

Edel AIR

Domestic hot water heat pump

100 and 150 litres wall mounted

Air intake and exhaust using a Ø80/125 concentric duct



Installation manual

Edel 100 AIR
Ref. 353210

Edel 150 AIR
Ref. 353211



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.



BVCert. 6020118



ELECTRICITE PERFORMANCE



Made in France



Manual ref. : 1898153
Edition n° 24.06

TABLE OF CONTENTS

1 - SAFETY	4	6 - SET-UP AND USE	26
2 - RECOMMENDATIONS	6	6.1 - Control panel.....	26
2.1 - Storage	6	6.2 - Setting the language.....	26
2.2 - Transport.....	6	6.3 - Setting the date and time.....	26
2.3 - Manutention.....	7	6.4 - Setting the desired water temperature	27
2.4 - Contents of packaging.....	7	6.4.1 - PV mode not activated	27
2.5 - Unpacking	7	6.4.2 - PV mode activated	27
2.6 - Symbols used	7	6.5 - Holiday/ temporary standby mode	27
3 - OPERATING PRINCIPLE	8	6.6 - BOOST mode	
4 - INTRODUCTION	8	(for occasional use and for guaranteed comfort)	27
4.1 - Dimensions	8	6.7 - Electric mode	
4.2 - Technical characteristics and Performances	9	(for operation using only the electrical back-up).....	28
4.3 - EU declaration.....	9	6.8 - Programming	28
5 - INSTALLATION	10	6.9 - INSTALLER menu	29
5.1 - Set-up.....	10	6.9.1 - PV mode.....	29
5.1.1 - Installation site	10	6.9.2 - Adjusting the operating settings.....	29
5.1.2 - Positioning	10	6.9.2.1 - ANTI-BACT -anti-legionellosis cycle-.....	29
5.1.3 - On-ground installation	10	6.9.2.2 - FAN MODE -Fan mode-	30
5.1.4 - Wall mounting	11	6.9.2.3 - T°C MIN -Minimum temperature-	30
5.1.5 - Options.....	12	6.9.2.4 - LOAD SHEDDING -Degree of authorisation during peak hours..30	
5.1.5.1 - Tripod for on-ground installation.....	12	6.9.2.5 - MAX. TIME -Max. heating time-.....	30
5.1.5.2 - Wall fastening brackets.....	12	6.9.3 - Locking the keyboard.....	30
5.2 - Air connections.....	12	6.9.4 - Resetting parameters.....	31
5.2.1 - Air intake and exhaust in unheated premises (20m ³ minimum)		6.9.5 - Reading data.....	31
insulated from neighbouring heated rooms.....	13	6.9.6 - Counters.....	31
5.2.1.1 - In the same room as the appliance	13	7 - MAINTENANCE AND TROUBLESHOOTING 32	
5.2.1.2 - Exterior air exhaust using Ø80 PVC pipe.....	13	7.1 - Water circuit / Condensates drainage	32
5.2.1.3 - Exterior air exhaust through a chimney	13	7.2 - Air intake circuit.....	33
5.2.1.4 - In an adjoining room, with vertical air ducts	14	7.3 - Electrical maintenance	33
5.2.2 - Connection to air exhaust (Ø80mm) and intake (Ø125mm) for ambient* or		7.4 - Drainage.....	33
exterior air	14	7.5 - Modification.....	33
5.2.2.1 - Installation with lateral or rear ducts Ø80/125.....	14	7.6 - Decommissioning.....	33
5.2.2.2 - Installing with lateral air ducts	15	7.6.1 - Leak detection	33
5.2.2.3 - Installing with lateral air ducts.....	16	7.6.2 - Removal and evacuation	33
5.2.2.4 - Installation with lateral air ducts and elbow outlet.....	17	7.6.3 - Charging process.....	34
5.2.2.5 - Installation with lateral ducts at distance «C» above the		7.6.4 - Decommissioning	34
appliance	18	7.6.5 - Recovery	34
5.2.2.6 - Installation by vertical duct Ø80/125	18	7.6.6 - Recycling and Disposal.....	34
5.2.3 - Piping accessories	20	7.7 - Troubleshooting.....	35
5.2.3.1 - For air duct connection onto ambient or exterior air	20	7.8 - Inspecting the corrosion-proof anode - Changing the primary	
5.2.3.2 - For connection with a Ø80 PVC pipe	20	anode of the heating element or cleaning the tank.....	35
5.2.3.3 - Essential accessories for air duct connection or air exhaust		7.9 - NTC sensor data.....	36
connection using a Ø80 PVC pipe	20	7.10 - List of spare parts	37
5.3 - Hydraulic connections.....	21	7.11 - Error message codes : errors, solutions, and operating in	
5.4 - Condensates drainage.....	23	case of error	39
5.5 - Electrical connections	24		
5.5.1 - External control.....	24		
5.5.1.1 - Peak/off-peak hours contact.....	24		
5.5.1.2 - Controlled ventilation	24		
5.5.1.3 - Connection to electricity provider.....	24		
5.5.1.4 - Connection to the PV function	25		

8 - WARRANTY 41

8.1 - Limitations of warranty.....41

- 8.1.1 - General information41
- 8.1.2 - Cases for exclusion from warranty (not limited to)41
 - 8.1.2.1 - Use.....41
 - 8.1.2.2 - Handling.....41
 - 8.1.2.3 - Installation site.....41
 - 8.1.2.4 - Electrical connections41
 - 8.1.2.5 - Hydraulic connections41
 - 8.1.2.6 - Accessories41
 - 8.1.2.7 - Maintenance.....41

9 - APPENDICES 42

9.1 - Electrical wiring diagram42

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 odorless.

→ 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, make sure 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 on 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 maintenance 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:

- following the instructions for operating, installing, and maintaining this appliance and all other parts and components of the system.
- ensuring its 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 regulations, directives, technical rules, safety measures and standards, must be respected in their current version in effect.

- This appliance can be used by children of at least 3 years of age and by persons with reduced physical, sensory or mental capabilities or lacking experience or knowledge, if they are properly supervised or if they have been given instructions on how to use the appliance safely and if the risks involved have been understood.
- 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 aged 3 to 8 years are only allowed to turn on the tap connected to the domestic hot water heat pump.

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

Protect the appliance with:

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

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

Water may drain from the discharge pipe of the pressure-relief valve. 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 bars on the domestic cold water supply of the appliance. Use of a membrane valve is recommended.
- 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 supply, open the hot water valves and then set the safety group to the drainage position.
- The pressure-limiting device should be activated regularly so as to flush limescale and to check that there are no 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 or danger.
- See the § «Dimensions» and § «Set-up» pages of this manual to find the necessary dimensions for proper installation of this appliance.
- See § «Hydraulic connections» page for minimum and maximum water pressures.
- 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 - 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.
- The corrosion-proof magnesium anode ensures the protection of the tank. An annual inspection of the condition of the anode must be carried out. It must be replaced if necessary, to maintain the corrosion-proof protection of the tank (see § «Corrosion-proof anode»).
- It is recommended to carry-out periodic inspections for limescale and to clean if necessary via the access hatch provided for this purpose.

2.1 - Storage



STORAGE PRECAUTIONS:

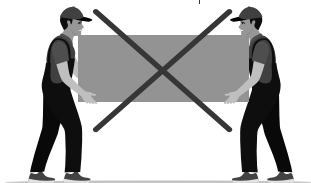
- Admissible storage and transport temperatures of the domestic hot water heat pump are from -5°C to +35°C.

2.2 - Transport

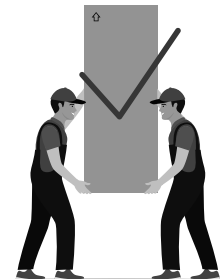
Transport and handling of the appliance must be done in its original cardboard packaging using the handles integrated into the cardboard packaging for ease of transportation.

Transport in a vehicle must be done with the appliance in a vertical position.

NON-ADMISSIBLE transportation positions:



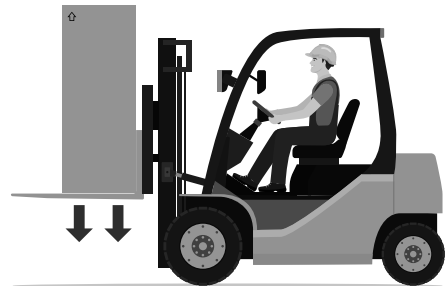
ADMISSIBLE transportation positions :



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



Transporting the appliance in a horizontal position may cause irreparable damage to the heat pump components.



Do not pose abruptly

Risk of tilting

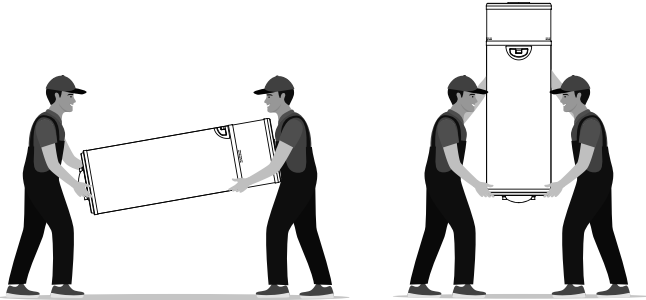


Transporting the appliance in a horizontal position may cause irreparable damage to the heat pump components.

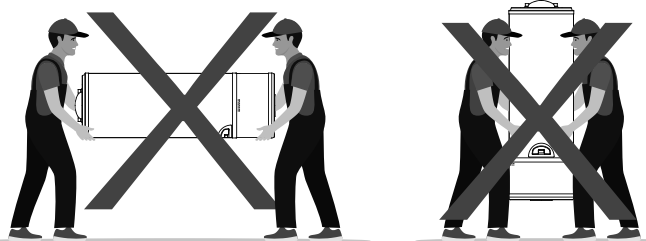
2.3 - Manutention

To transport the appliance to the installation location, use the wall bracket and lower handles.

ADMISSIBLE transportation positions :



NON-ADMISSIBLE transportation positions :



The top covers of the appliance cannot support loads and should not be used for handling.



Once the domestic hot water heat pump is installed in its definitive place, it is imperative to wait at least 60 minutes before switching it on for the first time.

2.4 - Contents of packaging

- 1 domestic hot water heat pump
- 1 x 80 mm air intake nozzle.
- 1 adjustment screw 100 litres Heat pumps
- 1 documentation packet containing 1 installation and user manual, 1 warranty form, 1 drilling template and a bag of two dielectric fittings.

2.5 - Unpacking

- Cut the straps and remove the cardboard packaging.
- Remove the cardboard spacer and the documentation packet.

2.6 - Symbols used



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



Consult the installation manual before all work on the product: handling, installation, use, and maintenance.



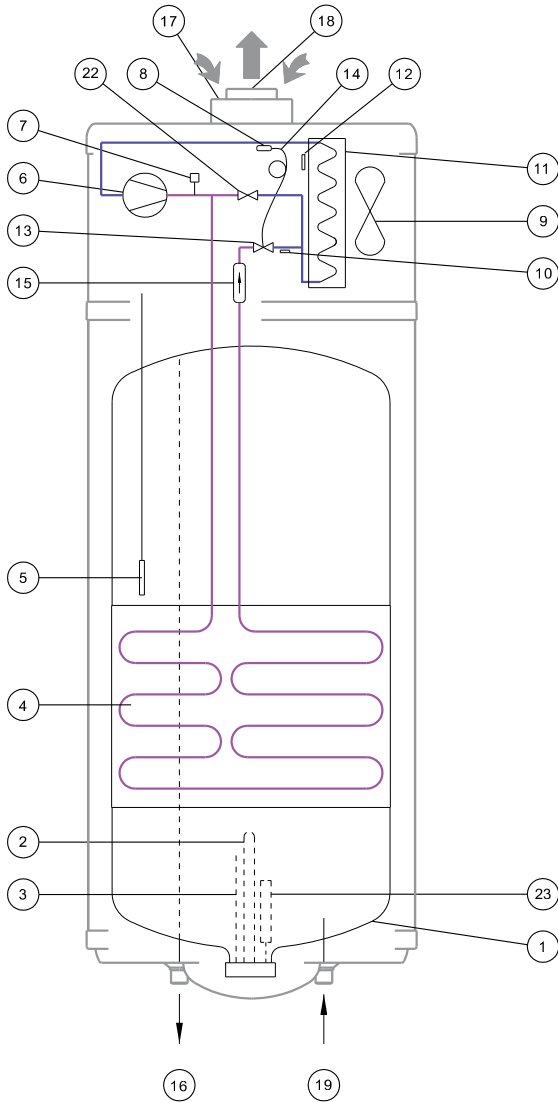
Contains regulated substances, do not dispose of in the garbage. In case of disposal, please respect the regulations for the recovery of electrical and electronic equipment.

3 - 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 for the capture of calories and then the bonuses to the water of the tank.

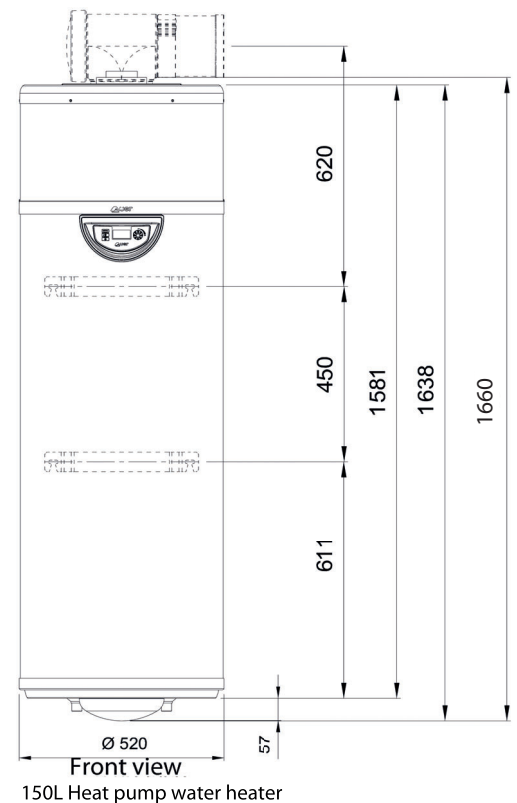
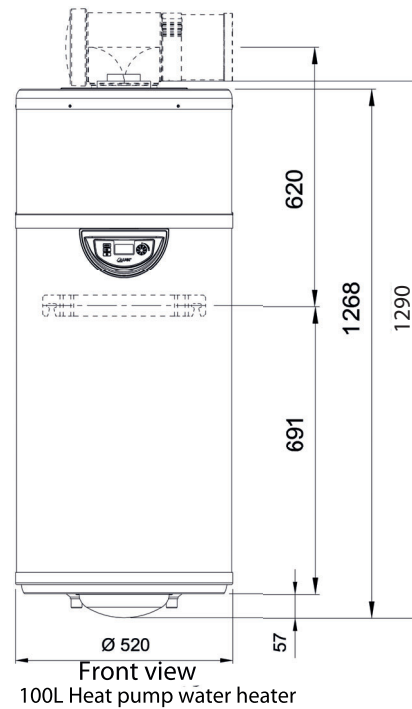
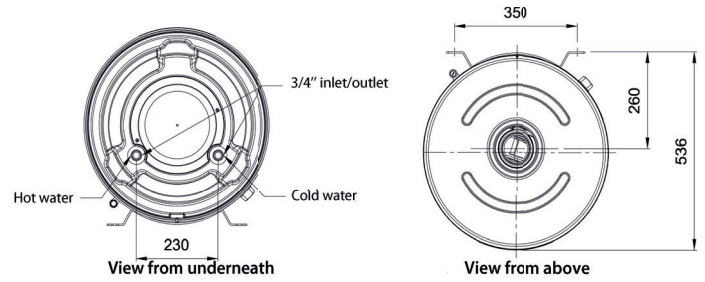
That is made possible by the use of refrigerant fluid allowing the transfer from one medium to another. This appliance has the particularity of operating on the R290 gas, guaranteeing good thermodynamic performance and negligible environmental impact.



Rep.	Description	Rep.	Description
1	Tank	12	Air sensor
2	Electrical resistance	13	Expansion valve
3	Safety aquastat	14	Capillary expansion valve
4	Condenser	15	Drying filter
5	Domestic hot water sensor	16	Domestic hot water outlet
6	Compressor	17	Air inlet
7	Pressure switch	18	Air outlet
8	Expansion valve bulb	19	Domestic cold water inlet
9	Fan	22	Defrosting solenoid valve
10	Evaporator sensor	23	Sacrificial anode
11	Evaporator		

4 - INTRODUCTION

4.1 - Dimensions



4.2 - Technical characteristics and Performances

Domestic hot water heat pump model		100L AIR	150L AIR
Heat pump performance			
Nominal volume	L	100	150
Max. input power (heat pump + back-up)	W	1350	1350
Air temperature range	°C	-7 to +35	-7 to +35
DHW* temperature with heat pump	°C	30 to 55	30 to 55
Max. heat pump power consumption	W	350	350
Air flowrate	m ³ /h	90 to 160	90 to 160
Indoor sound power level**	dB(A)	41.2	41.2
Outdoor sound power level**	dB(A)	55.8	55.8
Refrigerant fluid	-/kg	R290/0.1	R290/0.1
Global warming potential	kg	0.3kg CO ₂ equivalent	0.3kg CO ₂ equivalent
Type of air connection	-	Exterior air or ambient air	Exterior air or ambient air
Normative data (EN 16147)			
Draw cycle	-	M	M
COP* (exterior air +7°C)	-	2.38	2.5
Electrical reserve	W	16	17
Hot water reference temperature	°C	53.60	53.50
Heating time	-	6h48	9h37
ERP energy class	-	A	A+
Seasonal energy efficiency	%	99	104
Vmax	L	141.7	198.8
V40 td	L	311.1	380.1
COP* (ambient temperature +15°C)	-	2.7	2.89
Dimensions and connections			
Dimensions	mm	Ø520xH1290	Ø520xH1660
Weight when empty	kg	47	57.5
Air connection diameter (intake/exhaust)	mm	125/80	125/80
Max. length for air ducts	m	With air duct: 5m	With air duct: 5m
Diameter of connection for DCW* and DHW*	inches	M 3/4"	M 3/4"
Electrical power supply	V-Hz-A	230V-50Hz-10A	230V-50Hz-10A
Protection rating	-	IPX4	IPX4
D-curve circuit breaker	A	10	10
Tank			
Materials/protection	-	enamelled steel	enamelled steel
Max. service pressure	MPa	0.6 (6 bars)	0.6 (6 bars)
Max. condensates flowrate	L/h	0.12	0.12
Built-in electrical back-up power (87°C safety setting)	W	1000	1000
Max. temp with electrical back-up	°C	65	65

*DHW=domestic hot water

*DCW=domestic cold water

*COP= coefficient of performance

**Sound power level tested in semi-anechoic chamber

4.3 - 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 - INSTALLATION

5.1- Set-up

5.1.1- Installation site



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 as to prevent mechanical damage to the appliance.

• It is FORBIDDEN to install the appliance:

- outside.
- in rooms exposed to frost, or where the temperature is under 5°C, including when the appliance is operating.
- in humid rooms which have significant steam or vapour emissions.
- in a room with a risk of explosion due to gas, emissions, or dust.

• It is FORBIDDEN:

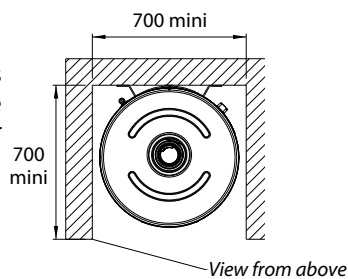
- to let the appliance operate using air intake which contains solvents or flammable matter.
- to use air intake which contains grease, dust, or aerosol particles.
- to connect vented exhaust hoods to the ventilation system.
- to use air intake containing combustion materials from a boiler.

- Avoid installing close to bedrooms to minimise noise pollution
- Do not install the air intake nozzle near a vapour exhaust (minimum distance 0.6m).

