Hydraulically isolate the primary and secondary circuits using stop valves to facilitate maintenance operations on the unit. The valves make it possible to carry out maintenance on the calorifer and its components without draining the entire installation.

These valves are also used to isolate the calorifer unit when conducting a pressurised check on the leak tightness of the installation if the test pressure is greater than the admissible operating pressure.



CAUTION

If the mains pipes are made of copper, fit a sleeve made of steel, cast iron or any other insulating material between the tank's hot water outlet and the pipes to prevent corrosion to the connection.

■ Connecting the domestic cold water

Make the connection to the cold water supply according to the hydraulic installation diagram.

Install a water drain in the boiler room and a funnel-siphon for the safety unit.

The components used for the connection to the cold water supply must comply with the prevailing standards and regulations in the country concerned. Fit a one-way valve to the domestic cold water circuit.

■ Pressure reducer

If the mains pressure exceeds 80% of the valve or safety unit setpoint (e.g.: 5.5 bar for a safety unit set at 7 bar), a pressure reducer must be fitted upstream of the appliance. Install the pressure reducer downstream the water meter in such a way as to ensure the same pressure in all of the installation pipes.

■ Measures to take to prevent hot water flow reversal

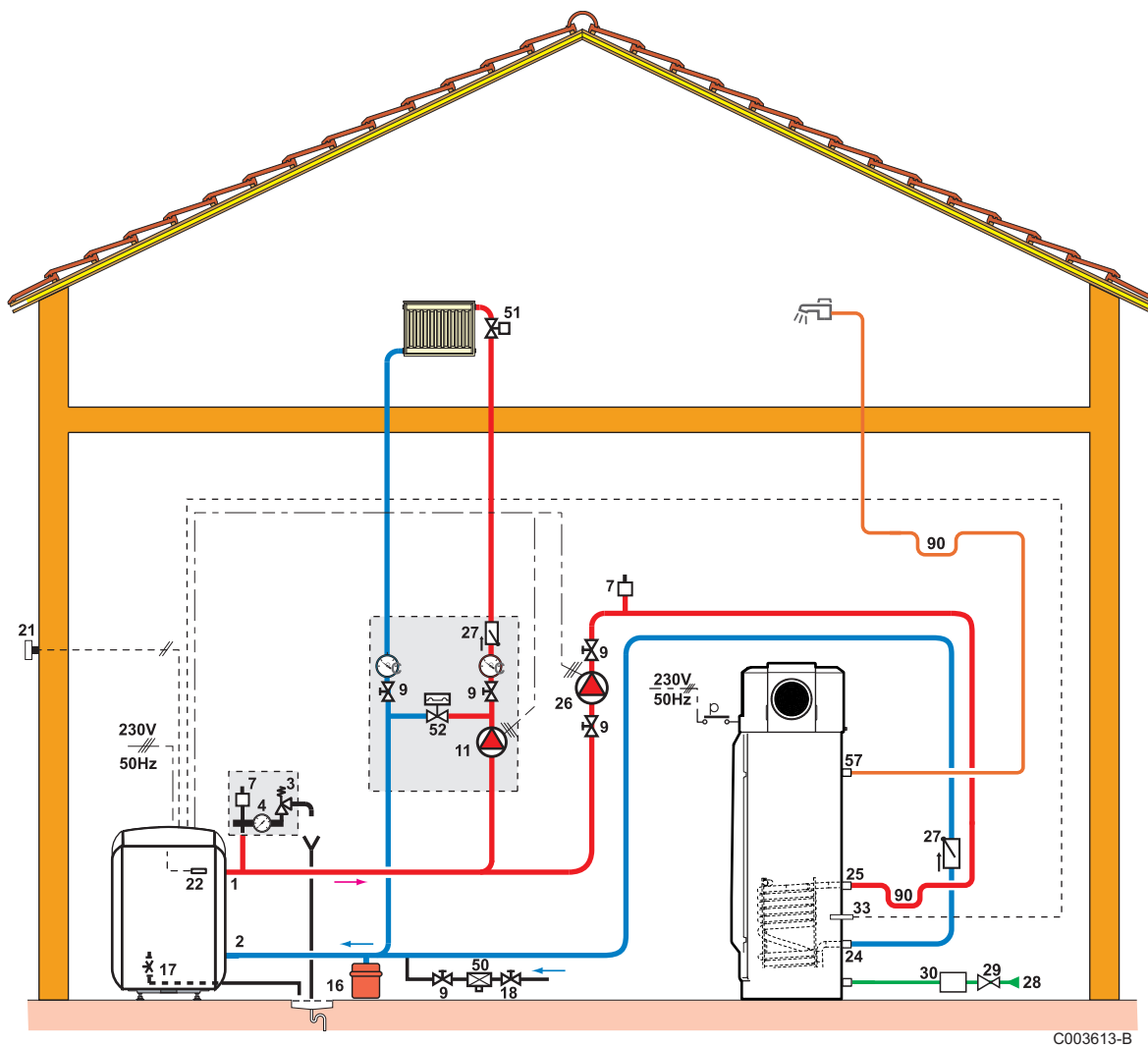
Fit a one-way valve to the domestic cold water circuit.

4.6.2. Connection to a boiler (Version EH)



CAUTION

Before making the water connections of the heating circuit and domestic hot water tank heat exchanger, it is imperative to rinse the circuits to remove any particles which might damage the components (safety valve, pumps, valves, ...).



C003613-B

- | | |
|----|--|
| 1 | Heating flow |
| 2 | Heating return |
| 3 | Safety valve |
| 4 | Pressure gauge |
| 7 | Automatic air vent |
| 9 | Isolating valve |
| 11 | Heating pump |
| 16 | Expansion vessel |
| 17 | Drain cock |
| 18 | Filling the heating circuit |
| 21 | Outside sensor |
| 22 | Boiler sensor |
| 24 | DHW calorifier exchanger primary inlet |
| 25 | DHW calorifier heat exchanger primary outlet |
| 26 | DHW pump |
| 27 | Non-return valve |
| 28 | Domestic cold water inlet |
| 29 | Pressure reducer |

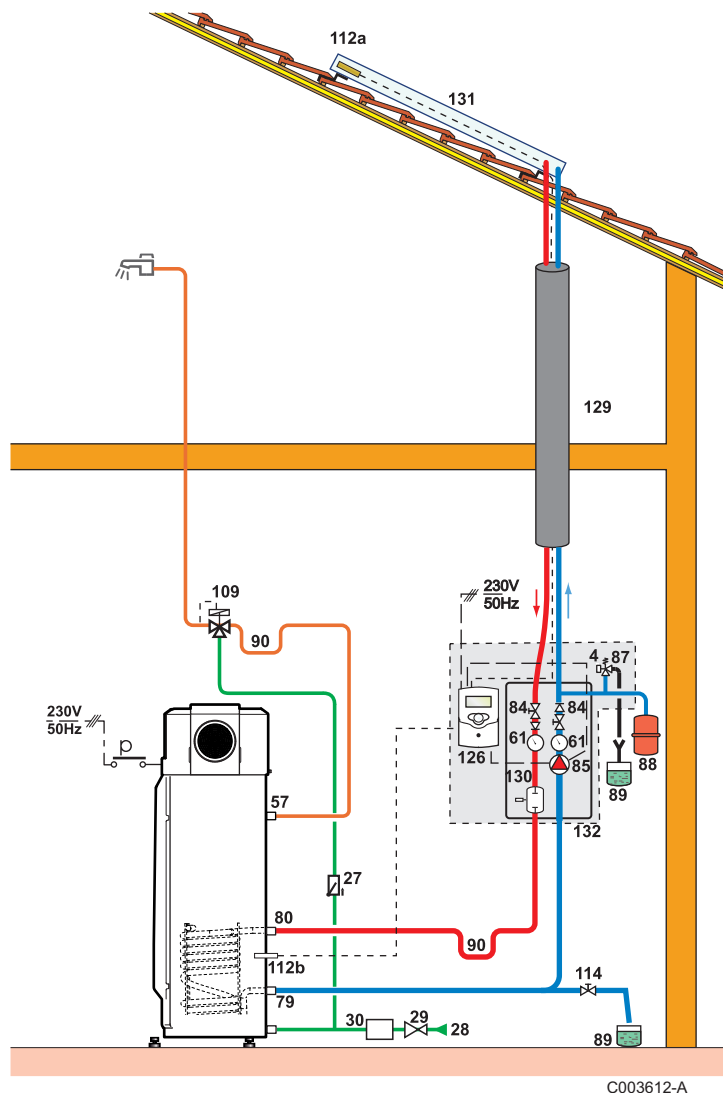
- 30 Safety unit
- 33 DHW sensor
- 50 Disconnecter
- 51 Thermostatic valve
- 52 Differential valve (only with module fitted with a 3-speed pump)
- 57 Domestic hot water outlet
- 90 Antithermosiphon loop

4.6.3. Connection to solar collectors (Version EH)



CAUTION

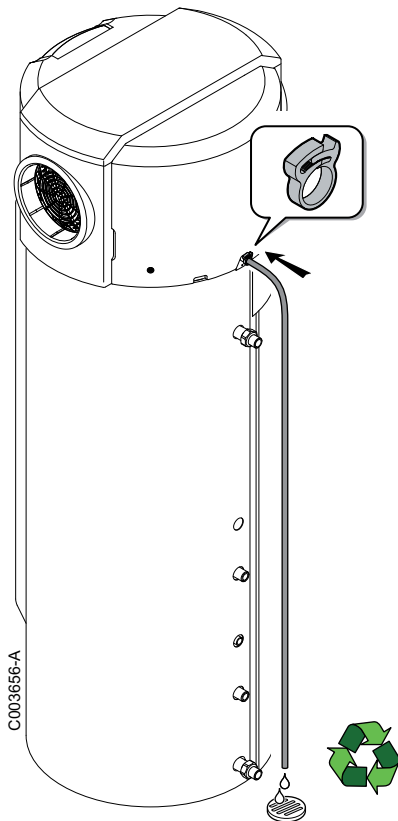
Limit the domestic hot water temperature to 60°C.



