



Heat pump water heater



Dear Customer,

We wish to thank you for having purchased the heat pump water heater. We hope that it meets your expectations and may offer you optimal service coupled with maximum energy saving for many years to come.

Our group invests a lot of time, energy and economic resources in creating innovative solutions aimed at reducing the energy consumption of its products.

Your choice shows sensibility and awareness towards reducing energy consumption, an issue directly related to environmental protection. Our constant commitment to creating innovative and efficient products coupled with your responsible behaviour in the rational use of energy both actively contribute to safeguarding the environment and natural resources.

Store this manual with care; it is intended to provide information, warnings and suggestions on the correct use and maintenance of the appliance, so that you may fully appreciate all its qualities. Our technical assistance centre closest to you is at your complete disposal for answering any of your queries.

INTRODUCTION

This manual is intended for final users of the heat pump water heater and plumbers responsible for the latter installation. Failure to observe the indications contained in this manual shall void the warranty.

This manual is an integral and essential part of the appliance. It must be stored with care by the user and should always be passed on to new owners or users of the appliance, and/or when the latter is transferred to another system.

In order to ensure correct and safe use of the appliance, both installer and user, each for his/her respective requirements, must read the instructions and precautions contained in this manual carefully, as they provide important safety indications concerning installation, use and maintenance of the appliance.

This manual is divided into four distinct sections:

- **SAFETY WARNINGS**

This section contains the safety precautions to be observed.

- **GENERAL INFORMATION**

This section contains useful general information relating to the description of the appliance and its technical features, besides information on the symbols, units of measurement and technical terms used. This section includes the water heater's technical data and dimensions.

- **TECHNICAL INFORMATION FOR INSTALLERS**

This section is intended for installers. It contains all the indications and instructions that professionally qualified personnel must observe in order to ensure optimal installation of the appliance.

- **OPERATING AND MAINTENANCE INSTRUCTIONS FOR THE USER**

This section is intended for final users and contains all the information necessary for operating the appliance correctly and for assisting the user in carrying out regular checks and maintenance operations on the appliance.

The manufacturer reserves the right to modify the data and contents of this manual without prior notice, with the aim of improving the quality of the relative products.

To facilitate understanding of the contents herein, given that the manual is published in multiple languages and is valid for use in several countries, all the illustrations are grouped in the final pages and are common to the various languages.



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SAFETY WARNINGS




CAUTION

1. **This manual is an integral part of the product. Keep it with care with the appliance, and hand it on to the next user/owner in case of change of property.**
2. **Read the instructions and warnings in this manual carefully, they contain important information regarding safe installation, use and maintenance.**
3. The appliance must be installed and commissioned by a qualified technician in accordance with local legislation and health and safety regulations. All power circuits must be shut off before you open the terminal block.
4. **DO NOT** use the appliance for any other than its specified use. The manufacturer is not liable for damage resulting from improper or incorrect use or failure to observe the instructions given in this manual.
5. Incorrect installation can result in damage to property and injury to persons and animals; the manufacturer is not liable for the consequences.
6. Do not leave the packaging materials (staples, plastic bags, expanded polystyrene, etc.) within the reach of children - they can cause serious injury.
7. The appliance may not be used by persons with reduced physical, sensory or mental capacity, or lacking the requisite experience and familiarity, unless under supervision or following instruction in the safe use of the appliance. **DO NOT** permit children to play with the appliance.
8. **DO NOT** touch the appliance when barefoot or if any part of your body is wet.
9. Any repairs, maintenance, plumbing and electrical connections must be done by qualified technicians using original spare parts only. Failure to observe the above instructions can compromise the safety of the appliance and relieves the manufacturer of any liability for the consequences.
10. The hot water temperature is regulated by a thermostat which also acts as a re-armable safety device to prevent dangerous overheating.
11. The electrical connections must be done as indicated in this manual.
12. If the appliance is equipped with a power cord, the latter may only be replaced by an authorised service centre or professional technician.
13. It is mandatory to screw on to the appliance's water intake pipe a suitable device against overpressure; this device must not be tampered with and must be made to operate frequently in order to check that it is not blocked and to remove any limescale. In countries which acknowledge EN 1487, the appliance's water intake pipe must be equipped with a safety device compliant with said standard; it must be calibrated to a maximum pressure of 0.7 MPa, including at least a cock, check valve, safety valve and hydraulic load cut-out.
14. Make sure you drain the appliance when it is out of service in an area subject to subzero temperatures. Drain as described in the appropriate chapter.
15. Water heated to over 50°C can cause immediate serious burns if delivered directly to the taps. Children, disabled persons and the elderly are particularly at risk. We recommend installing a thermostatic mixer valve on the water delivery line.
16. Do not leave flammable materials in contact with or in the vicinity of the appliance.
17. The appliance is not supplied with batteries. Where these are required, it is suggested use the battery kit made by the manufacturer. Carefully observe the polarity when fitting. At the end of their life, dispose of batteries in accordance with applicable legislation using dedicated containers. Disconnect the appliance from the mains power supply when fitting or removing batteries.

GENERAL INFORMATION

1.1 Description of the symbols used


In terms of installation and operation safety, the symbols described in the table below are used in order to stress the importance of the relative risk warnings:

Symbol	Description
	Failure to comply with this warning may result in injury to persons or, in some cases, death.
	Failure to comply with this warning may result in serious damage to property and plants or injury to animals .
	It is mandatory to comply with the general and appliance-specific safety measures.

1.2 Field of application

This appliance is intended for hot water production for domestic use or similar, at temperatures below boiling point. The appliance must be hydraulically connected to a domestic water supply line and to a power supply network. Exhaust ducts may be used for the entry and discharge of processed air.

It is forbidden to use of the appliance for uses other than those specified. Any alternative use of the appliance constitutes improper use and is prohibited; in particular, the appliance may not be used in industrial cycles and/or installed in environments exposed to corrosive or explosive materials. The manufacturer shall not be held liable for any damage due to faulty installation, improper use or uses deriving from behaviour that is are not reasonably predictable, and incomplete or careless implementation of the instructions contained in this manual.

	This appliance should not be operated by individuals (including children) with reduced physical or sensory abilities, or by inexperienced or unskilled individuals, unless adequately supervised and trained regarding use of the appliance by persons responsible for their own safety. Children must be supervised by persons responsible for their safety so as to ensure that they do not use the appliance as a toy.
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1.3 Instructions and technical norms

The purchaser pays for the appliance's installation, which must be carried out by qualified personnel only, in conformity with national regulations in force and any provisions emitted by local authorities or bodies responsible for public health, and in accordance with the specific manufacturer indications contained in this manual.

The manufacturer is responsible for the product's conformity to the relevant construction directives, laws and regulations in force at the time the product is first commercialised. The designer, installer and user are each exclusively responsible, in their respective fields, for knowing and observing the legal requirements and technical regulations concerning the design, installation, operation and maintenance of the appliance. Any reference to laws, regulations or technical specifications contained in this manual is purely for information purposes; any new laws introduced or modifications to existing laws are not in any way binding on the manufacturer towards third parties. It is necessary to ensure that the power supply network to which the product is connected complies with the EN 50160 norm (under penalty of warranty invalidation). Relative to France, ensure that installation complies with the NFC 15-100 norm.

The tampering of product integral parts and/or supplied accessories invalidates the warranty.

1.4 Product certifications

The CE marking of the appliances attests its conformity to the following EC Directives, of which it satisfies the essential requisites:

- 2006/95/EC on electrical safety (EN/IEC 60335-1; EN/IEC 60335-2-21; EN/IEC 60335-2-40);
- 2004/108/EC on electromagnetic compatibility (EN 55014-1; EN 55014-2; EN 61000-3-2; EN 61000-3-3);
- RoHS2 2011/65/EU on restriction of use on certain hazardous substances in electrical and electronic equipment (EN 50581).
- Commission Regulation (EU) no. 814/2013 on ecodesign (no. 2014/C 207/03 - transitional methods of measurement and calculation)

Verification of performance is carried out through the following technical regulations:

- EN 16147;
- CAHIER DE CHARGE_103-15/B_2011 Chauffe-eau Thermodynamiques pour la marque NF électricité performance;
- 2014/C 207/03 - transitional methods of measurement and calculation

This product complies with:

- REACH Regulation 1907/2006/EC;
- Commission Delegated Regulation (EU) no. 812/2013 (labelling)

1.5 Packaging and supplied accessories

The appliance is anchored to a wooden pallet and is protected with polystyrene top cover, wooden edge protectors, and external cardboard; all the materials are recyclable and eco-compatible.

The following accessories are included:

- Belt for handling the water heater (to be removed once the product is installed);
- Connection pipe for condensation water;
- One 3/4" dielectric coupling and joint;
- Instruction manual and warranty documents;
- Energy label and product fiche;
- 2 adapters for Ø150 and Ø160 ducts.

1.6 Transport and handling

Upon delivery of the product, check that the latter has not been damaged during transport and that no signs of damage appear on the packaging. In the event of damages, immediately notify any claims to the forwarder.

WARNING! The appliance should be handled and stored in a vertical position. The product may be handled in a horizontal position only for short distances, while resting on the rear end indicated; in this case, wait at least 3 hours before starting the appliance once it has been correctly repositioned in a vertical position and/or installed; this is to ensure that the lubricating oil inside the refrigeration circuit is suitably distributed and to avoid damages to the compressor.

The packaged appliance may be handled either manually or with the aid of a forklift truck, while ensuring that the above indications are observed. It is advisable to keep the appliance in its original packaging until installing it in its chosen location, particularly when construction work is under way on-site.

Upon removing the packaging, check whether the appliance is intact and that no parts are missing. In the event of defects or missing components, notify the dealer within the time limits specified by the law.

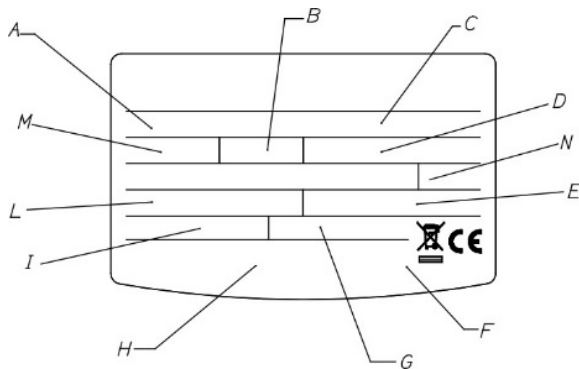
WARNING! Keep the packaging elements out of the reach of children, as they are potentially dangerous.

When transporting or handling the appliance after the initial start-up, observe the aforementioned indication concerning the allowed tilt angle and ensure that all water has been drained from the tank. Should the original packaging be missing, provide an adequate protection for the appliance to prevent any damages, for which the manufacturer shall not be held liable.

Allowed positions for transportation	Non-allowed positions

1.7 Identification of the appliance

The main information for identifying the appliance is contained on the adhesive data plate located on the water heater casing.



A	Model
B	Tank capacity
C	Serial no.
D	Power supply voltage, frequency, maximum absorbed power
E	Max./min. pressure of the refrigeration circuit
F	Tank protection
G	Absorbed power – heating element mode
H	Marks and symbols
I	Max./min. power in heat pump mode
L	Type of refrigerant and charge
M	Maximum tank pressure
N	Product weight

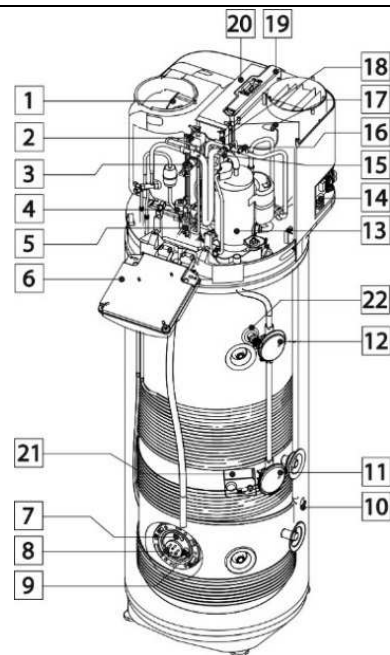
2. TECHNICAL FEATURES

2.1 Operating principle

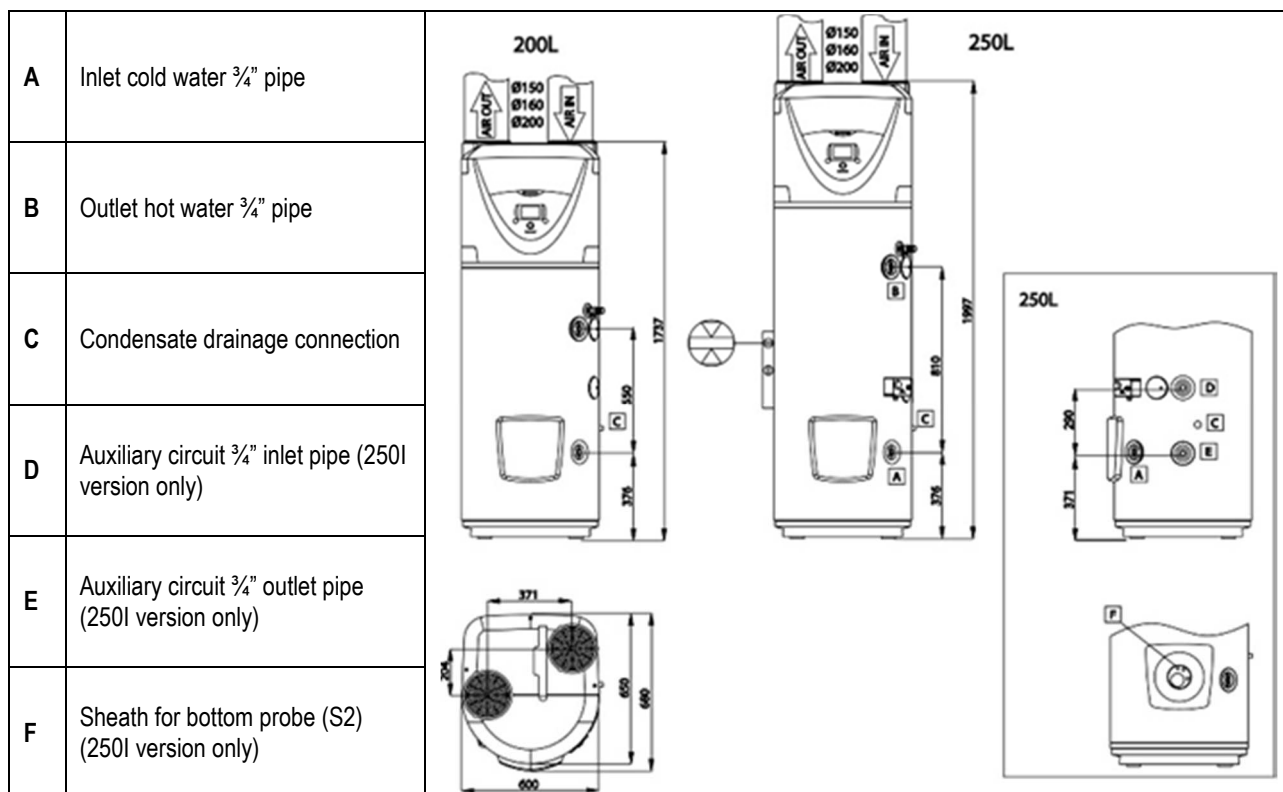
The efficiency of a heat pump cycle is measured by the Coefficient of Performance (COP), i.e. the ratio between the energy supplied to the appliance (in this case, the heat transferred to the water to be heated) and the electrical energy used (by the compressor and the appliance's auxiliary devices). The COP varies according to the type of heat pump and to its relative conditions of operation. For example, a COP value equal to 3 indicates that for every 1 kWh of electrical energy used, the heat pump supplies 3 kWh of heat to the medium to be heated, of which 2 kWh are extract from the free source.