5.1.2 - Positioning

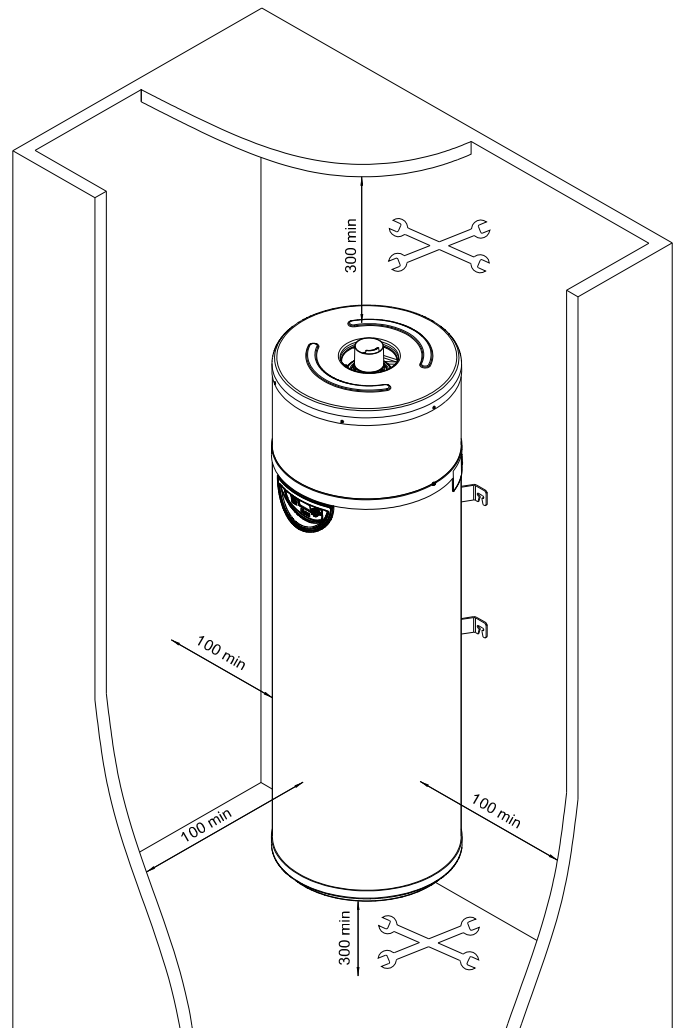
If the appliance is installed in a room of less than 20m³ an air duct connection will be needed for air intake and exhaust

In this configuration, it is recommended to loosen the lateral screws on the upper cover before installation.



If installing the domestic hot water heat pump in a bathroom, it is mandatory to follow the safety standards in regards to the placement of electric appliances.

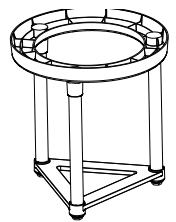
The domestic hot water heat pump must not be close enough to be touched by someone who is in the bathtub or shower stall.



5.1.3 - On-ground installation

A tripod, see § «Options», allows to install the domestic hot water heat pump on the ground, in the case where the wall will not support the weight of the water heater.

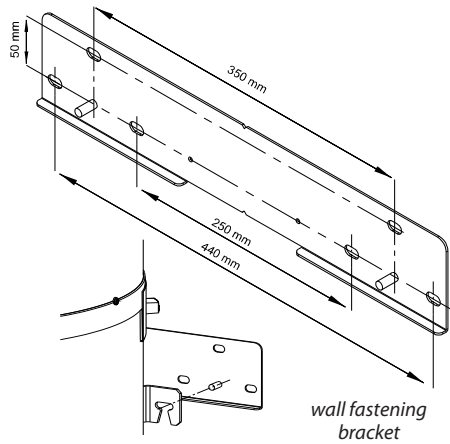
The height of the tripod is adjustable from 300mm to 515mm. To adjust the tripod horizontally, each foot is equipped with an adjustment screw to be used for this purpose.



Even for on-ground fitting, the domestic hot water heat pump should be anchored to the wall to avoid any danger of tipping or falling.

5.1.4 - Wall mounting

For a durable and perfectly vertical anchoring, it is recommended to use the wall fastening bracket(s) (available as optional extras). This bracket is pre-drilled with various interaxial distances: 250mm, 350mm or 440mm. This enables in part, a more durable wall mounting through use of the 4 fixation points instead of 2, and also allows for easier positioning with the use of a level.



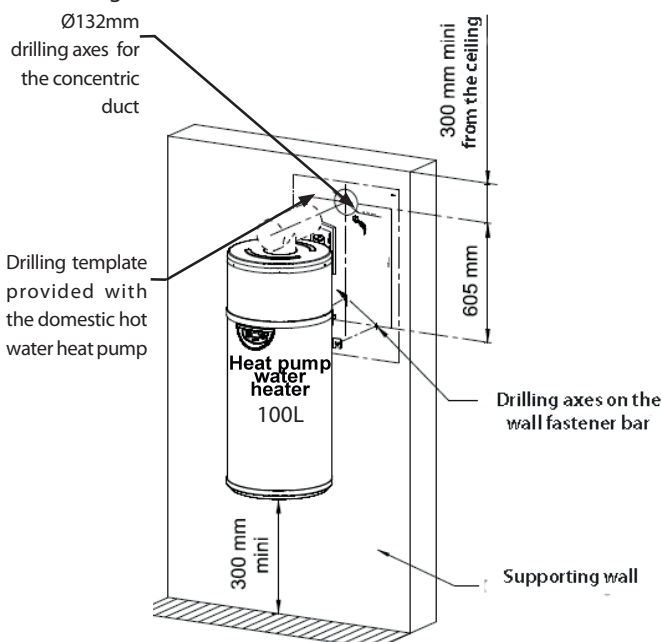
Ensure the solidity of the wall to be able to support the full weight of a full water heater.

Weight with water : **Water heater 100L** = 148kg
Water heater 150L = 219kg

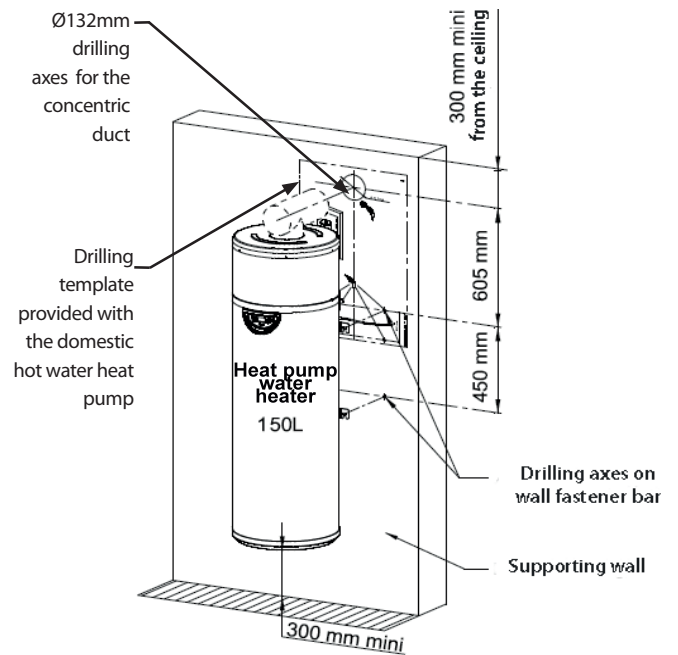
Leave a space of 300mm free under the appliance for access to the anode and the electrical back-up.

Before fitting the appliance:

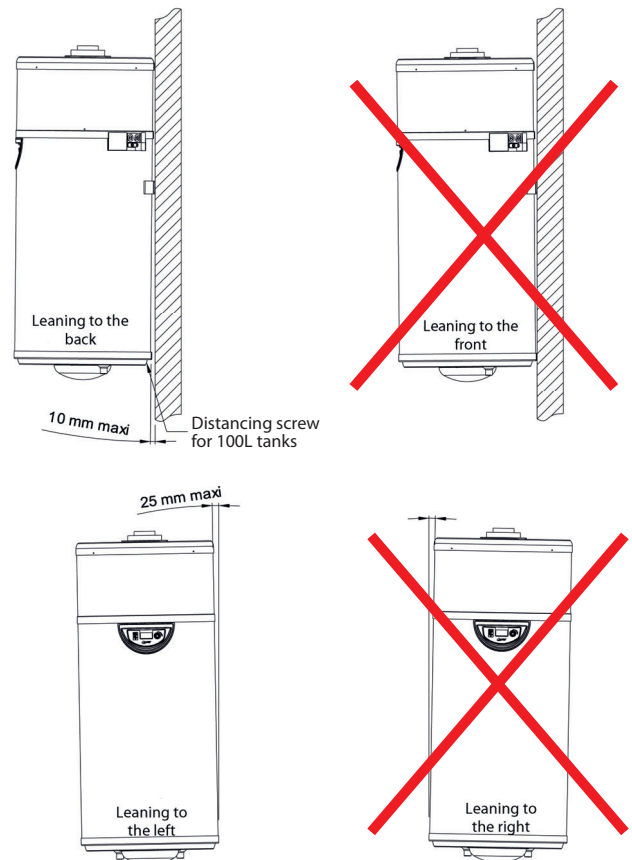
- Determine the position of the domestic hot water heat pump (see § «Positioning»)
- Position the drilling template against the wall (supplied with the appliance)
- Mark out the position of the drill holes for the wall fastening bracket and the air duct outlet*.
- Drill one (1) Ø132 hole for the Ø125* air duct outlet or one (1) Ø90 hole for the Ø80 PVC pipe* outlet.
- Locate and drill the holes.
- Fix the bracket(s) while ensuring that the appliance is positioned horizontally.
- Mount the tank onto the wall fastener bracket(s) and tighten the screws.



* In the case of assembly with horizontal air ducts or with Ø80mm PVC pipe (with direct outlet at the back)



- Reposition the domestic hot water heat pump and adjust the wall bracket(s) so that they are vertical. It is acceptable for the appliance to lean slightly to the right (max. 20mm) or backwards (max. 10mm), as the condensates outflow is located on the righthand side at the rear of the appliance.

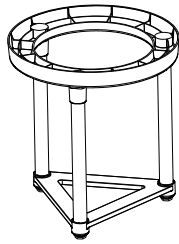


The vertical positioning of the domestic hot water heat pump must be strictly respected. If it is not, condensates could overflow and water may leak out onto the floor.

5.1.5 - Options

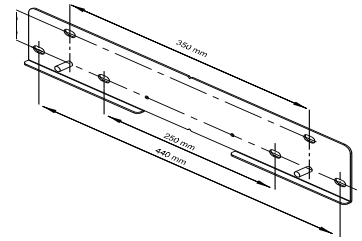
5.1.5.1 - Tripod for on-ground installation

Tripod with adjustable height from 300 to 515mm



5.1.5.2 - Wall fastening brackets

For the 100 l ref: 730017 x1
For the 150 l ref: 730018 x2



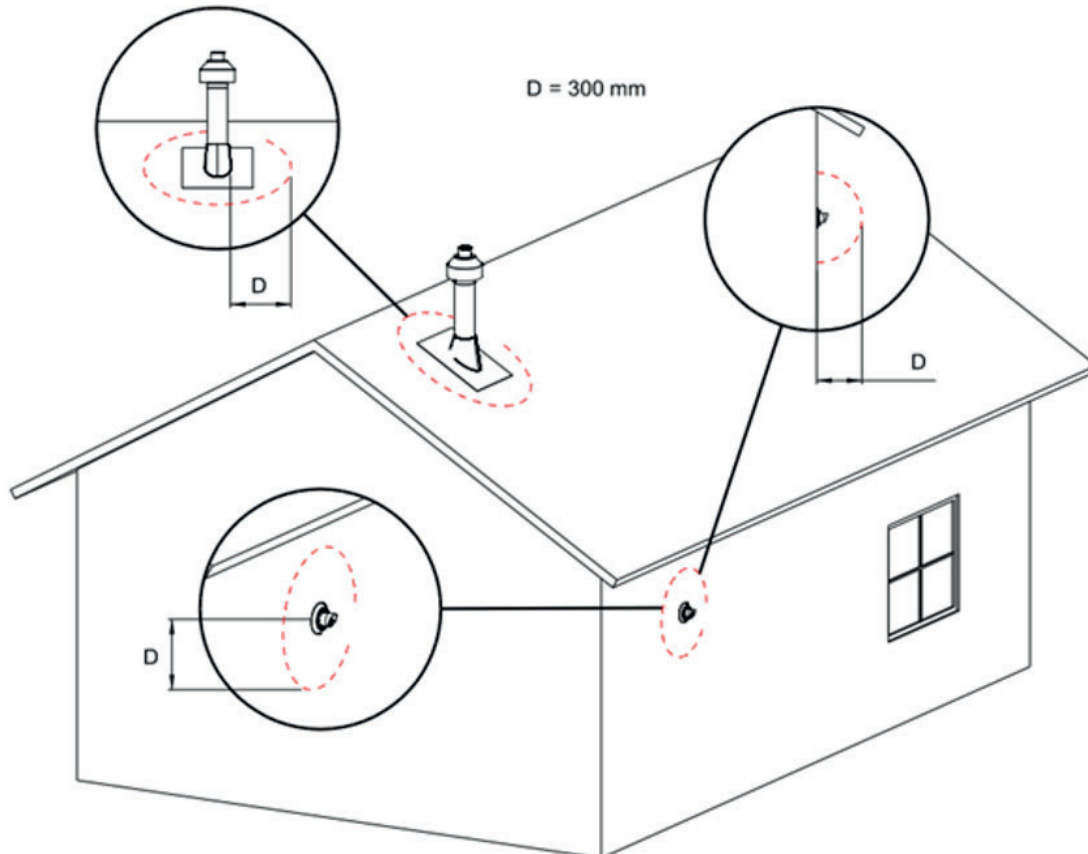
5.2 - Air connections

The domestic hot water heat pump can recover calories from exterior air or ambient air from unheated premises due to its horizontal Ø80/125 concentric air duct.



To allow for the removal of the hood for maintenance of the appliance, always lock into place the Ø80 PVC pipe and the insulated 125mm T-joint (or extension) without gluing, onto both the appliance and the casing of the appliance.

In the case of a vertical air duct installation, the terminal must be at least 300mm above the roof through which it passes. No obstacle less than 300mm from the air duct is permitted.



It is forbidden to connect the domestic hot water heat pump to the same duct as the VMC. It is forbidden to connect several domestic hot water heat pumps to a common duct.

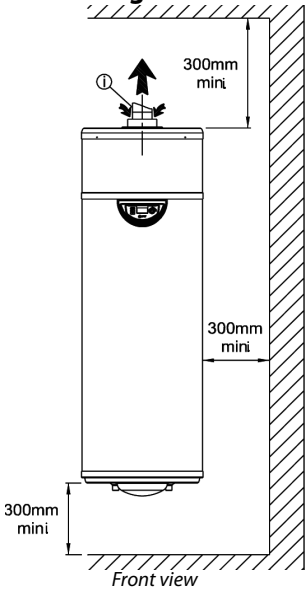
5.2.1- Air intake and exhaust in unheated premises (20m³ minimum) insulated from neighbouring heated rooms



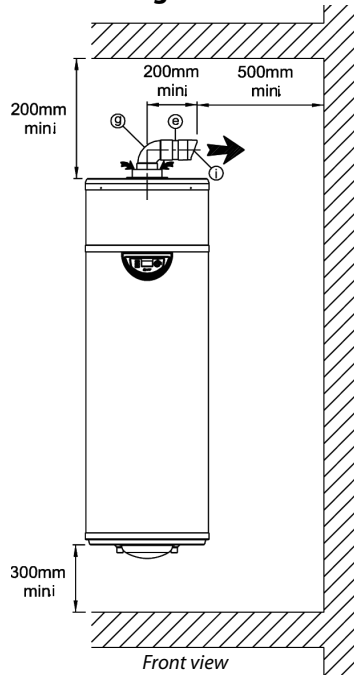
If insulation of heated adjoining rooms is insufficient, loss of heat is more likely.

5.2.1.1 - In the same room as the appliance

If height free under the ceiling > 300 mm



If height free under the ceiling < 300 mm

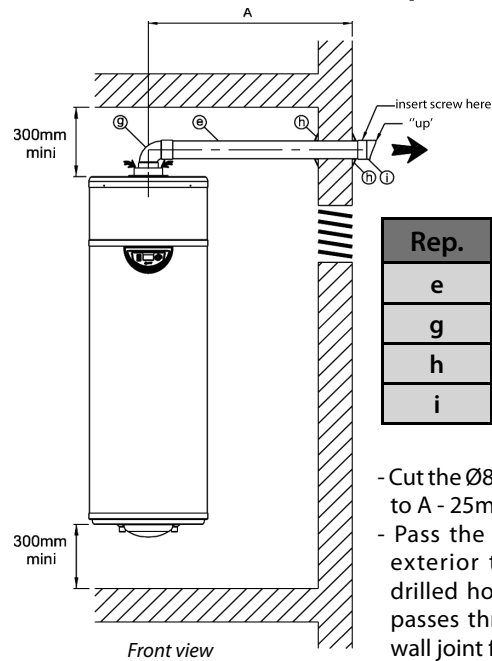


- Fix the supplied Ø80 nozzle (**rep.i**) onto the Ø80 PVC pipe located on the appliance's air outlet.
- If the height free under the ceiling is less than 300mm above the appliance you will need to fit an Ø80 F/F PVC elbow onto the air exhaust pipe (**rep.g**) and direct it towards the side (not towards the back and, consequently, the wall)
- Position the Ø80 elbow (**rep.g**) on the Ø80 PVC pipe located on the appliance's air outlet.
- Fix the supplied Ø80 nozzle (**rep.i**) at the PVC elbow outlet using a Ø80 PVC pipe (**rep.e** - not referenced).

Rep.	Description
e	Ø80 PVC pipe
g	Ø80 F/F PVC elbow
i	Ø80 nozzle

5.2.1.2- Exterior air exhaust using Ø80 PVC pipe

A < 10m (1 extra elbow equivalent to 1m)

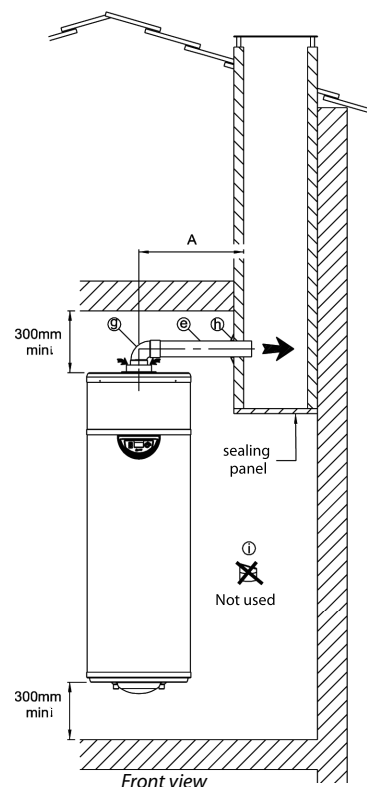


Rep.	Description
e	Ø80 PVC pipe
g	Ø80 F/F PVC elbow
h	2 x Ø80 wall joints
i	Ø80 nozzle

- Cut the Ø80 PVC pipe (**rep.e**) to A - 25mm
- Pass the pipe towards the exterior through the Ø90 drilled hole, making sure it passes through the interior wall joint first (**rep.h**).
- Slot the second wall joint on the exterior (**rep.h**) and position the supplied Ø80 nozzle (**rep.i**) onto the Ø80 PVC pipe.
- Direct the Ø80 nozzle (**rep.i**) upwards and use a screw to anchor it into place.
- Slot the Ø80 PVC pipe (**rep.e**) onto the Ø80 PVC elbow (**rep.g**).
- Slot the Ø80 PVC elbow (**rep.g**) onto the Ø80 PVC pipe located on the appliance's air outlet.
- Make a mark in the elbow (**rep.g**) to indicate where the end of the pipe arrives (**rep.e**).
- Remove the pipe from the wall (**rep.e**) and glue it into the elbow (**rep.g**).