- 4 Pressure gauge
- 27 Non-return valve

28	Domestic cold water inlet
29	Pressure reducer
30	Safety unit
57	Domestic hot water outlet
61	Thermometer
79	Primary solar exchanger outlet on the DHW calorifier
80	Primary solar exchanger inlet on the DHW calorifier
84	Stop valve with lockable nonreturn valve
85	Primary solar circuit pump
87	Sealed safety valve calibrated at 6 bar
88	Solar expansion vessel
89	Heat transfer fluid container
90	Antithermosiphon loop (= 10 x Pipe diameter)
109	Domestic hot water thermostatic mixing valve
112a	Solar sensor probe
112b	Solar DHW sensor
114	Primary solar circuit filling and draining device
126	Solar regulator
129	Duo-Tube
130	Manual bleed degasser
131	Solar collectors
132	Complete solar station with solar regulator

4.7 Condensates discharge



1. Mount the flow collector.
2. Fit the clamp to the flow header.

4.8 Installing the control system in the living room

The control system is mounted as standard on the heat pump. It is possible to install the control system in the living room for greater comfort.

- ▶ The user can remotely control programming of DHW production.
- ▶ The user is informed directly if the installation malfunctions in any way.

4.8.1. Choose a location

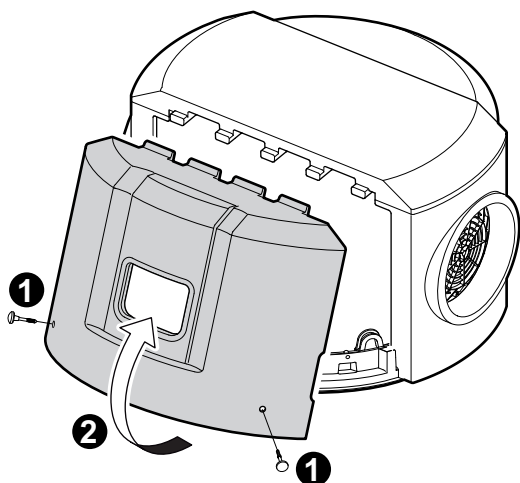
Install the control system against an internal wall around 1.5 metres from the floor in the carefully chosen pilot room.

Locations in the room that are not recommended:

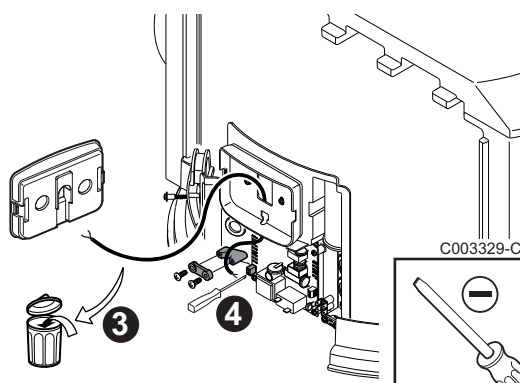
- ▶ Encased
- ▶ Exposed to solar radiation.

4.8.2. Remove the control system from its housing in the control panel

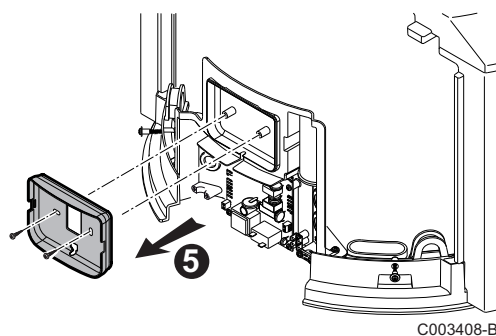
1. Unscrew the 2 screws.
2. Remove the front cover.



C003254-C

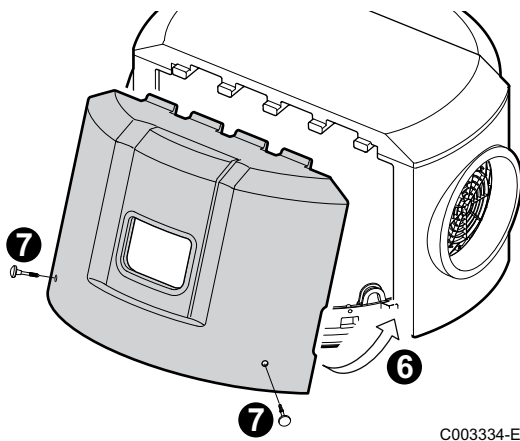


3. Separate the control system command module from its base.
4. Unscrew the 2 wires on the command module.



C003408-B

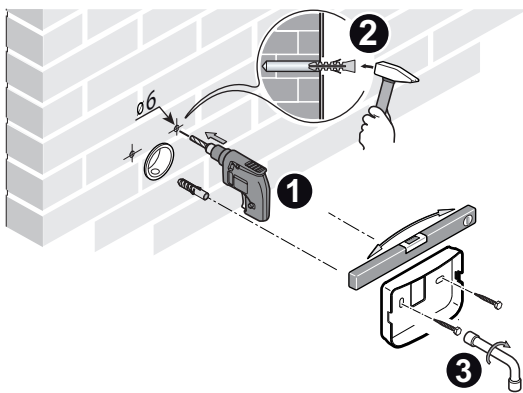
5. Unhook the rear part of the regulator from the control panel.



C003334-E

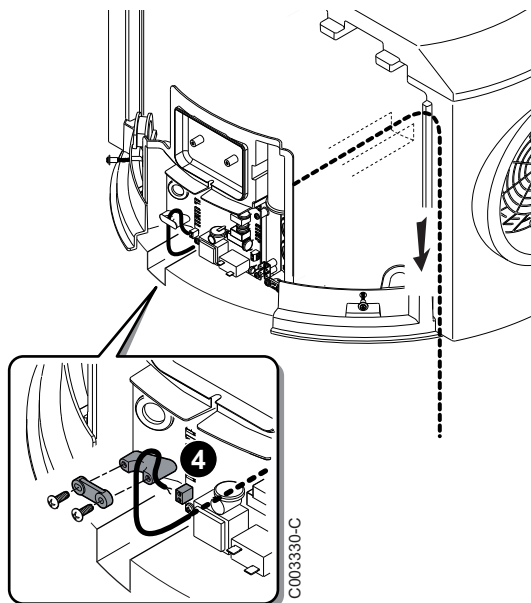
6. Replace the front cover.
7. Tighten the 2 screws.

4.8.3. Attaching the wall bracket and connecting the control system to the electricity



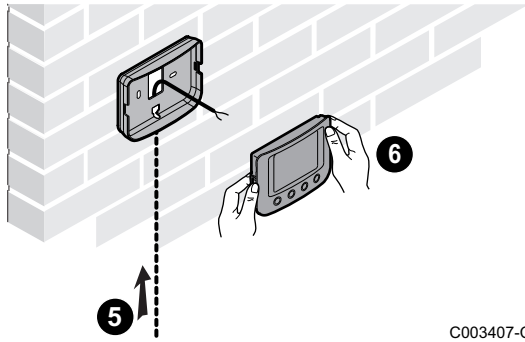
C003331-A

1. Drill 2 holes with a Ø of 6 mm.
2. Put the plugs in place.
3. Attach the wall support.



C003330-C

4. Connect the 2 wires on the control panel (not supplied).



C003407-C

4.9 Electrical connections

5. Connect the 2 wires on the command module.
6. Put the control system module in place.

4.9.1. Recommendations



WARNING

- ▶ Only qualified professionals may carry out electrical connections, always with the power off.
- ▶ Do not connect the power supply directly to the HP/HC contact.

The earthing shall comply with local standards.

Power the appliance with a circuit that includes a 16 A omnipolar circuit breaker, D curve type, with a gap of more than 3 mm.

The DHW tank is delivered with a 3G cable. If the power cable is damaged, it must be replaced by the manufacturer, its after sales service or persons with similar qualifications in order to obviate any danger.

The electricity supply is connected to the mains by connection cable (~230 V, 50 Hz) and electrical plug.

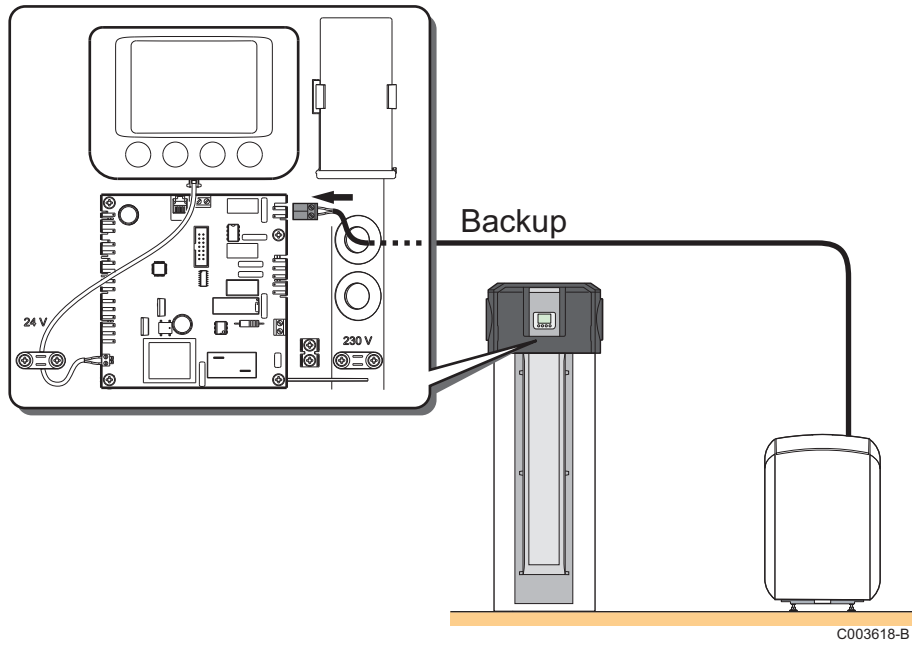
The HP/HC connection is made on the terminal block.

4.9.2. Connecting the hydraulic back-up (Version EH)

1. Remove the front cover.



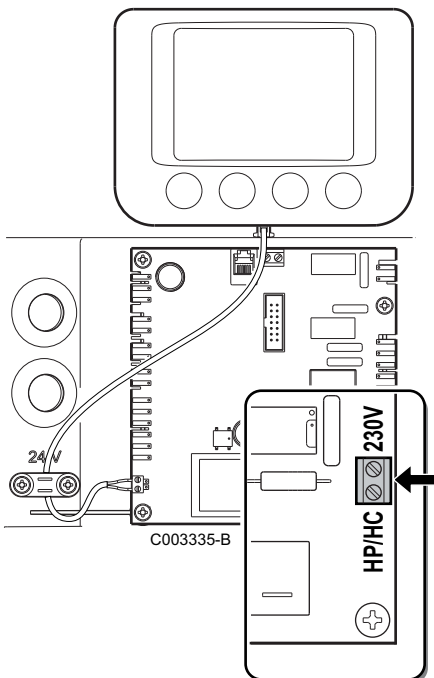
See chapter "Installing the control system in the living room", page 30



2. Access to the PCB.
3. Connect the boiler back-up connector (boiler back-up). To set the boiler inlet, refer to the boiler instruction manual.