2.2 Construction features

1	Fan	12	Top NTC temperature probe (hot water)
2	Hot gas valve	13	Hermetic rotary compressor
3	Safety pressure switch	14	Lateral connections
4	Electronic expansion valve	15	Pressure transducer
5	Evaporator inlet NTC temperature probe	16	Low pressure outlet
6	Electronic box	17	Air NTC temperature probe
7	Bottom NTC temperature probe (heating element zone)	18	Compressor suction NTC temperature probe
8	Electric heating element	19	Evaporator filter
9	MG Anode	20	Evaporator
10	Condensate drain pipe	21	Thermostat (only 250L)
11	Middle NTC temperature probe	22	T&P valve

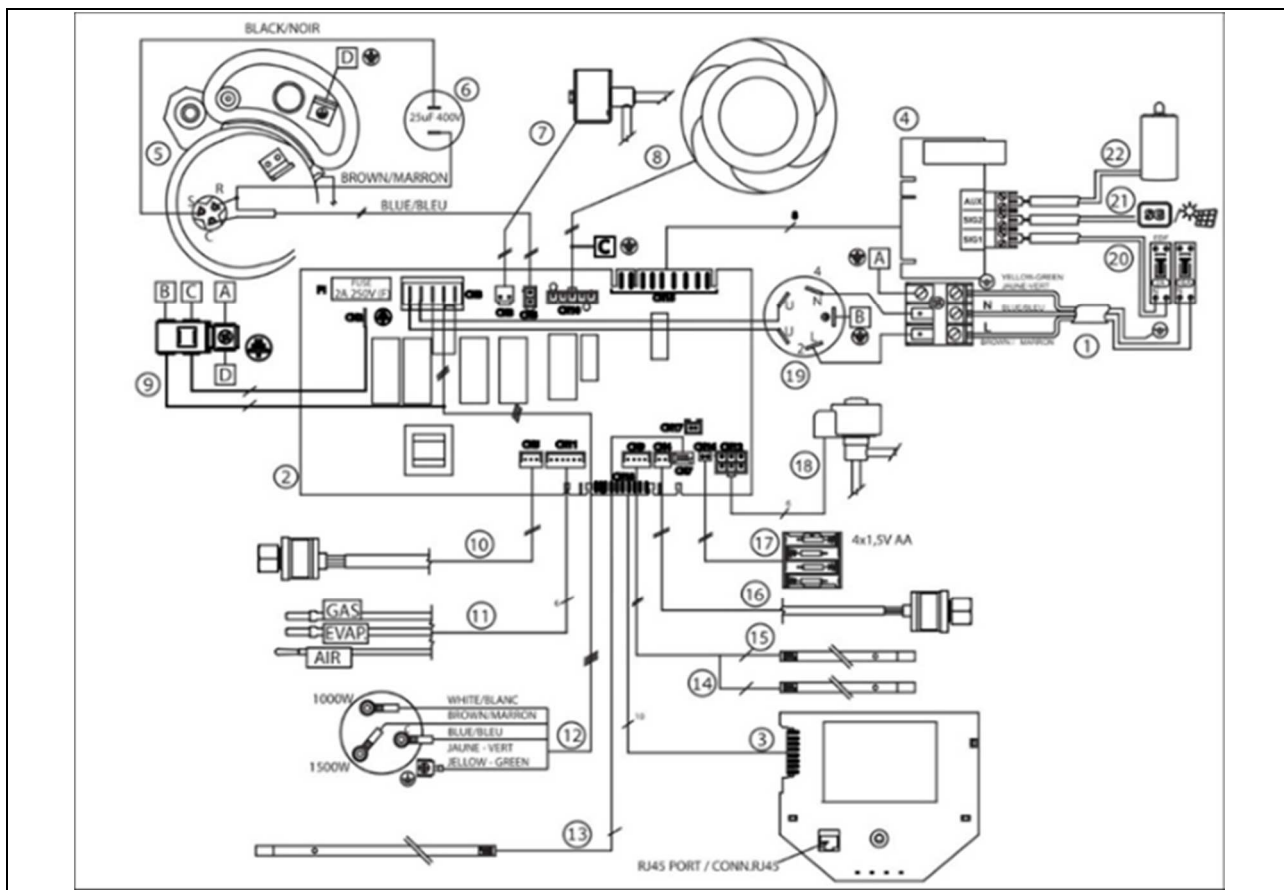


2.3 Overall dimensions.



2.4 Electrical diagram

1	Power supply (220-230V 50Hz)	12	Electric heating element (1500 + 1000 W)
2	Mainboard (motherboard)	13	Bottom NTC temperature probe (heating element zone)
3	Interface board (display or HMI)	14	Middle NTC temperature probe
4	Connection board	15	Top NTC temperature probe (hot water)
5	Hermetic rotary compressor	16	Safety pressure switch
6	Operation condenser (15µF 450V)	17	Batteries (4x1,2V AA rechargeable)
7	Hot gas valve	18	Electronic expansion valve
8	Fan	19	Filter
9	Earth pole	20	HC-HP signal (EDF) - cable not supplied with the product
10	Pressure transducer	21	PV/SG signal - cable not supplied with the product
11	Air/Evaporator/Suction NTC temperature probes	22	AUX signal - cable not supplied with the product



2.5 Technical data table

Description	Unit of measurement	200D	250I
Rated tank capacity	l	200	245
Insulation thickness	mm	≈ 50	
Type of internal tank protection		Enamelling	
Type of corrosion protection		Disposable magnesium anode	
Maximum operating pressure	bar	6	
Diameter of condensate drainage connection	mm	14	
Diameter of air exhaust/intake pipes	mm	150-160-200	
Minimum water hardness	°F	12	
Minimum conductivity of the water	µS/cm	150	
Weight when empty	kg	90	115
Weight when full	kg	290	365
Cylinder (EN 12897:2006)			
Normal operating pressure	bar	3,5	3,5
Maximum water supply pressure	bar	12	12
Cold connection (feed)	-	¾" G	¾" G
Hot connection (draw off)	-	¾" G	¾" G
Pressure Reducing Valve Set Pressure	bar	3,5	3,5
Cylinder TPRV	°C / bar	90-95 / 7	90-95 / 7
Combination valve PRV	bar	6	6
Expansion vessel pre-charge pressure	bar	3,5	3,5
Operating temperature of not-resetting thermostat	°C	-	30-70
Cylinder indirect coil (EN 12897:2006)			
Connections	-	-	¾" G
Surface area	m²	-	0,65
Maximum supply pressure	bar	-	6
Rating @60°C	l	-	181,9
Primary flow rate	l/min	-	15
Pressure drop through coil @15l/min	mbar	-	18
Primary heating power input	kW	-	9,76
Heating time from 15°C to 60°C	min	-	58:40
Max water temperature with external integration	°C	-	75

Heat pump			
Average electrical power consumption	W	700	
Max. electrical power consumption	W	900	
Quantity of R134a refrigerant fluid	kg	1,3	
Max. pressure of refrigerating circuit (low-pressure side)	MPa	1	
Max. pressure of refrigerating circuit (high-pressure side)	MPa	2,4	
Max. water temperature with heat pump	°C	62	
EN 16147			
COP (A)		3,05	3,14
Heating time (A)	h:min	04:30	05:29
Heating energy consumption (A)	kWh	2,934	3,718
Max. amount of hot water in a single intake V _{max} (A), delivered at 55°C	l	273	345
Pes (A)	W	23	24
Tapping (A)		L	XL
812/2013 – 814/2013 (B)			
Q _{elec} (B)	kWh	3,825	6,066
η _{wh} (B)	%	126,1	128,5
Mixed water at 40°C V40 (B)	l	273	345
Temperature setting (B)	°C	55	55
Annual electricity consumption (average climatic condition) (B)	kWh/year	812	1303
Load profile (B)		L	XL
Indoor sound power level (C)	dB(A)	55	55
Heating element			
Heating element power	W	1500+1000	
Max. water temperature with heating element	°C	75	
Max. current consumption	A	11,36	
Power supply			
Voltage / max. power consumption	V / W	220-240 single-phase / 2500	
Frequency	Hz	50	
Protection rating		IPX4	
Air side			
Standard air flow rate (automatic modulating control)	m³/h	650	
Available static pressure	Pa	110	
Minimum volume of room of installation (D)	m³	30	
Minimum ceiling height of room of installation (D)	m	1,940	2,200
Min. temperature of room of installation	°C	1	
Max. temperature of room of installation	°C	42	
Minimum air temperature (w.b. at 90% r.h.) (E)	°C	-7	
Maximum air temperature (w.b. at 90% r.h.) (E)	°C	42	

(A) Values obtained with external air temperature of 7°C and relative humidity at 87%, inlet water temperature of 10°C and set temperature of 55°C (according to the provisions set forth in EN 16147). Rigid Ø200 ducted product, as per second picture par 4.3.

(B) Values obtained with external air temperature of 7°C and relative humidity at 87%, inlet water temperature of 10°C and set temperature of 55°C (according to the provisions set forth in 2014/C 207/03 - transitional methods of measurement and calculation). Rigid Ø200 ducted product, as per second picture par 4.3.

(C) Values obtained from average results of three tests carried out with external air temperature of 7°C and relative humidity at 87%, inlet water temperature of 10°C and temperature set according to the provisions set forth in 2014/C 207/03 - transitional methods of measurement and calculation and EN 12102). Rigid Ø200 ducted product, as per second picture par 4.3.

(D) Value that ensures correct operation and eases maintenance if the product is not ducted. Correct operation of the product is nevertheless ensured up to a minimum height of 2,090 m, as long as the accessory grilles are used.

(E) Outside the operating temperature range of the heat pump, heating of the water is ensured by the integration.

Data collected from a significant number of products.

Additional energy data are shown on the Product Sheet (Attachment A) that is an integral part of this manual.

Products which do not have the label and data sheet required for boiler/solar power configurations pursuant to regulation 812/2013 may not be used in such installations.

TECHNICAL INFORMATION FOR INSTALLERS

3. WARNINGS

3.1 Installer qualification

WARNING! The installation and initial start-up of the appliance must be performed by qualified personnel in compliance with the national regulations in force regarding installation, and in conformity with any regulations issued by local authorities and public health bodies.

The water heater is supplied with a sufficient amount of R134a refrigerant for its operation. This refrigerant fluid does not damage the atmosphere's ozone layer, is not flammable and does not cause explosions; however any maintenance activities or work on the refrigerant circuit must exclusively be carried out by authorised personnel with the suitable equipment.

3.2 Implementing the instructions


















WARNING! Incorrect installation can harm persons or animals and damage possessions; the manufacturer shall not be held liable for any damage in such cases.




The installer is required to observe the instructions outlined in this manual.

Once installation is complete, it is the installer's duty to inform and instruct the user on how to operate the water heater and carry out the main operations correctly.

3.3 Safety regulations

Refer to Paragraph 1.1 under the section GENERAL INFORMATION for the description of the symbols used in the table below.

Ref.	Warning	Type of risk	Symbol
1	Protect connection piping and cables so as to avoid them being damaged.	Electrocution caused by exposure to live wires.	
		Flooding due to water leaking from damaged pipes.	
2	Make sure the installation site and any systems to which the appliance must be connected fully comply with the regulations in force.	Electrocution from contact with live wires that have been incorrectly installed.	
		Damage to the appliance caused by improper operating conditions.	
3	Use manual tools and equipment that are suitable for the intended use (in particular, ensure that the tool is not worn and that the handle is intact and securely fixed); use them correctly and prevent them falling from a height. Put them safely back in place after use.	Personal injury caused by flying splinters or fragments, inhalation of dust, knocks, cuts, puncture wounds and abrasions.	
		Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.	
4	Use electrical equipment that is suitable for the intended use; use the equipment correctly, keep passages clear of the power supply cable, prevent the equipment falling from a height, disconnect and put back in place after use.	Personal injury caused by flying splinters or fragments, inhalation of dust, knocks, cuts, puncture wounds and abrasions.	
		Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.	
5	Descale the components, in accordance with the instructions of the safety data sheet included with the product used, while ventilating the room and wearing protective clothing; avoid mixing different products and protect the appliance and surrounding objects.	Personal injury caused by acidic substances coming into contact with skin or eyes; inhaling or swallowing harmful chemical agents.	
		Damage to the appliance or surrounding objects due to corrosion caused by acidic substances.	
6	Make sure that any portable ladders are securely positioned, that they are sufficiently resistant, that the steps are intact and not slippery, that these do not move around when someone climbs on them and that someone supervises at all times.	Personal injury caused by falling from a height or cuts (stepladders shutting accidentally).	
7	Make sure that the work area has adequate hygiene and health conditions in terms of lighting, ventilation and the solidity of relevant structures.	Personal injury caused by knocks, stumbling etc.	
8	Wear individual protective clothing and equipment during all work phases.	Personal injury caused by electrocution, falling splinters or fragments, inhalation of dust, shocks, cuts, puncture wounds, abrasions, noise and vibration.	
9	All operations inside the appliance must be performed with the necessary caution in order to avoid sudden contact with sharp parts.	Personal injury caused by cuts, puncture wounds and abrasions.	
10	Before handling, empty all components which may contain hot water and perform bleeding where necessary.	Personal injury caused by burns.	
11	Make all electrical connections using suitably-sized conductors.	Fire caused by overheating due to electrical current passing through undersized cables.	
12	Protect the appliance and all areas in the vicinity of the work area using suitable material.	Damage to the appliance or surrounding objects caused by falling splinters, knocks and incisions.	

13	Handle the appliance with care, while using suitable protection equipment. Use the appropriate handling belt.	Damage to the appliance or surrounding objects caused by shocks, knocks, incisions and crushing.	
14	Arrange materials and equipment in such a way as to make handling easy and safe, and avoid the formation of any piles which could give way or collapse.	Damage to the appliance or surrounding objects caused by shocks, knocks, incisions and crushing.	
15	Reset all safety and control functions affected by any work performed on the appliance and make sure that they operate correctly before restarting the appliance.	Damage or shutdown of the appliance caused by out-of-control operation.	

4. INSTALLATION

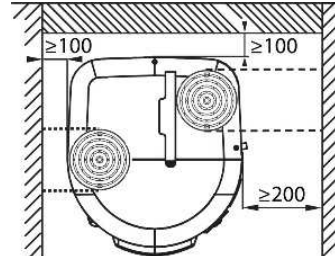
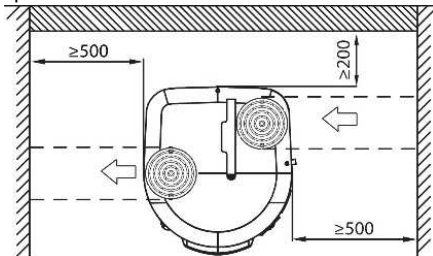


WARNING! Observe the general warnings and safety instructions listed in the previous paragraphs and strictly adhere to the indications therein contained.