5.2.1.3 - Exterior air exhaust through a chimney

A < 10m (1 extra elbow equivalent to 1m)

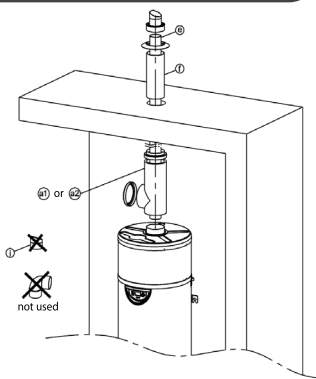
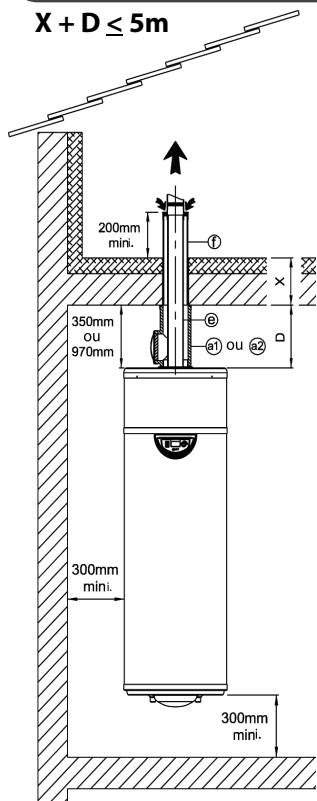


Rep.	Description
e	Ø80 PVC pipe
g	Ø80 F/F PVC elbow
h	2 x Ø80 wall joints

- Follow the same procedure as above without the second wall joint (**rep.h**) or Ø80 nozzle (**rep.i**).
- Cut the (Ø80) PVC pipe (**rep.e**) to A-50mm

5.2.1.4 - In an adjoining room, with vertical air ducts

$$X + D \leq 5m$$



- Remove the Ø80 PVC pipe located on the appliance's air outlet (lg 140mm)
- Cut the Ø125 PVC pipe (**rep.f**) to (X + 200mm).
- Cut the Ø80 PVC pipe (**rep.e**) to (X + D + 20 0mm + 90mm).
- Place the Ø125 PVC pipe in the air duct nozzle without gluing it.
- Position the Ø125 wall joint.

- If the Ø80 PVC pipe is short enough to pass through the top, insert it into the Ø125 PVC pipe. Pass the nozzle, assembled with the Ø80 PVC pipe (the Ø125 PVC pipe must not overlap on the inside) through the adjoining room. Make sure that the Ø80 PVC pipe passes through the wall flange and the insulated elbow, (see below, depending on dimension «D» you may need to extend it).
- If the Ø PVC pipe is too long to pass through the top, pass the previously assembled nozzle (the Ø125 PVC pipe must not overlap on the inside) through the adjoining room. Insert the Ø80 pipe into the Ø125 PVC pipe by passing it through from underneath. Make sure that the Ø80 PVC pipe passes through the wall flange and the insulated elbow (see below, depending on dimensions of «D»).

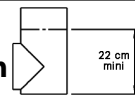
Rep.	Description
a1	Rear or vertical insulated air duct Ø80/125 - 355mm long (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 255mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
a2	Insulated lateral or vertical Ø80/125 - 975mm air duct (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 875mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
e	Ø80 PVC pipe
f	Ø125 PVC pipe
i	Ø80 nozzle



Do not glue the F155/F125 air duct nozzle to the Ø125 PVC pipe.



Min. cutting height for the Ø125 insulated elbow (rep.a1)= 220mm



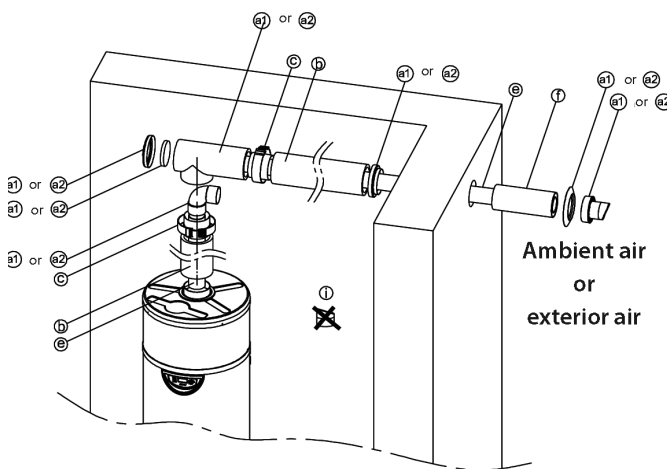
• Height of dimension «D»:

- if D = 350mm, use the insulated Ø80/125 air duct elbow (**rep.a1**) without cutting it again.
 - if 220mm < D < 350mm, use the insulated Ø80/125 air duct elbow (**rep.a1**) which you will need to cut.
 - if 350mm < D < 970mm, use the insulated Ø80/125 air duct elbow (**rep.a2**) which you will need to cut.
- Slot the Ø80 PVC pipe into the appliance's air outlet through the access cover on the insulated elbow, and the insulated extension pipe onto the air inlet (push down on the insulated elbow to reduce its length enough to pass it through both the F155/F125 wall flange and around the appliance's air inlet).
 - Replace the cover parts on the insulated elbow.
 - Place retaining clamps on the insulated extension pipe at 2m intervals.

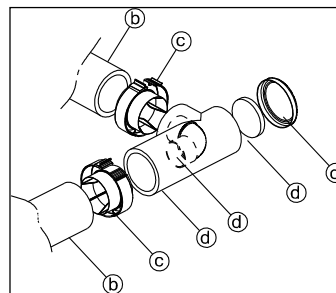
5.2.2 - Connection to air exhaust (Ø80mm) and intake (Ø125mm) for ambient* or exterior air

*ambient air from unheated premises (20m³ minimum) insulated from neighbouring heated rooms.

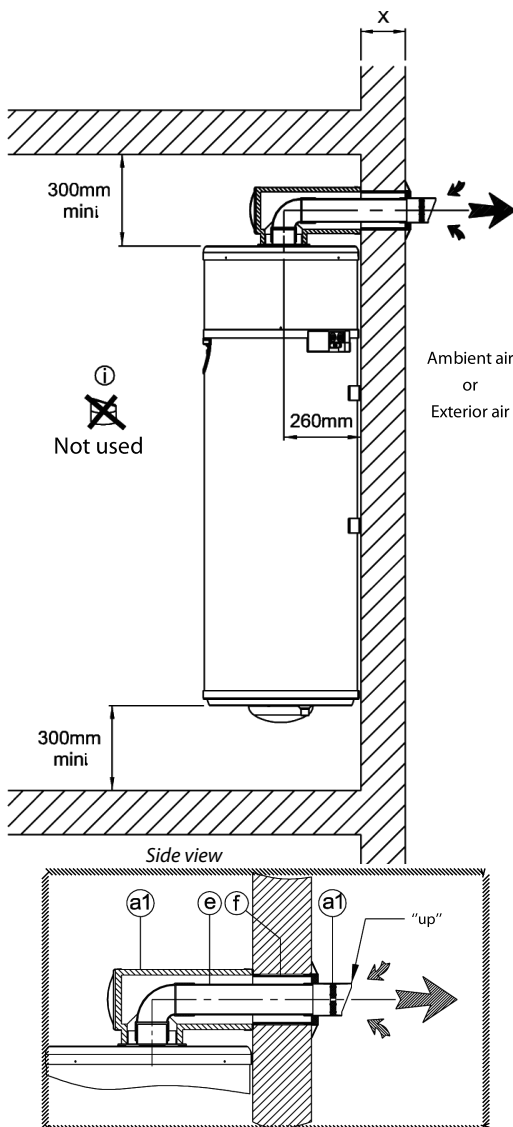
5.2.2.1- Installation with lateral or rear ducts Ø80/125



Close-up for assembly of the insulated elbow



Rep.	Description
a1	Rear or vertical insulated air duct Ø80/125 - 355mm long (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 255mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
a2	Insulated lateral or vertical Ø80/125 - 975mm air duct (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 875mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
b	Lateral or vertical Øint 125, 2.2m long insulated extension
c	1 connecting sleeve for insulated extension pipe
d	Ø80/125 insulated elbow for air duct (Ø125 insulated elbow + Ø80 F/F PVC elbow + cover for insulated elbow)
e	Ø80 PVC pipe
f	Ø125 PVC pipe
i	Ø80 nozzle

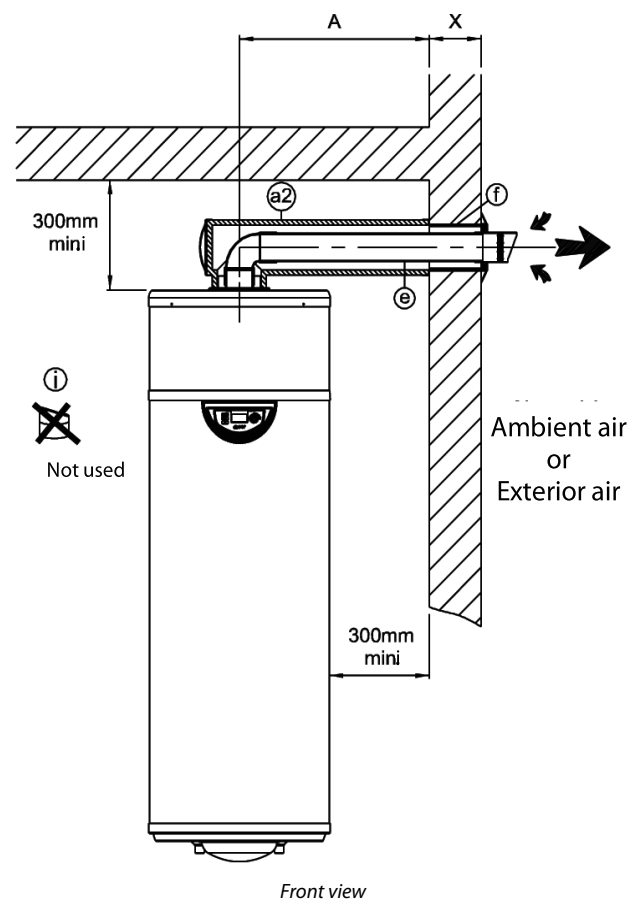


Rep.	Description
a1	Rear or vertical insulated air duct Ø80/125 - 355mm long (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 255mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
e	Ø80 PVC pipe
f	Ø125 PVC pipe

- Cut the Ø125 PVC pipe (**rep.f**) to (**X + 25 mm**).
- Glue the pipe into the air duct nozzle.
- Position the Ø125 wall joint.
- Pass the assembled air duct nozzle through the wall from the outside.
- Direct the air duct nozzle upwards as indicated on the diagram.
- The Ø125 PVC pipe should overlap by about 25mm on the inside.
- Mark the direction of the air duct nozzle on the inside by marking the top of the Ø125 PVC pipe.
- Glue the wall flange F155/F125 onto the Ø125 PVC pipe, and pressing it against the inside wall at the same time.
- Cut the Ø80 PVC pipe (**rep.e**) to (**X + 225mm**)
- Remove the cover parts from the insulated elbow (length 355mm)
- Insert the Ø80 PVC elbow into the base of the insulated elbow and affix it to the Ø80 PVC pipe (apply a bit of silicone so that the assembly stays put together).
- Fix the other end of the Ø80 PVC elbow into the air duct nozzle. The insulated elbow should be fixed into the wall flange at the same time.
- Slot the Ø80 PVC elbow into the appliance's air outlet, and the insulated elbow into the air inlet.
- Put the cover parts back onto the insulated elbow.

5.2.2.2 - Installing with lateral air ducts

260mm < A ≤ 875mm

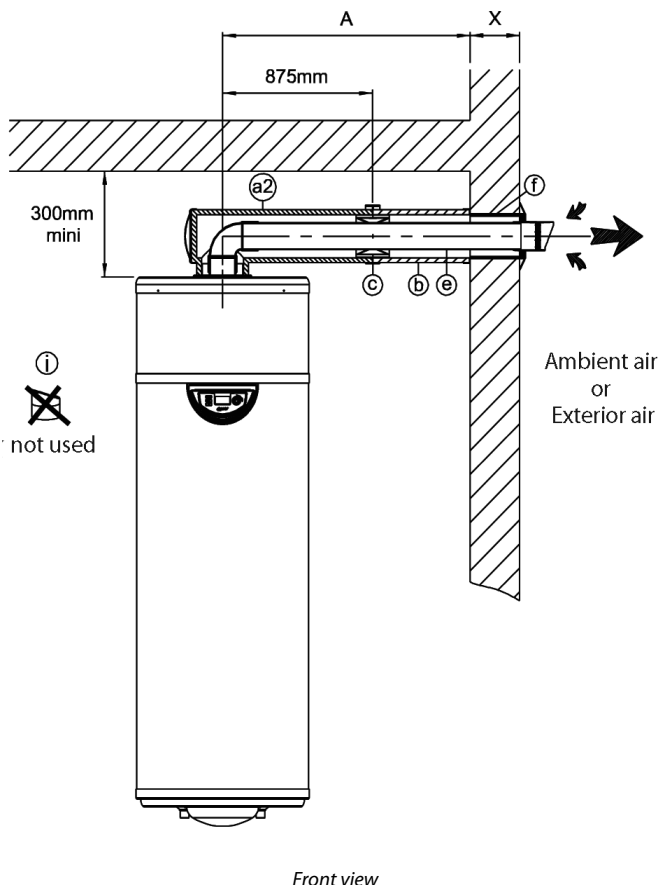


Rep.	Description
a2	Insulated lateral or vertical Ø80/125 - 975mm air duct (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 875mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
e	Ø80 PVC pipe
f	Ø125 PVC pipe

- Cut the Ø125 PVC pipe (**rep.f**) to (X + 25mm).
- Glue it into the air duct nozzle.
- Position the Ø125 wall joint.
- Pass the assembled air duct nozzle through the wall from the outside.
- Direct the air duct nozzle upwards as indicated on the diagram.
- The Ø125PVC pipe should overlap by about 25mm on the inside.
- Mark the direction of the air duct nozzle on the inside by marking the top of the Ø125 pipe.
- Glue the wall flange onto the Ø125 pipe while pressing it against the wall at the same time.
- Cut the Ø80 PVC pipe (**rep.e**) to (A + X - 30mm).
- Cut the insulated air duct (**rep.a2**) to (A-205mm).
- Cut the insulated elbow (length 975mm) to (A -5mm).
- Remove the cover parts from the insulated elbow.
- Insert the Ø80 PVC elbow into the base of the insulated elbow and fix it to the Ø80 PVC pipe (apply a bit of silicone so that the assembly stays put together).
- Fix the other end of the Ø80 pipe into the air duct nozzle. The insulated elbow should be fixed into the wall flange at the same time.
- Slot the Ø80 PVC elbow into the appliance's air outlet, and the insulated elbow into the air inlet.
- Replace the cover parts back onto the insulated elbow.

5.2.2.3 - Installing with lateral air ducts

A + X ≤ 5m and A > 875mm



Rep.	Description
a1	Rear or vertical insulated air duct Ø80/125 - 355mm long (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 255mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
a2	Insulated lateral or vertical Ø80/125 - 975mm air duct (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 875mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
b	Lateral or vertical Øint 125, 2.2m long insulated extension
c	1 connecting sleeve for insulated extension pipe
e	Ø80 PVC pipe
f	Ø125 PVC pipe

- Cut the Ø125 PVC pipe (**rep.f**) to (X + 25mm).
- Glue it into the air duct nozzle.
- Position the Ø125 wall joint.
- Pass the assembled air duct nozzle through the wall from the outside.
- Direct the air duct nozzle upwards as indicated on the diagram.
- The Ø125PVC pipe should overlap by about 25mm on the inside.
- Mark the direction of the air duct nozzle on the inside by marking the top of the Ø125 pipe.
- Glue the wall flange onto the Ø125 pipe while pressing it against the wall at the same time.
- Cut the Ø80 PVC pipe (**rep.e**) to (A + X - 30mm).
- Cut the insulated extension pipe (**rep.b**) to (A-875mm).
- Insert the Ø80 PVC pipe into the insulated extension pipe.
- Fix the insulated extension pipe to the insulated elbow using a connecting sleeve (**rep.c**).
- Remove the cover parts from the insulated elbow.
- Insert the Ø80 PVC elbow into the base of the insulated elbow and affix it to the Ø80 PVC pipe (apply a bit of silicone so that the assembly stays put together).
- Fix the other end of the Ø80 pipe into the air duct nozzle. The insulated elbow should be fixed into the wall flange at the same time.
- Slot the Ø80 PVC elbow into the appliance's air outlet, and the insulated elbow into the air inlet.
- Replace the cover parts back onto the insulated elbow.
- Place retaining clamps at intervals of approximately 2 meters on the insulated extension pipe.

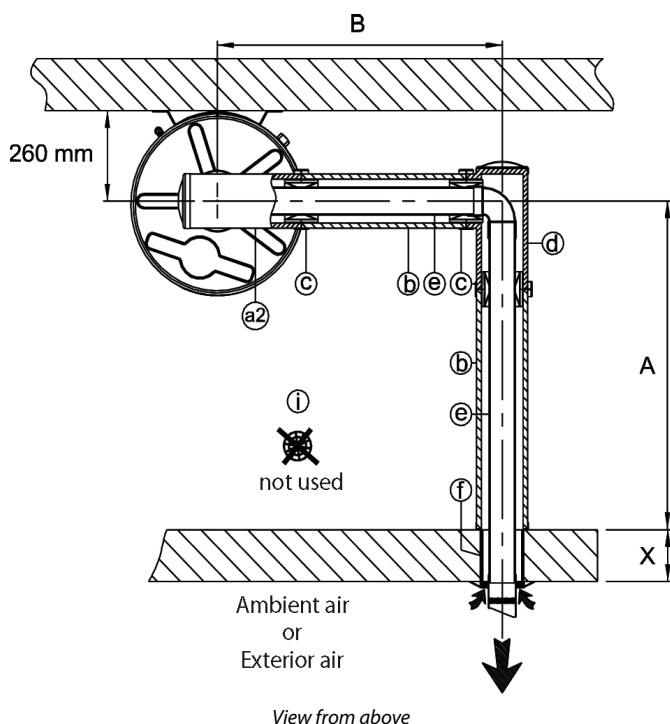
5.2.2.4 - Installation with lateral air ducts and elbow outlet

$$A + B + X \leq 4m$$

Example using a 975mm-long insulated air duct (rep.a2)

• FOR PART «A»:

- Cut the Ø125 PVC pipe (rep.f) to (X + 25mm).
- Glue it into the air duct nozzle.
- Position the Ø125 wall joint.
- Pass the assembled air duct nozzle through the wall from the outside.
- Direct the air duct nozzle upwards as indicated on the diagram.
- The Ø125PVC pipe should overlap by about 25mm on the inside.
- Mark the direction of the air duct nozzle on the inside by marking the top of the Ø125 pipe.
- Glue the wall flange onto the Ø125 pipe while pressing it against the wall at the same time.
- Cut the first Ø80 PVC pipe (rep.e) to (A + X - 30mm)
- Cut the first insulated extension pipe (rep.b) to (A-255mm).
- Insert the first Ø80 PVC pipe into the first insulated extension pipe.
- Fix the first insulated extension pipe to the first insulated elbow using a connecting sleeve (rep.c).



Rep.	Description
a2	Insulated lateral or vertical Ø80/125 - 975mm air duct (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 875mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
b	Lateral or vertical Øint 125, 2.2m long insulated extension
c	1 connecting sleeve for insulated extension pipe
d	Ø80/125 insulated elbow for air duct (Ø125 insulated elbow + Ø80 F/F PVC elbow + cover for insulated elbow)
e	Ø80 PVC pipe
f	Ø125 PVC pipe

- Remove the cover parts from the first insulated elbow
- Insert the first Ø80 PVC elbow into the base of the first insulated elbow and fix it to the Ø80 PVC pipe (apply a bit of silicone so that the assembly stays put together).
- Slot the other end of the Ø80 PVC pipe into the air duct nozzle. The first insulated extension pipe should be fixed into the wall flange at the same time.