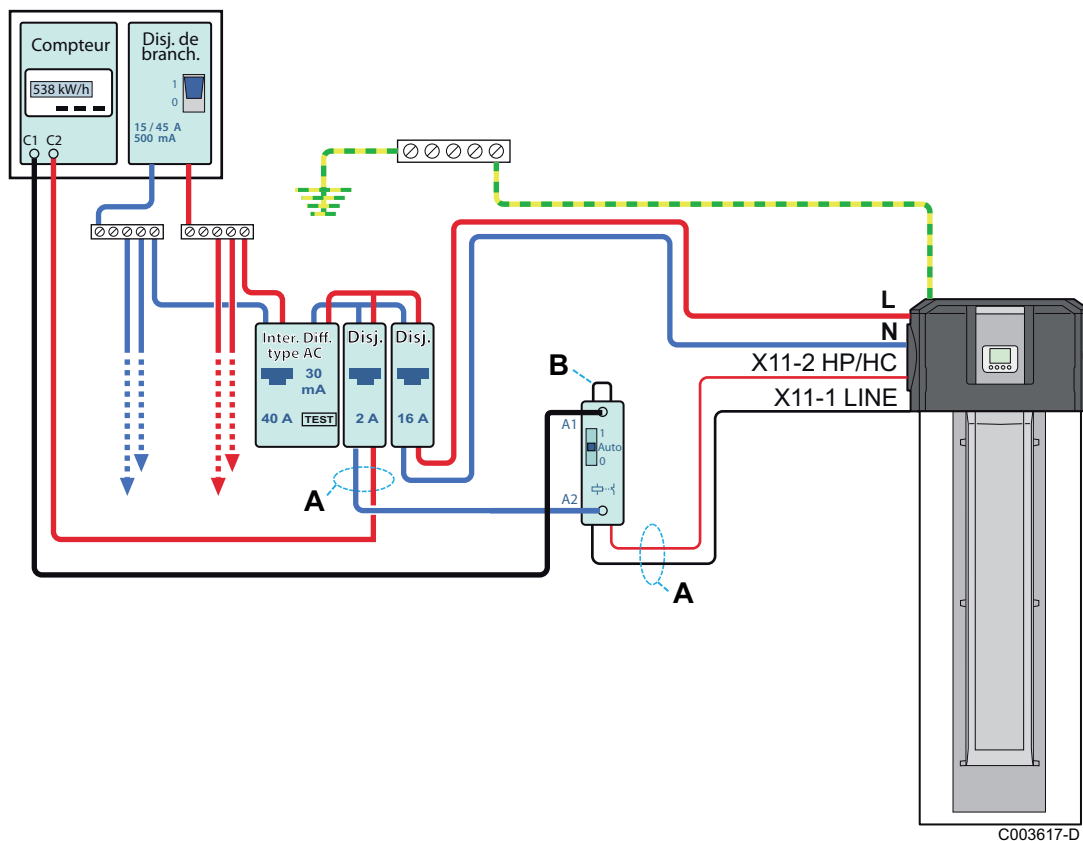
4.9.3. Access to the connection terminal HP/HC

1. Remove the front cover.
 - 👉 See chapter "Installing the control system in the living room", page 30
2. Access to the PCB.
3. Make the electrical connection using cable with a cross section of 1,5 mm².



4.9.4. Connection with HP/HC signal connected

■ Shunt connection with HP/HC relay

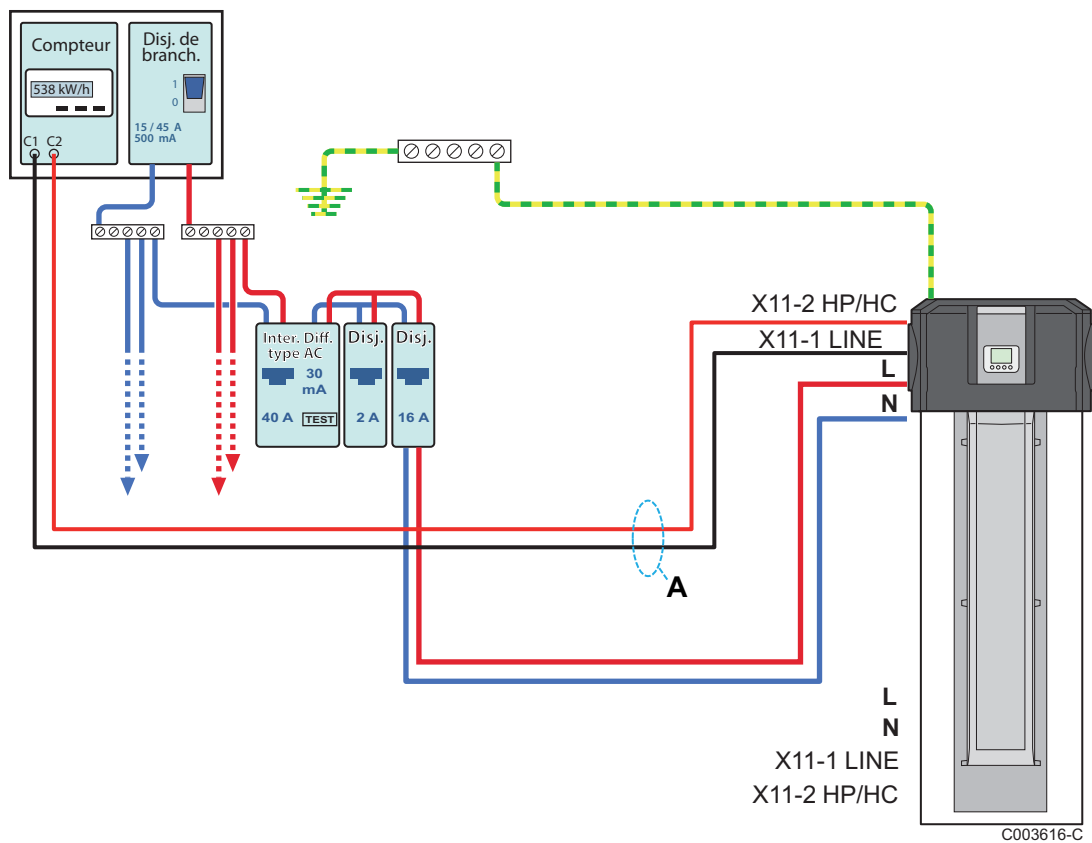


A Control current 1,5 mm²

B Shunt 1,5 mm²

- ▶ Set parameter **P04** to 2.
- ▶ The heat pump and additional heating are not permitted to operate in Peak Hours
- ▶ Rapid Boost heating at one touch
- ▶ The 2 signal wires must be routed as far as the appliance's box

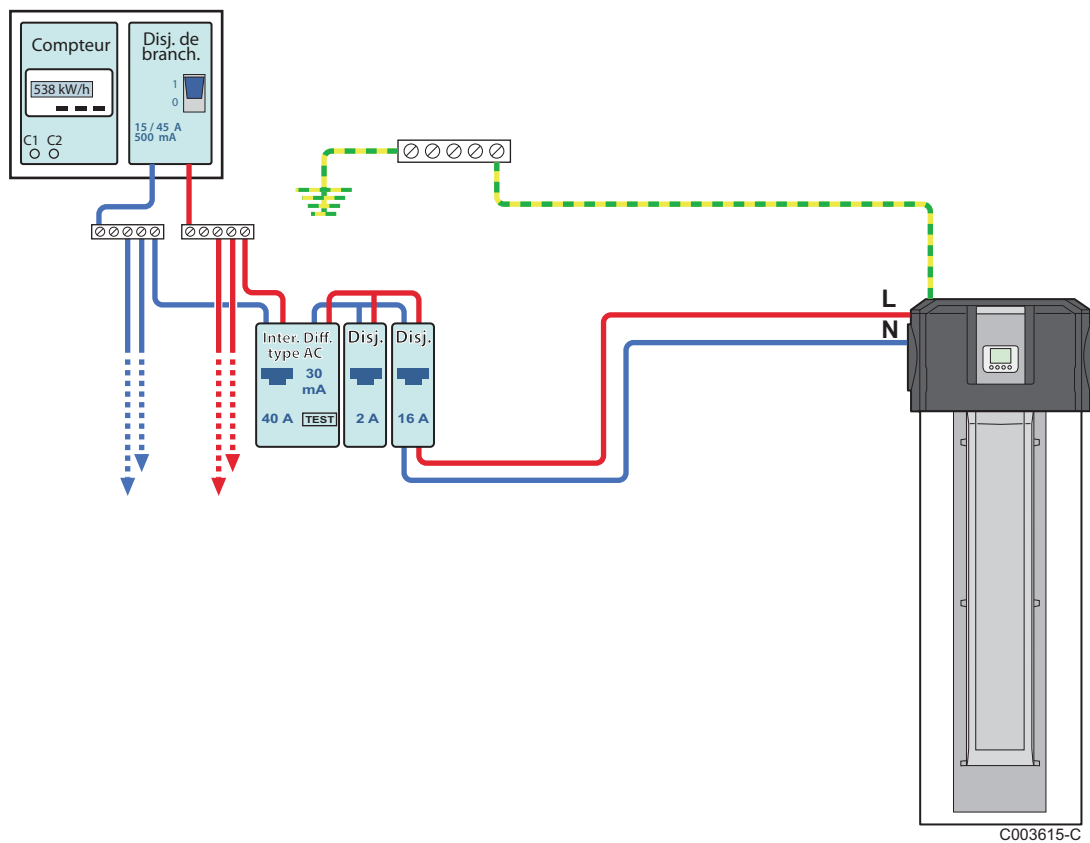
■ Connection to the meter with direct HP/HC contact