4.1 Location of the appliance

WARNING! Prior to starting any installation activities, ensure that the location where the water heater is to be installed satisfies the following requirements:

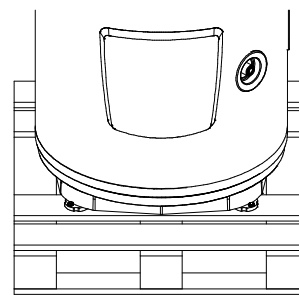
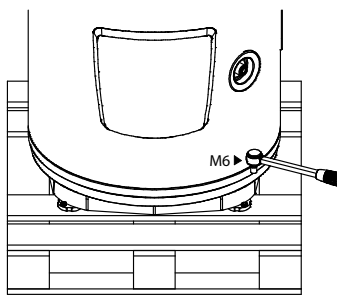
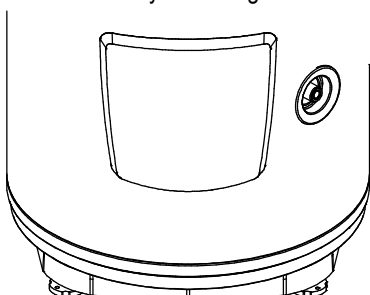
- In the event of water heaters without an air exhaust duct, the room of installation should have a volume of no less than 30 m³ and must be adequately ventilated. Avoid installing the appliance in rooms which may favour frost build-up. Do not install the product in a room containing an appliance that requires air to function (e.g. an open-chamber gas boiler, open-chamber gas water heater, etc.) unless otherwise indicated by local law. The product's safety and performance levels are not guaranteed in the event of outdoor installation.
- The appliance's air exhaust and/or extraction duct (if present) must have access to the outside from the point where the appliance is installed. The connections for the air exhaust and aspiration ducts are located on the upper part of the appliance;
- Ensure that the installation site and the electrical and hydraulic systems to which the appliance must be connected fully comply with the regulations in force;
- The chosen site must have, or must be suitable to house, a single-phase 220-240 V ~ 50 Hz power supply socket;
- The chosen site must be suitable to house a condensate drainage outlet connected to the lateral of the appliance with a suitable siphon;
- The chosen site must ensure that the appropriate safety distances from the ceiling (par. 4.3) and wall (below pictures) can be observed. It is suggested have the distance shown in first picture. The second picture shown the main distances that allow the right operational functions and guarantee the main component maintenance. They do not allow the fan replacement, in this case it will be necessary move the product.



- that installation of the ducts allows maintenance operations on the evaporator filter (refer to par. 4.3);
- that the plan allows a perfectly vertical operating position;
- The chosen site must conform to the appliance's IP protection rating (protection against the penetration of liquids) as specified by the regulations in force;
- The appliance must not be exposed to direct sunlight, even when windows are present;
- The appliance must not be exposed to particularly aggressive substances such as acidic vapours, dust or gas-filled environments;
- The appliance must be installed as close as possible to the points of use to limit heat dispersion along the piping;
- The air aspirated by the product must be free of dust, acid vapours and solvents.

4.2 Positioning on the ground

- Once the suitable installation position has been located, remove the packaging and remove the fixings visible on the pallet where the product is based.
- Using the appropriate belt, remove the product from the pallet.
- Fix the feet on the ground (through the appropriate holes) using suitable screws and rawplugs; after positioning the appliance, remove the fabric belt by loosening the relative bolts.



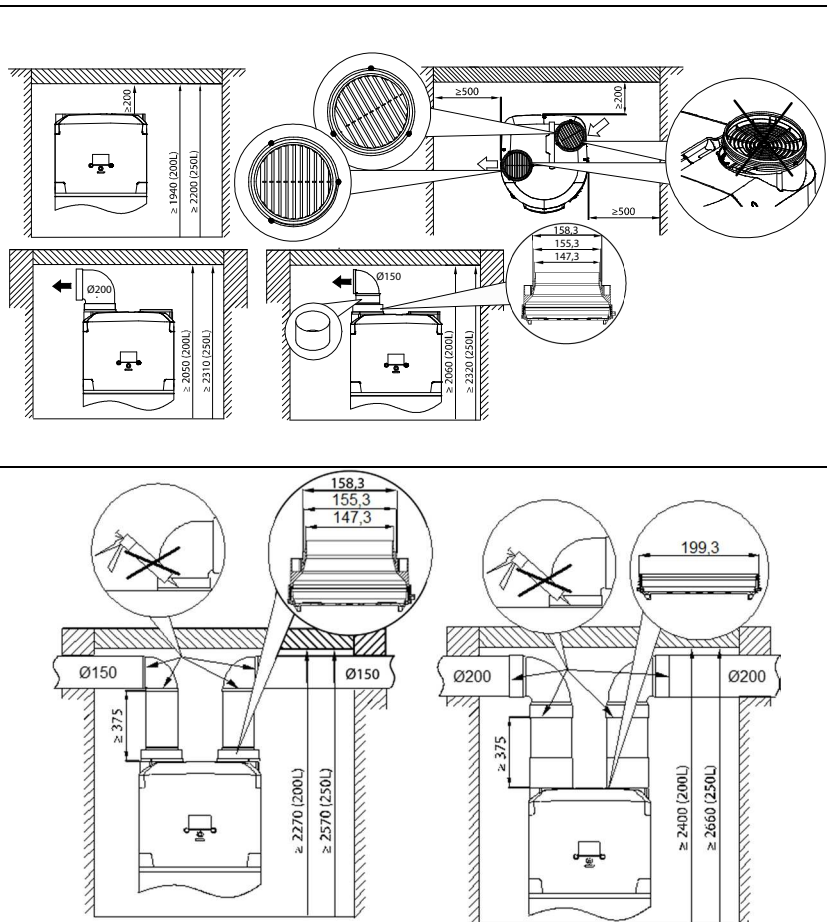
4.3 Air supply connections

Please bear in mind that using air from heated environments may hamper the building's thermal performance.

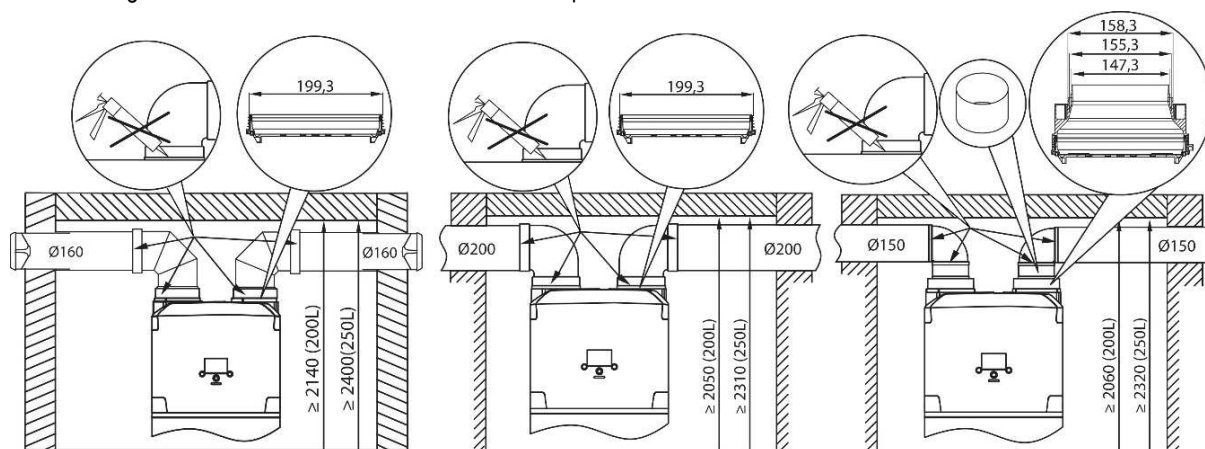
There is one connection for the air intake and one for the air exhaust on the rear side of the appliance. It is important to not remove (except for not canalized installation, picture on the side) or tamper the two grilles.

In the event of a non-ducted product, in order to avoid by-passes between the air intake and outlet, replace the grilles on the product with accessory grilles (code 3078095 where not supplied), or do not remove the grilles on the product and fit a curve in the delivery pipe (picture on the side).

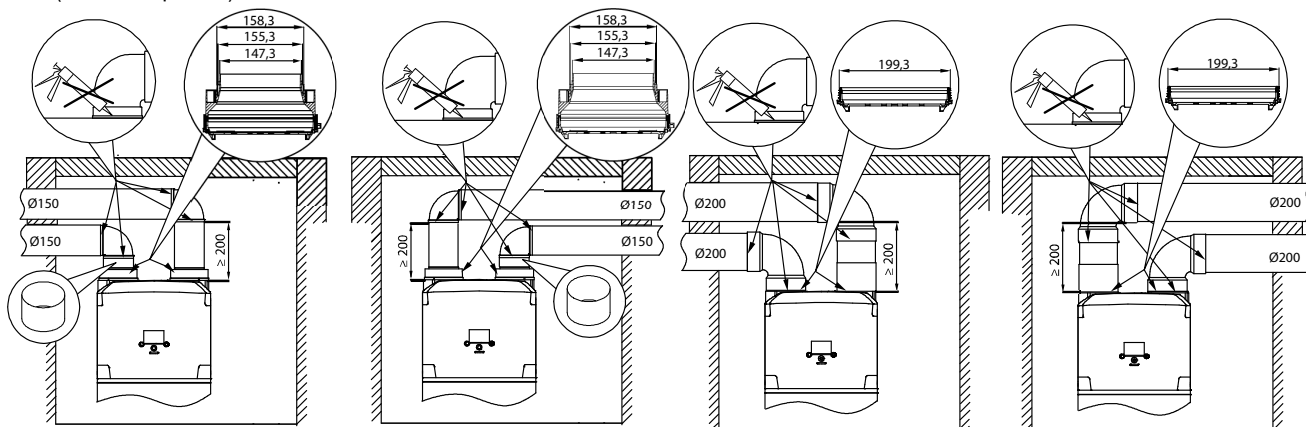
The outlet air may reach temperatures that are 5-10°C lower compared to that of the inlet air and, if not ducted, the temperature of the room of installation may drop sensibly. If operation by exhaust or intake to the outside (or another room) of the treated air by the heat pump is foreseen, suitable ducting must be used for air passage. Ensure that the ducting is connected and fastened securely to the product to prevent accidental disconnections and annoying noises. We recommend installing the ducted product as shown in picture on the side.



The minimum height for a ducted installation is shown in below picture.



In the event of a ducted product, allow a minimum distance between the product and the ducts to allow for the removal of the evaporator filter (ref. below picture).



WARNING: Do not use outdoor grills resulting in high losses, such as anti-insect grilles. The grids used should allow good air flow, the distance between the inlet and outlet air should not be less than 37cm.

Protect pipes from the external wind. The expulsion of air in the chimney is allowed only if the draft is appropriate, is also required periodic maintenance of the barrel, and chimney accessories.

The total static pressure loss due to installation is calculated by adding the loss of the single installed components; this sum must be lower than the static pressure of the fan (par. 2.5)



WARNING! A type of canalization not suitable affects product performance and significantly increases the heating time!

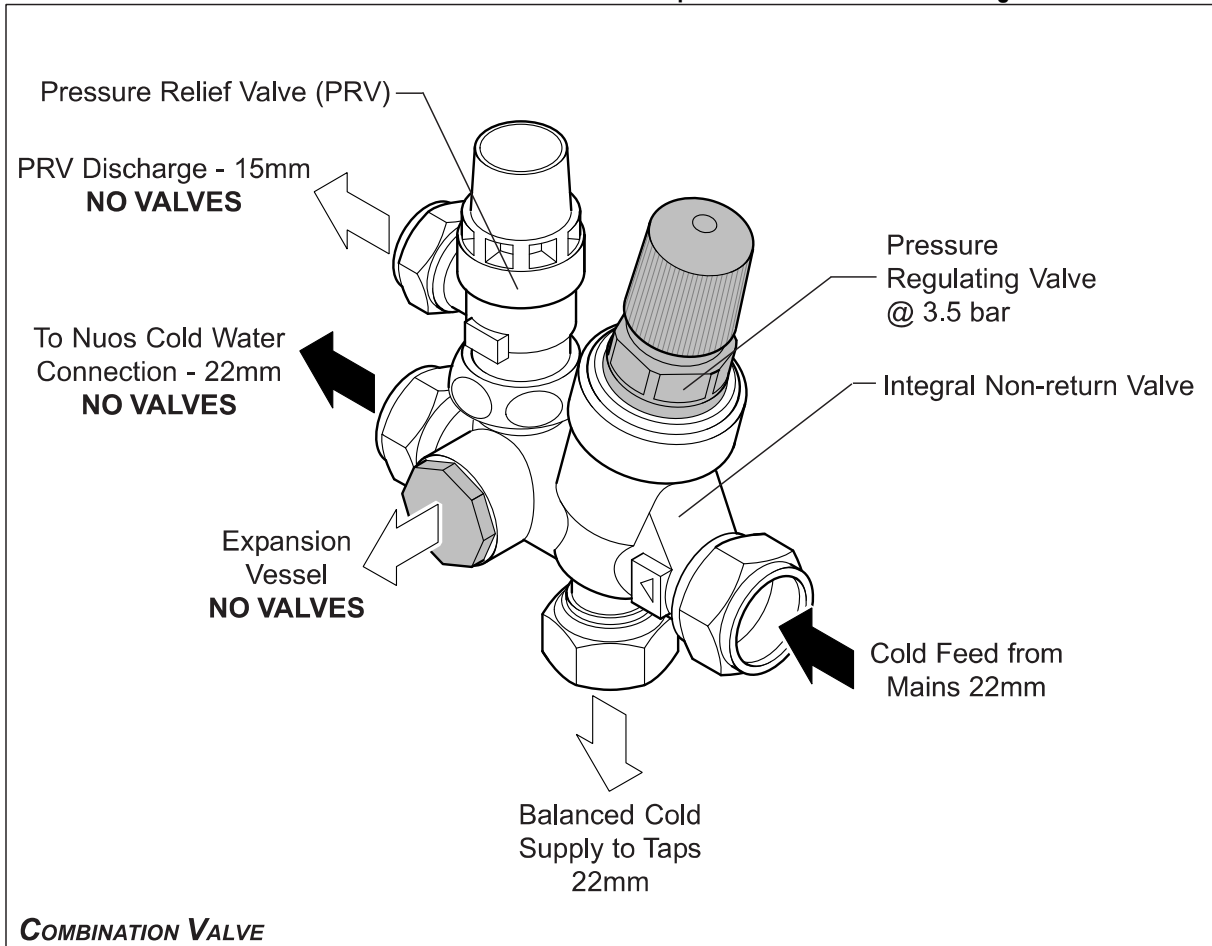
4.4 Hydraulic connections

The combination valve can be installed in any orientation.

The pipework must be flushed prior to fitting the valve to avoid damage to the valve.

WARNING: No valves must be fitted between the combination valve and the product.

WARNING: No valves must be fitted from the combination valve to expansion vessel or PRV discharge.