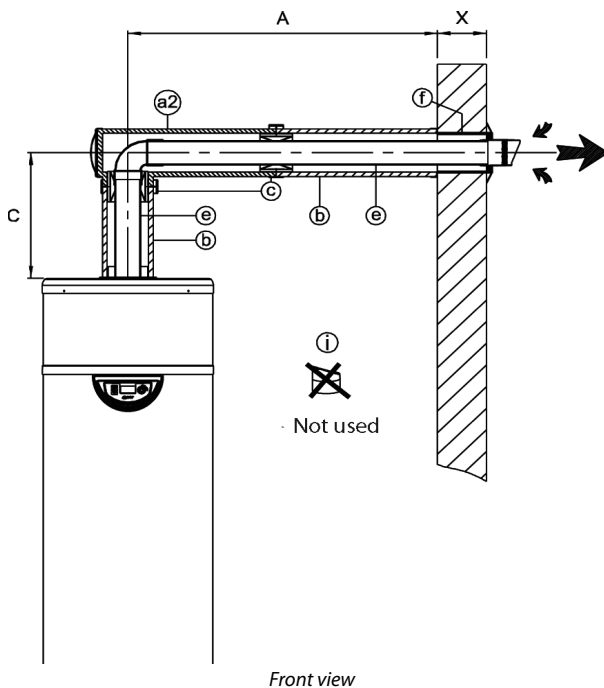
• FOR PART «B»:

- Cut the second Ø80 PVC pipe (rep.e) to (B-150mm)
- Cut the second insulated extension pipe (rep.b) to (B-985mm)
- Insert the second Ø80 PVC pipe into the insulated extension pipe.
- Fix the second insulated extension pipe to the first insulated elbow using the second connecting sleeve (rep.c).
- Insert the end of the second Ø80 PVC pipe into the first Ø80 PVC elbow (apply a bit of silicone so that the assembly stays put together).
- Remove the cover parts of the second insulated elbow.
- Fix the second insulated extension pipe to the second insulated elbow using the third connecting sleeve (rep.c).
- Insert the second Ø80 PVC elbow into the base of the second insulated elbow and fix it to the second Ø80 PVC pipe (apply a bit of silicone so that the assembly stays put together).
- Slot the second Ø80 PVC elbow into the appliance's air outlet and the insulated elbow onto the air inlet.
- Replace the cover parts back onto the 2 insulated elbows.
- Place retaining clamps at intervals of approximately 2 meters on the insulated extension pipe.

5.2.2.5 - Installation with lateral ducts at distance «C» above the appliance

$$A \leq 0,88m \text{ and } A + C + X \leq 5m$$

Example uses an insulated air duct 975mm-long (rep.a2)



Rep.	Description
a2	Insulated lateral or vertical Ø80/125 - 975mm air duct (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 875mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
b	Lateral or vertical Øint 125, 2.2m long insulated extension
c	1 connecting sleeve for insulated extension pipe
e	Ø80 PVC pipe
f	Ø125 PVC pipe

• FOR PART «A»:

- Cut the Ø125 PVC pipe (rep.f) to (X + 25mm).
- Glue it into the air duct nozzle.
- Position the Ø125 wall joint.
- Pass the assembled air duct nozzle through the wall from the outside.
- Direct the air duct nozzle upwards as indicated on the diagram.
- The Ø125PVC pipe should overlap by about 25mm on the inside.
- Mark the direction of the air duct nozzle on the inside by marking the top of the Ø125 pipe.
- Glue the wall flange onto the Ø125 pipe while pressing it against the wall at the same time.
- Cut the first Ø80 PVC pipe (rep.e) to (A + X - 30mm)
- Cut the first insulated extension pipe (rep.b) to (A-875mm).
- Insert the first Ø80 PVC pipe into the first insulated extension pipe.
- Fix the first insulated extension pipe to the first insulated elbow using a connecting sleeve (rep.c).
- Remove the cover parts from the 975mm-long insulated elbow.
- Insert the first Ø80 PVC elbow into the base of the first insulated elbow and fix it to the Ø80 PVC pipe (apply a bit of silicone so that the assembly stays put together).
- Slot the other end of the Ø80 PVC pipe into the air duct nozzle. The first insulated extension pipe should be fixed into the wall flange at the same time.

• FOR PART «C»:

- Remove the Ø80 PVC pipe (lg 140mm) located on the appliance's air outlet.
- Cut the second Ø80 PVC pipe (rep.e) to (C-65mm)
- Cut the second insulated extension pipe (rep.b) to (C-110mm)
- Insert the second Ø80 PVC pipe into the insulated extension pipe.
- Fix the second insulated extension pipe to the first insulated elbow using the second connecting sleeve (rep.c).
- Insert the end of the second Ø80 PVC pipe into the Ø80 PVC elbow (apply a bit of silicone so that the assembly stays put together).
- Slot the second Ø80 PVC pipe onto the appliance's air outlet and the second insulated extension pipe onto the air inlet.
- Replace the cover parts on the insulated elbow.
- Place retaining clamps at intervals of approximately 2 meters on the insulated extension pipe.

5.2.2.6- Installation by vertical duct Ø80/125

$$X + D + A + 0,33 \leq 5m$$

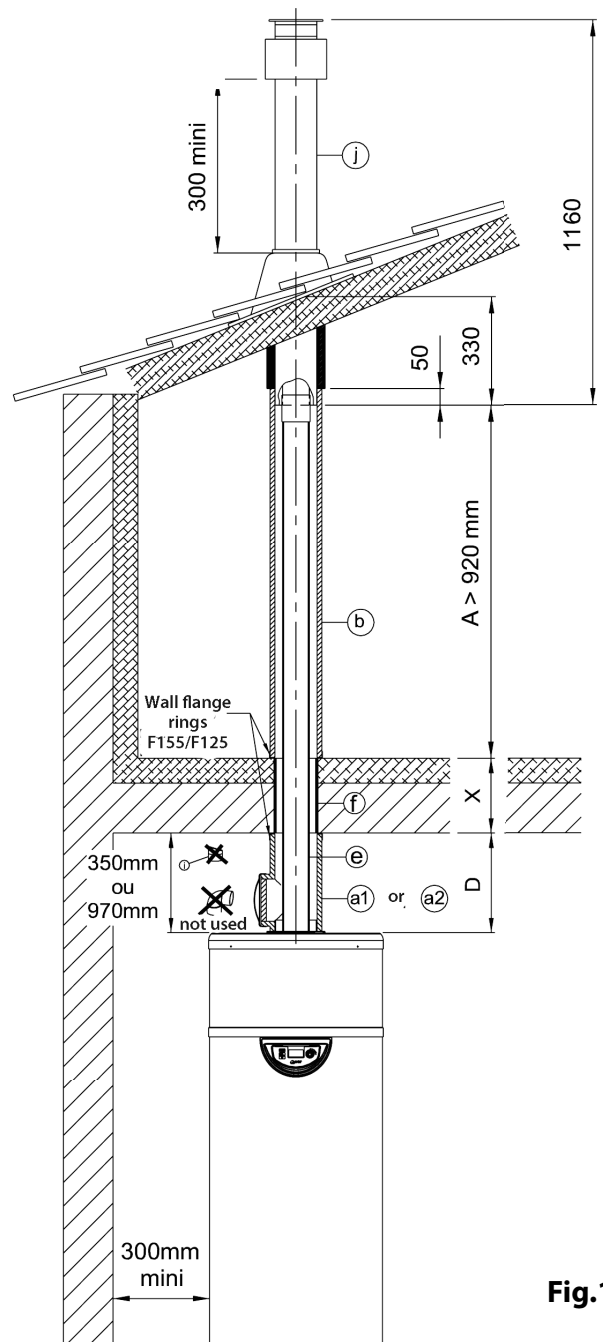


Fig.1

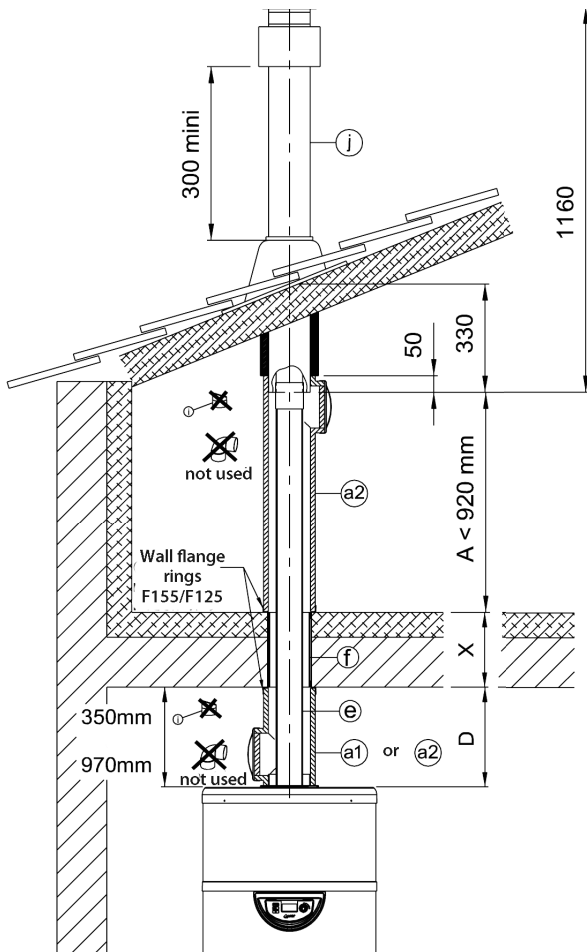


Fig.2

Rep.	Description
a1	Rear or vertical insulated air duct Ø80/125 - 355mm long (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 255mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
a2	Insulated lateral or vertical Ø80/125 - 975mm air duct (air duct nozzle + Ø125 wall joint + F155/F125 wall flange + Ø125 insulated elbow [useable length 875mm] + Ø80 F/F PVC elbow + cover for insulated elbow)
b	Lateral or vertical Øint 125, 2.2m long insulated extension
e	Ø80 PVC pipe
f	Ø125 PVC pipe
i	Ø80 nozzle
j	Ø80/125 vertical air duct (37° to 50° flashing + watertight sealing + fixing ring + 2 F155/F125 flange rings)

- Position the Ø80/125 vertical terminal on the roof.
- Glue a PVC F/F Ø80mm sleeve to the lower part of the Ø80mm pipe on the Ø80/125 vertical terminal.
- Remove the Ø80 PVC pipe (lg 140mm) located on the air outlet of the appliance.
- Cut the Ø125 PVC pipe (**rep.f**) to (X mm).
- Cut the Ø80 PVC pipe (**rep.e**) to (X + D + A + 80mm)
- If A < 920mm cut the insulated air duct sleeve (**rep.a2**), to A + 50mm.
- If A > 920mm, cut the insulated extension pipe (**rep.b**), to A + 50mm.

- Position the Ø125 PVC pipe through the ceiling and insulation, as well as the two F155/F125 flange rings, one placed on the inside and one on the outside.

Do not glue the two F155/F125 flange rings onto the Ø125 PVC pipe.

- **If the Ø80 PVC pipe is short enough to pass over the top**, insert it either:
 - into the elbow of the insulated air duct (**rep.a2**) **Fig.1**
 - into the Ø125mm insulated extension pipe (**rep.b**) **Fig.2**, then into the Ø125 PVC pipe, then into the elbow of the insulated air duct (**rep.a1** or **a2**) (which may be extended [see below, depending on dimensions of «D»]).
- **If the Ø80 PVC pipe is not short enough to pass over the top**, insert it into the elbow of the insulated air duct (**rep.a1** or **a2**) (which may be extended [see below, depending on dimensions of «D»]), then into the Ø125 PVC pipe, and then either into the Ø125 insulated extension pipe (**rep.b**) **Fig.2** or into the elbow of the insulated air duct (**rep.a2**) **Fig.1**.
- Slot the Ø80 PVC pipe onto the lower part of the F/F Ø80 vertical terminal (as the case may be, by removing the stopper and cover on the insulated air duct) (**rep.a2**) **Fig.1**. Slide the elbow of the insulated air duct (**rep.a2**) **Fig.1** or the 50mm insulated extension pipe Ø125 (**rep.b**) **Fig.2** onto the Ø80/125 vertical terminal by gently squeezing it vertically.
- Either slot the insulated air duct (**rep.a2**) **Fig.1** or the Ø125 insulated extension pipe (**rep.b**) **Fig.2** into the F155/F125 upper flange ring.
- **Depending on the height of «D»** :
 - if D = 350mm use the elbow of the Ø80/125 insulated air duct (**rep.a1**) without cutting it.
 - if 220mm < D < 350mm use the elbow of the Ø80/125 insulated air duct (**rep.a1**) cutting it.
 - if 350mm < D < 970mm use the elbow of the Ø80/125 insulated air duct (**rep.a2**) cutting it.
- Slot the elbow of the insulated air duct (**rep.a1** ou **a2**) into the lower F155/F125 flange ring.

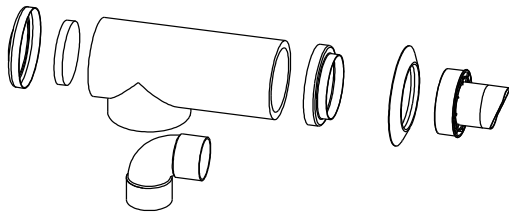
Min. cutting height on the insulated elbow Ø125 (rep.a1)= 220mm



- Remove the stopper and cover on the insulated air duct (**rep.a1** or **a2**), slot the Ø80 PVC pipe onto the appliance's air outlet and the insulated extension pipe onto the appliance's air inlet (gently squeeze the elbow of the insulated air duct to make sure it passes through the F155/F125 flange ring and around the air inlet at the same time).
- Replace the stopper and cover onto the insulated elbow (**rep.a1** or **a2**).
- Place retaining clamps along the insulated extension pipe at 2 meter intervals.

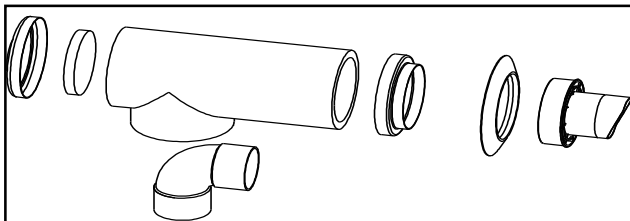
5.2.3- Piping accessories

5.2.3.1 - For air duct connection onto ambient or exterior air



Insulated rear or vertical duct Ø80/125 lg 355mm
(-rep.a1-)

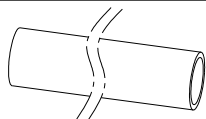
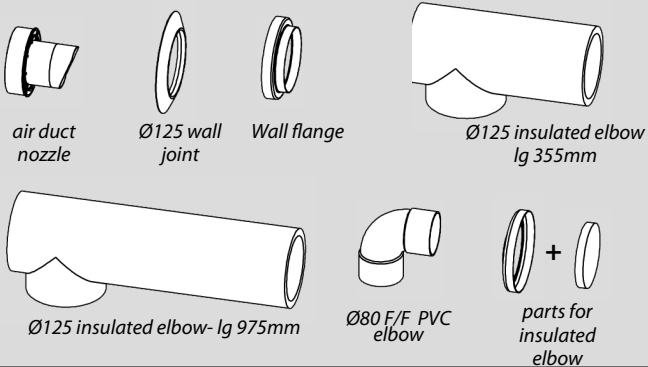
includes: air duct nozzle + wall joint Ø125 + wall flange + insulated elbow Ø125 lg 355mm + PVC elbow Ø80 F/F + parts for insulated elbow



Insulated lateral or vertical duct Ø80/125 lg 975mm
(-rep.a2-)

includes: air duct nozzle + wall joint Ø125 + wall flange + insulated elbow Ø125 lg 975mm + Ø80 F/F PVC elbow + parts for insulated elbow

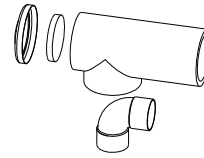
Details for «duct» options



Insulated extension pipe Øint:125 lg:2,2m
(-rep.b- x1 piece)
Insulated extension pipe Øint:125 lg:2,2m
(-rep.b- x8 pieces)

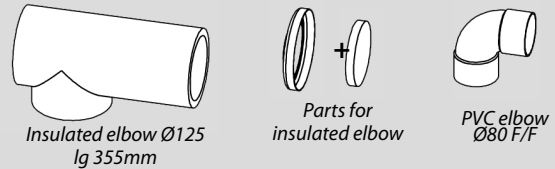


1 connecting sleeve for extension pipe to connect to insulated extension pipe or insulated elbow

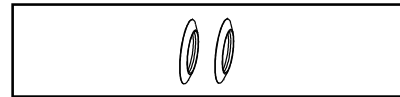


Ø80/125 Insulated elbow kit for air duct
includes: Ø125 insulated elbow + parts for insulated elbow + Ø80 F/F PVC elbow

Ø80/125 Insulated elbow kit for air duct
includes: Ø125 insulated elbow + parts for insulated elbow + Ø80 F/F PVC elbow

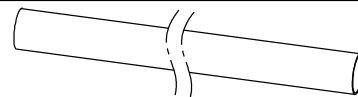


5.2.3.2 - For connection with a Ø80 PVC pipe

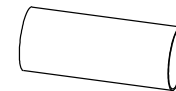


2 wall joints Ø80
(-rep.h-)

5.2.3.3 - Essential accessories for air duct connection or air exhaust connection using a Ø80 PVC pipe



Ø80 PVC pipe (not referenced)



Ø125 PVC pipe (not referenced)

5.3 - 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. The use of a membrane valve is recommended. This valve must conform to all local and national standards.
- 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 should be sized according to building regulations and standards and must never be obstructed. It should be connected to a vertically 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.
- The pressure-relief valve drainage outlet must be installed in a frost-free place and in a downward-sloping position.
- 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 3-4 bars is recommended).
- It is advised to fit a shut-off valve above the pressure-relief valve.
- For installations equipped with:
 - small diameter piping
 - ceramic plate valves

A domestic 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 materials**

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

- Flush the supply line piping before connecting the appliance to the domestic installation so as not to introduce any particles, metallic or otherwise, into the appliance.
- Respect all standards in effect in the country of use, notably sanitation regulations and pressure safety regulations.
- The maximum domestic hot water temperature at distribution points should never exceed 50°C for the toilets, and 60°C for other uses. Adequate thermostatic mixing valves should be installed to any avoid risk of burns.
- In regions where water contains very high levels of limescale (TH>20°F), it is recommended to treat the water with a softener. Softened water should conform to the criteria defined by the country of use's regulations.
- Not respecting the conditions below, see DTU-60-1, will render the warranty on the tank null and void (values given are for water at a temperature of 20°C).