A Control current 1,5 mm²

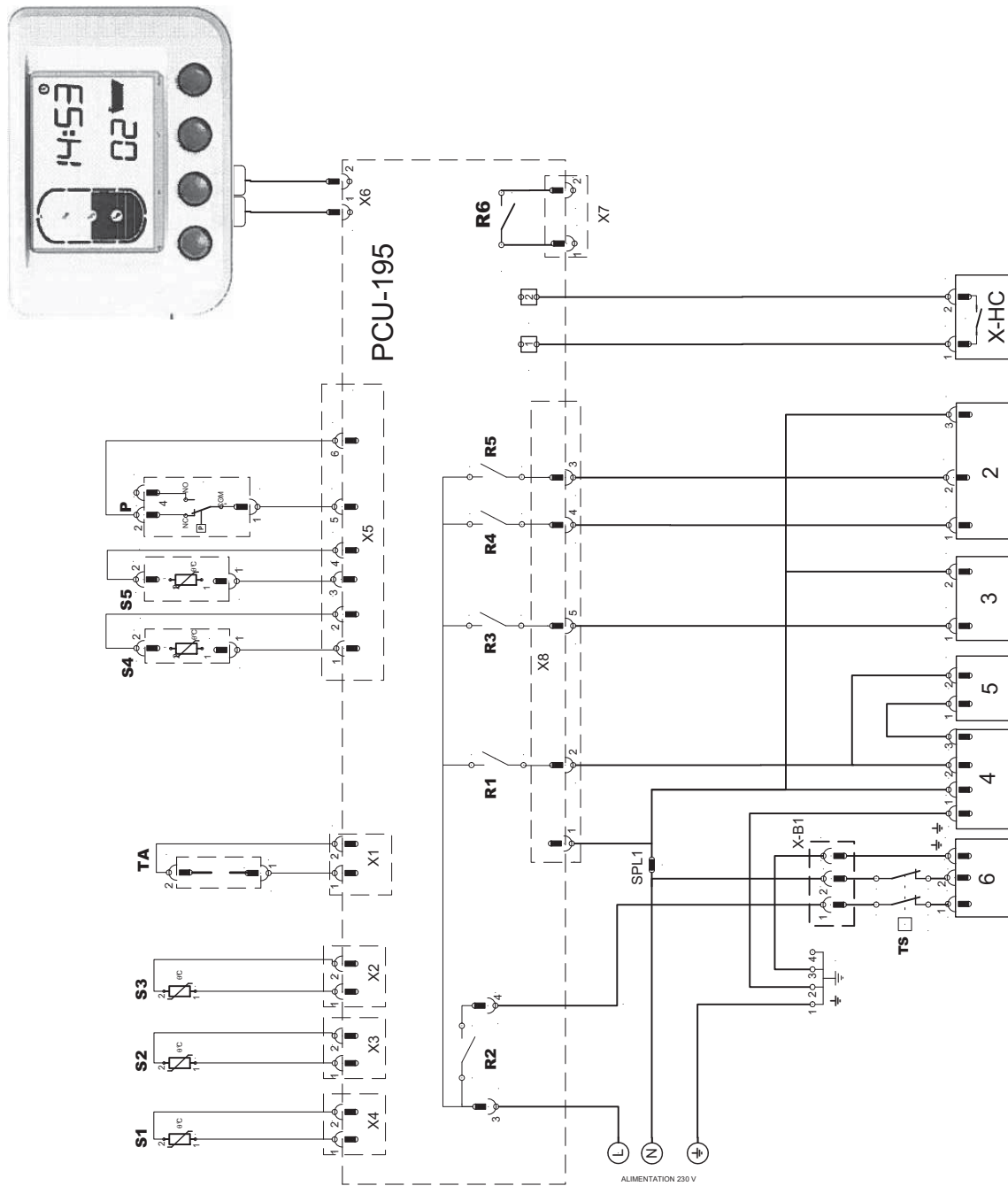
- ▶ Set parameter **P04** to 2.
- ▶ The heat pump and additional heating are not permitted to operate in Peak Hours
- ▶ Rapid Boost heating at one touch
- ▶ The 2 signal wires must be routed as far as the appliance's box

4.9.5. Connection with timer programming



- ▶ Easy to install
- ▶ Opt for hourly programming to take advantage of the HP/HC tariff

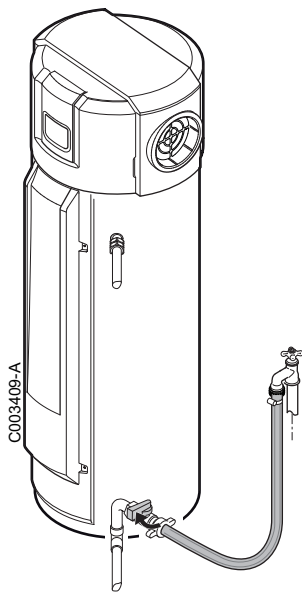
4.10 Electrical principle diagram



①	Control panel	P	Pressure switch	X3-S2	Middle DHW temperature sensor
②	Fan	R1 to R6	Relay	X4-S1	Top DHW temperature sensor
③	Solenoid valve for defrosting	S4	Evaporator sensor	X5	Room sensor, Evaporator, Pressure switch
④	Compressor	S5	Room sensor	X6	Control panel connection

⑤	Condenser	SPL1	Splice	X7	Hydraulic back-up command terminal board
⑥	Electric heating resistance	TA	Impressed current anode	X8	Command terminal board
⏏	Earth	TS	Safety thermostat	X-B1	Electrical back-up command terminal board
L	Live	X1	Connecting the impressed current anode	X-HC	Pricing information input (HP-HC). Allows authorisation of domestic hot water production depending on the setting of the HP/HC input
N	Neutral	X2-S3	Bottom DHW temperature sensor		

4.11 Filling the thermodynamic DHW tank

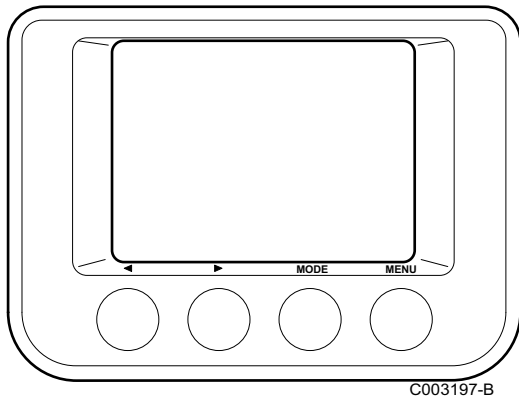


1. Open a hot water tap.
2. Open the cold water tap located on the safety unit. Ensure that the drainage valve on the unit is closed.
3. When the water overflows through the hot water tap, the appliance is full. Close the hot water tap.

5 Commissioning

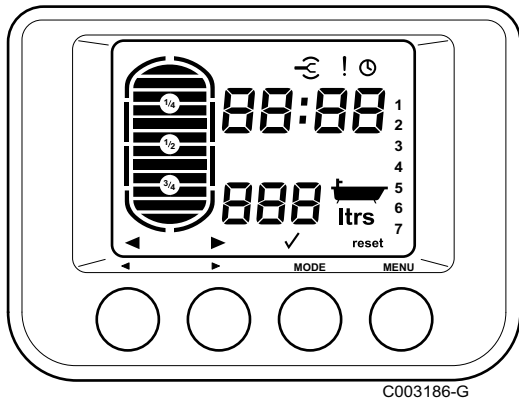
5.1 Control panel

5.1.1. Description of the keys

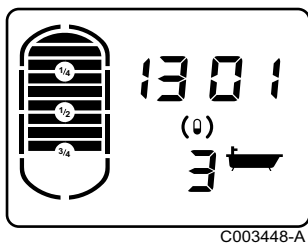


- ◀ - ▶ Browse keys
- MODE** Operating mode selection key
- MENU** Programme selection key

5.1.2. Description of the display







- Quantity of domestic hot water available (depending on the set point input)
- Parameter settings
- Alarm
- Programming
- Display of the date (day:month) or the time (hour:minutes) depending on the selected menu
- Display of the day of the week (1=Monday, 2=Tuesday, etc.)
- Digital display
- Number of baths available (40 °C)
- ltrs** Quantity of water (litres)
- ◀ Reduces set values
- ▶ Increases set values
- ✓ Confirm key
- reset**
 - ▶ Reset the control system after a breakdown
 - ▶ Restore the default value when making a setting



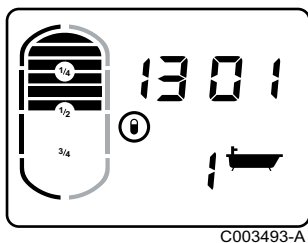
- ⓪ Automatic mode or Comfort mode
 - ⓪ Eco mode
 - ⓪ Boost mode
 - ⓪ + Holiday mode
- days**

■ DHW production mode indicator


The main display indicates the domestic hot water production mode.

Display	Domestic hot water production	Description
	Heat pump	The 2 segments of the tank flash simultaneously when domestic hot water production is handled by the heat pump
	Electrical back-up	The right-hand segment of the tank flashes when domestic hot water production is handled by electrical back-up
	Hydraulic additional heating	The left-hand segment of the tank flashes when domestic hot water production is handled by hydraulic back-up (Version EH)
	Heat pump + Electrical back-up + Hydraulic additional heating	The 2 segments of the tank flash alternately when domestic hot water production is handled by the heat pump, by electrical back-up and by hydraulic backup (EH version)

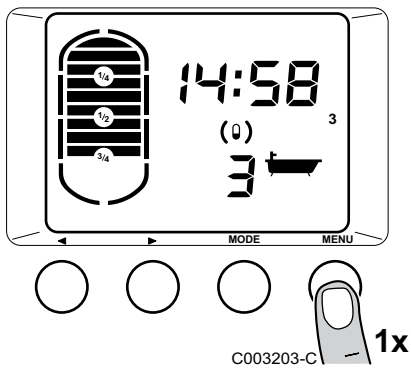
■ Indicator of the water volume available



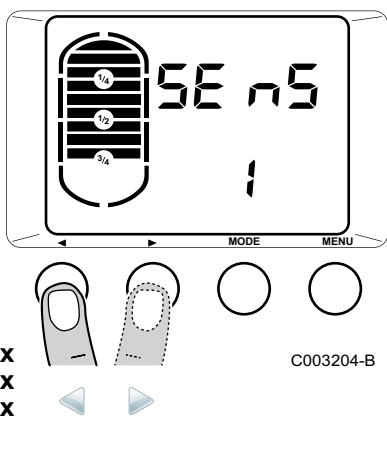
When producing domestic hot water, the display indicates the number of baths available and the level to which the tank is filled (quantity of hot water available).