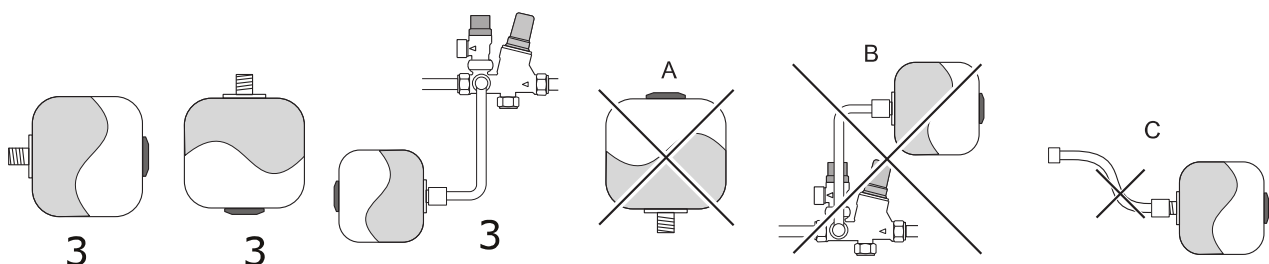
Expansion vessel installation

DO NOT install expansion vessel vertically with connection at the bottom (A).

DO NOT connect via a vertical pipe above the combination valve (B).

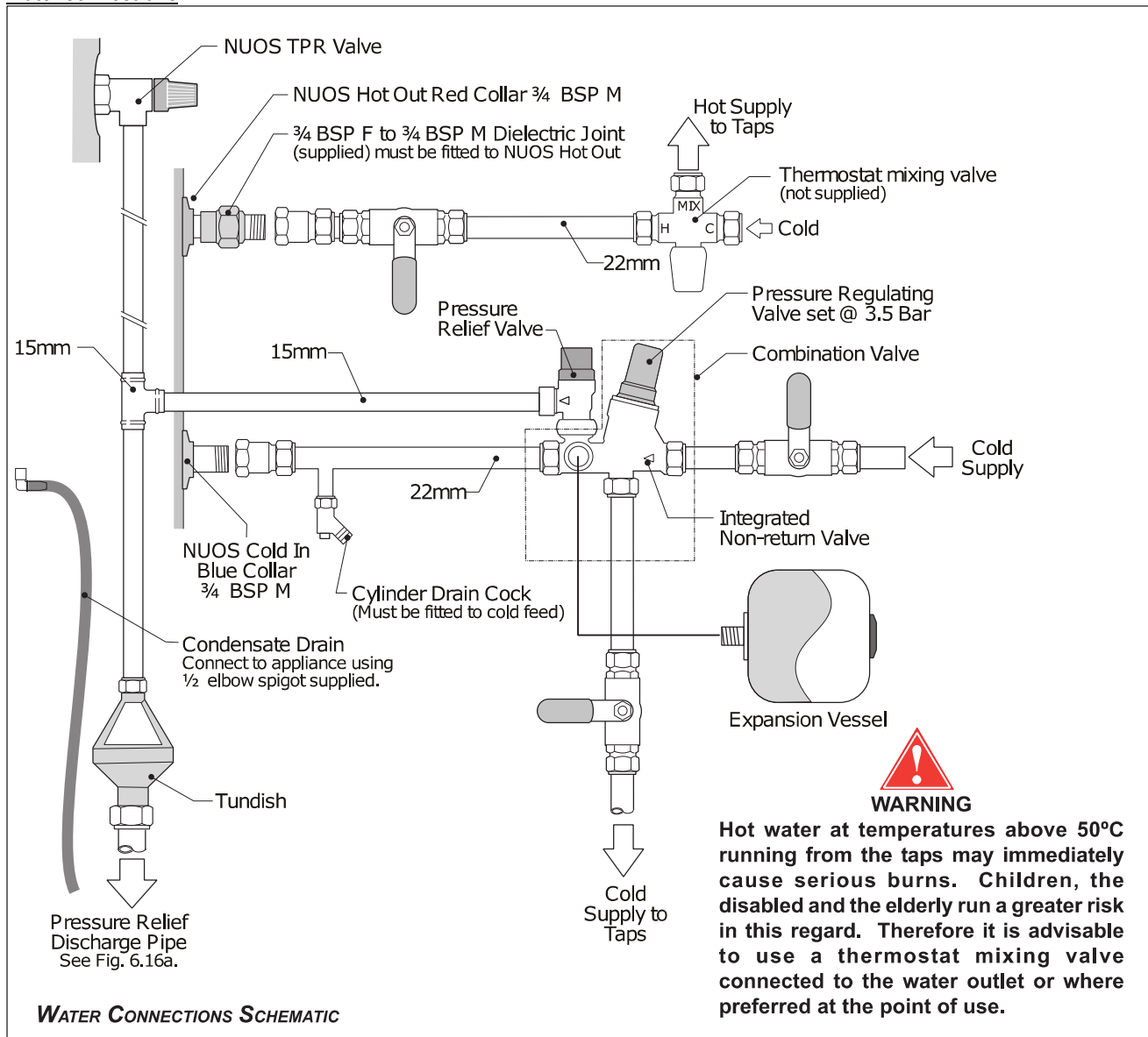
DO NOT use flexible hoses (C).

Installing EV incorrectly can cause air to become trapped in the expansion vessel resulting in potential nuisance vibration through the Nuos and pipework.



EXPANSION VESSEL INSTALLATION

Not to scale

Water connections

The appliance must not operate with water hardness levels below 12°F; on the other hand (>25°F), it is advisable to use a suitably calibrated and monitored water softener in the event of particularly hard water; **in this event, the residual hardness must not fall below 15°F.**

The 250I version has an indirect coil that is intended for connection to a water heating system, such as a solar system as show below. A manual reset overhear stat is supplied fitted to the product.

For solar installations this stat should be wired so that in the event of over heating from the solar system the thermostat switches the solar pump of, thus preventing flow to the product.

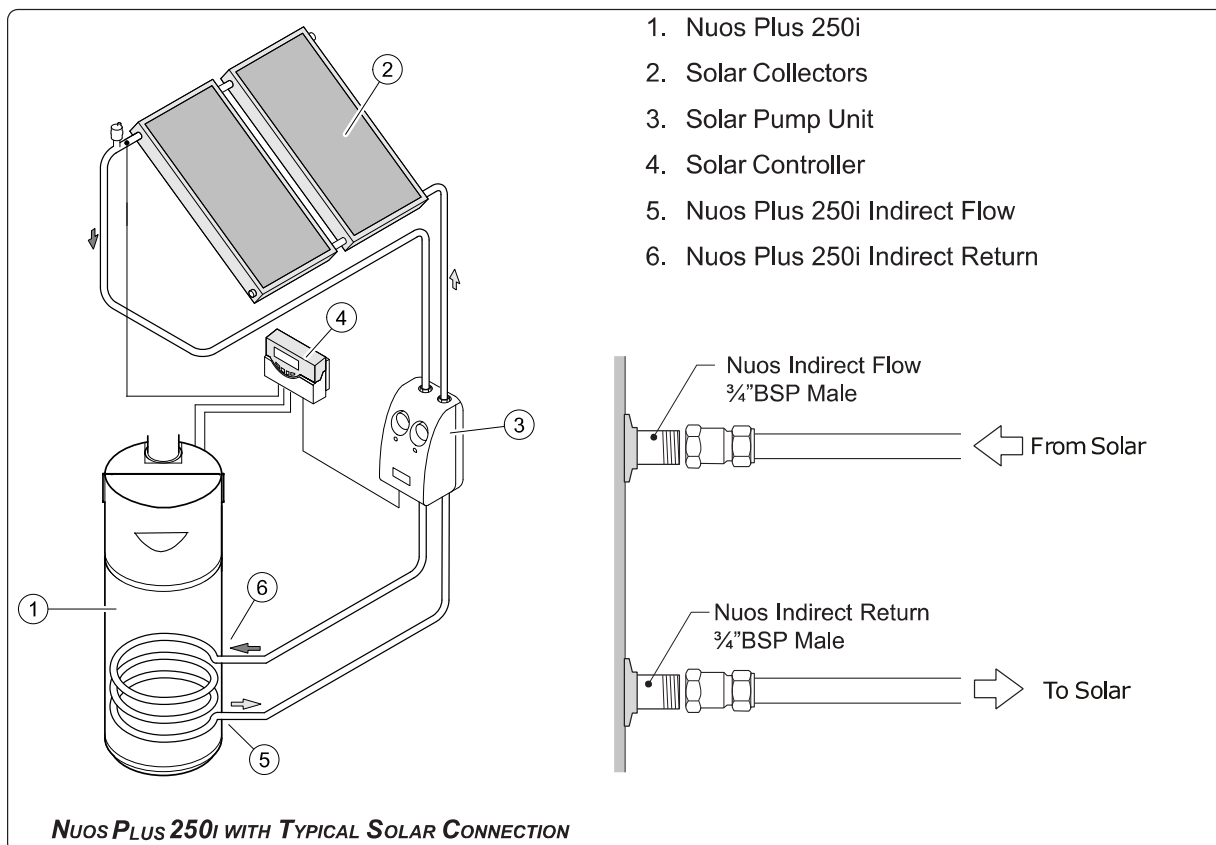
The overhear setting fro the stat should be set at a maximum temperature 70°C

The 250I version coil has two 3/4" G couplings, upper (inlet) and lower (outlet), on which to connect an auxiliary source.

WARNING! It is advisable to carefully wash the system's pipes in order to remove any residues of screw thread, welding or dirt which may hamper the correct operation of the appliance.

General guidance

Current guidance notes do not cover the connection of a solar thermal circuit to an unvented storage vessel (cylinder). However, if guidance is sought for compliance with current regulations the fundamental principle is to provide a failsafe means of shutting off the solar input to the heat exchanger if the cylinder temperature should rise above the set temperature of the cylinder's energy cut out. (see Note 1). As with all unvented hot water systems, notification of intention to install should be given to your local building control.

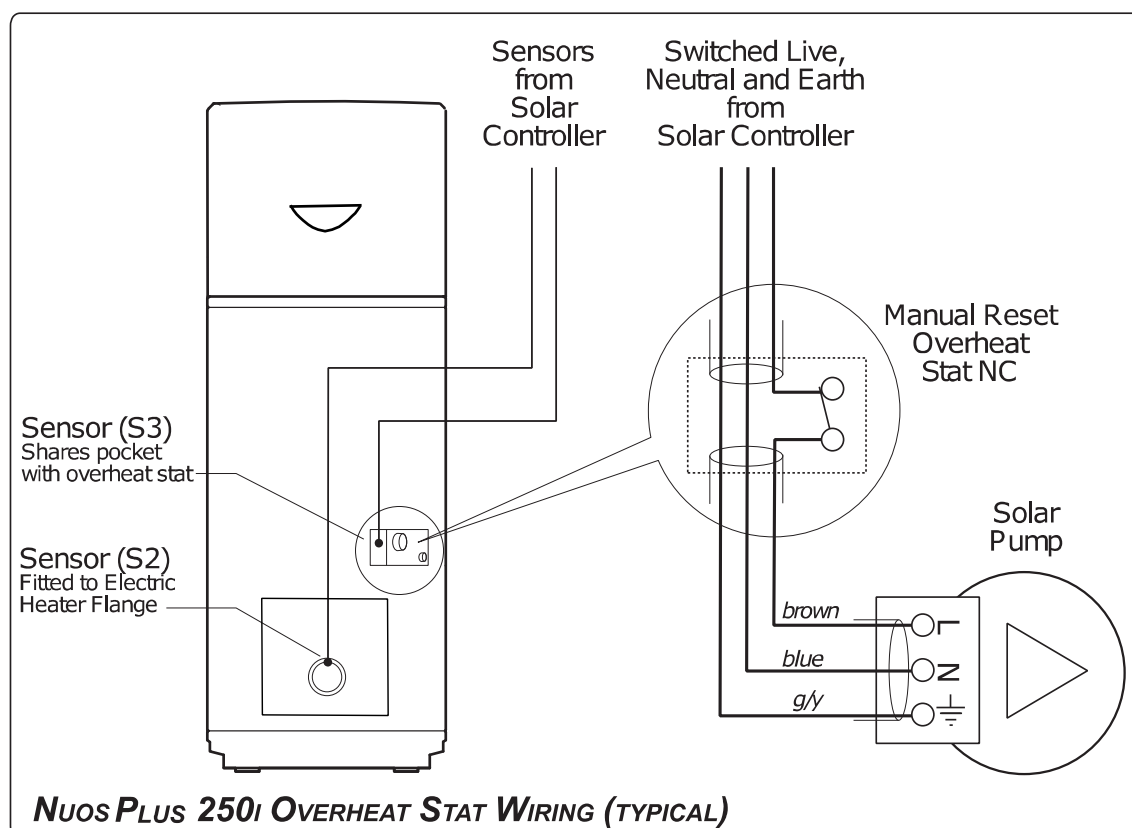


Option A: A non self resetting mechanical shut-off should be installed on the solar primary flow to the cylinder. The mechanical shut-off should be suitable for use with a solar primary circuit (i.e. high temperature and glycol resistant). The mechanical shut-off should be integrated electrically with the cylinder energy cut out/s and if necessary the solar circuit temperature control, please refer to the solar controller manufacturer for further information.

Option B: Where the solar controller and hydraulic system demonstrate that by no lesser means the requirement in Option A is satisfied by other means; certification by an approvals body is required to demonstrate that in the event of the stored water going over temperature, the heat input to the cylinder is isolated by physical means and is non self resetting. These systems should be clearly identified with reference to the approvals body. (See Note 2).

Note 1 :Whilst most solar cylinders use a coil type heat exchanger other options such as external plate to plate devices , external annulars or 'tank in tank' systems may be used but the same control options always apply.