Resistivity	<2200 Ωcm or >4500Ωcm	
Complete alkalimetric title	< 1.6 meq/L	8°F
CO ₂	> 15 meq/L	-
Calcium (Ca ⁺⁺)	< 1.6 meq/L	8°F
Sulfates (SO ₄ ⁻)	> 2 meq/L	10°F
Chlorides (Cl ⁻)	> 2 meq/L	10°F
Sulfates and Chlorides(SO ₄ ⁻ +Cl)	> 3 meq/L	15°F

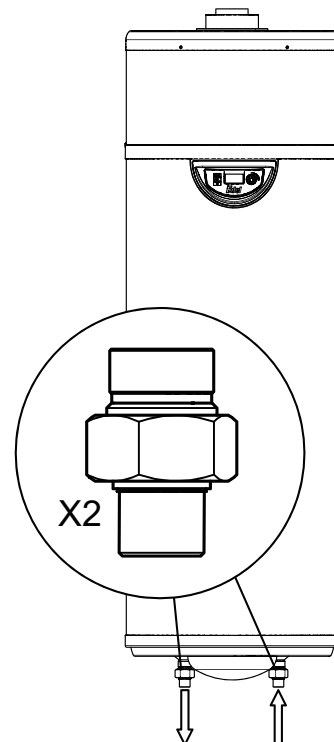


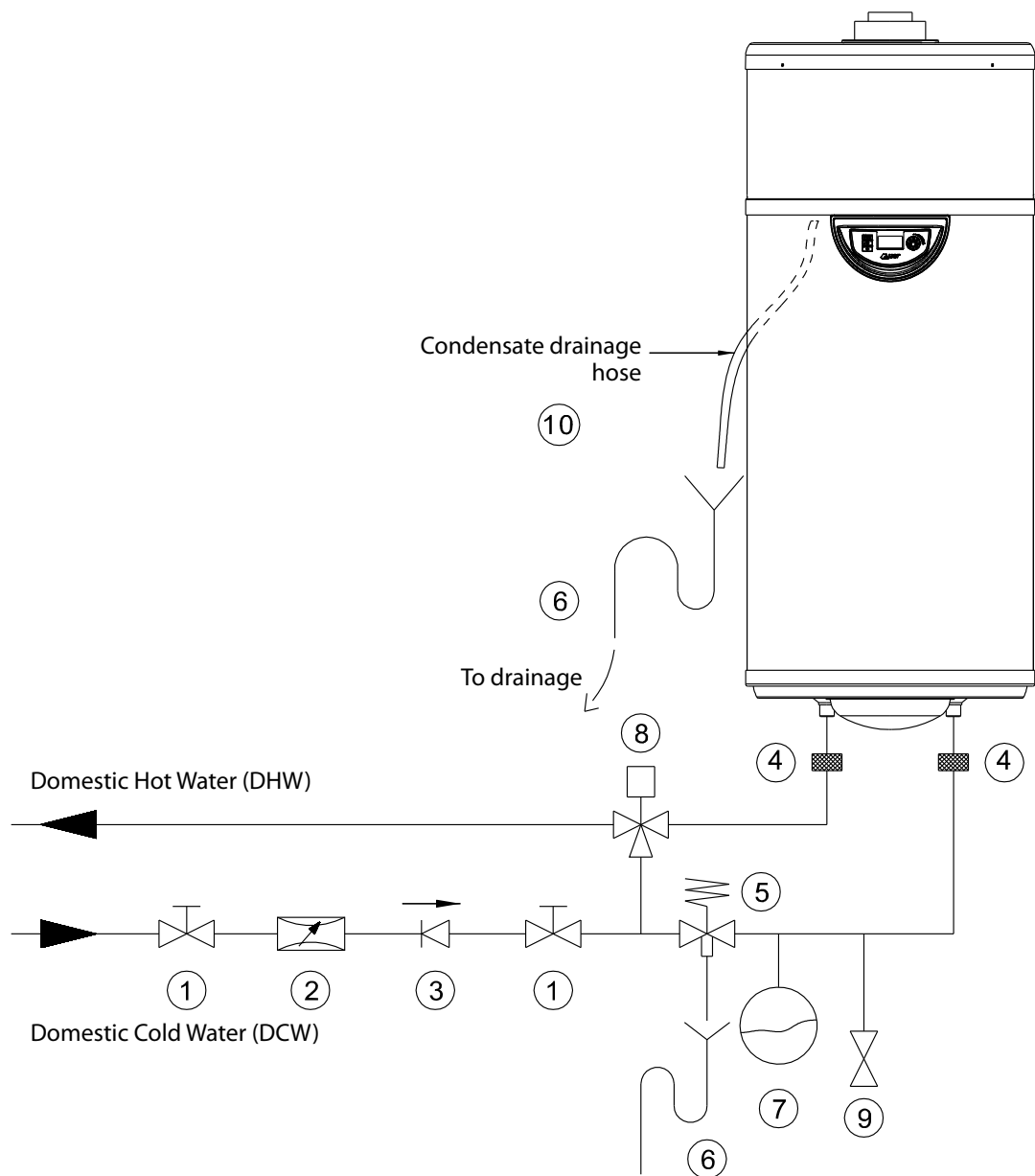
If any of these points have been neglected, if the water quality did not allow correct treatment within the legal framework or if regular inspections of the anode have not been carried out then the warranty will be null and void.



It is strongly advised to NOT use a recirculation pump. This appliance is not intended for connection to a recirculating pump. Any recirculation will cause a significant drop in the temperature of the water contained in the tank.

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





- | | |
|------------------------------------|-------------------------------|
| 1. Stop valve* | 6. Run-off siphon* |
| 2. Pressure-reducing valve* | 7. Expansion vessel* |
| 3. Check valve* | 8. Thermostatic mixing valve* |
| 4. Dielectric fittings (supplied) | 9. Drainage valve* |
| 5. Pressure-relief membrane valve* | 10. Condensates drainage |

* not supplied

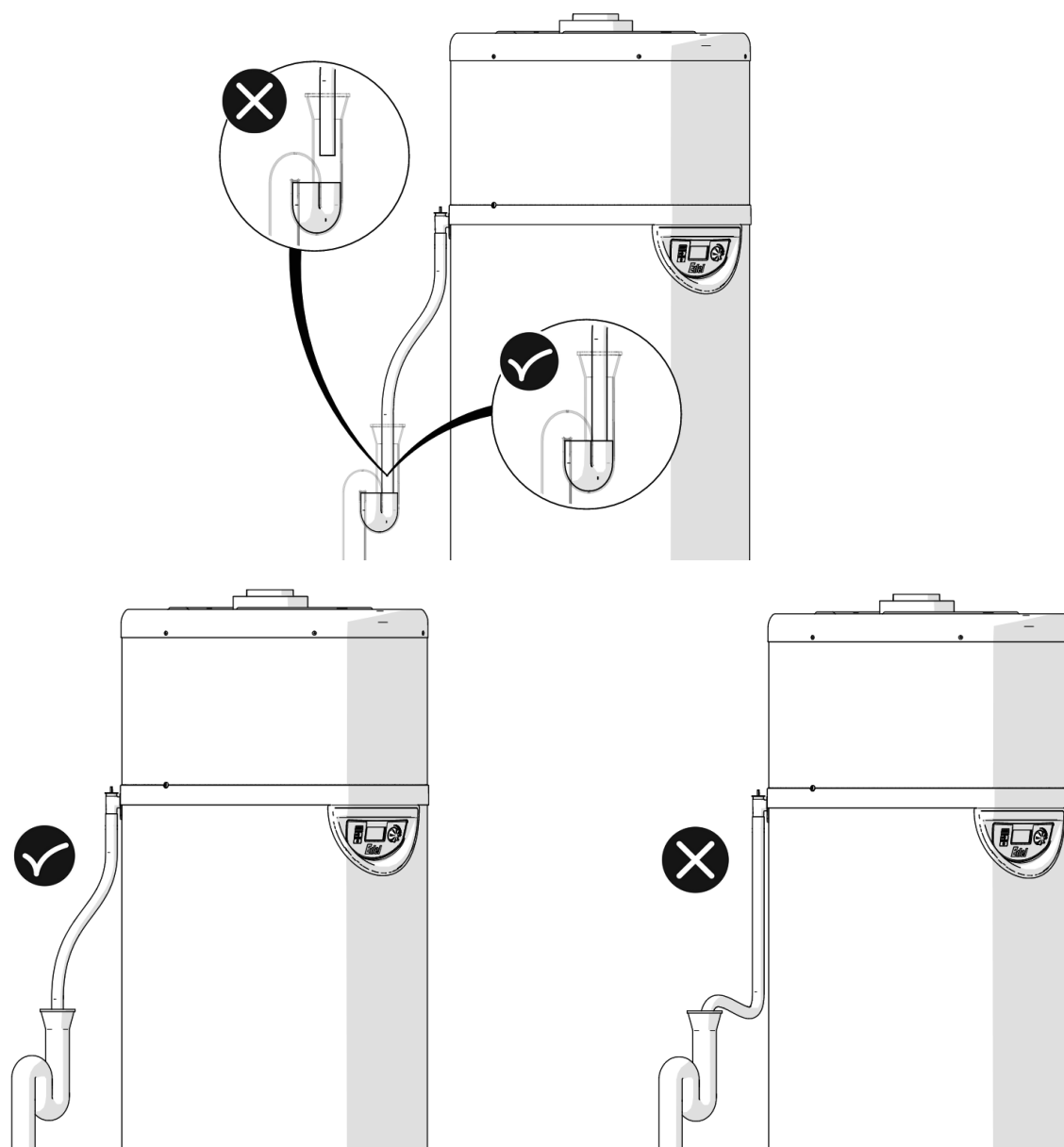
5.4 - Condensates drainage

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.

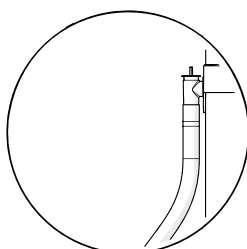
To ensure correct drainage, the following points must be observed:

- 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 nipple.



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

The condensate plug, supplied in the documentation packet, is fitted to the overflow of the condensate discharge tee.



It is compulsory:

- On a ducted installation, during the building air-tightness test, to prevent air leaks.
- For installations with a long duct or in collective ducts, coupled with an anti-depression siphon, it prevents noise caused by water being sucked into the siphon.

For an unducted installation or one with a short length of duct, it is not necessary to use the plug.

5.5 - Electrical connections



Do not connect the Domestic hot water heat pump to a power line that has been previously used for a boiler with an automatic peak/off-peak time control. The domestic hot water heat pump must be connected to a power supply at all times and the peak/off-peak time control must be managed using the programming on the control panel, or through use of an independent cable. Grounding is mandatory.

Power supply: 230V single phase + ground

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

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

Protect the appliance with:

- a 10A (D-curve) all-pole circuit-breaker with a minimum 3mm contact opening.
- A protective 10A (D-curve) circuit-breaker with a 30mA differential.

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

5.5.1 - External control



Only an external «dry contact», voltage-free connection is authorised. Otherwise, there is a risk of damage to the electronic circuit board.



It is not advised to operate the Domestic hot water heat pump during off-peak hours to optimise performance.

It is not necessary to connect the electricity meter's timer switch to program the Domestic hot water heat pump for peak/off-peak time operation.

The appliance's control panel can be used to program time slots for the Domestic hot water heat pump or for the electrical back-up to run (see § «Programming» for daily programming options).

5.5.1.1 - Peak/off-peak hours contact

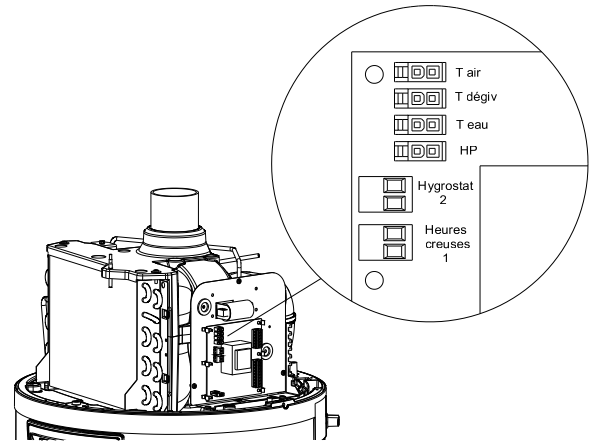
It is also possible to connect the electricity meter dry-contact to the Domestic hot water heat pump without using programming.

- Switch open = Load shedding
- Switch off = Normal operation

The load shedding level can be selected and programmed for the appliance (see § «Load shedding»).

By default, the electrical back-up does not run during peak hours.

- Remove the protective casing.
- Remove the black cover from the electronics board.
- Pass a 0.75mm² 2-wire cable with metal tips through a cable gland at the back of the appliance and bring the end of the cable around to the electronics board. The other end of the cable should be connected to the timer switch.
- Insert the 2-wire cable through a grommet from the electronics box.
- Connect the 2-wire cable to «Input 1» indicated on the electronics board, after removing the existing red bridge.



5.5.1.2 - Controlled ventilation

The domestic hot water heat pump can be used to continuously ventilate a room even if the heating cycle is complete.

To stop the fan from operating, connect a timer on a moisture sensor. Use the same procedure as for the timer switch, but connect the 2-wire cable to «Input 2» on the electronics board.

- Switch open = The fan will not operate
- Switch closed = The fan will operate

- Set the regulator to «External control ventilation mode»: **FAN MODE 3**

5.5.1.3 - Connection to electricity provider

To prevent the electrical back-up from running during peak hours, connect the dry contact originating from the electricity counter, to terminal 1.

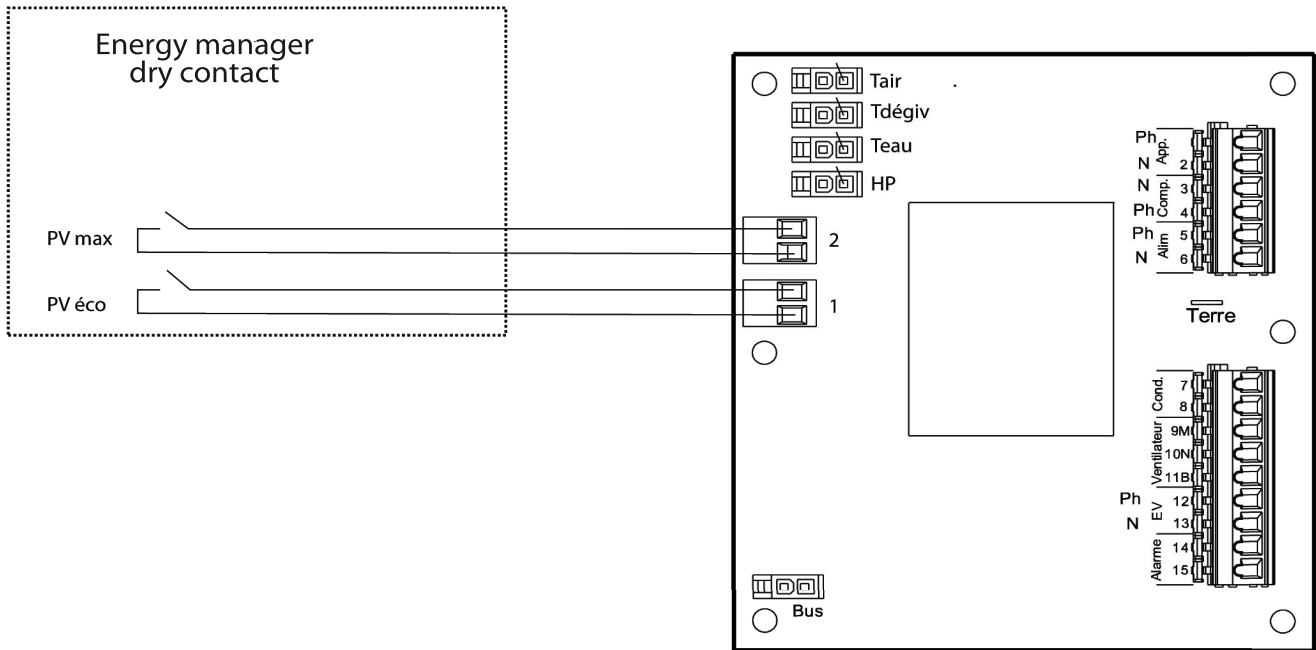
- Switch open = Back-up not allowed to run
- Switch closed = Back-up allowed to run

By choosing load shedding level 0 or 1 (see § «Load shedding»), the electrical back-up alone is prevented from running (load shedding =1) both the heat pump and the electrical back-up are prevented from running (load shedding = 0).

Only an external connection, using a voltage-free «dry contact» is authorised (otherwise there is risk of damaging the electronic circuit board).

- Pass a 0.75mm² 2-wire cable with metal tips through a cable gland at the back of the appliance and bring the end of the cable around to the electronics board. The other end of the cable should be connected to the timer switch.
- Insert the 2-wire cable through a grommet from the electronics box.
- Connect the 2-wire cable to «Input 1» indicated on the electronics board, after removing the existing red bridge.

5.5.1.4 - Connection to the PV function



This function enables the appliance to operate in auto-production mode, which means that it will use the energy produced by the PV function to supply the heat pump as well as the electrical back-up, and to heat the water in the tank. The connection is made between the energy manager electrical box (not supplied) and connectors 1 and 2 on the electronics board.

- Remove the protective casing.
- Remove the black cover from the electronics board.
- Connect the PV function cable to connector 1 on the electronics board.
- If the PV function regulator has 2 control contacts, connect them to connectors 1 and 2 on the electronics board § « Electrical wiring diagram» in the appendix.
- Terminal n° 1 : a low level of electrical energy is produced by the PV function.
- Terminal n° 2 : a high level of electrical energy is produced by the PV function.



CAUTION: Connectors 1 and 2 are for DRY CONTACTS ONLY. They must NEVER be connected to 230V.

6 - SET-UP AND USE



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

- Leave the appliance unplugged.
- Open the hot water outlet which is located at the highest point of the appliance.
- Open the cold water inlet on the pressure-relief valve.
- Fill the tank until water is coming out of the highest water 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 of -7°C to +35°C to provide a water temperature of up to 55°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 55°C.

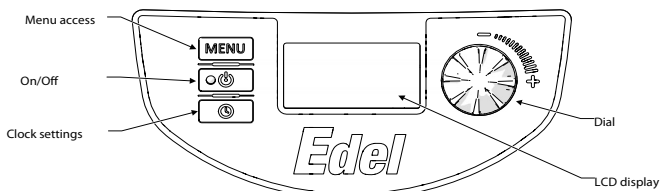
In the case of significant domestic hot water usage, the domestic hot water heat pump has a *T°C MIN* function which increases the heating power once there is less than 1/3 of the volume of the tank remaining at 38°C (see § «*T°C MIN*» -minimum temperature-). A different parameter allows to activate the back-up if the heating time is too long (see § «*MAX TIME*»).

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 the electrical back-up.

This function is deactivated as soon as the desired temperature is reached (for example: 50°C), (end of heating cycle).

Periodically check that there are no alerts (in case of an alert, refer to § «Error message codes»).

6.1 - Control panel



Pictograms :

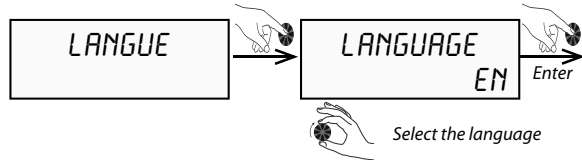
- | | |
|------------------------------------|---|
| Compressor activated | Frost-protection mode in progress |
| Fan activated | Holiday mode in progress |
| Defrosting in progress | Keyboard locked |
| Electrical back-up activated | Settings/parameters being displayed |
| Domestic hot water requested | PV mode activated |
| Comfort mode in progress | 123..7 .Date |
| Eco mode in progress | |

6.2 - Setting the language

When the appliance is turned on for the first time, the language must be selected. Turn the dial to the left and select «English». Confirm your selection by pressing on the dial. Access to the «*LANGUAGE*» menu is always available.

- Press **MENU**.

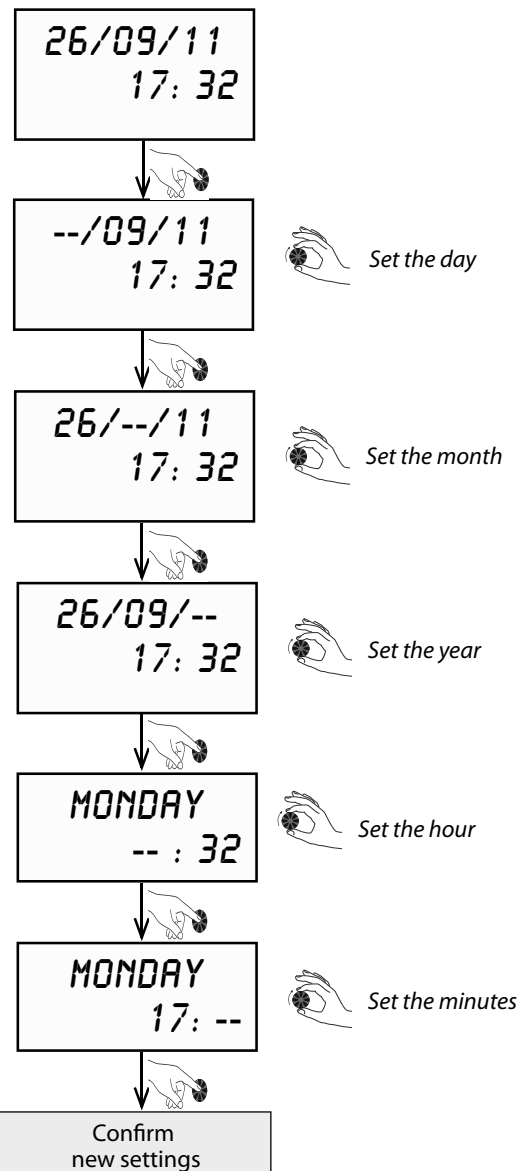
- Turn the dial to scroll through the menu options:



- Press **MENU** to return to the main menu.