- ▶ The number of baths is calculated based on a domestic hot water temperature of 40°C.
 - ▶ The level to which the tank is filled is calculated according to the set point temperature.
 - ▶ Set the 2 parameters, **P.18** and **P.19**, according to the appliance model.
-  "Modifying the installer parameters", page 48

5.1.3. Browsing in the menus



1. Press once the **MENU** key. The **SE nS 1** menu is displayed (Temperature measurement).



2. Use the ◀ and ▶ keys to scroll through the menus.

1x MENU	SE nS 1	Temperature sensors
1x ▶	CL OC 2	Setting the time and the date
2x ▶	Pr oG 3	Modify an hourly programme
3x ▶	Co un 4	Meters
4x ▶	PA rA 5	Setting parameters
5x ▶	Er bL 6	Failure history
6x ▶	Co dE 7	Installer parameters

3. To access the selected menu, press the **MODE** key (✓).
4. To go back to the previous display, press the key **MENU**.
5. To go back to the main display, press once key **MENU**.

5.2 Check points before commissioning

- ▶ Check that the thermodynamic DHW tank is full of water.
- ▶ Check the seals.
- ▶ Check that the safety devices are operating correctly.
- ▶ Check the operating mode.

5.3 Putting the appliance into operation

5.3.1. Commissioning



CAUTION

Initial commissioning must be done by a qualified professional.

Carry out the commissioning operations in the following order:

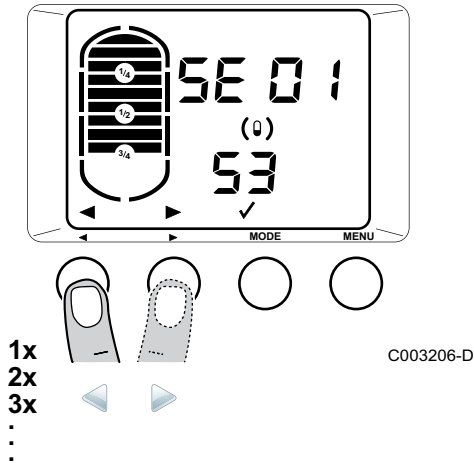
1. Connect to the mains.
2. Check that no error codes or messages are shown on the display. The domestic hot water set point temperature is set to 55°C in comfort mode.
3. Select the **Boost** operating mode.
4. The compressor starts up after 120 seconds if DHW production is required.

5.4 Checks and adjustments after commissioning

- ▶ Check the leak tightness of the connections.
- ▶ Check the temperature of the 3 DHW temperature sensors to ensure that the appliance operates correctly. If the readout values are incorrect, check the positioning of the sensors in the sensor tube.
- ▶ A few days after start up of the appliance, a visual inspection must be made to check for any leaks in the water system or any blockages in the condensates runoff.

5.5 Reading out measured values

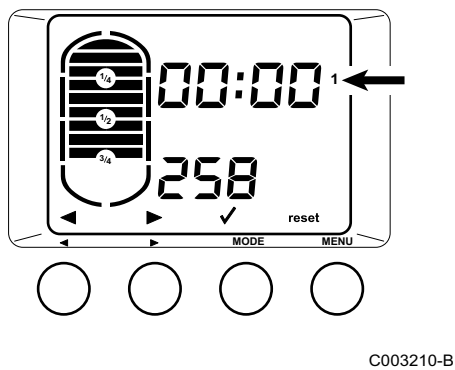
5.5.1. Temperature sensors



1. Press once the **MENU** key. The **SE nS 1** menu is displayed.
2. Press the **MODE** ✓ key to confirm.
3. Press the ◀ and ▶ keys to display the values measured by the various temperature sensors.

Parameters	Description	Values displayed (For example)
SE 01	Top, middle or bottom domestic hot water temperature sensor	53 °C
SE 02		45 °C
SE 03		42 °C
SE 04	Room sensor	1
SE 05	Evaporator temperature sensor	3
SE 06	Electricity tariff: Peak hours (HP1), Off-peak hours (HC0)	HC0
SE SW	Operating status / sub-status of the control system sequence	0 - 0

5.5.2. Counters



To access the various meters, proceed as follows:

1. Press once the **MENU** key. The **SE nS 1** menu is displayed.
2. Press the ▶ key 3 times. The **Co un 4** menu is displayed.
3. Press the **MODE** ✓ key to confirm.
4. Display the various meters with the ◀ and ▶ keys.

Display	Description
1	Number of hours' operation of compressor
2	Number of hours' operation of the electrical back-up
3	Number of hours' operation in peak periods
4	Number of hours' operation in off-peak periods
5	Number of hours powered up

5. Press the **reset** key to reset the meter displayed to zero.
6. Confirm using key **MODE** ✓.
7. To exit this menu, press the **MODE** ✓ key.
8. To go back to the main display, press the **MENU** button.

5.6 Changing the settings

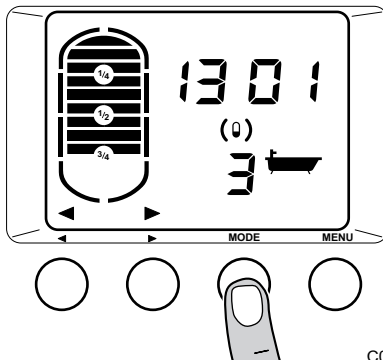
5.6.1. Choosing the operating mode

The main display indicates the operating mode.

Display	Operating mode	Description
Ⓢ	Automatic or Comfort	Comfort programme activated. Domestic hot water production is handled by the heat pump and by electrical back-up if necessary (+ Hydraulic back-up for EH version). If domestic hot water production is not satisfied by the compressor after a modifiable time delay (factory setting: 5 hours - Parameter P23), the back-ups start up.
(*)	Eco	Reduced programme activated. Domestic hot water production is handled by the heat pump alone. After the compressor has stopped, it may be that the display showing the quantity of domestic hot water available is not complete (☹).
ⓑ	Boost	Forced operating activated. Domestic hot water production is handled simultaneously by the heat pump and the electrical back-up for a modifiable period (factory setting: 6 hours) - Parameter P20.
Ⓜ + days	Vacation	Holiday period. Shutting down domestic hot water production. The domestic hot water temperature is kept at 10°C.

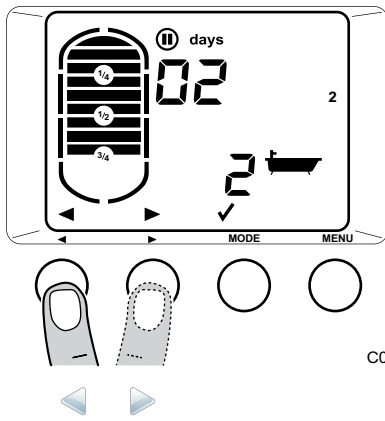
To change the operating mode, press the **MODE** key several times until the symbol corresponding to the desired operating mode appears on the display.

5.6.2. Programming an extended absence (Vacation)



C003410-B

1. Press the **MODE** key 4 times. The symbol **Ⓜ days** appears.



2. Programme the number of days' holiday using the ◀ and ▶ keys.
3. Confirm using key **MODE** ✓.

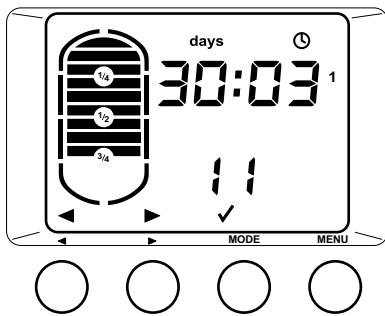


The number of days' holiday is decremented by one day at midnight every night.

5.6.3. Setting the time and date


■ Setting the time and the date

To set the time and date, proceed as follows:



1. Press once the **MENU** key. The **SE nS 1** menu is displayed.
2. Press once the ▶ key. The **CL OC 2** menu is displayed.
3. Press the **MODE** ✓ key to confirm.
4. Using keys ◀ and ▶ set the following lines.
 - Set the hour and the minutes. Confirm using key **MODE** ✓.
 - Set the day, the month and the year with the ◀ and ▶ keys. Confirm using key **MODE** ✓.
5. To exit this menu, press the **MODE** ✓ key.
6. To go back to the main display, press the **MENU** button.

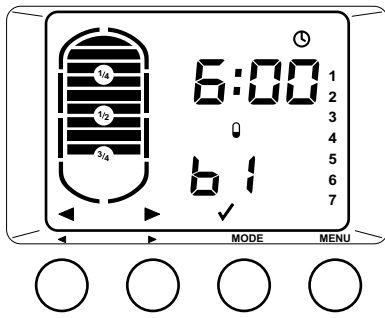
■ Automatic switching to summer time

The automatic changeover to summer time is factory-set to 1. To modify this parameter, refer to chapter  "Modifying the domestic hot water production parameters", page 47

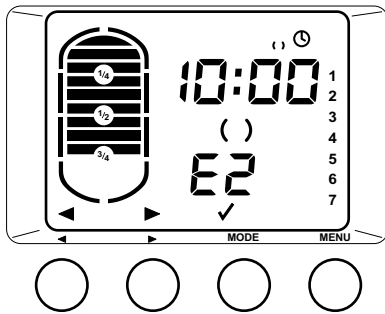
5.6.4. Modify an hourly programme

Factory setting: 23:00 to 07:00 hours - Every day of the week

1. Press once the **MENU** key. The **SE nS 1** menu is displayed.
2. Press the ▶ key 2 times. The **Pr oG 3** menu is displayed.
3. Press the **MODE** ✓ key to confirm. All the numbers for the day of the week flash (1=Monday, ..., 7=Sunday). The new programme will be active every day of the week.



C003208-B



C003209-B

4. To modify the programme for one day in particular, use the ◀ and ▶ keys. Confirm using key **MODE** ✓.
5. Programme the "comfort" and "reduced" periods using the ◀ and ▶ keys. Confirm using key **MODE** ✓.



- ▶ It is possible to programme 3 comfort periods per day. These periods can be reduced to 2, 1, 0. A programmed period can be deactivated with the value **OFF**. Programme the start of the Comfort period using the ◀ and ▶ keys. Confirm using key **MODE** ✓.
- ▶ A programmed period starts with **b** and ends with **E**.
- ▶ The hours are divided into half-hour sections.
- ▶ For enhanced comfort, the duration of the period must be more than 6 hours.