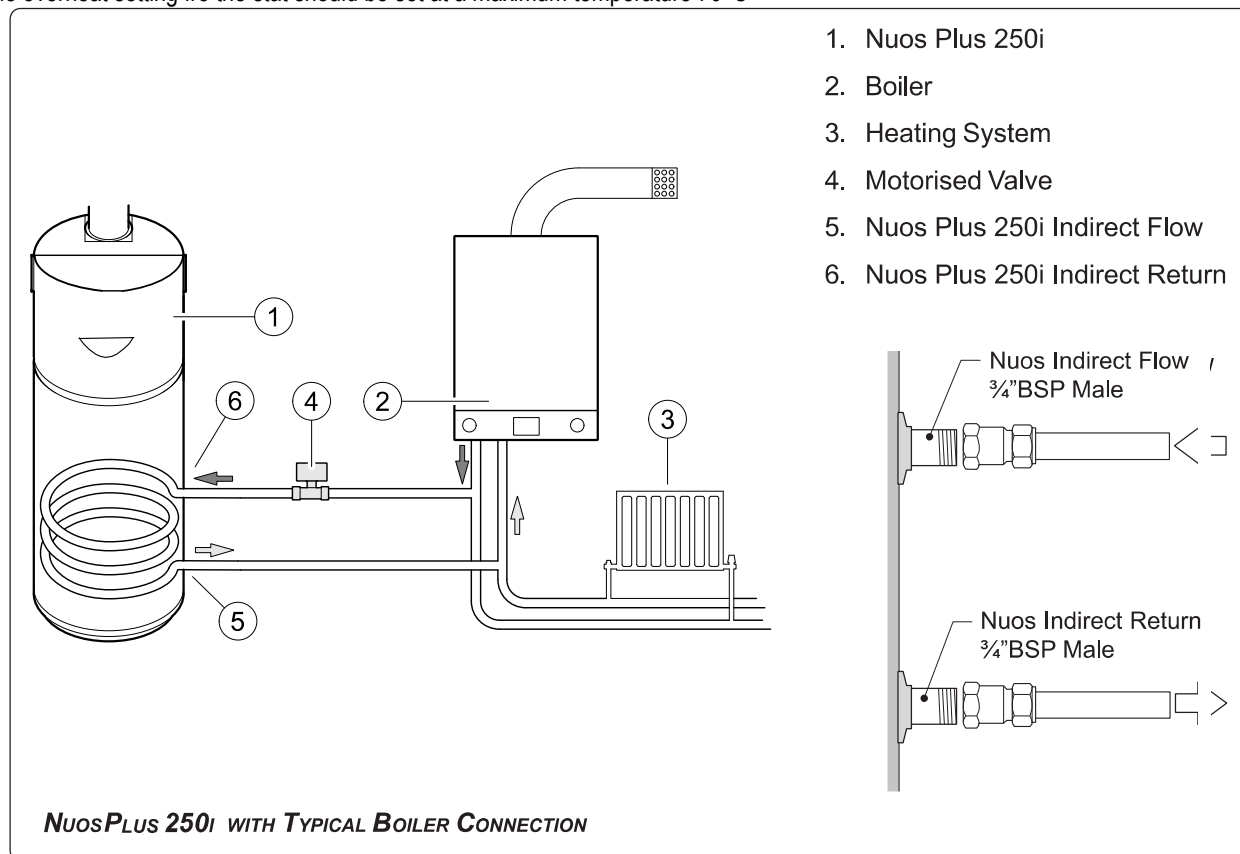
Note 2 :Current approved bodies include the British Board of Agreement (BBA) , WRc-NSF Limited, or KIWA



The 250l version has an indirect coil that is intended for connection to a water heating system, such as a boiler as show below. A manual reset overheat stat is supplied fitted to the product.

This stat should be wired so that in the event of over temperature in the product's hot water system the thermostat breaks the electrical supply to the motorized valve which in turn mechanically closes preventing primary water entering the coil.

The overheat setting fro the stat should be set at a maximum temperature 70°C



TPRV & PRV Discharge: The discharge from the cylinder TPRV and combination PRV must be plumbed to the tundish and should not be used for any other purpose. The tundish must be vertical and fitted within 750mm of the pressure relief valve and must be located with the Nuos. The tundish must be in a position visible to the occupants, and positioned away from any electrical devices. The discharge pipe from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge, and be made of a suitable material in line with Building Regulation G3 (preferably metal). The tundish must not be located near or above electrical components, switches or junction boxes.

TPRV & PRV Discharge Pipes – To Gully: The discharge pipes from safety devices (tundish) must be installed to fully comply with Part G3 of the Building Regulations (latest edition). The following text, and diagram 1 are reproduced from G3 Building Regulations 2010 (as amended) Draft.

BUILDING REGULATIONS G3 (the following text is reproduced from the Building Regulations. It is included here for reference only).

These are a statutory document and take priority over all other regulations and recommendations. The installation of an unvented hot water system of over 15 litres is classified as a “Controlled Service” and Regulation G3 applies. To meet the requirements of the regulation, installation of an unvented system should be undertaken by a “competent installer”. All installations of unvented hot water storage systems having a capacity of more than 15 litres should be notified to the relevant Local Authority by means of building notice 10 or by the submission of full plans. It is important to note that it is a criminal offence to install an unvented hot water storage system over 15 litres without notifying the Local Authority.

Discharge pipes from safety devices

Discharge pipe D1

3.50 Safety devices such as temperature relief valves or combined temperature and pressure relief valves (see paragraphs 3.13 or 3.18) should discharge either directly or by way of a manifold via a short length of metal pipe (D1) to a tundish.

3.51 The diameter of discharge pipe (D1) should be not less than the nominal outlet size of the safety device, e.g. temperature relief valve.

3.52 Where a manifold is used it should be sized to accept and discharge the total discharge from the discharge pipes connected to it.

3.53 Where valves other than a temperature and pressure relief valve from a single unvented hot water system discharge by way of the same manifold that is used by the safety devices, the manifold should be factory fitted as part of the hot water storage system unit or package.

3.54 The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible to, and lower than, the safety device, with no more than 600mm of pipe between the valve outlet and the tundish (see Diagram 1).

Note: To comply with the Water Supply (Water Fittings) Regulations, the tundish should incorporate a suitable air gap.

3.55 Any discharge should be visible at the tundish. In addition, where discharges from safety devices may not be apparent, e.g. in dwellings occupied by people with impaired vision or mobility, consideration should be given to the installation of a suitable safety device to warn when discharge takes place, e.g. electronically operated.

Discharge pipe D2

3.56 The discharge pipe (D2) from the tundish should: a. have a vertical section of pipe at least 300mm long below the tundish before any elbows or bends in the pipework (see Diagram 1); and b. be installed with a continuous fall of at least 1 in 200 thereafter.

3.57 The discharge pipe (D2) should be made of: a. metal; or b. other material that has been demonstrated to be capable of safely withstanding temperatures of the water discharged and is clearly and permanently marked to identify the product and performance standard (e.g. as specified in the relevant part of BS 7291-1:2006 Thermostatic pipes and fittings for hot and cold water for domestic purposes and heating installations in buildings. General requirements).

3.58 The discharge pipe D2 should be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic

resistance exceeds that of a straight pipe 9m long, i.e. for discharge pipes between 9m and 18m the equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device; between 18 and 27m at least 3 sizes larger, and so on; bends must be taken into account in calculating the flow resistance. See Diagram 1, Table 3.1 and the worked example.

Note: An alternative approach for sizing discharge pipes would be to follow Annex D, section D.2 of BS 6700:2006 + A1:2009 Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

Diagram 1 Typical discharge pipe arrangement

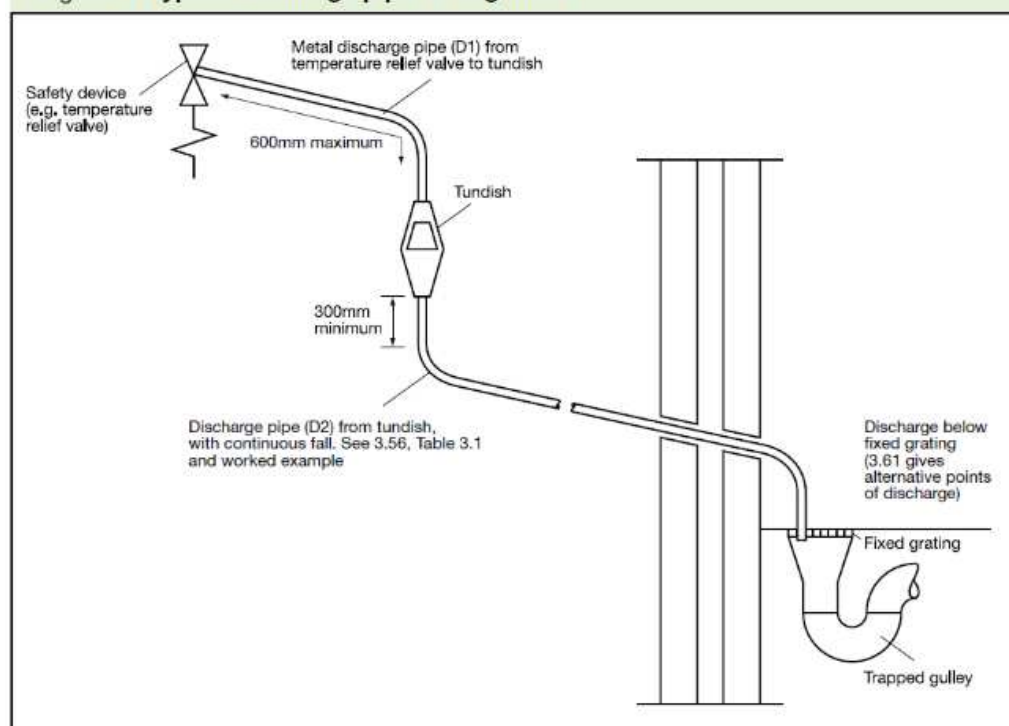


Table 3.1 Sizing of copper discharge pipe 'D2' for common temperature relief valve outlet sizes

Valve outlet size	Minimum size of discharge pipe D1*	Minimum size of discharge pipe D2* from tundish	Maximum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends)	Resistance created by each elbow or bend
G½	15mm	22mm 28mm 35mm	Up to 9m Up to 18m Up to 27m	0.8m 1.0m 1.4m
G¾	22mm	28mm 35mm 42mm	Up to 9m Up to 18m Up to 27m	1.0m 1.4m 1.7m
G1	28mm	35mm 42mm 54mm	Up to 9m Up to 18m Up to 27m	1.4m 1.7m 2.3m

*see 3.51 and 3.58 and Diagram 1

Note: The above table is based on copper tube. Plastic pipes may be of different bore and resistance. Sizes and maximum lengths of plastic should be calculated using data prepared for the type of pipe being used.

Worked example:

The example below is for a G½ temperature relief valve with a discharge pipe (D2) having 4 No. 22mm elbows and length of 7m from the tundish to the point of discharge.

From Table 3.1:

Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G½ temperature relief valve is: 9.0m

Subtract the resistance for 4 No. 22mm elbows at 0.8m each = 3.2m

Therefore the maximum permitted length equates to 5.8m which, is less than the actual length of 7m therefore calculate the next largest size.

Maximum resistance allowed for a straight length of 28mm copper discharge pipe (D2) from a G½ temperature relief valve is: 18m

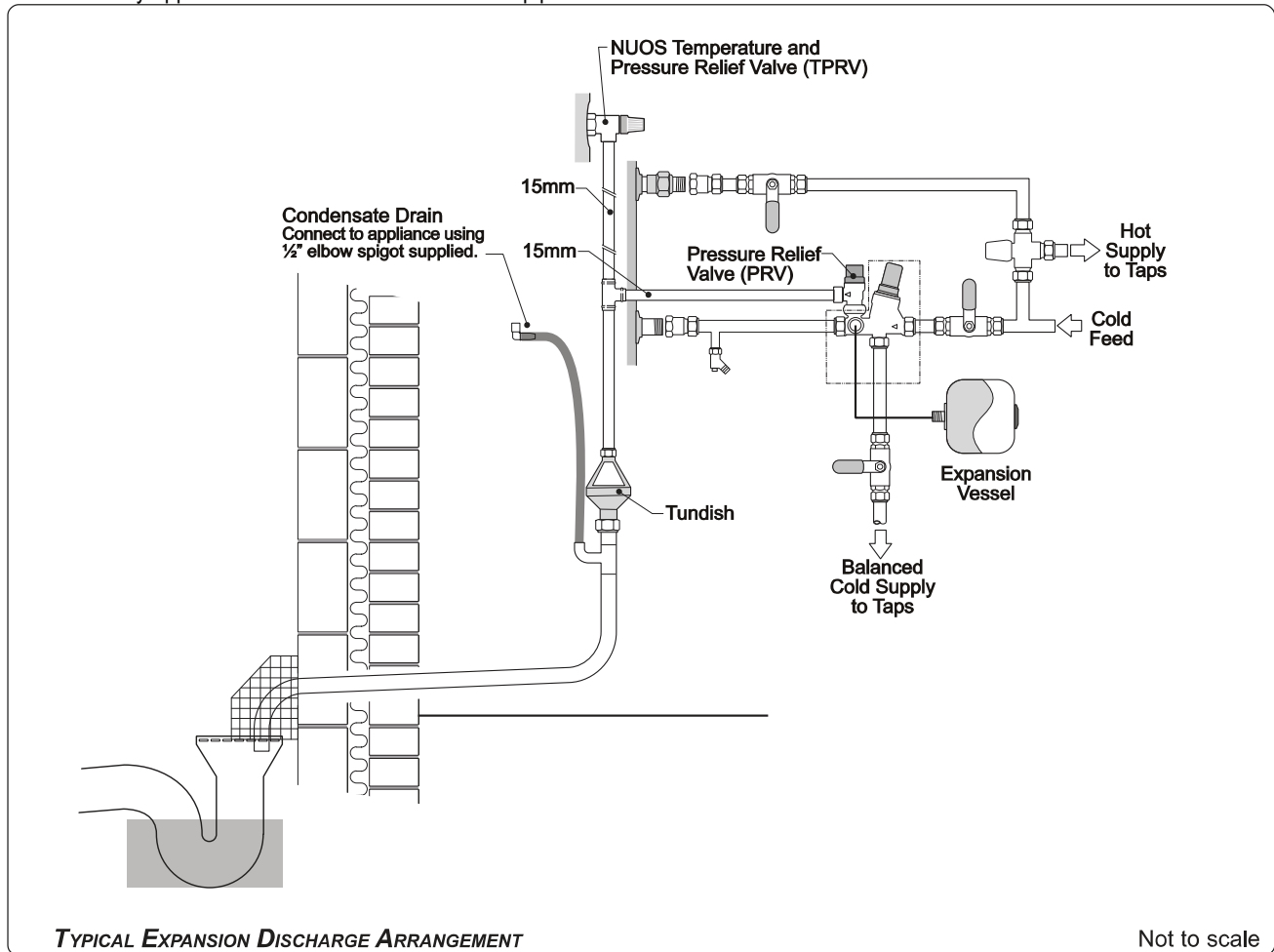
Subtract the resistance for 4 No. 28mm elbows at 1.0m each = 4m

Therefore the maximum permitted length equates to: 14m

As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

3.59 Where a single common discharge pipe serves more than one system, it should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected.

3.60 The discharge pipe should not be connected to a soil discharge stack unless it can be demonstrated that the soil discharge stack is capable of safely withstanding temperatures of the water discharged, in which case, it should: a. contain a mechanical seal, not incorporating a water trap, which allows water into the branch pipe without allowing foul air from the drain to be ventilated through the tundish; b. be a separate branch pipe with no sanitary appliances connected to it; c. if plastic pipes are used as branch pipes carrying discharge from a safety device, they should be either polybutylene (PB) or crosslinked polyethylene (PE-X) complying with national standards such as Class S of BS7291-2:2006 or Class S of BS 7291-3:2006 respectively; and d. be continuously marked with a warning that no sanitary appliances should be connected to the pipe.



Notes:

1. Plastic pipes should be joined and assembled with fittings appropriate to the circumstances in which they are used as set out in BS EN ISO 1043-1:2002 Plastics. Symbols and abbreviated terms. Basic polymers and their special characteristics.

2. Where pipes cannot be connected to the stack it may be possible to route a dedicated pipe alongside or in close proximity to the discharge stack

Termination of discharge pipe

3.61 The discharge pipe (D2) from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge.

3.62 Examples of acceptable discharge arrangements are: a. to a trapped gully with the end of the pipe below a fixed grating and above the water seal; b. downward discharges at low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility; and, c. discharges at high level: e.g. into a metal hopper and metal downpipe with the end of the discharge pipe clearly visible or onto a roof capable of withstanding high temperature discharges of water and 3 m from any plastic guttering system that would collect such discharges.