6.3 - Setting the date and time

- Press «**Clock settings**»

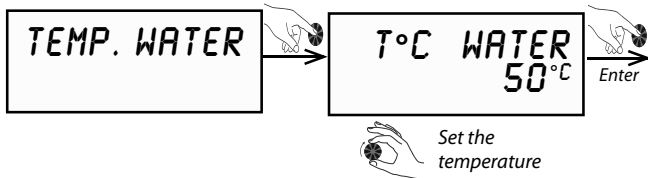


6.4 - Setting the desired water temperature

6.4.1 - PV mode not activated

The water temperature can be adjusted from 30°C to 65°C. Up to 55°C, the water is heated using only the heat pump. Beyond this temperature and up to 65°C, the electrical back-up takes over.

- Press **MENU**
- Turn the dial to scroll through menu options:



- Press **MENU** to return to the main menu.

ACCU+ mode

If the domestic hot water setpoint is higher than that accepted by the heat pump, the product switches to «ACCU +» mode. The «ACCU +» function increases the amount of water in the product while maintaining minimum heat pump operating time.

- In order to get the best results from your heat pump, it is recommended that you do not leave the set water temperature too high unless absolutely necessary. The default temperature is set at 55°C.

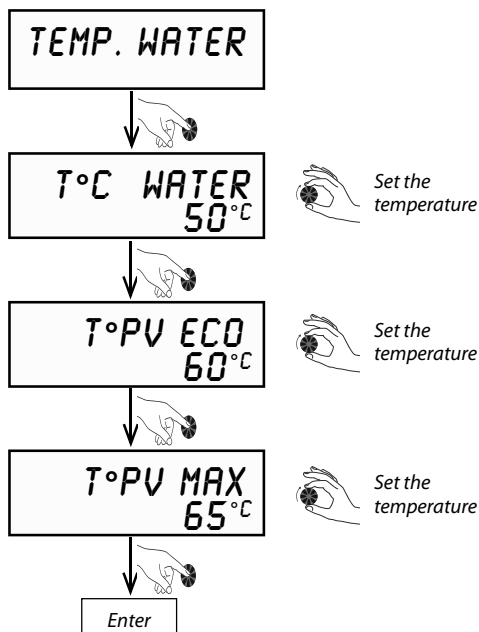


If the water temperature is set at 50°C or below, we recommend programming an anti-Legionella cycle.

6.4.2 - PV mode activated

When PV mode is activated, the water temperature can be set to a higher level to favour operation during periods of photovoltaic production.

- Press **MENU**
- Turn the dial to scroll through menu options:



- Press **MENU** to return to the main menu.

The settings are available according to the following reasoning:

$$\text{TEMP} \leq \text{T°PV ECO} \leq \text{T°PV MAX} \leq 65^\circ\text{C}$$

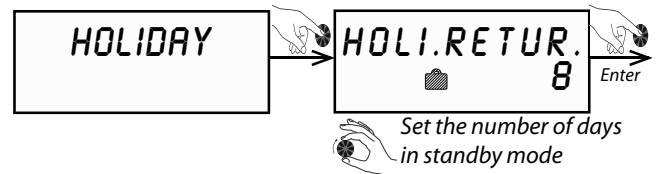
T°PV ECO 60°C Target water temperature used by the water heater when photovoltaic production is at a low level. (mode «PV ECO»)

T°PV MAX 65°C Target water temperature used by the water heater when photovoltaic production is at a high level. (mode «PV MAX»)

6.5 - Holiday/ temporary standby mode

«HOLIDAY» mode puts the appliance on standby while frost protection mode remains active. This function can be programmed to run between 1 and 99 days, and is put into effect as soon as the number of days has been confirmed.

- Press **MENU**
- Turn the dial to scroll through menu options:



- Press **MENU** to return to the main menu.

«HOLIDAY» mode switches off automatically once the number of days set has been reached. **The Domestic hot water heat pump** displays «HOLI. RETUR..» (holiday return) on the screen, along with a countdown of the days remaining in standby mode.

6.6 - BOOST mode

(for occasional use and for guaranteed comfort)

The «BOOST» function temporarily forces the electrical back-up and the heat pump to operate at the same time to speed up the heating time.

The «electrical back-up» symbol ⚡ flashes while it is activated.

- Press **MENU**
- Turn the dial to scroll through menu options:



- Press **MENU** to return to the main menu.

The screen will blink for a few minutes and any actions on the keys will make it blink again.

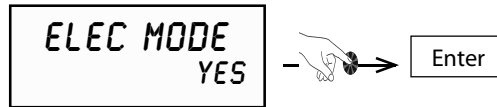
The «BOOST» function is automatically deactivated once the desired temperature is reached (end of the heating cycle).

6.7 - Electric mode

(for operation using only the electrical back-up)

«ELEC MODE» uses only the electrical back-up to heat the water in the Domestic hot water heat pump. It provides a back-up option if for any reason the heat pump is not operational (piping not connected, dusty renovation work being carried out near the appliance, etc...).

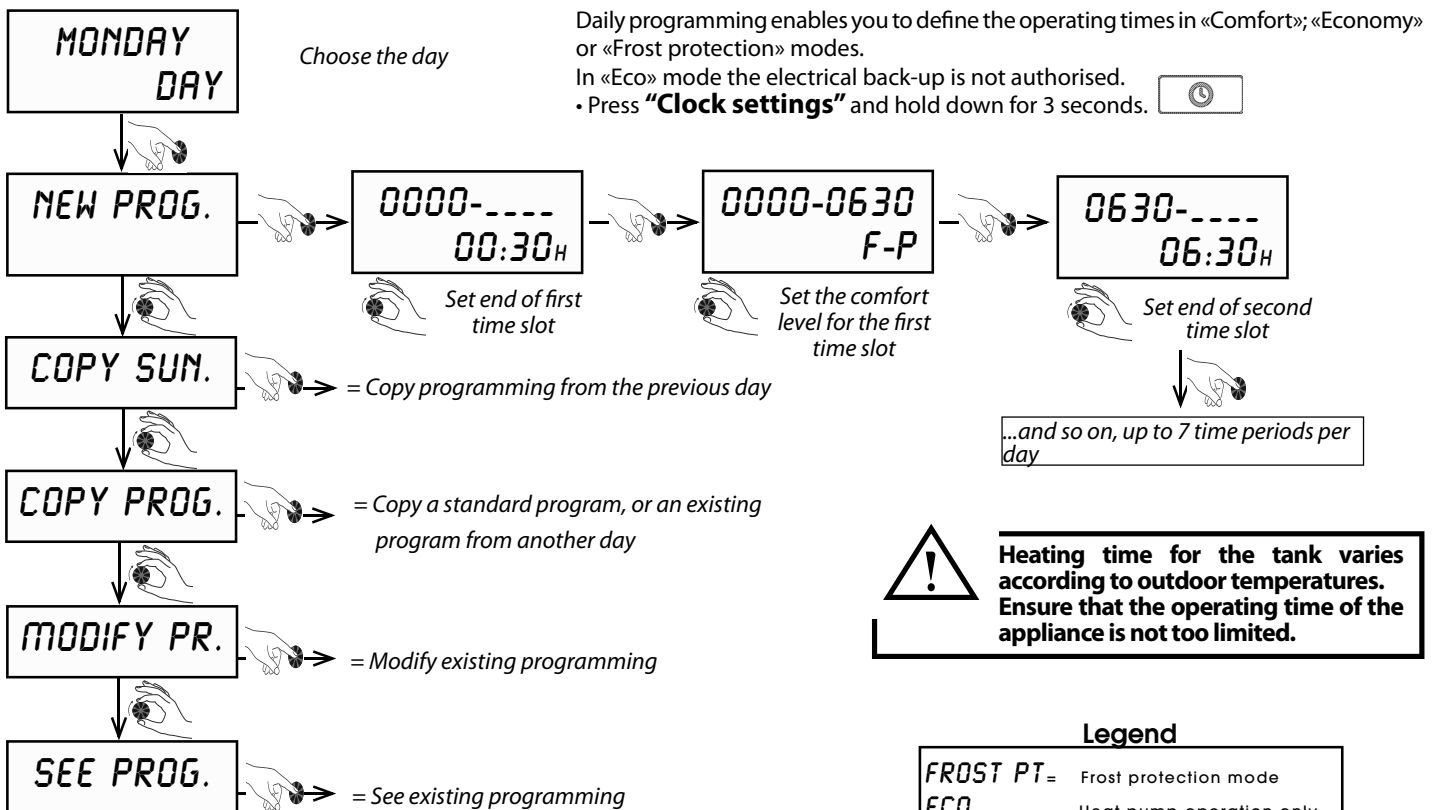
- Press **MENU**
- Turn the dial to scroll through menu options:



- Press **MENU** to return to the main menu.

The screen will blink for a few minutes and any actions on the keys will make it blink again.

6.8 - Programming



- Press **MENU** to return to the main menu.

Legend

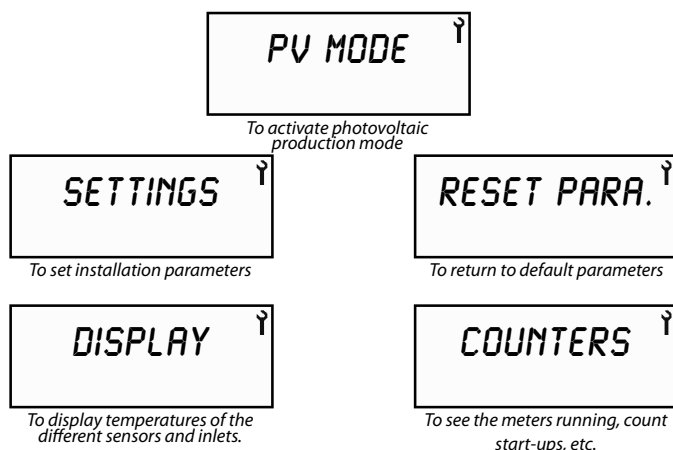
FROST PT	= Frost protection mode
ECO	= Heat pump operation only
COMF	= Heat pump operation only + electrical back-up if necessary

6.9 - INSTALLER menu

It may be necessary to adjust certain settings to optimise the performance of the **Domestic hot water heat pump**, depending on how the appliance is installed.

Accessing the Installer menu:

- Press **MENU**
- Turn the dial until the screen displays: «**INST. MENU.**»
- Press the «**Clock settings**» and «**Menu**» buttons **simultaneously**.
- **Keep both buttons pressed down** for 3 seconds until the screen displays «**SETTINGS**».



6.9.1 - PV mode

Parameter	Description	Unit	Time range	Factory setting
MODE PV	Activation of photovoltaic mode	-	yes no	no
PRIORITY	Interval of anti-legionellosis cycles	-	yes no	yes

1. If the **PV mode** regulator is connected to connectors 1 and 2 on the electronics board, **PV mode** must be activated.

- The electrical energy which is produced is stored in the form of hot water. The PV function can be set to two different levels of production.
- **PV ECO** = the lower level of photovoltaic energy production. The heat pump generates a higher water temperature. The hot water temperature must be somewhere between the regular hot water temperature and 55°C (factory setting = 55°C).
- **PV MAX** = the higher level of photovoltaic energy production. The heat pump and electrical back-up generate a higher water temperature. The hot water temperature must be somewhere between the **PV ECO mode** hot water temperature and 65°C (factory setting = 65°C).

- Turn the dial to set the mode:
- **Menu** → **INST. MENU** → **PV mode**
- Select «**yes**»
- Press on the dial to confirm your selection.
- Press **Menu**.
- Set the desired domestic hot water temperature.

7. Turn the dial to select the primary function:
- **Menu** → **INST. MENU** → **PV MODE** → **PRIORITY**

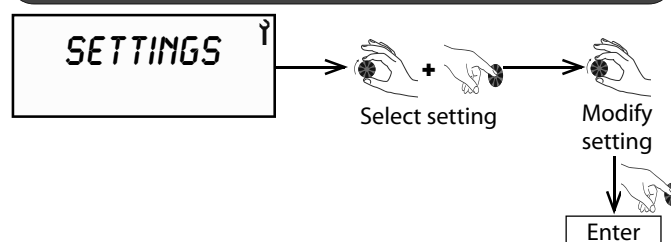
- **Yes:** the signals from connectors 1 and 2 take precedence over **eco** and **frost protection** modes.
- **No:** The **eco** and **frost protection** modes take precedence over the signals from connectors 1 and 2.

Note: If **PV mode** is chosen as the primary function, the domestic hot water will also be heated during non-selected time periods (e.g. in **hoilday mode** and outside of the programmed time slots). If you only wish the domestic hot water to be heated during authorised time slots, adjust the settings to **no**.

8. Press the dial to confirm your selection.

For products which are equipped with an extra thermal heat exchanger, no boiler request is sent when the heat pump is switched on. Only the electrical back-up is on, to use the energy produced by the PV function.

6.9.2 - Adjusting the operating settings

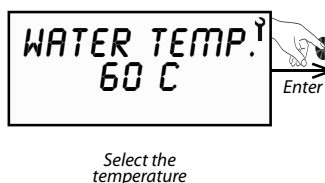
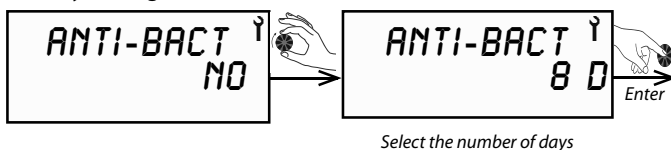


Parameter	Description	Unit	Time range	Factory setting
ANTI-BACT	Time interval for anti-legionellosis cycle	days	0-99	0
FAN MODE	Ventilation mode	-	1,2,3	1
T°C MINI	Min. temp for electrical back-up	-	0 or 1	0
SHEDDING	Load shedding level	-	0,1,2	1
MAX. TIME	Max. heating time	hours	No, auto, 1 to 24	No

• Press **MENU** to return to the main menu.

6.9.2.1 - ANTI-BACT-anti-legionellosis cycle-

Factory setting **ANTI BACT = NO**
Factory setting **WATER TEMP. = 60 C**

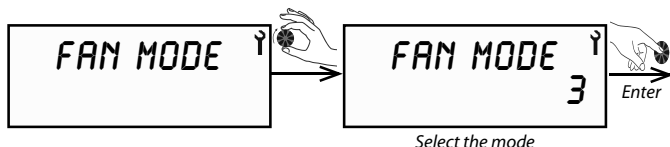


Example:
ANTI-BACT = 8
WATER TEMP. = 60 C
The anti-legionellosis cycle will be carried out every 8 days at 10pm.

• Press **MENU** to return to the main menu.

- If the desired water temperature is set at 60°C, (see § «Setting the desired water temperature»), there will not be an anti-legionellosis cycle as it is already running continuously.
- If an anti-legionellosis cycle is interrupted by a period where the back-up is not allowed to run (electricity provider signal or programmed time periods) it will relaunch automatically during the next authorised period.
- No anti-legionellosis cycle except when returning from holidays and after a frost protection period of more than 3 days.
- During the anti-legionellosis cycle the water temperature is raised between 55°C and 70°C by the heat pump.

6.9.2.2 - FAN MODE -Fan mode-



Factory setting = 1

- MODE 1* = Ventilation only activated during water heating periods.
- MODE 2* = Permanent ventilation
- MODE 3* = Ventilation activated during water heating periods and the ventilation is regulated by an external control (such as a moisture sensor).

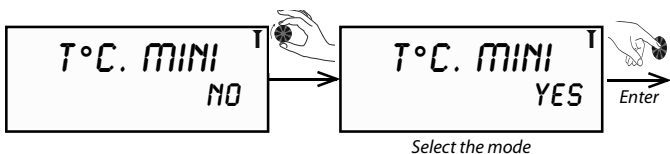
The external control should be connected on the electric board's moisture sensor inlet in the domestic hot water heat pump (see electrical diagram in the appendix).

**If PV mode is activated, controlled ventilation (FAN MODE 3) is not available*

- Press **MENU** to return to the main menu.

6.9.2.3 - T°C MINI -Minimum temperature-

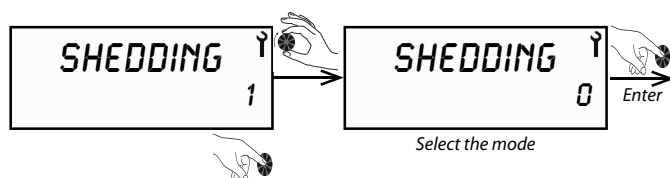
The electrical back-up can be activated at the same time as the heat pump to prevent the water temperature from going below a minimum comfort level of 38°C. The electrical back-up will start up and raise the water temperature to 43°C, then it will turn off and the heat pump will finish heating the water.



- The T°C Mini function is deactivated by default.
- In case of load shedding the «T°C mini» function is not activated.
- Press **MENU** to return to the main menu.

6.9.2.4 - LOAD SHEDDING -Degree of authorisation during peak hours

When load shedding is activated, it is possible to stop certain elements from running (heat pump or electrical back-up).



If the load shedding switch is on:

- MODE 0* = No element is authorised to operate.
- MODE 1* = Only the heat pump is authorised to operate.
- MODE 2* = The heat pump and the electrical back-up are both authorised to operate (neutralising the «peak time» function).

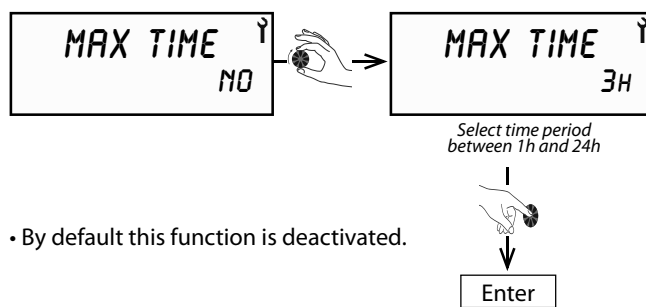
If PV mode is activated, load shedding cannot be done through the peak/off-peak hours dry contact. In this case the timer must be programmed (see § «Programming»).

- Press **MENU** to return to the main menu.

6.9.2.5 - MAX. TIME -Max. heating time-

It is possible to program a timed heating period. The domestic hot water heat pump can automatically use the electrical back-up at the same time as the heat pump to heat the water in the tank quicker than the heat pump alone.

By selecting *MAX TIME = AUTO*, the heating time is limited to a maximum of 5 hours during off-peak time.



- By default this function is deactivated.

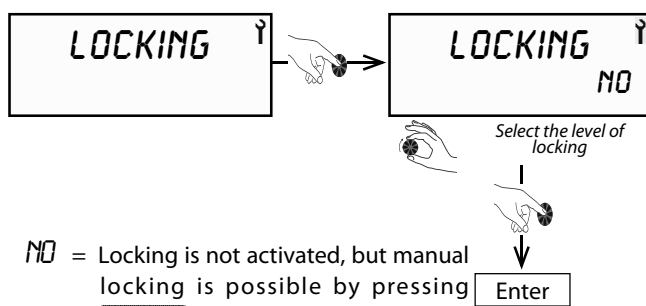
- Press **MENU** to return to the main menu.

6.9.3 - Locking the keyboard

Permanent and automatic locking

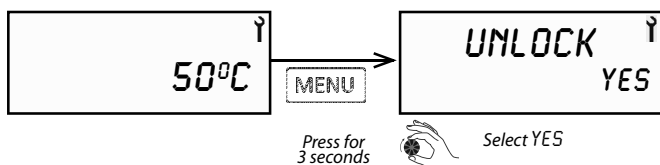
The «LOCKING» menu allows three possible levels of locking for accessing the menus.

in the «Installer» menu, turn the dial to «LOCKING».