6. To exit this menu, press the **MENU** key.

5.6.5. Modifying the domestic hot water production parameters

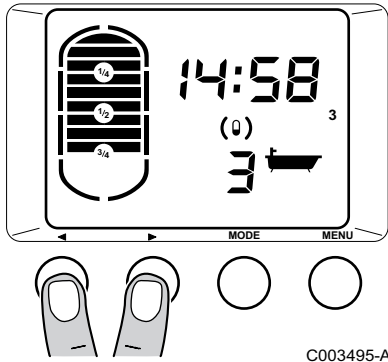
1. Press once the **MENU** key. The **SE nS 1** menu is displayed.
2. Press the ▶ key 4 times. The **PA rA 5** menu is displayed.
3. Press the **MODE** ✓ key to confirm.
4. Scroll through the parameters using the ◀ or ▶ key.
5. To modify a parameter, press the **MODE** ✓ key.
6. Set the desired value using the ◀ or ▶ key.
7. Confirm using key **MODE** ✓.

Parameters	Factory setting	Description	Adjustment range	
			Min	Max
P 01	55 °C	DHW set point in Automatic and Boost mode	40 °C	65 °C
P 02	55 °C	DHW set point in Eco mode	40 °C	65 °C
P 04	0	Choice of mode for the DHW Comfort period 0: Use the time programs 1: Use the electricity tariff information input (Tells you whether or not domestic hot water production is permitted (HP1 = not permitted => Contact closed, HC0 = permitted => Contact open)) 2: Use the electricity tariff information input (Tells you whether or not domestic hot water production is permitted (HP1 = not permitted => Contact open, HC0 = permitted => Contact closed))	0	2
P 06	1	0: for countries where the time change is done on other dates or is not in use. 1: ▶ Summer time: The last Sunday in March ▶ Winter time: The last Sunday in October	0	1

5.6.6. Return to the factory settings

To reset the appliance, proceed as follows:

1. Press the ◀ and ▶ keys **simultaneously** for 5 seconds. The **RST ALL** menu is displayed.
2. Press the **MODE** ✓ key to carry out a TOTAL RESET of all parameters. The factory settings are reset.



5.7 Modifying the installer parameters

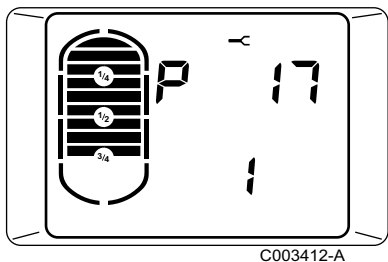


CAUTION

Modification of the factory settings may be detrimental to the functioning of the appliance.

Parameters **P 17** to **P 31** must only be modified by a qualified professional. To prevent unwanted settings, some parameter settings can only be changed after the special access code **12** is entered.

1. Press once the **MENU** key. The **SE nS 1** menu is displayed.
2. Press the ▶ key 6 times. The **Co de 7** menu is displayed.
3. Press the **MODE** ✓ key to confirm.
4. Scroll through the parameters using the ◀ or ▶ key.
5. To modify a parameter, press the **MODE** ✓ key.
6. Set the desired value using the ◀ or ▶ key.
7. Confirm using key **MODE** ✓.



Parameters	Factory setting	Description	Adjustment range	
			Min	Max
P 17	1	Protection by impressed current anode 0: Deactivation 1 : Activation	0	1
P 18	27	Water volume contained in the DHW tank (x 10 l)	6	255
P 19	120	Water volume for one bath (l)	10	255
P 20	6	Maximum duration of the Boost mode (h)	1	10
P 21	0	Display type: °C or °F	0	1

Parameters	Factory setting	Description	Adjustment range	
			Min	Max
P 22	1	Back-up type 0: None 1: Electric 2: Hydraulics	0	2
P 23	5	Time delay for starting up the back-up in Automatic mode (Hours)	0	10
P 24	120	Compressor start-up time (seconds)	60	255
P 25	0	Management of the fans in domestic hot water production mode 0 : Automatic 1: Average speed of fan rotation 2: Maximum speed of fan rotation	0	2
P 26	0	Antilegionellosis. The tank is overheated every Saturday from 4 o'clock to 6 o'clock (65 °C). 0: Off 1: On	0	1
P 27	10	Compressor cut-off hysteresis in relation to the set point for the bottom domestic hot water temperature sensor	5	15
P 28	45	Maximum DHW temperature (bottom sensor) for compressor cut-off (°C)	35	50
P 29	3	Minimum duration of compressor operation (minutes)	3	10
P 30	5	Anti-short-cycle period between 2 compressor start-ups (minutes)	5	10
P 31	0	Hydraulic additional heating 0: contact R6 closed if there is an additional hydraulic heating request 1: contact R6 opened if there is an additional hydraulic heating request	0	1

5.7.1. Control system sequence

Control system sequence		
Status	Sub-status	Operation
0	0	Appliance off
	7	Compressor post-operation
1	1	Anti-short cycle activated
	2	Wait for the start-up condition for domestic hot water production
	3	Start-up of the fan and the defrosting valve
2	5	Compressor starts
	6	Defrosting
3	1	Anti-short cycle activated
	4	Additional heating starts
	7	Compressor post-operation
4	5	Compressor starts
	6	Defrosting
9	--	Blockage state

6 Switching off the appliance

6.1 Installation shutdown




CAUTION

Try to avoid switching off the appliance in order to maintain protection against corrosion. The appliance's frost protection continues to be activated.

6.2 Frost protection

In the event of extended absence (holiday), programme the corresponding number of days. The temperature of the water in the tank is maintained at 10°C.

 See chapter "Programming an extended absence (Vacation)", page 45

7 Checking and maintenance

7.1 General instructions

**CAUTION**

Installation and maintenance of the appliance must be done by a qualified professional in accordance with prevailing statutory texts and codes of practice.

**CAUTION**

Before working on the appliance, ensure that it is switched off and safe.

**CAUTION**

Check the discharge on the compressor condenser for single phase voltages.

**CAUTION**

Before working on the cooling circuit, switch off the appliance and wait a few minutes. Some equipment such as the compressor and the pipes can reach temperatures higher than 100°C and high pressures, which may cause serious burns.



When the appliance is switched off, the fan continues to run by inertia for around one minute.

Maintenance operations are important for the following reasons:

- ▶ To guarantee optimum performance
- ▶ To extend the life of the equipment
- ▶ To provide an installation which offers the customer optimum comfort over time.

**CAUTION**

At no time allow water to get into the control components. Before starting cleaning, disconnect the mains power plug or switch off the appliance.

7.2 Maintenance operations to be performed

7.2.1. Refrigerant circuit

No maintenance is required on the refrigerant circuit in the thermodynamic water heater.

7.2.2. Hydraulic circuit

Check the watertightness of the water connections.

7.2.3. Aeraulics



DANGER

Risk of injury on the sharp-edged fins.



CAUTION

Do not distort or damage the fins.

- ▶ Clean the evaporator at regular intervals using a soft-haired brush.
- ▶ Carefully realign the fins using a suitable comb if they are bent.

7.2.4. Impressed current anode

No maintenance operations are required on an impressed current anode.



The appliance's control panel must be switched on to ensure operation of the impressed current anode.

7.2.5. Checking the safety valve or unit

Operate the safety valve or unit at least **1** time per month to check that it is running correctly. This check provides forewarning of any occurrences of excess pressure that may damage the domestic hot water calorifier.



WARNING

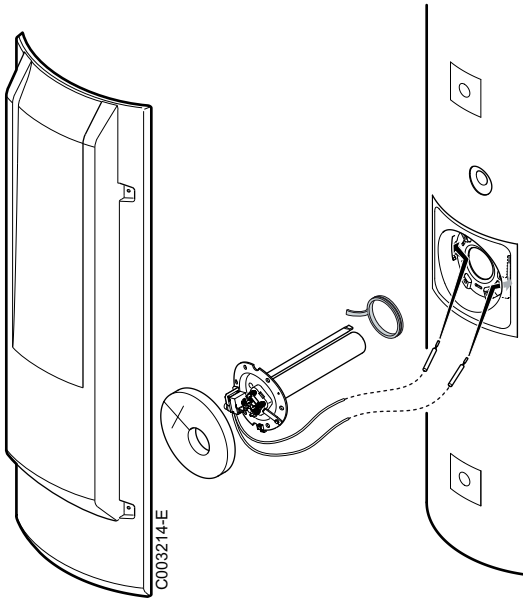
Failure to comply with this maintenance rule may cause deterioration of the DHW tank and the cancellation of the guarantee.

7.2.6. Descaling



Use a new leak tight seal on the inspection trap.

In hard water regions, it is advisable to ask the fitter to descale the DHW tank exchanger once a year in order to maintain its level of performance.



1. Turn off the domestic cold water inlet.
2. Drain the calorifier.
3. Open a hot water tap.
4. Open the valve on the safety unit.
5. Remove the insulation from the inspection hatch.
6. Pull out the DHW sensor.
7. Remove the inspection trap (13 mm spanner).
8. Remove the 2 bulbs from the safety thermostat.
9. Remove the limescale deposited in the tank in the form of sludge or strips. Keep the limescale on the wall of the tank: it provides effective protection against corrosion and enhances the insulation of the DHW tank.
10. Then replace all the parts in reverse order.



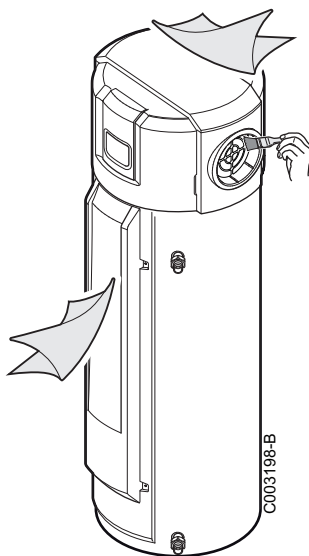
Each time it is opened, the lip gasket must be replaced to guarantee tightness. Place the positioning lug on the gasket toward the outside of the tank.

11. After each intervention, ensure that the installation is watertight.



The screws retaining the visit trap must be tightened to 6 N·m +1/-0. Use a dynamometric spanner.

7.2.7. Cleaning the casing material



- ▶ Clean the outside of the appliance with a damp cloth and soapy water.
- ▶ Clean the ventilation grid with a long-haired brush.

7.2.8. Cleaning the fan

Check the cleanliness of the fan 1 time per year. Clogging by dust and other particles impairs the heat pump's performance.