3.63 The discharge would consist of high temperature water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges. In some buildings, e.g. care homes, in-line blending valves would need to meet the additional performance standards set out in NHS Estates Model specification D 08

4.5 Electrical connections

	Cable	Max current
Permanent power supply (cable supplied with the appliance)	3G 1.5mm ²	16A
EDF signal (cable not supplied with the appliance)	H05V2V2-F 2G min. 0.75mm ²	2A
PV/SG signal (cable not supplied with the appliance)	H05V2V2-F 2G min. 0.75mm ²	2A
AUX signal (cable not supplied with the appliance)	H05V2V2-F 2G min. 0.75mm ²	2A

IMPORTANT

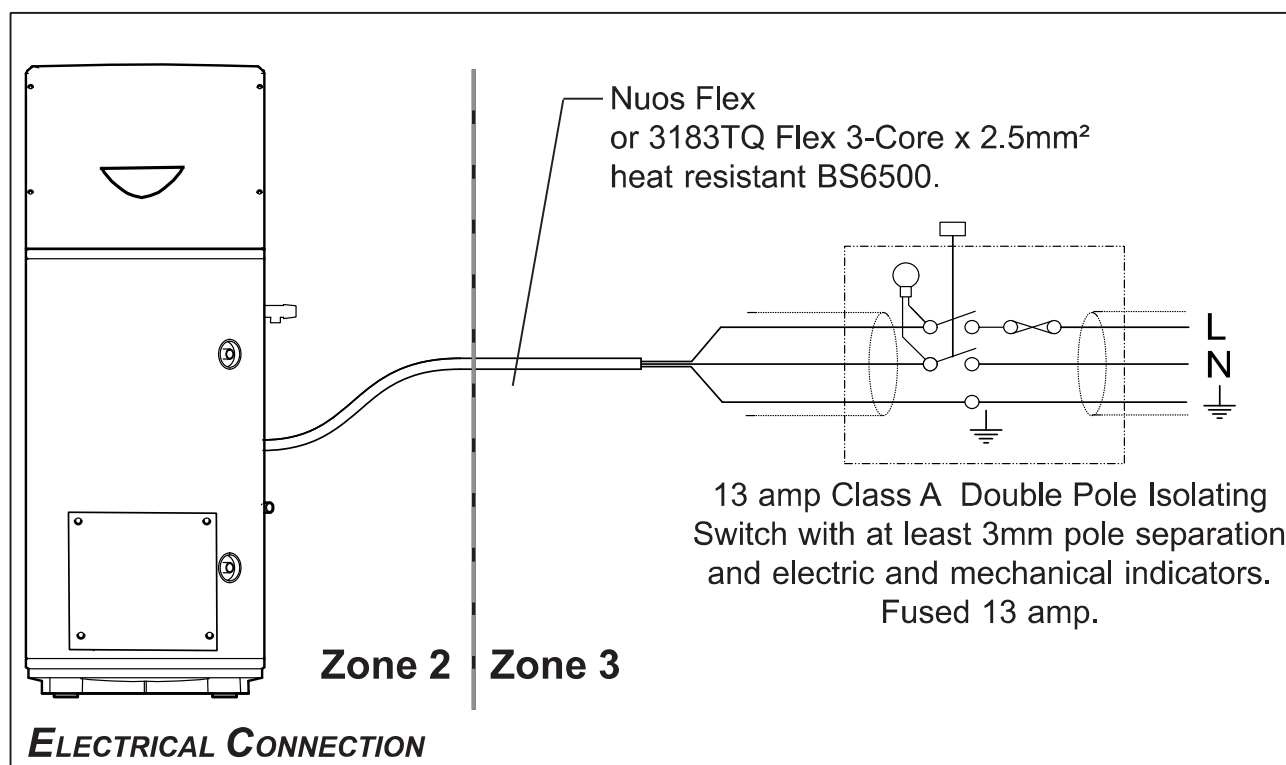
Where an appliance is installed in a room containing a bath or shower, the appliance and any electrical switch or any appliance control, utilising mains electricity should be situated specifically in accordance with current IEE wiring regulations, Health & Safety document no. 635 (Electricity at Work Regulations). For unusual locations special procedures may be necessary. **BS 6798** gives detailed guidance on this aspect.

WARNING:

Before you get access to terminals, all supply circuits must be disconnected

WARNING:

Is forbidden remove covers and do maintenance and / or electrical connections by unqualified personnel



The appliance is supplied with a power supply cable (should the latter need to be replaced, use only original spare parts supplied by the manufacturer).

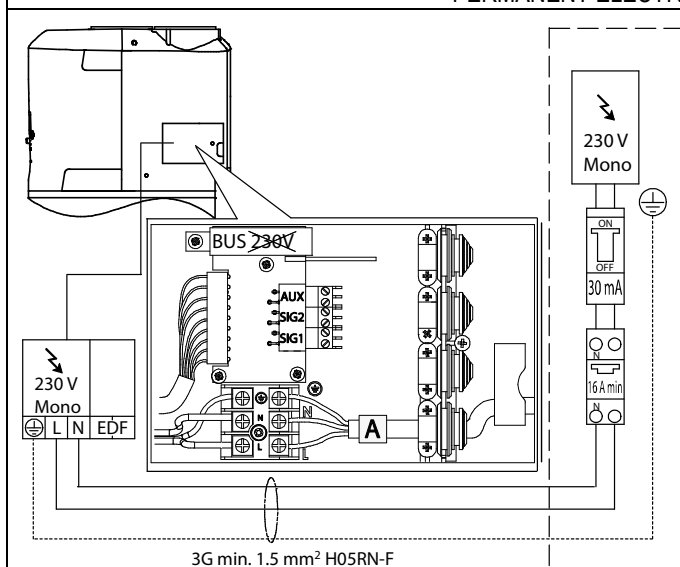
It is advisable to carry out a check on the electrical system to verify conformity to the regulations in force. Verify that the electrical system can suitably withstand the water heater's maximum power consumption values (refer to the data plate), in terms of the size of the cables and their conformity to the regulations in force. It is forbidden to use multiple outlet sockets, extension cables or adaptors. It is forbidden to use piping from the water, heating and gas systems for earthing the appliance.

Prior to operating the machine, make sure that the electricity mains voltage conforms to the value indicated on the appliance's data plate. The manufacturer of the appliance shall not be held liable for any damage caused by failure to earth the system or due to anomalies in the electric power supply. To disconnect the appliance from the mains, use a bipolar switch complying with all applicable CEI-EN regulations in force (minimum distance between contacts 3 mm, switch preferably equipped with fuses).

The appliance must comply with the European and national standards, and must be protected by a 30mA RCD.

The main circuit board on the appliance is fitted with an earth contact for operating purposes only, not for safety purposes.

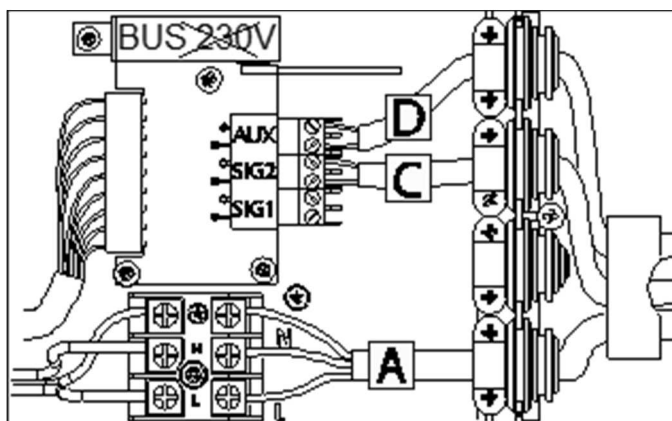
PERMANENT ELECTRICAL CONNECTION



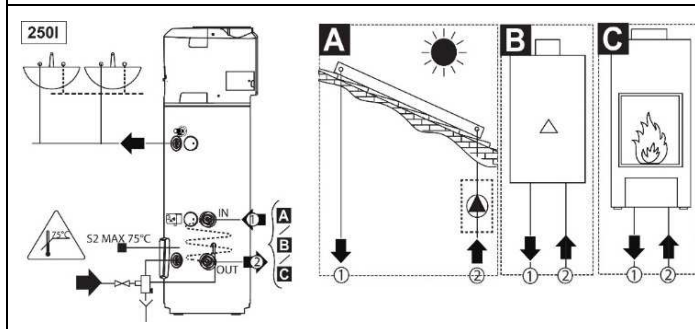
Use this configuration whenever users do not have a two-tier electricity rate.

The water heater will always be connected to the power supply network to ensure 24h operation.

AUXILIARY CONNECTION



- If you have an FV system to be connected or an available SG signal, you can connect a bipolar cable from the inverter or the SG signal cable (one in alternative to the other) to the electrical box on the right hand side of the product (secure the cable into the dedicated cabling sheath). Connect said cable (C) to the “SIG2” connector and enable the PV (P9) or SG (P18) function on the installer's menu (see paragraph 7.7). **Caution: 230 V signal.**
- Only for 250I version, if you have an auxiliary heat generator (boiler) and you want to replace the integration performed by the heating element with it, you can connect a bipolar cable (D) from the heat generator (if enabled) to the electrical box on the right hand side of the product (secure the cable into the dedicated cabling sheath). Connect the cable to the “AUX” connector and set the P8 parameter on 3 via the installer's menu (see paragraph 7.7).



In the event of connection of 250I version to the boiler/stove, it is advisable to use sensor slot S2.

5. INITIAL START-UP

Once the appliance is connected to the hydraulic and electric systems, the water heater must be filled with water from the domestic water supply network. In order to fill the water heater, it is necessary to open the central tap of the domestic network supply and the nearest hot water tap, while making sure that all the air in the tank is gradually expelled.

The product is not supplied with batteries.

In the event of installation with batteries, use 4 type NiMh, AA, 1.2V, 2100 mAh minimum, rechargeable batteries with a minimum of 1000 recharging cycles and a minimum operating temperature of 65°C (it is suggested use batteries supplied from the manufacturer's catalogue). These should be inserted carefully observing the correct polarity, in the special seat inside the front casing that is accessible by removing only the external frame (refert o par. 7.1). The appliance will automatically recharge them.

OPERATING AND MAINTENANCE INSTRUCTIONS FOR THE USER

6. WARNINGS

6.1 Initial start-up



WARNING! The installation and initial start-up of the appliance must be performed by qualified personnel in compliance with the national regulations in force regarding installation, and in conformity with any regulations issued by local authorities and public health bodies.

In all cases, the company performing the work must carry out checks to verify the safety and correct operation of the entire system.

Before starting the water heater, check that the installer has completed all of his operations. Make sure you fully understand the installer's explanations on operation of the water heater and correct performance of the appliance's main operations.

6.2 Recommendations

In the event of a malfunction and/or faulty operation, turn the appliance off and do not attempt any repairs, but contact qualified personnel. Only original spare parts must be used and any repairs must be carried out exclusively by qualified personnel. Failure to comply with the above-mentioned recommendations may jeopardise the appliance's safety and void the manufacturer's liability. In the event of prolonged inactivity of the water heater, it is advisable to carry out the following:

- Disconnect the appliance from the power supply or, if a switch is mounted upstream from the appliance, turn the switch itself to the "OFF" position.
- Close all taps of the domestic water supply system.
- Empty the product as shown par. 8.1

WARNING! Hot water at temperatures above 50°C running from taps may immediately cause serious burns. Children, the disabled and the elderly run a greater risk in this regard. Therefore, it is advisable to use a thermostatic mixing valve connected to the appliance's water outlet pipe.



CAUTION If the display shows the icon to the side, it means that the water temperature has reached a temperature more than 6°C above the temperature set.

CAUTION! (only for 250l model) Ensure that the temperature detected by the S2 and S3 sensors of the auxiliary source's control unit, inside the water heater, do not exceed 75°C.

6.3 Safety regulations

Refer to paragraph 1.1 for the description of the symbols used in the table below.

Ref.	Warning	Type of risk	Symbol
1	Do not perform operations that involve removing the appliance from its housing.	Electrocution due to exposure to live components.	
		Flooding caused by water leaking from disconnected piping.	
2	Do not leave objects lying on the appliance.	Personal injury caused by the object falling off the appliance as a result of vibrations.	
		Damage to the appliance or any underlying items caused by the object falling off as a result of vibrations.	
3	Do not climb onto the appliance.	Personal injury caused by the appliance falling down.	
		Damage to the appliance or any underlying objects caused by the appliance detaching from its fixing brackets and falling.	
4	Do not perform any operations that involve opening the appliance.	Electrocution due to exposure to live components. Personal injury caused by burns due to overheated components, or wounds caused by sharp edges or protrusions.	
5	Do not damage the power supply cable.	Electrocution from non-insulated live wires.	
6	Do not climb onto chairs, stools, ladders or unstable supports to clean the appliance.	Personal injury caused by falling from a height or cuts (stepladders shutting accidentally).	
7	Do not attempt to clean the appliance without first switching it off, removing the plug or turning the external switch to the OFF position.	Electrocution due to exposure to live components.	
8	Do not use the appliance for any purpose other than normal household operation.	Damage to the appliance caused by operation overload. Damage to objects caused by improper use.	
9	Do not allow children or inexperienced persons to operate the appliance.	Damage to the appliance caused by improper use.	
10	Do not use insecticides, solvents or aggressive detergents to clean the appliance.	Damage to plastic or painted parts.	
11	Avoid placing any objects and/or appliance beneath the water heater	Damage due to possible water leakage.	
12	Do not drink the water of condensation	Injury from positioning	

6.4 Recommendations for prevention of Legionella growth (based on European standard CEN/TR 16355)

Informative

Legionella are small rod shaped bacteria which are a natural constituent of all fresh waters.

Legionnaires' disease is a serious pneumonia infection caused by inhaling the bacteria Legionella pneumophila or other Legionella species. This bacterium is frequently found in domestic, hotel and other water systems and in water used for air conditioning or air cooling system. Hence the main intervention against the condition is prevention, through control of the organism in water systems.

The European standard CEN/TR 16355 gives recommendations for good practice concerning the prevention of Legionella growth in drinking water installations but existing national regulations remain in force.

General recommendations

"Conditions for Legionella growth". The following conditions encourage Legionella growth:

- water temperature between 25 °C and 50 °C. To restrict the growth of Legionella bacteria, the water temperature shall be in a range that the bacteria will not grow or have minimum growth, wherever possible. Otherwise, it is necessary to disinfect a drinking water installation by means of a thermal treatment;
- stagnation of the water. To avoid long periods of stagnation, the water in every part of the drinking water installation should be used or flushed at least weekly;
- nutrients, biofilm and sediment within the installation including water heaters, etc. Sediment can support the growth of Legionella bacteria and it should be removed on a regular basis from e.g. storage systems, water heaters, non-flown through expansion vessels (e.g. once a year).

Regarding to this storage water heater, if

1) the product is switched-off for a period of time [months] or

2) the water temperature is constantly maintained between 25°C and 50°C,

the Legionella bacteria could growth inside the tank. In these cases, to restrict the Legionella growth, it is necessary to perform the so called "thermal disinfection cycle".

This storage water heater is sold with a software that, if it is enabled, carry out a "thermal disinfection cycle" to restrict the Legionella growth inside the tank.

This cycle complies with the hot water installations and relevant recommendations for Legionella prevention specified in the following Table 2 of the CEN/TR 16355.