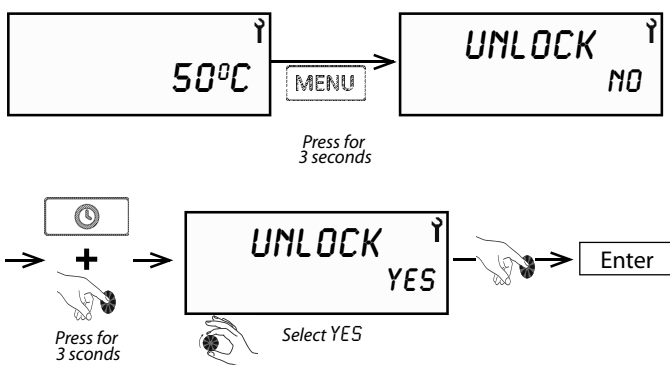


- NO* = Locking is not activated, but manual locking is possible by pressing **MENU** for 3 seconds.

AUTO = Lock menu access with temporary unlocking (60 seconds), press **MENU** for 3 seconds.



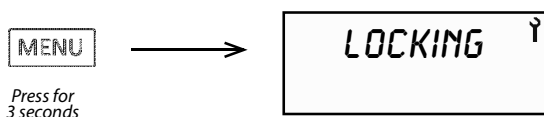
PRO = Lock access to menus with temporary unlocking (300 seconds) by pressing **MENU** for 3 seconds, and then **+** and **+** buttons for 3 seconds.



• When locking is activated, it is only possible to access unlocking and to reset the alarm.

Manual locking from the main menu

It is possible to manually lock the keyboard from the main menu without going through the «Installer» menu provided that locking settings are not already in place.

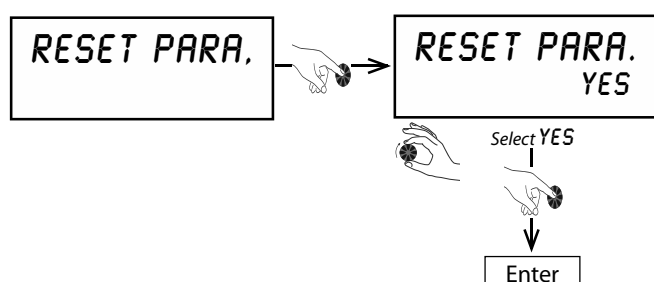


Manual locking is done by pressing **MENU** for 3 seconds.

6.9.4 - Resetting parameters

Resetting the parameters enables you to return to the default settings of the appliance.

Go to the «Installer» menu and turn the dial to «RESET PARA.».



6.9.5 - Reading data

The «READ DATA» menu shows you, in real time, the information given by the sensors.

Go to the «Installer» menu, turn the dial to «DISPLAY».

Display	Description	Reference on electronics board
WATER	Domestic hot water temperature in lower part of tank	Teau
AIR	Temperature of heat pump air intake	Tair
EVAP	Temperature of heat pump evaporator (expansion valve outlet)	Tdegiv
MODE PV (deactivated) factory settings		
SHEDDING	Off-peak hours switch (0-on; 1- off)	heures creuses
FAN CONTR.	Fan control switch (0-on; 1- off)	hygrostat
MODE PV (activated)		
PV ECO	Contact input 1 (0-open; 1- closed)	1
PV MAX	Contact input 2 (0-open; 1- closed)	2

The temperature which is permanently displayed on the screen is the set temperature, and does not necessarily indicate the temperature of the water immediately available in the tank.

6.9.6 - Counters

The «Counters» menu shows the number of start-ups from the heat pump and the electrical back-up.

In the «Installer» menu, turn the dial to «COUNTERS».



- COUNTER N°1 :
Number of start-ups from the heat pump
- COUNTER N°2 :
Number of start-ups from the electrical back-up
- COUNTER N°4 :
Accumulated heat pump running time.

7 - 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.
- The release of refrigerant fluid into the atmosphere is forbidden.
- 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 carrying out any work.
- 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.

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 defrosting.
- 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 fluid complies with national gas regulations.

.../...



.../...

→ In case of intervention on the refrigerant circuit:

- 1) Secure the area you will be working in.
- 2) Inform people of the potential danger involved in the work being carried out.
- 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 dry powder or CO₂ extinguisher near the work area.
- 7) Do not smoke



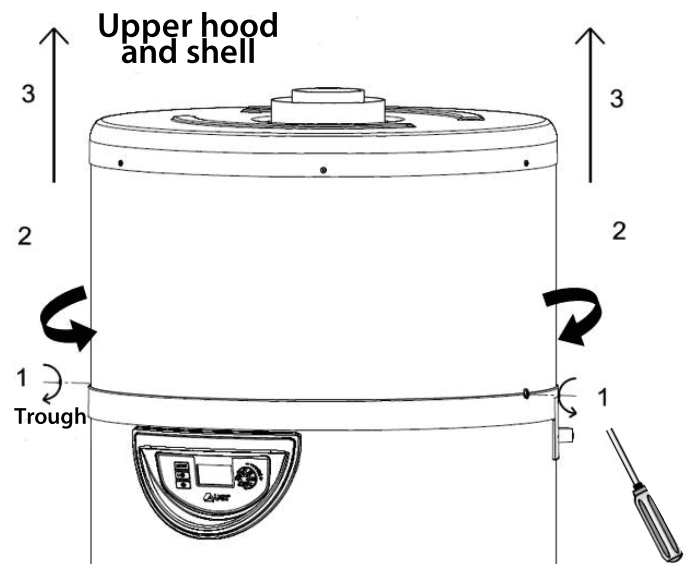
7.1 - Water circuit / Condensates drainage

Check that condensates are draining properly:

- Remove the upper cover.
- Check that the drainage outlet is not blocked.
- Clean the condensates recovery trough, where deposits from the air intake may have gathered.
- Clean the flexible drainage hose.

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

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



To access the heat pump and the electrical connections you will first need to partially dismantle the air duct, starting with the Ø80 inside pipe and then the insulated elbow:

- 1- Partially unscrew (or remove) the 2 screws which fix the shell to the lower part of the appliance.
- 2- Turn the hood slightly to the right to free the notches.
- 3- Lift the hood and shell up together vertically.

7.2 - 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.

7.3 - Electrical maintenance

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

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

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 once 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.

7.4 - 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.

7.5 - Modification

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

7.6 - Decommissioning

7.6.1 - 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.

7.6.2 - 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.

7.6.3 - 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.

7.6.4 - 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 diponible, 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.

7.6.5 - 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 labeled 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.

7.6.6 - 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.

7.7 - Troubleshooting



• No hot water

Check that:

- The volume of water consumed is not higher than the volume in the tank.
- The time period that the appliance operates is not too short (12h minimum if connected to piping).
- The set water temperature is not too low.
- No recirculating pump has been installed.
- The presence and correct positioning of the water inlet pipes (the absence or incorrect positioning of a pipe can reduce the hot water supply capacity of the cylinder).

• The heat pump is not working

Check that:

- The desired water temperature is higher than the temperature of the water in the tank.
- There is a power supply to the appliance.
- The green light is on.
- The appliance is not in holiday mode (symbol ).
- The appliance is not blocked by a peak-time signal.
- The air intake or ambient temperature is under -7 °C or over +35°C.
- The timer has not been programmed to stop the appliance operating (frost protection symbol  is on).
- The appliance is not in load shedding mode.
- If there is an error message on the screen (see § Error messages codes).

• Condensates are not draining (water under the appliance)

Check that:

- The draining system is not blocked or dirty.


Clean 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 tube opens into an open-air duct.
- The appliance is properly positioned (vertical position and no tilting).

• Electrical back-up is not working

Check that:

- An external contact or time programming does not prevent operation («frost protection»  symbol lit up).
- A heat limiting safety thermostat for the electrical back-up has not been activated after over-heating (>87°C). If this is the case, reset the heat-limiting safety thermostat.

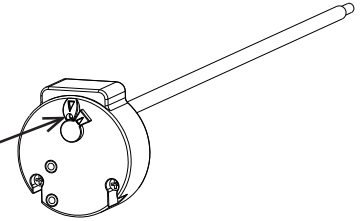
Before resetting, check:

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



Do not adjust settings on safety aquastat

Reset button (87°C) on heat-limiting safety thermostat



• Water is too hot

Check that:

- The water sensor is properly positioned in the well.

7.8 - Inspecting the corrosion-proof anode - Changing the primary anode of the heating element or cleaning the tank

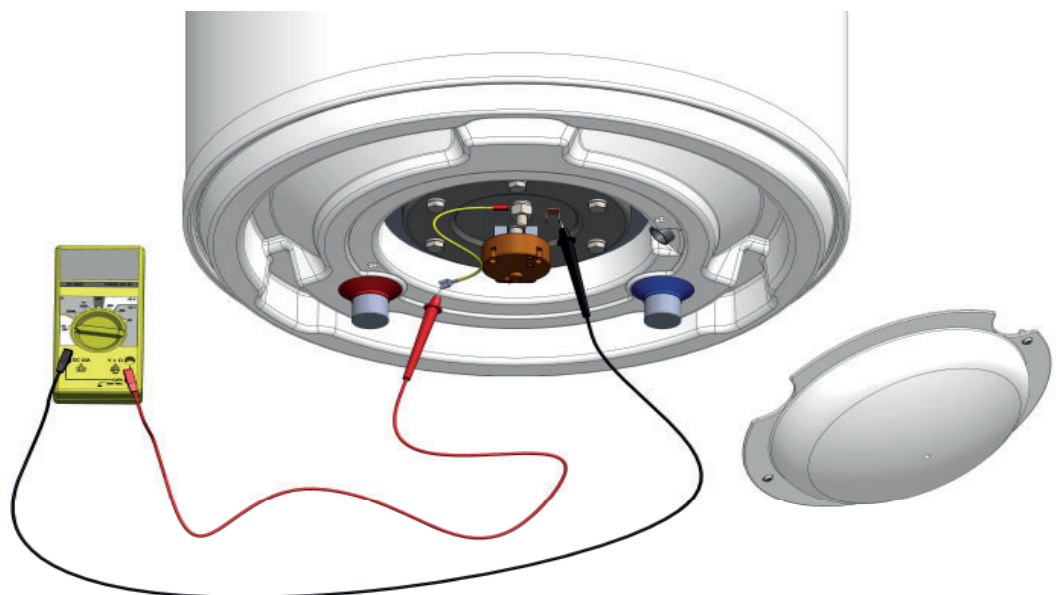


If the corrosion-proof anode is in a poor state of repair it will shorten the lifespan of the appliance and render the warranty null and void.

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.

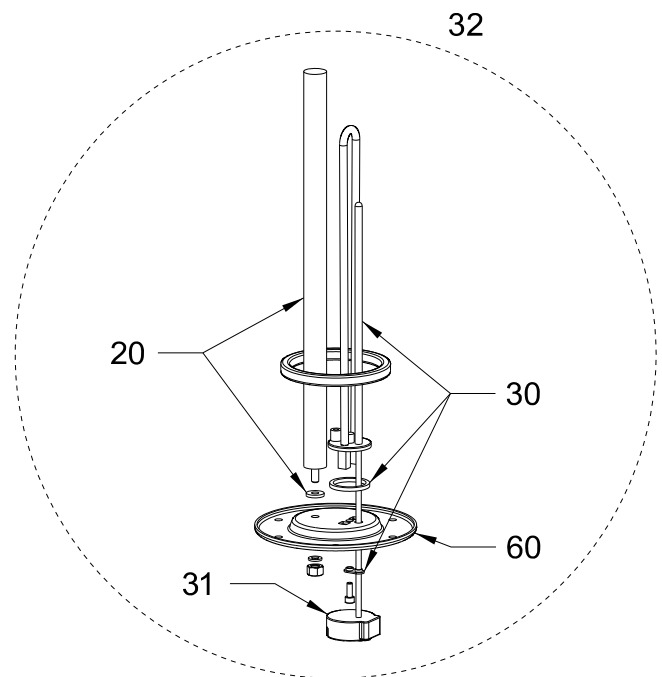
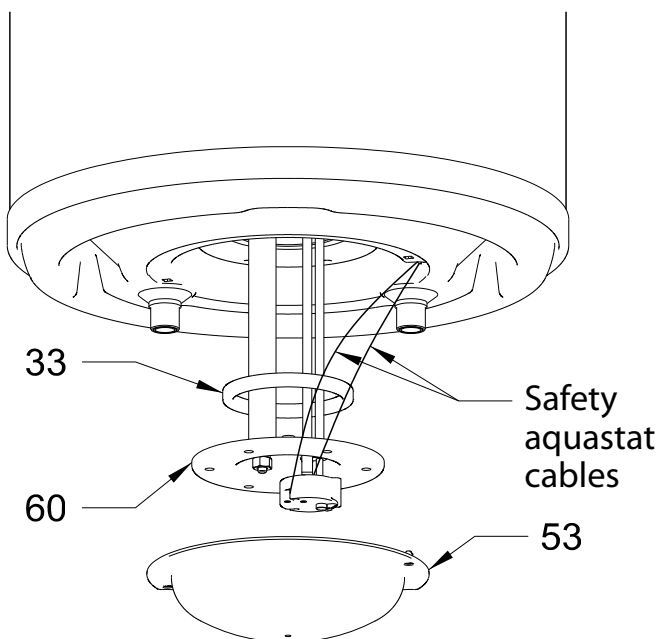


If the current is $>0.3\text{mA}$, the anode is operational, if the current $<0.3\text{mA}$ check the anode visually.

To access the anode, the heating element, and to clean the tank:

- Drain the appliance using the drainage valve installed on the cold water inlet.
- Disassemble the lower plastic hood (**rep.53**).
- Disconnect the electrical heating element (**rep.30**) (phase and neutral)
- Remove the lower flange (**rep.60**) which supports the heating element and anode.
- Inspect the primary anode (**rep.20**) at its narrowest point. This diameter should be more than 15mm.
- Change the anode if its diameter is less than 15mm (the diameter of a new anode is 26mm).
- To change the primary anode, unscrew the self-locking nut and washer, and remove the primary anode with its seal.
- Fit the new anode into place with a new seal, and tighten the self-locking nut and washer.
- To change the heating element: remove the aquastat (**rep.31**) by pulling out the casing.

- Unscrew the screw and the insulating ring holding the heating element in place.
- Remove the heating element and its seal (**rep.30**).
- Fit the new heating element with a new seal.
- Tighten the screw and the insulating ring.
- Put the aquastat back into place by slotting the 2 tabs on the aquastat into the 2 lugs on the heating element that stick out of the access flange.
- Clean the flange (**rep.33**) or replace if defective.
- If the seal has been replaced, carefully reposition the 6 cage nuts and bolts on the lower flange by pushing them down.
- Reposition the seal on the flange (**rep.33**).
- Put the lower flange back into place.
- Rewire the heating element (phase and neutral).
- Put the lower plastic cover back into place (**rep.53**).

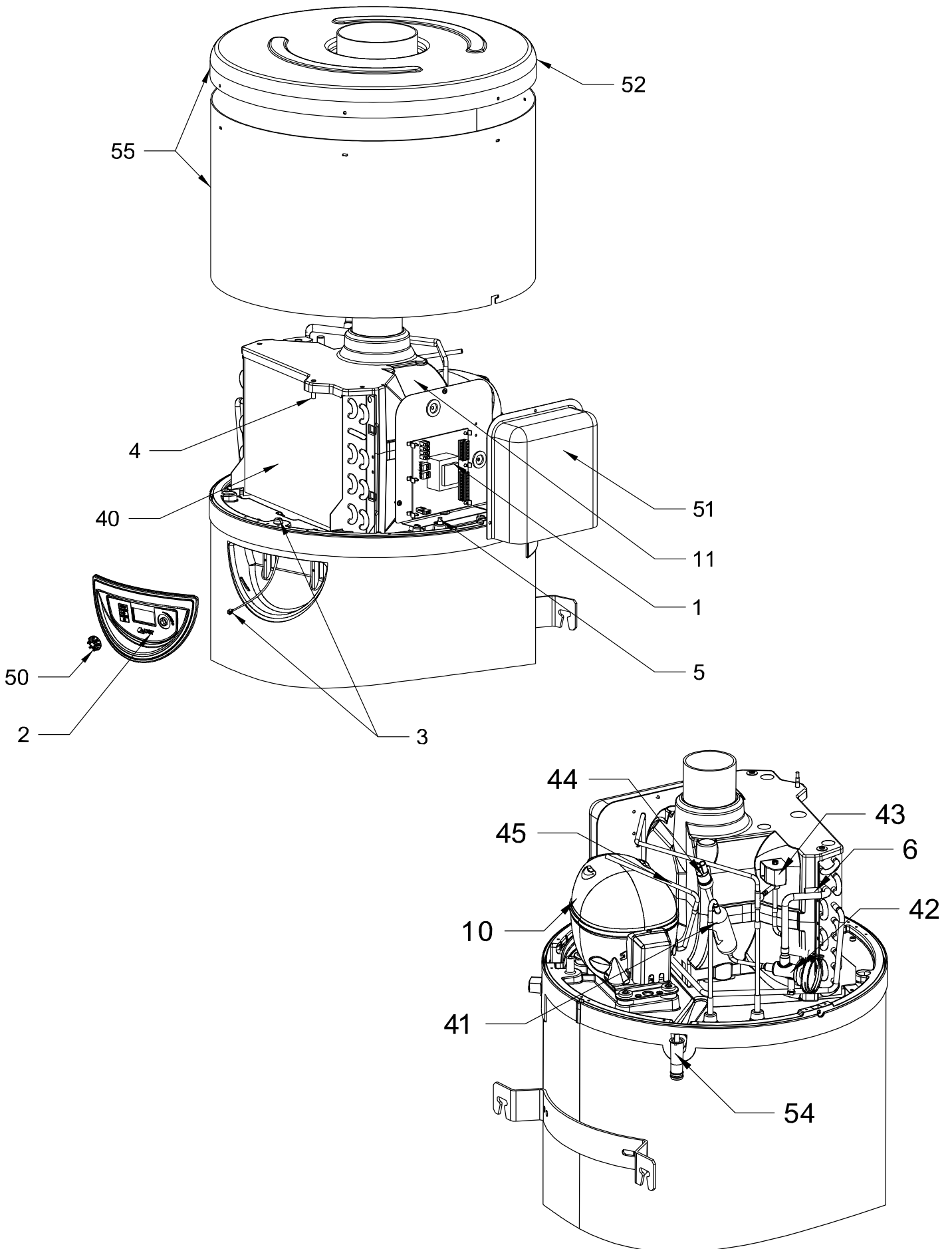


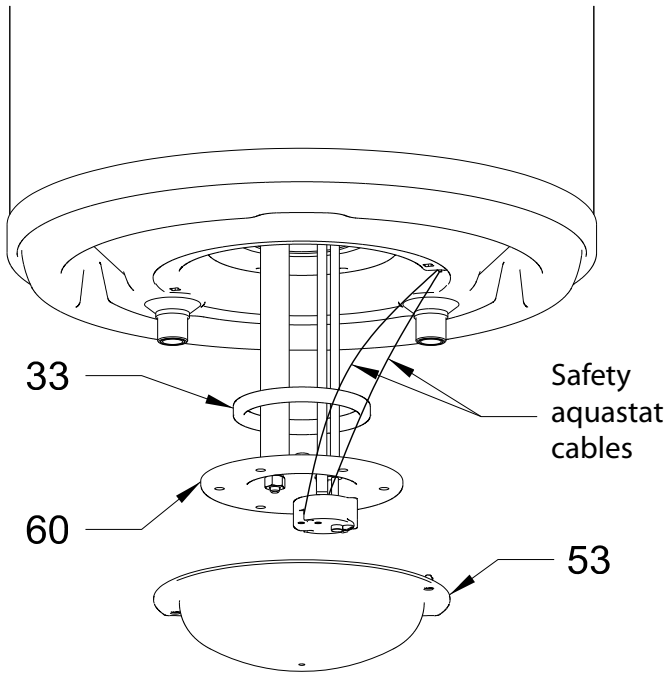
7.9 - NTC sensor data

All three **domestic hot water heat pump** sensors have the same ohmic values.