7.2.9. Cleaning the condensates discharge duct

Check the cleanliness of the condensates discharge pipe. An obstruction by dust may cause poor condensates flow or even a risk of excessive accumulation of water.



DANGER

Risk of the heat pump malfunctioning.

7.3 Accessing the bottom inspection trap



Have a lip gasket and a retainer ring on hand for the inspection trap.

1. Disconnect the mains supply.
2. Drain the calorifier.
3. Open a hot water tap.
4. Open the valve on the safety unit.
5. Set the appliance to repair position **1**.
6. Check the extent of scaling in the tank and on the exchanger.
Keep the limescale on the wall of the tank: it provides effective protection against corrosion and enhances the insulation of the DHW tank.
Remove limescale deposits from the bottom of the tank.
Remove limescale deposits from the exchanger to guarantee its performance.
7. Fit the unit together.



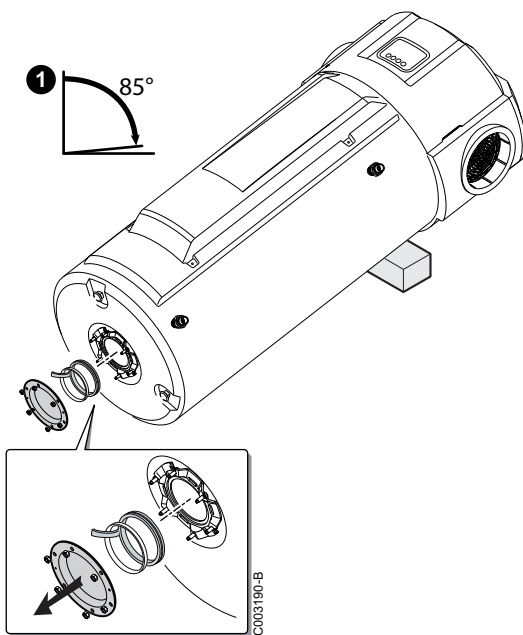
CAUTION

Each time it is opened, the lip gasket + retainer ring unit must be replaced to guarantee tightness. Place the positioning lug on the gasket toward the outside of the tank.

8. After reassembly, check the tightness of the lower flange.



The screws retaining the visit trap must be tightened to 6 N·m +1/-0. Use a dynamometric spanner.



8 Troubleshooting

8.1 Messages (Code type bxx or Exx)

In the case of failure, the control panel displays a message and a corresponding code.

1. Make a note of the code displayed.
The code is important for the correct and rapid diagnosis of the type of failure and for any technical assistance that may be needed.
2. Disconnect and reconnect the mains cable.
The appliance will restart only when the malfunction has been corrected.
3. If the code is displayed again, correct the problem by following the instructions in the table below:

Code no.	Description	Checking / solution
b00	Parameter error on the PCU PCB	Reset the parameters
b01	Pressure switch alarm Note: DHW production is handled by back-up if back-up enabled	<ul style="list-style-type: none"> ▶ Check the power supply to the compressor ▶ Check the pressure switch connection
b02	Maximum DHW temperature exceeded Note: DHW production is not covered (by the compressor or the back-up)	<ul style="list-style-type: none"> ▶ Check the connection on the top DHW sensor ▶ Check that the back-up is not running permanently
b03	The room temperature is higher than 35°C. The compressor is outside its operating range. Note: DHW production is handled by back-up if back-up enabled.	<ul style="list-style-type: none"> ▶ Modify the parameters according to the instructions in the manual. ▶ The compressor will handle DHW production once the room temperature is less than 35°C.
b04	The room temperature is less than -5°C. Note: DHW production is handled by back-up if back-up enabled.	<ul style="list-style-type: none"> ▶ Modify the parameters according to the instructions in the manual. ▶ The compressor will handle DHW production once the room temperature is higher than -5°C.
b25	The bottom DHW temperature sensor is short circuited	<p>Bad connection</p> <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted <p>Sensor fault</p> <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
b26	The bottom DHW temperature sensor is open	<p>Bad connection</p> <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted <p>Sensor fault</p> <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary

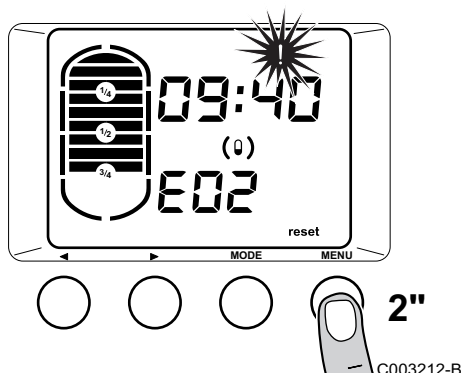
Code no.	Description	Checking / solution
627	The top DHW temperature sensor is short circuited	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
628	The top DHW temperature sensor is open	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
632	The impressed current anode is in open circuit.	<ul style="list-style-type: none"> ▶ Check that the connection cable between the SCU PCB and the anode is not severed ▶ Check that the anode is not broken ▶ Check that the DHW tank is correctly filled with water Remarks: <ul style="list-style-type: none"> ▶ Domestic hot water production has stopped but can nonetheless be restarted using key reset (For 72 hours) ▶ Protection against corrosion is not ensured
633	The impressed current anode is short-circuited.	<ul style="list-style-type: none"> ▶ Check that the connection cable between the PCU PCB and the anode is not short-circuited ▶ Check that the anode is not short-circuited Remarks: <ul style="list-style-type: none"> ▶ Domestic hot water production has stopped but can nonetheless be restarted using key reset (For 72 hours) ▶ Protection against corrosion is not ensured
640	Measurement error on the domestic hot water temperature sensors. Remarks: <ul style="list-style-type: none"> ▶ This message is only displayed on initial commissioning. ▶ This message disappears after 10 minutes or when you press the ✓ key. 	The 3 sensors do not measure the same value <ul style="list-style-type: none"> ▶ Check the location of the sensors.

If the causes of the problem are still present after several attempts at automatic start-up, the appliance goes into lockdown mode (also called failure).

The display shows :

- The symbol (!)
- The symbol **reset**
- The fault code (for example **E02**).

- ▶ After correcting the failure, press the **reset** key for 2 seconds. If the error code continues to display, search for the cause in the error table and apply the solution.



Code no.	Description	Checking / solution
E00	The parameter storage unit on the PCU electronic board is defective	Replace the PCU PCB
E01	The middle DHW temperature sensor is short circuited Note: DHW production is not covered	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
E02	The middle DHW temperature sensor is open Note: DHW production is not covered	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
E03	Maximum DHW temperature exceeded Note: DHW production is not covered (by the compressor or the back-up)	<ul style="list-style-type: none"> ▶ Check the connection on the top DHW sensor ▶ Check that the back-up is not running permanently ▶ Reset the mechanical safety device if necessary
E04	The room temperature sensor is short circuited Note: DHW production is handled by back-up if back-up enabled	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
E05	The room temperature sensor is open Note: DHW production is handled by back-up if back-up enabled	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
E06	The evaporator temperature sensor is short circuited Note: DHW production is handled by back-up if back-up enabled	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary
E07	The evaporator temperature sensor is open Note: DHW production is handled by back-up if back-up enabled	Bad connection <ul style="list-style-type: none"> ▶ Check whether the sensor is connected ▶ Check the link and the connectors ▶ Check that the sensor has been correctly fitted Sensor fault <ul style="list-style-type: none"> ▶ Check the Ohmic value of the sensor ▶ Replace the sensor if necessary

Code no.	Description	Checking / solution
E08	Malfunction on the defrosting function Note: DHW production is handled by back-up if back-up enabled	<ul style="list-style-type: none"> ▶ Check activation of the defrosting solenoid valve ▶ Check the position of the temperature sensor in the evaporator ▶ Check that the fan is working correctly ▶ Check that the condensates can flow freely
E09	The low pressure pressure switch alarm sounds for more than 120 seconds Note: DHW production is handled by back-up if back-up enabled	<ul style="list-style-type: none"> ▶ Check the position of the temperature sensor in the evaporator ▶ Check that the fan is working correctly ▶ Check that the condensates can flow freely
E10	The low pressure pressure switch alarm has been tripped more than 3 times during the last 24 hours Note: DHW production is handled by back-up if back-up enabled	<ul style="list-style-type: none"> ▶ Check the position of the temperature sensor in the evaporator ▶ Check that the fan is working correctly ▶ Check that the condensates can flow freely ▶ Check the refrigerant load

8.2 Message and error history

The **Er bL 6** menu is used to consult the last 10 messages and the last 10 errors displayed by the control panel.

1. Press once the **MENU** key. The **SE nS 1** menu is displayed.
2. Press the **▶** key 5 times. The **Er bL 6** menu is displayed.
3. Press the **MODE ✓** key to confirm. The **Er r** menu is displayed. Select the message history **Er r** or the error history **bL** using the **◀** and **▶** keys.
4. Press the **MODE ✓** key to confirm. A critical or non-critical error code is then displayed.
5. To reset the error memory to zero, select **CL r** using the **◀** and **▶** keys.
6. Confirm using key **reset**.

9 Spare parts

9.1 General

When it is observed subsequent to inspection or maintenance work that a component in the appliance needs to be replaced, use only original spare parts or recommended spare parts and equipment.