Table 2 - Types of hot water installation

	Hot and cold water separately				Mixed hot and cold water					
	No storage		Storage		No storage upstream of mixing valves		Storage upstream of mixing valves		No storage upstream of mixing valves	
	No circulation of hot water	With circulation of hot water	No circulation of hot water	With circulation of hot water	No circulation of hot water	With circulation of hot water	No circulation of mixed water	With circulation of mixed water	No circulation of mixed water	With circulation of mixed water
Rif. In Allegato C	C.1	C.2	C.3	C.4	C.5	C.6	C.7	C.8	C.9	C.10
Temp.	-	≥ 50°C ^e	In the storage water heater ^a	≥ 50°C ^e	Thermal disinfection ^d	Thermal disinfection ^d	In the storage water heater ^a	≥ 50°C ^e Thermal disinfection ^d	Thermal disinfection ^d	Thermal disinfection ^d
Ristagno	-	≤ 3 l ^b	-	≤ 3 l ^b	-	≤ 3 l ^b	-	≤ 3 l ^b	-	≤ 3 l ^b
Sedimento	-	-	Remove ^c	Remove ^c	-	-	Remove ^c	Remove ^c	-	-
a. Temperature ≥ 55°C the whole day or at least 1h per day ≥ 60°C. b. The volume of water contained in the pipework between the circulation system and the tap which has the greatest distance to the system. c. Remove the sediment from the storage water heater in accordance with the local conditions but at least once a year. d. Thermal disinfection for 20 min at a temperature of 60°C, for 10 min at 65°C or for 5 min at 70°C at every draw-off point at least once a week. e. The water in the circulation loop shall be not less than 50°C. - No requirement.										

This electronic storage water heater is sold with a thermal disinfection cycle function not enabled for default; as a consequence, if, for any reason, one of the above said "Conditions for Legionella growth" could occur; it's hardly recommended to enable such function by following the instructions mentioned in this booklet [see par. 7.7].

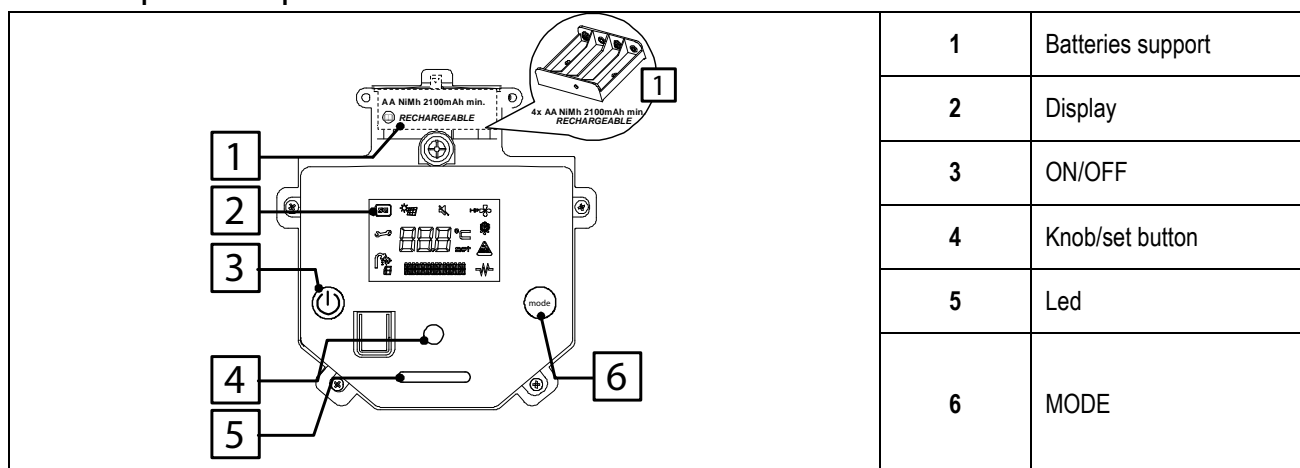
However, this thermal disinfection cycle is not able to destroy any Legionella bacteria in the storage tank; so, if this function is then disabled, Legionella bacteria growth might re-take place again.

Note: when this software carries out the thermal disinfection treatment, the energy consumption of the storage water heater is expected to increase.

Warning: when this software has been carrying out the thermal disinfection treatment, water temperature can cause severe burns instantly. Children, disabled and elderly are at highest risk of being scalded. Feel water before bathing or showering.

7. INSTRUCTIONS FOR USE

7.1 Control panel description



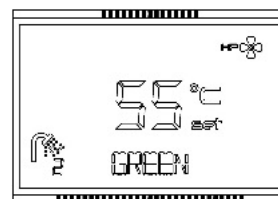
The control panel, constructed in a simple and rational way, comprises two buttons and a central knob.

In the upper section, a DISPLAY shows the set temperature or the detected temperature, while in bottom section other specific indications such as the operation mode signal, fault codes, settings and information of the product's condition.

7.2 Turning the water heater on/off

Turning the appliance on: simply press the ON/OFF button to turn the water heater on. The DISPLAY visualises the “set” temperature and operation mode, while the HP symbol and/or heating element symbol indicate the operation of the heat pump and/or heating element respectively.

Turning the appliance off: simply press the ON/OFF button to turn the water heater off, only “OFF” appears on the display. The protection against corrosion is still ensured (in case HC-HP contact works, insert rechargeable batteries, see par. 5), while the product will automatically ensure that the temperature of the water in the tank does not fall below 5°C.



7.3 Setting the temperature

The desired temperature for the hot water (T SET POINT) can be set by turning the knob clockwise or anti-clockwise (the visualised temperature will flash temporarily).

To visualise the current temperature of the water in the tank, press and release the knob; the relative value will appear for 8 seconds then the set temperature will reappear once again.

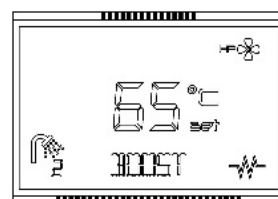
The temperatures that can be obtained in the heat pump mode vary between 50°C and 55°C, by factory default setting, and 40°C-55°C, by varying the setting on the installer menu (P13).

The maximum temperature that can be obtained with the heating element is 65°C.

7.4 Mode of operation

In normal operating conditions, the “mode” button can be used to vary the operating mode through which the water heater reaches the set temperature. The selected mode will be visualised on the line below the temperature.

If the heat pump is active, the following symbol will appear:	HP
If the heating element or integration (P8=3) are active, the following symbol will appear:	HE



- **GREEN:** the water heater uses only the heat pump to ensure maximum energy saving. This function is recommended for air temperatures higher than 0°C during heating and for normal operation. The maximum temperature that can be reached depends on the value of the P13 parameter (51°C-62°C) – refer to Paragraph 7.7. For air conditions outside the pump's operating range, the integration is enabled (except for P8=2). The integration is always enabled in case of anti-Legionella and antifreeze.
- **AUTO:** this default function is disabled, for activation set the P8=1 or P8=3 and select “Auto” with mode button. The water heater learns how to reach the desired temperature in a limited number of hours, with rational use of the heat pump and, only if necessary, of the integration. The maximum number of hours used depends on the P14 parameter - TIME_W (See paragraph 7.7), that is set by default at 8 hours. The integration is always enabled in case of anti-Legionella and antifreeze.
- **BOOST:** by enabling this mode the water heater simultaneously uses the heat pump and the integration to reach the desired temperature in the least time possible. Once the temperature has been reached, operation returns to the previous mode. This mode is not selectable when the P8 parameter value is 2.
- **VOYAGE (to be activated through the installer menu P3):** studied for situations in which users are absent from the appliance's operating location; this mode allows for programming the number of days of absence, during which the water heater will remain turned off. The appliance will activate only to supply hot water on the day of arrival; protection against corrosion will continue to be guaranteed while the product will automatically ensure that the temperature of the water in the tank does not fall below 5°C. Press the “mode” button until selecting the VOYAGE mode, turn the knob to set the number of days (“days”) then press the knob to confirm. The display will only visualise the number of days that remain until the product's reactivation. Once this time has elapsed, the unit

will switch back to the previous mode. In the event of an electric connection with a day/night contactor or with HC-HP signal, the number of nights of absence must be specified, taking into account that the product only operates during the night. If, for example, you leave home on Saturday morning and return on Sunday of the following week, on Saturday morning you should set the device to 8 days of absence in order to have hot water ready for your return on Sunday.

- **PROGRAM (P4 can be enabled on the installer's menu):** two programs are available, P1 and P2, that can be enabled individually or combined together throughout the day (P1+P2). The appliance can enable the heating phase to reach the chosen temperature at the pre-set hour, giving priority to the heating with the heat pump and, only if necessary, with the integration according to the following combinations:

For P8=0 the integration is enabled only when the conditions are outside the heat pump's operating range.

For P8=1 and 3 the integration is enabled simultaneously with the heat pump when requested.

For P8=2 the integration is never enabled.

The integration is always enabled in case of anti-Legionella and antifreeze.

Press "mode" to select the desired Program mode (P1/P2/P1+P2), turn the knob to set the desired temperature, press the knob to confirm, turn the knob to set the desired time and press to confirm; in P1+P2 mode the information for both of the programs can be set.

For electrical connection with HC/HP signal dual power supply you can program heating of the water at any time of the day.

This function requires you to set the current time, see following paragraph.

Warning: to ensure comfort for operation in P1+P2 mode with times that are very close together, it is possible that the water temperature is higher than the temperature set.

	Factory settings
TEMPERATURA IMPOSTATA PROGRAMMA P1	55°C
ORARIO IMPOSTATO PROGRAMMA P1	06:00
TEMPERATURA IMPOSTATA PROGRAMMA P2	55°C
ORARIO IMPOSTATO PROGRAMMA P2	18:00

7.5 Time setting

Setting the time is required if the PROGRAM mode is enabled. Once it is enabled, turn the knob to the current time and press to confirm. It can also be set with the L0 parameter by selecting it and setting the current time by turning the knob (the P4 function must be ON).



7.6 Information menu

The information menu allows for visualising data for monitoring the product. To enter the menu, press the relative knob and hold for 5 seconds.	
Turn the knob to select the parameters L0, L2, L3 ... L27	
Upon reaching the desired parameter, press the knob to visualise its value. Press the knob or "MODE" button to return to the parameter selection area once again.	

To exit the information menu, press the "mode" button (the appliance will ensure that the menu is automatically exited after the latter has been idle for 10 minutes).		
Parameter	Name	Parameter description
L0	TIME	Time of the day (visible only if P4 is ON)
L1	SW MB	Mainboard Software Version
L2	SW HMI	Display Software Version
L3	ENERGY	Energy consumption in kWh (*) (**)
L4	ANTI_B	Displays whether the anti-Legionella function is enabled
L6	HE_SET	Displays the HE_SET status
L7	SILENT	Displays whether the silent function is enabled
L8	PV MODE	Displays which PV function is enabled
L9	SG MODE	Displays whether the SG function is enabled
L10	T W PV	Displays the temperature to be reached with the PV function
L11	T_A_HP	Air temperature below which the heat pump does not work
L12	T W HP	Temperature that will be reached with only the heat pump
L13	T W 1	Heating element unit sensor 1 temperature detected
L14	T W 2	Heating element unit sensor 2 temperature detected
L15	T W 3	Intermediate sensor temperature detected
L16	T W 4	Dome sensor temperature detected

L17	T AIR	Environmental air sensor temperature detected
L18	T EVAP	Evaporator sensor temperature detected
L19	T ASP	Displays the intake temperature
L20	P ASP	Displays the intake pressure
L21	T SH	Overheating temperature
L22	HP HYST	Compressor hysteresis temperature
L23	HP h	Heat pump operating times (**)
L24	HE h	Heating element operating times (**)
L25	HP ON	Number of compressor start-up cycles (**)
L26	TIME_W	Number of accepted power supply times
L27	T AB	Displays the anti-Legionella set-point temperature

* The values shown may differ from actual values based on mains power supply voltage and frequency.

** The values are updated either every 24 hours or when switching to battery operation or when an error occurs.

7.7 Installer menu

	CAUTION: THE FOLLOWING PARAMETERS MUST BE ADJUSTED BY QUALIFIED PERSONNEL.
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Some product settings can be modified on the installer's menu. The key symbol is displayed.

To enter the menu, keep the knob pressed for 5 seconds then scroll the parameters of the “L – INFO” menu until reaching “P0 CODE”.

After entering the code (illustrated in the table that follows), turn the knob to select the parameters P0, P2, P3 ... P20.

Upon reaching the parameter to be modified, press the knob to visualise the parameter's value then turn the knob to set the desired value.

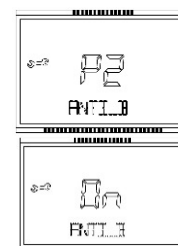
To return to the parameter selection area, press the knob to store the entered parameter or press "mode" (or wait 10 seconds) to exit without storing the entered value.

To exit the installer menu, press the “mode” button (the appliance will ensure that the menu is automatically exited after the latter has been idle for 10 minutes).

Parameter	Name	Parameter description	Range		Factory settings
			Min	Max	
P0	CODE	Code entering to access the installer menu. The number 222 appears on the display: turn the knob until reaching number 234 then press the knob. It will then be possible to access the installer menu.	0	299	222
P1	RESET	Re-set the factory parameters.	0	1	OFF
P2	ANTI_B	Anti-Legionella protection.	OFF	ON	OFF
P3	VOYAGE	See chap. 7.4.	OFF	ON	OFF
P4	PROG	See chap. 7.4.	OFF	ON	OFF
P6	SILENT	Set silent mode.	OFF	ON	OFF
P8	HE_SET	Manage the operating modes.	0	3	0
P9	PV MODE	Modify the operating modes based on the presence of the PV signal.	0	3	0
P10	T W PV	It is the desired temperature when PV is in production.	55	75	62
P12	T MIN	Adjustment of the minimum temperature reachable. A value set lower allows you more operating economy if you have economical hot water consumption.	40	50	50
P13	T_HP	It is the achievable temperature with only the heat pump.	51	55	55
P14	TIME_W	Number of accepted power supply times.	5	24	8
P15	HP HYST	Compressor hysteresis temperature.	4	15	8
P16	T_A_HP	Air temperature below which the compressor does not work.	-7	20	-7
P17	TANK_LT	Product capacity (do not modify) .	-	-	-
P18	SG MODE	Operation with SG signal.	0	1	0
P19	ERRORS	Faults history (read-only value).	-	-	-
P20	T AB	Anti-Legionella set-point temperature	60	75	60

P2 parameter – Anti legionnaire's disease protection

If enabled, the water heater automatically performs the anti-Legionella protection function. The water temperature must remain higher or equal to 55°C all day or higher or equal to 60°C for at least 1 hour. These temperatures can cause burns, so we recommend you use a thermostatic mixer. The anti-Legionella function is enabled via this parameter; the temperature to be reached is settable via the P20 parameter and the hysteresis via the P15 parameter. Suggesting to set the P20 parameter at 60°C and the P15 parameter at 4°C. During the cycle of antilegionella will be displayed “ANTI_B” alternately to the mode of operation, once the cycle is done the set temperature remains the original one. In the event that is enabled the two-tier rate signal HC-HP, the function will take place during the economic tariff. To stop press "on/off".



P6 parameter - Silent

This function reduces the sound level (performance can vary from those declared). It can be enabled via the P6 parameter on the installer's menu. When enabled, the image to the right appears on the display.