Temp. (°C)	Résist. R (KOhms)	Temp. (°C)	Résist. R (KOhms)	Temp. (°C)	Résist. R (KOhms)	Temp. (°C)	Résist. R (KOhms)
-10	56,200	10	20,700	30	8,045	60	2,343
-5	46,890	15	16,350	35	6,514	70	1,637
0	33,020	20	12,920	40	5,306	80	1,165
5	26,200	25	10,000	50	3,422		

7.10 - List of spare parts



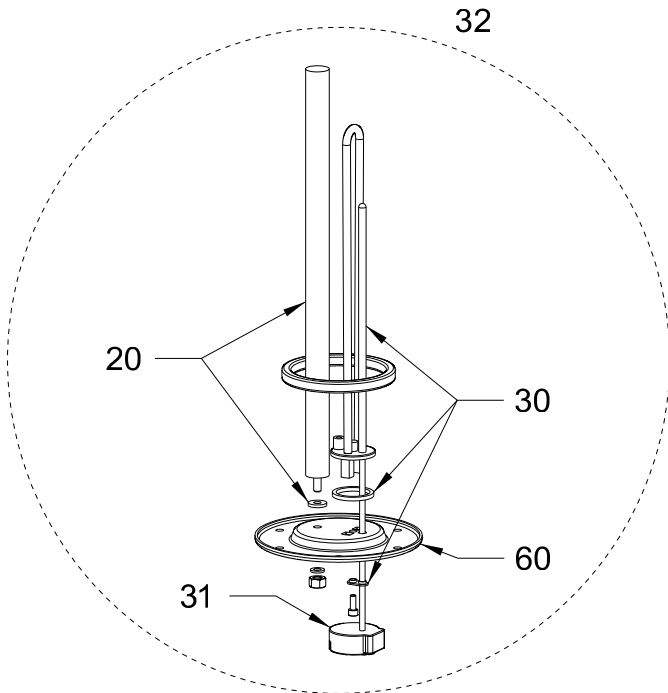


33

60

53

Safety aquastat cables



32

20

30

31

60

Rep	100L	150L	Description
Regulation / Display			
1	B1244096	B1244096	Electronic circuit board controller
2	B4992816	B4992816	Circuit board + display +H2P program - CET EMR
3	B4992653	B4992653	Display screen cable - 480mm + foam
4	B1244576	B1244576	Temperature sensor lg460mm
5	B1244577	-	Temperature sensor lg700mm
5'	-	B1244575	Temperature sensor lg1200mm
6	B4993072	B4993072	Temperature sensor kit 900mm
Electricity			
10	B4992547	B4992547	Compressor replacement kit + accessories
11	B1244883	B1244883	Ø140 fan
11	B4994617	B4994617	Fan casing kit
12	B1244426	B1244426	1µF clip-on capacitor
43	B1239212	B1239212	650 mm coil
Protection			
20	B1944178	-	340mm anode kit
20'	-	B1944184	450mm anode kit
Electrical back-up			
30	B4991949	B4991949	1000W heating element kit + seal
31	B1239160	B1239160	80°C-87°C aquastat
32	B4994442	B4994482	Lower flange (assembled) + flange seal
33	B1657539	B1657539	Tank flange seal
Refrigerant circuit			
40	B1472860	B1472860	Finned heat exchanger
41	B1472871	B1472871	Dehumidifying filter (2 intakes/ 1 exhaust)
42	B1472873	B1472873	Thermostatic expansion valve
43	B4993609	B4993609	Solenoid valve and coil kit
44	B1244424	B1244424	1/4" pressure switch / 600mm
45	B1973127	B1973127	Refrigerant loading pipe + schrader valve
-	B1972914	B1972914	Perforating clamp
-	B1972915	B1972915	Lock clamp
Casing			
50	B1758866	B1758866	Control panel dial
51	B4992027	B4992027	Electrical box cover and label
53	B1759506	B1759506	White heating element cover
54	B1759504	B1759504	Condensate draining T-pipe
55	B4995208	B4995208	Cover and shell kit
60	B4594440	B4594440	Cover flange enamelled
Hydraulic			
-	B1594108	B1594108	Dielectric fittings

Nota : 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.

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



Note:

Errors can be dismissed by briefly pressing the dial (manual reset)

Display	Error	Probable causes	Solutions	Temporary operation measures while waiting for the problem to be solved
MEMO/BUS	<ul style="list-style-type: none"> •Circuit board defect •Bus wire defect •Display screen defect 	<ul style="list-style-type: none"> •Voltage too high on electrical network •Wiring error during electrical connection (connection to electricity provider or moisture sensor) •Damage during transportation 	<ul style="list-style-type: none"> •Replace main circuit board or •Replace display screen board 	<ul style="list-style-type: none"> •Appliance non-functional
T_AIR	<ul style="list-style-type: none"> •Air temperature sensor defect (Temperature of air intake) 	<ul style="list-style-type: none"> •Sensor not functioning •Sensor unplugged from board •Sensor cable damaged 	<ul style="list-style-type: none"> •Replace sensor 	<ul style="list-style-type: none"> •Heat pump non-functional •Electrical back-up heats water to 43°C (38°C mini)
T_DEFROST	<ul style="list-style-type: none"> •Evaporator sensor defect (Defrosting temperature) 	<ul style="list-style-type: none"> •Sensor not functioning •Sensor unplugged from board •Sensor cable damaged 	<ul style="list-style-type: none"> •Replace sensor 	<ul style="list-style-type: none"> •Heat pump non-functional •Electrical back-up heats water to 43°C (38°C minimum)
T_WATER	<ul style="list-style-type: none"> •Hot water tank water sensor defect 	<ul style="list-style-type: none"> •Sensor not functioning •Sensor unplugged from board •Sensor cable damaged 	<ul style="list-style-type: none"> •Replace sensor 	<ul style="list-style-type: none"> •Heat pump non-functional
CLOCK	<ul style="list-style-type: none"> •Clock / timer defect 	<ul style="list-style-type: none"> •Voltage too high on electrical network •Damage during transportation 	<ul style="list-style-type: none"> •1-Press «Clock settings» and set the date and time •2-If the error message persists, replace the circuit board 	<ul style="list-style-type: none"> •Programmed heating periods are no longer valid : the water is maintained continuously at the standard set temperature (if no signal or control is connected to the «external control» switch)
OVER PRESS.	<ul style="list-style-type: none"> •Heat pump pressure too high 	<ul style="list-style-type: none"> •No water in the tank •Water is too hot (>75°C) •Water sensor removed from tank •Defective water sensor 	<ul style="list-style-type: none"> •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 tank 	<ul style="list-style-type: none"> •Heat pump non-functional •Must be manually reset •Operation using the electrical back-up is possible
FREQ. DEFROD.	<ul style="list-style-type: none"> •Defrosting too often 	<ul style="list-style-type: none"> •Insufficient airflow •Air inlet / outlet blocked •Ventilation duct blocked •Air duct is too long or has too many elbows •Evaporator clogged 	<ul style="list-style-type: none"> •Set the fan at maximum speed (FAN MODE 2) •Check that the air is circulating properly throughout the piping circuit •Check the length of pipes: <ul style="list-style-type: none"> -10m total length of flexible hose -20m total length of rigid piping •Check the condition of all filters on air ducts •Check that the evaporator is clean 	<ul style="list-style-type: none"> •Heat pump non-functional •Electrical back-up heats water to 43°C (38°C minimum)
LOWP PRES.	<ul style="list-style-type: none"> •Heat pump pressure too low 	<ul style="list-style-type: none"> •Insufficient airflow •Air inlet / outlet blocked •Ventilation duct blocked •Fan blocked or non-functional •Evaporator clogged •Ice on the evaporator 	<ul style="list-style-type: none"> •Check that the fan is working •Check that the air is circulating properly through the piping circuit •Check the length of pipes: <ul style="list-style-type: none"> -10m total length of flexible hose -20m total length of rigid piping •Check the state of all filters on air ducts •Check that the evaporator is clean 	<ul style="list-style-type: none"> •Heat pump non-functional •Electrical back-up heats the water to 43°C (38°C minimum)
OVERHEAT	<ul style="list-style-type: none"> •Domestic hot water overheating (water temperature >87°C) 	<ul style="list-style-type: none"> •Defective water sensor •Water sensor removed from tank 	<ul style="list-style-type: none"> •Check that the water sensor is in the right position in the tank 	<ul style="list-style-type: none"> •Heat pump non-functional •Automatic reset

Display	Error	Probable causes	Solutions	Temporary operation measures while waiting for the problem to be solved
ERR.01	•Incorrect temperature sensor reading	<ul style="list-style-type: none"> •The air and defrosting sensors are reversed on the circuit board •The defrosting and water sensors are reversed on the circuit board •The defrosting sensor is connected to the air input, the air sensor is connected to the water input, the water sensor is connected to the defrosting input 	•Reposition the temperature sensors correctly on the main circuit board	•Heat pump non-functional
	•Incorrect reading from the defrosting sensor	•The defrosting sensor is not properly connected to the tube and is measuring air	•Reposition the defrosting sensor properly in the tube	
	•The heat pump has run out of refrigerant fluid	•There is a leak in the refrigerant circuit	•Find and repair the leak before filling the refrigerant circuit	
	•The expansion valve is not working	•The expansion valve bulb is damaged or broken due to work being carried out on the appliance, or it being in contact with a part which vibrates	•Replace the expansion valve	
	•The compressor is not working and safety temperature is activated	•Defect in compressor	•Replace the compressor	
ERR.02	•Incorrect temperature sensor readings	<ul style="list-style-type: none"> •The air and water sensors are reversed on the circuit board •The defrosting sensor is connected to the air input, the air sensor is connected to the water input, the water sensor is connected to the defrosting input 	•Reposition the temperature sensors properly on the main circuit board	•Appliance non-functional
ERR.03	•Incorrect temperature sensor readings	•The defrosting sensor is connected to the air input, the air sensor is connected to the water input, the water sensor is connected to the defrosting input	•Reposition the temperature sensors properly on the main circuit board	•Appliance non-functional
ERR.04	•Incorrect defrosting and water sensor readings	•The defrosting and water sensors are reversed on the circuit board	•Reposition the temperature sensors properly on the main circuit board	•Heat pump non-functional
ALARM EPR0	•The display screen electronics board has a memory problem	•The display screen of the circuit board is damaged	•Replace the display screen of the circuit board	•Appliance non-functional
ERR.08	•Incorrect defrosting sensor readings	•The defrosting sensor is defective	•Replace the sensor	•Appliance in alternative mode
ANTI BAC	•The anti-legionellosis cycle is not validated	•Sub-draft too high	•Restart a cycle	•Unit on
		•Set temperature too high	•Reduce cycle set temperature	
		•Failure of the resistance	•Clean the resistance •Replace the resistance	
		•Electrical back-up not allowed	•Authorize electrical back-up	
ACCU+ ELEC MODE BOOST	Activation of a function involving the use of the electrical back-up	This is not a fault, just an information message.		

8 - 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 voucher 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 of the appliance 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 manufacturer. In the absence of this document, the date of manufacture will be used to determine the start date of the 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 as well as the hydraulic DTU 60-1 addendum 4 regarding domestic hot water.

A defective part does not warrant the whole appliance being replaced. The warranty only applies 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 handling costs are the responsibility of the user.

Repairs on a device will not result in compensation.

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

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

The warranty will not apply in the case of absence of, insufficient, or improper maintenance of the appliance.

Regular maintenance of the appliance by a qualified 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 until an inspection can be carried out.

8.1 - Limitations of warranty

8.1.1 - General information

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

- Misuse (other than domestic), abuse, negligence, improper transport, improper handling, or improper storage.
- 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.

8.1.2 - Cases for exclusion from warranty (not limited to)

8.1.2.1 - Use

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

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

8.1.2.2 - 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.

8.1.2.3 - 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 20m³ where there is no piping for air intake or 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.

8.1.2.4 - 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.

8.1.2.5 - Hydraulic connections

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

- 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 installing 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 insulating).
- 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.

8.1.2.6 - 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.

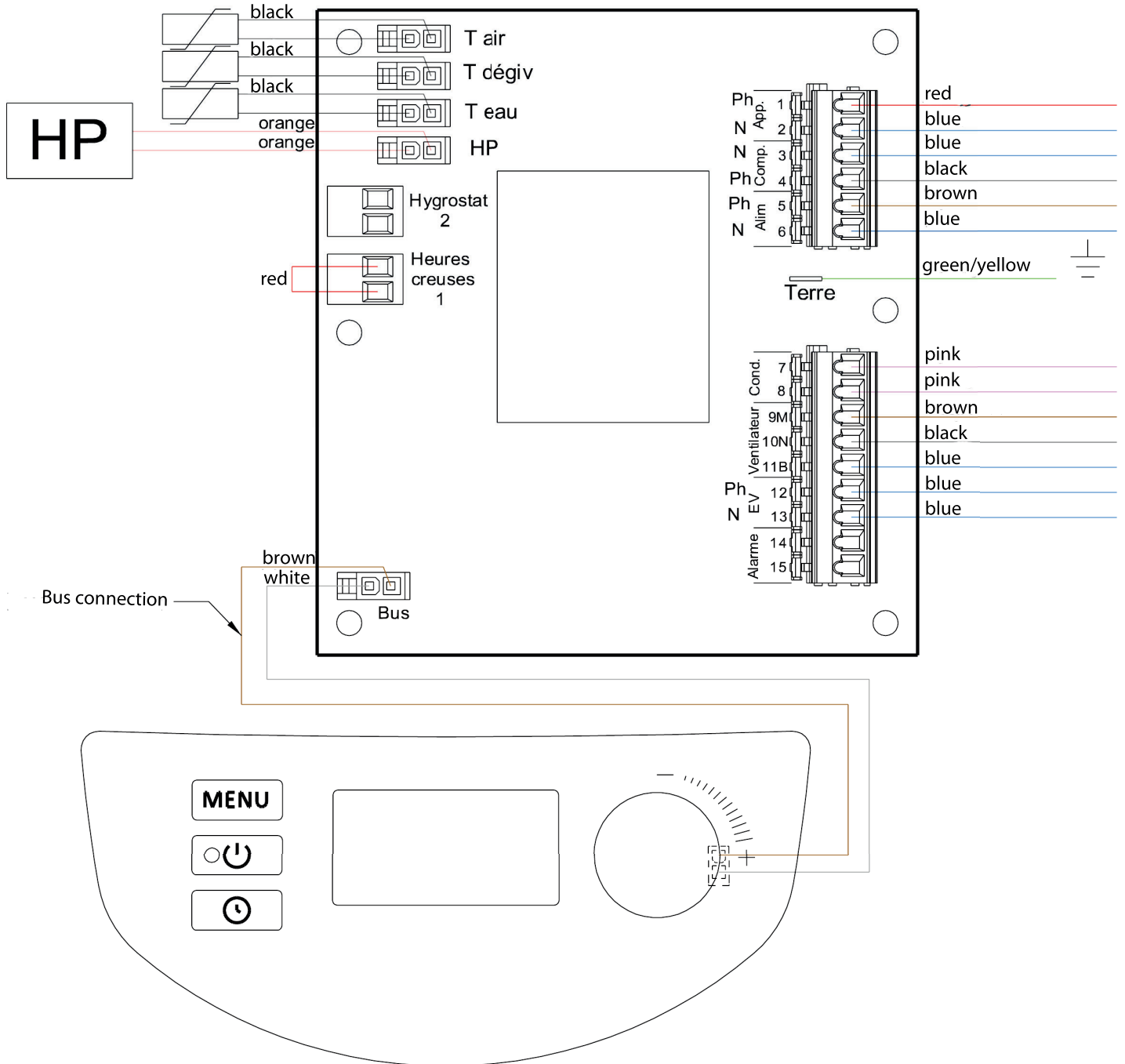
8.1.2.7 - Maintenance

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

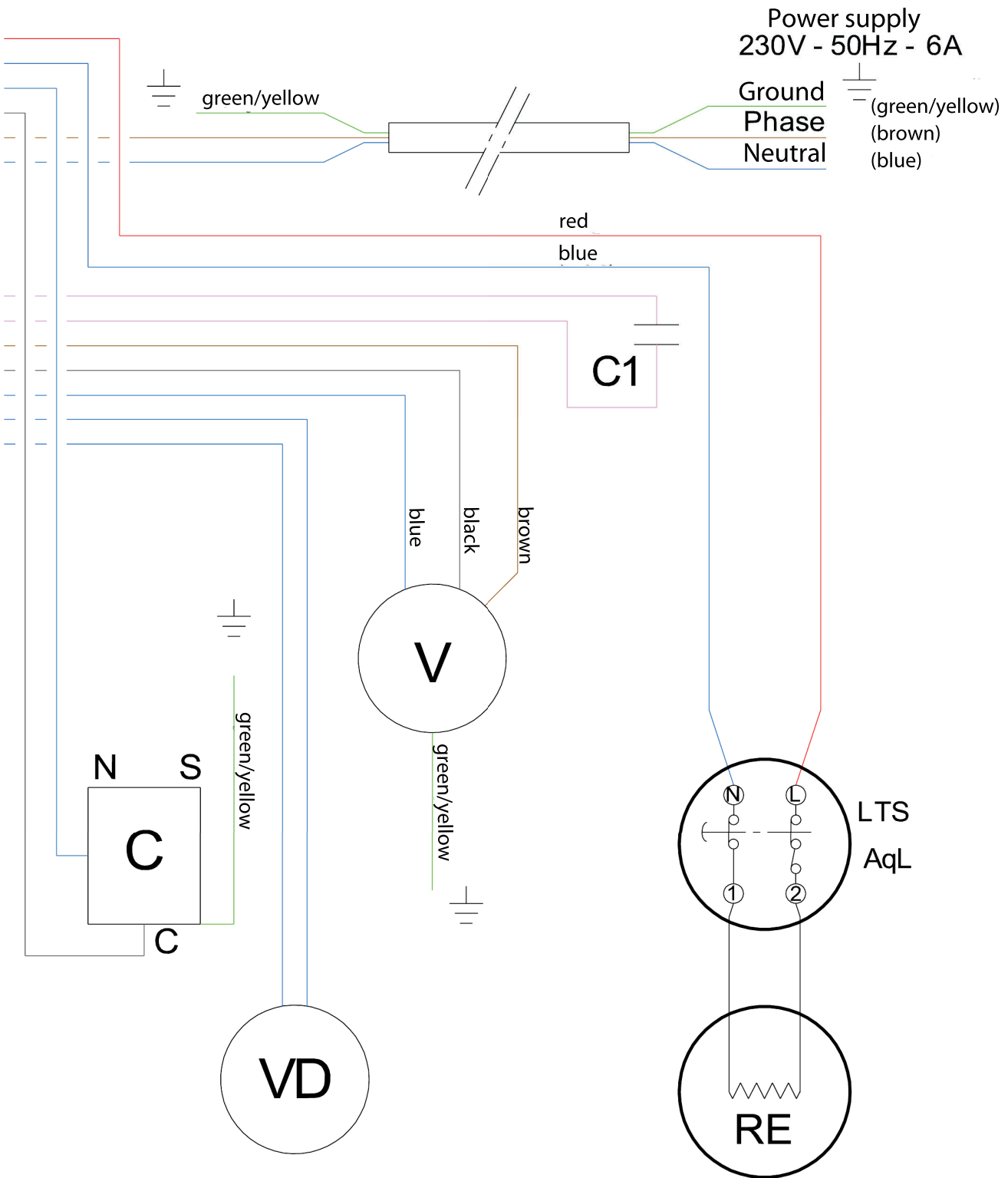
- Not maintaining the appliance, and not changing the anode in due time.
- Not maintaining the pressure-relief valve, resulting in excessive pressure.
- Absence of a pressure-reducer
- Not maintaining the evaporator or the condensates draining system.
- Abnormal levels of limescale on heating elements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

9 - APPENDICES

9.1 - Electrical wiring diagram



- C1 - Fan capacitor
- V - Fan
- C - Compressor
- VD - Defrosting valve
- RE - Electrical resistance 1200W
- LTS - Heat-limiting safety thermostat for the electrical back-up
- AqL - Electrical back-up aquastat
- HP - High pressure pressure sensor





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