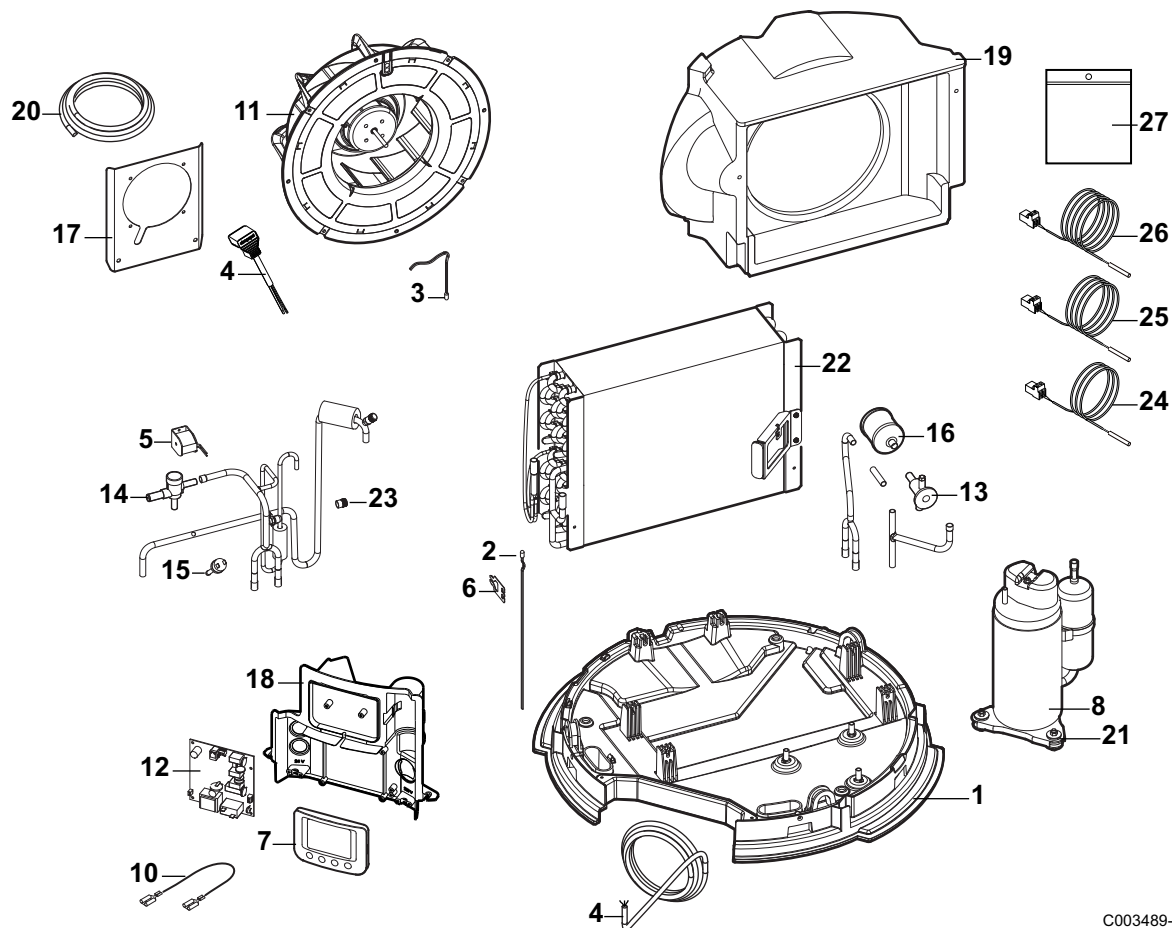


To order a spare part, give the reference number shown on the list.

9.2 Spare parts

Spare parts list reference: 300026515-002-C

9.2.1. Heat pump

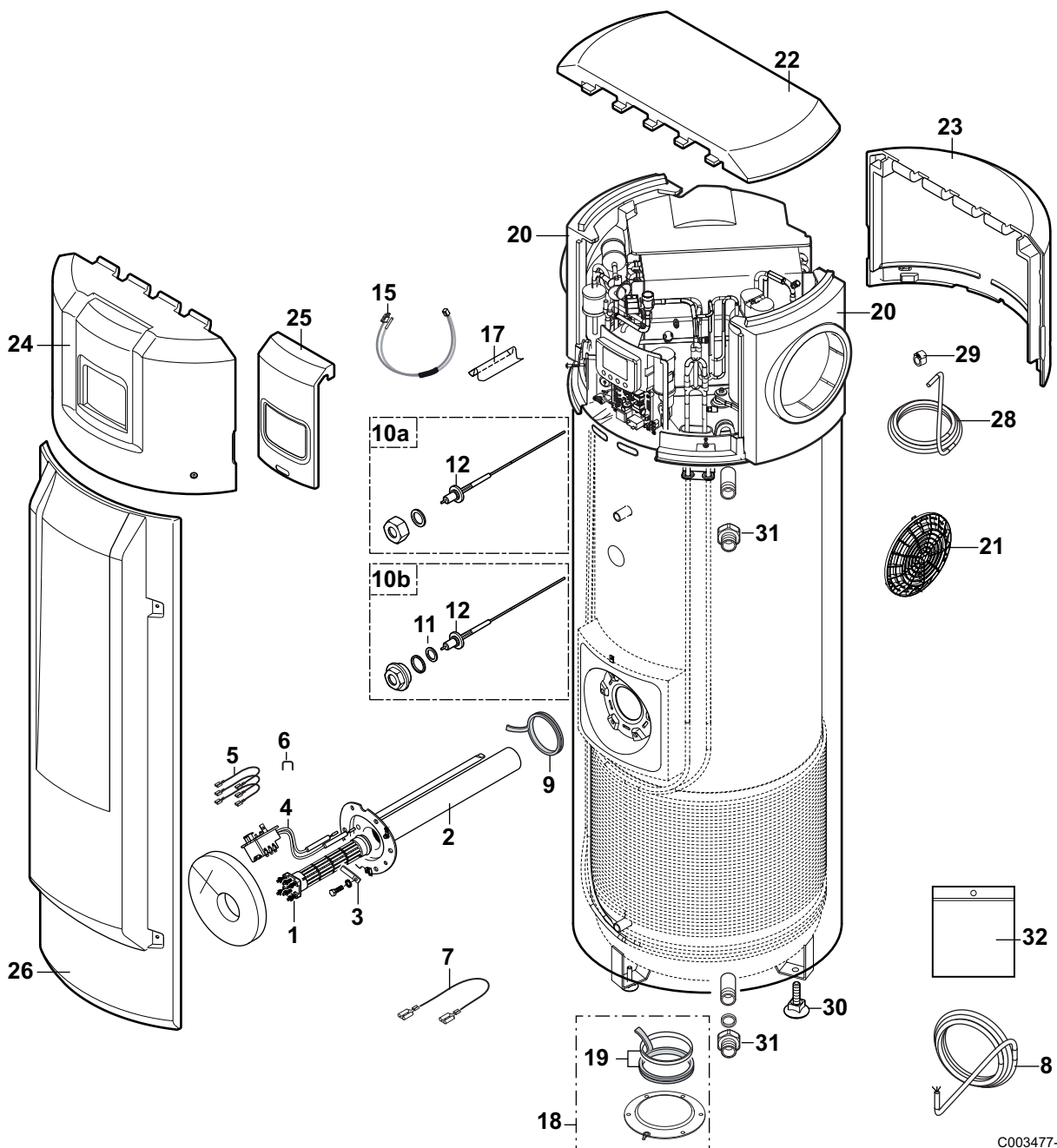


C003489-A

Markers	Reference	Description
1	SFH41000	Base frame
2	SFH22038	Air sensor
3	SFH22039	Evaporator sensor
4	SFH32178	Electrical harness
5	SFH24053	Coil
6	SFH40173	Sensor bracket
7	SFH31034	Control panel
8	SFH20050	Compressor
10	SFH33170	Earthing connector
11	SFH37008	Motorised fan
12	SFH31306	PCB
13	SFH23108	Expansion valve
14	SFH24052	Solenoid valve
15	SFH22234	LP pressure switch
16	SFH21038	Filter drier
17	SFH40172	Fan bracket

Markers	Reference	Description
18	SFH41001	Control panel bracket
19	SFH41002	duct
20	SFH51172	Gasket
21	SFH40171	Compressor bracket
22	SFH25298	Battery
23	SFH12102	Valve plug
24	SFH22056	Tank sensor 0.5 m + Connector
25	SFH22057	Tank sensor 1.5 m + Connector
26	SFH22058	Tank sensor 2 m + Connector
27	200020513	Screw bag

9.2.2. DHW tank



C003477-F

Markers	Reference	Description
1	300019082	Heating element 2400 W
2	97862390	Heating body
3	97866635	Fastening plate
4	95363327	Thermostat
5	200011080	Black wire (x3)
6	300019070	Connection bridge
7	89534902	Earth wire
8	300025717	Power supply cable
9	95013133	Lip gasket diameter 82 mm
10a	200021118	Connection G 3/4" ACI complet As of serial number 193
10b	200019797	Connection G1" 1/2 ACI complet From serial number 101 to serial number 192
11	300014305	O-ring 14x4 EPDM
12	200011550	Titanium anode
15	300025716	ACI anode cable
17	95365613	Contact spring for pocket
18	89525501	Complete top mounting
19	89705511	Gasket 7 mm + Retainer ring 5 mm
20	300025193	Nozzle
21	300025194	Grill
22	300025192	Top cover
23	200020278	Back cover + Spacers + Screw
24	200020279	Front cover + Spacers + Screw
25	300025216	Panel strap
26	300025930	Front cover 200E
26	300025931	Front cover 300
28	94994712	Pipe PVC diameter 16X12
29	S101017	Pipe clamp 135
30	97860646	Adjustable foot M10x35
31	300025648	Dielectric connection
32	200020217	Screws for casing

10 Warranty

10.1 General

You have just purchased one of our appliances and we thank you for the trust you have placed in our products.

Please note that your appliance will provide good service for a longer period of time if it is regularly checked and maintained.

Your fitter and our customer support network are at your disposal at all times.

10.2 Warranty terms

The following provisions are not exclusive of the buyer being able benefit from the legal provisions applicable regarding hidden defects in the buyer's country.

Starting from the purchase date shown on the original fitter's invoice, your appliance has a contractual guarantee against any manufacturing defect.

The length of the guarantee is mentioned in the price catalogue. The manufacturer is not liable for any improper use of the appliance or failure to maintain or install the unit correctly (the user shall take care to ensure that the system is installed by a qualified engineer).

In particular, the manufacturer shall not be held responsible for any damage, loss or injury caused by installations which do not comply with the following:

- ▶ applicable local laws and regulations,
- ▶ specific requirements relating to the installation, such as national and/or local regulations,
- ▶ the manufacturer's instructions, in particular those relating to the regular maintenance of the unit,
- ▶ the rules of the profession.

The warranty is limited to the exchange or repair of such parts as have been recognised to be faulty by our technical department and does not cover labour, travel and carriage costs.

The warranty shall not apply to the replacement or repair of parts damaged by normal wear and tear, negligence, repairs by unqualified parties, faulty or insufficient monitoring and maintenance, faulty power supply or the use of unsuitable fuel.

Sub-assemblies such as motors, pumps, electric valves etc. are guaranteed only if they have never been dismantled.

The legislation laid down by european directive 99/44/EEC, transposed by legislative decree No. 24 of 2 February 2002 published in O.J. No. 57 of 8 March 2002, continues to apply.

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