**P8 parameter (for details see paragraph 7.4)**

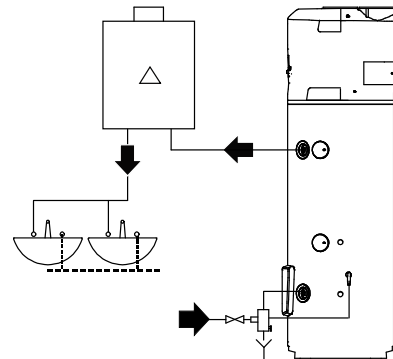
The P8 parameter allows you to manage the product's different operating modes. It can have values of 0, 1, 2, 3.

STANDARD (value 0 - default): only the GREEN, BOOST, VOYAGE (if enabled with P3) and PROGRAM (if enabled with P4) modes can be selected with the "mode" button; the integration is by the electric heating element that operates according to the mode selected.

HE_ON (value 1): the GREEN, AUTO, BOOST, BOOST2, VOYAGE (if enabled with P3) and PROGRAM (if enabled with P4) modes, i.e. all available modes, can be selected with the "mode" button; the integration is by the electric heating element that operates according to the mode selected.

COMBI (value 2): only the GREEN, VOYAGE (if enabled with P3) and PROGRAM (if enabled with P4) modes can be selected with the "mode" button. Integration to the heat pump is not provided; the electric heating element always operates in the event of anti-Legionella and antifreeze. It is advised to perform a pre-heating of inlet water to combi boiler made by the heat pump (refer to picture on the side).

SYSTEM (value 3): the GREEN, AUTO, BOOST, BOOST2, VOYAGE (if enabled with P3) and PROGRAM (if enabled with P4) modes, all available modes can be selected with the "mode" button; the integration is by the external auxiliary heat generator where it is correctly connected both hydraulically and electronically (see paragraph 4.5) to the product. It is advised when it is available auxiliary heat generator which is able to replace the electrical resistance for integration function (only for 250I models).

**P9 parameter - Photovoltaic function**

If you have a photovoltaic system, you can set the product to optimise use of the electricity produced. After having done the electrical connections as described in paragraph 4.5 and set the P9 parameter to other than 0, when the SIG2 signal is detected, the current operating mode is automatically modified as follows:

STANDARD (value 0 - default): the operating mode of the previously described procedures is not modified.

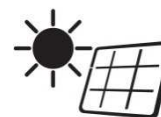
PV GREEN (value 1): the PV icon is displayed (see figure to the side). When the signal from the inverter is present, the name of the selected mode alternates with the text PV GREEN. The product will reach the set temperature (the most between T SET POINT and T W PV), with only the heat pump (max 62°C).

PV HE (value 2): the PV icon is displayed (see figure to the side). When the signal from the inverter is present, the name of the selected mode alternates with the text PV HE. The product will reach the set temperature (the highest between T SET POINT and T W PV), operating with only the heat pump up to 62°C and subsequently with the heating element (1500 W).

PV BOOST (value 3): the PV icon is displayed (see figure to the side). When the signal from the inverter is present, the name of the selected mode alternates with the text PV BOOST. The product will reach the set temperature (the highest between T SET POINT and T W PV), operating both with only the heat pump and the heating element (1000 W) up to 62°C and subsequently with only the heating element (1500 W).

There must be the SIG2 signal for at least 5 minutes to enable the photovoltaic function (once the product starts a cycle, it will operate for at least 30 minutes).

If parameter P18 is active, function P18 is automatically deactivated when the photovoltaic function is activated.

**P18 parameter - SG function**

If you have an SG signal, you can connect the signal cable as described in chapter 4.5 and when the P18 function is enabled the SG icon will be displayed. Once you have received the SIG2 signal for at least 5 minutes (once the product starts a cycle, it will operate for at least 30 minutes), the name of the selected mode alternates with the text SG ON and the current operating mode is automatically modified by thermostating the product to the temperature set (the highest between T SET POINT and T W PV), operating with only the heat pump (max 62°C).

If parameter P9 is active, function P9 is automatically deactivated when the SG function is activated.

**P19 parameter - Errors**

This is a read-only parameter that shows the history of the last 10 errors; it is accessible only by the technical assistance. The number (3 digits) indicates the occurred error code whilst the error number is represented in the lower string in chronological order (max 10 errors - the number 10 indicates the most recent occurred error).

7.8 Antifreeze function

When the product is supplied with power and there is no hot water demand, if the water temperature in the tank goes below 5°C, the heater coil (1000 W) is activated automatically to heat the water to 16°C. With P8=3 the function is performed by the integrated circuit.

7.9 Defrost

The defrost function is activated when the heat pump has been working for at least 20 minutes, the detected air temperature is below 15°C and the evaporator temperature is decreasing rapidly. When the defrost cycle is running, the icon to the side is displayed.

**7.10 Number of showers available**

The icon to the side shows the estimated number of showers remaining, based on hot water availability. One shower is calculated as: 40 L at 40°C. Press the knob to view the value.



7.11 Errors diagnostics

As soon as a fault occurs, the appliance enters into the fault mode while the display emits flashing signals and visualises the error code. The water heater will continue supplying hot water provided the fault affects only one of the two heating units, by activating the heat pump or heating element.

If the fault involves the heat pump, the symbol "HP" will flash on the screen, while the heating element symbol will flash if the fault involves this component. If both components are affected, both symbols will flash.

If the product shows an error signal, switch the appliance off and then on with the ON/OFF button (without batteries); if the error signal persists, contact the technical assistance.



CAUTION: Before intervening on the product by following the indications below, check the correct electrical connection of the components to the mainboard and the correct position of the NTC sensors in their seats.

Before any maintenance operation: read carefully the checking procedures explained in the Technical Manual				
Error code	Cause	Heating element operation	Heat pump operation	What to do
Encoding of heat pump circuit codes				
110	Air/Evaporator/Compressor Inlet Temperature sensors; short circuit or open circuit	ON	OFF	Check and eventually correct the assembly of sensors' connector on the main board. Control the proper functioning of the sensors.
111	Air/Evaporator sensor: decalibration	ON	OFF	Control the proper functioning of Air and Evaporator sensors
121	Gas issue	ON	OFF	Control the proper functioning of the compressor inlet temperature sensor. If the error persists, recover the residual gas, find the leak in the cooling circuit and repair it; empty the cooling circuit and recharge with 1300 grams of coolant
131	Problem on compressor start-up capacitor	ON	OFF	Check and eventually correct the wirings between: main board and compressor start-up capacitor, start-up capacitor and compressor, main board and compressor. Then control the voltage on the start-up capacitor and on the compressor power connector on the main board.
141	Fan issue	ON	OFF	Control power voltage on the fan connector. Control the proper functioning of the compressor inlet temperature sensor
142	Evaporator filter: obstruction	ON	OFF	Clean the evaporator filter and the air ducts. Control the proper functioning of the compressor inlet temperature sensor. If the error persists, check compliance of the air duct specifications
143	High pressure drop in air ducts	ON	OFF	Check compliance of the air duct specifications. Control the proper functioning of the compressor inlet temperature sensor. If the error persists, clean the evaporator filter and the air ducts
151	High pressure issue	OFF	OFF	Recover the refrigerant, make the vacuum and charge 1300g of R134a. If the error persists, replace the pressure switch.
171	Pressure transducer: open or short circuit	ON	OFF	Check and eventually correct the assembly of the pressure transducer connector on the main board. Check the proper functioning of the pressure transducer
181	Electronic expansion valve (EEV) problem	ON	OFF	Check and eventually correct the assembly of the EEV coil connector on the main board. Check and eventually correct the positioning of EEV coil on the EEV.
Encoding of domestic water circuit codes				
210	High NTC sensor (hot water): short circuit or open circuit	ON	OFF	Check the correct assembly of the wirings on the sensor connector and on the main board. Control the proper functioning of the sensor.
220	Medium NTC sensor: short circuit or open circuit	ON	ON	
230	Low NTC sensor (heating element zone): short circuit or open circuit	OFF	OFF	
231	Low NTC sensor (heating element zone): safety intervention (1st level)	OFF	OFF	Control the proper functioning of the sensor
232	Low NTC sensor (heating element zone): safety intervention (2nd level)	OFF	OFF	
Encoding of electronic circuit codes				
310	ON/OFF repeated	OFF	OFF	Wait 15 minutes before unblocking the product with the ON/OFF button
321	Mainboard issue	OFF	OFF	Reset the product by pushing the ON/OFF button twice. If the error persists, replace the component.
331	Mainboard-display wiring: no communication	OFF	OFF	Reset the product by pushing the ON/OFF button twice. If the error persists, replace the mainboard-display communication wiring

8. MAINTENANCE (for authorized personnel)



WARNING! Observe the general warnings and safety instructions listed in the previous paragraphs and strictly adhere to the indications therein contained.

All maintenance operations and interventions should be performed by qualified personnel (i.e. with the necessary requirements as outlined in the applicable norms in force).

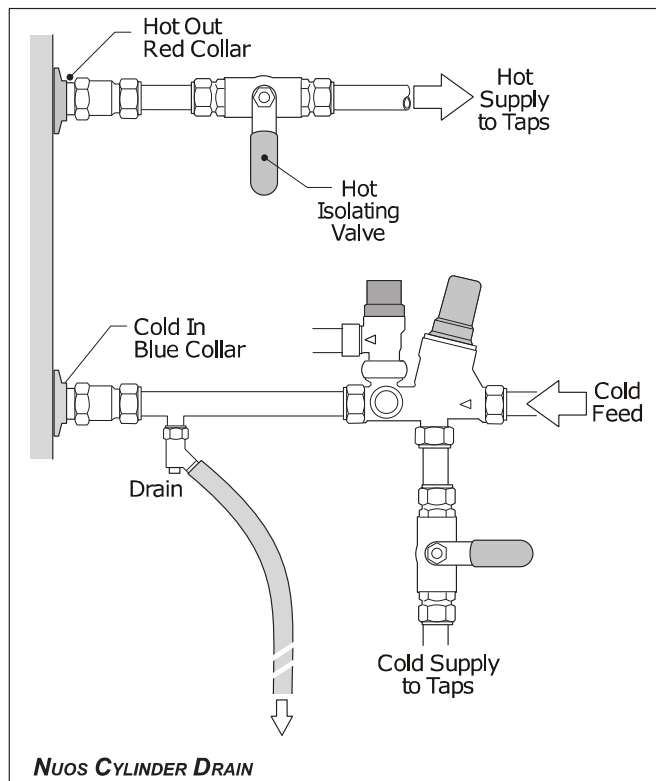
After routine or extraordinary maintenance, we recommend filling the appliance's tank with water and draining it completely to remove any residual impurities.

8.1 Draining the appliance

The appliance must be drained if left inactive in a room subject to frost.

Typical drain arrangement and system designs will vary:

1. Turn power off to ensure Nuos is not operated when empty.
2. Turn off cold supply to Nuos.
3. Shut off hot water feed from Nuos.
4. Connect hose to drain cock and place other end in sink, basin etc.
5. Open drain cock and open TPR valve to vent cylinder.



8.2 Routine maintenance

- Partial obstruction of the evaporator filter causes a reduction in product performance. We therefore recommend cleaning the filter to remove any dust or obstructions at least once a year. The filter can be extracted using the appropriate clip above the casings (lateral picture). Clean the filter with water and mild soap.



- Check and clean canalizations and grills.
- Verify that the external terminal of the air exhaust duct, and the duct itself, are not obstructed or have not deteriorated.
- Ensure that the condensate water runs out in a suitable drain and make sure the discharge is made without hindrance.
- Check operation of the electric heater element.
- Check anode every year and replace as required depending on its deterioration – see 8.5.
- Inspect the inside of the cylinder – see 8.6.
- With the water supply turned off remove the strainer from the combination valve and clean off any debris and rinse in water.
- Expansion vessel: with the water supply turned off and taps open, check the expansion vessel pressure and top up as necessary.
- Cylinder TPRV: check its operation with the supply water on, turn the TPRV test knob and check water discharges to the dish, ensure the valve closes after testing.
- Combination valve PRV: check its operation with the supply water on, turn the PRV test knob and check water discharges to the dish, ensure the valve closes after testing.
- Discharge pipe (D1): open either TPRV or PRV gradually to produce a full bore discharge into the dish and D2 and check there is no back pressure and that the water flows freely to drain.
- Pressure Reducing Valve (PRV): check that the correct outlet pressure is being maintained by measuring the pressure at an in-line terminal fitting e.g. a tap.

8.3 Troubleshooting

Problem	Possible reason	What to do
Water comes out cold or insufficiently warm	Low temperature set	Increase the temperature set for the outlet water.
	Device functioning errors	Check for errors on the display and act in the way specified on the chart "Faults".
	No electrical connection, disconnected or damaged wirings	Check the voltage at the supply terminals, verify the integrity and connections of the cables.
	Absence of HC/HP signal (if the product is installed with the HC/HP signal cable)	Try to put the product in "Boost" mode, if is ok in this way, check the connection of the meter, check the integrity of the HC/HP cable.
	Malfunctioning of the timer for two-tier rate (if the product is installed in this configuration)	Check the operation of the contactor day / night and that the set time is enough to heat water.
	Insufficient air flow to the evaporator.	Clean the grilles and ducts regularly.
	Product off	Check availability of electricity, turn on the product.
	Usage of a large amount of hot water when the product is heating up phase.	
	Probe error	Control the presence, even if occasional E5.
The water is boiling (with the possible presence of steam from the taps)	High level of scaling of the boiler and components	Turn off the power, drain the unit, remove the sheath of the resistance and remove lime scale inside the boiler, be careful not to damage the enamel of the boiler and the sheath resistance. Repackage the product as in the original configuration, it is recommended to replace the flange gasket.
	Probe error	Control the presence, even if occasional E5.
Reduced functioning of the heat pump, semi-permanent operation of the electrical resistance	Air temperature out of range	Depending from the climatic conditions.
	"Time W" value too low	Set a parameter for lower temperature or a longer unit of "Time W".
	Installation done not in accordance with electric voltage (too low)	Provide a proper Electric voltage.
	Evaporator clogged or frozen	Check the cleaning of the evaporator.
	Problems with the heat pump circuit	Make sure that there are no errors on the display.
	Are not yet past 8 days by: -First Time instalation. -Change of the parameter Time-W. -No power from mains in absence of batteries or exhausted batteries.	
Insufficient flow of hot water	Leaks or obstructions by the water circuit	Verify that there are no leaks along the circuit, check the integrity of the the deflector pipe, the integrity of incoming cold water pipe and hot water pipe.
Overflowing water by the the safety valve	A drip of water by the device should be considered normal during the heating	If you want to avoid the drip, install an expansion vessel on the plant supply. If leakage continues during the period of no heating, check the calibration of the device and the pressure of the water network. Caution: Do not obstruct the hole for evacuation of the device!
Increase of the noise	Presence of obstructive elements inside	Check the components in movement, clean the fan and the other parts who can generate noise or vibrations.
	Components vibration	Check the components fixed with screws, be sure that the screws are tight.
Problems of visualization or display off	Damage or disconnection of the wiring connecting electronic board and interface board	Check the integrity of the connection, check the operation of electronic boards.
	No power from mains in absence of batteries or exhausted batteries.	Check if there is electric mains supply and check the conditions of the batteries.
Bad odor coming from the the product	Absence of a siphon or siphon empty	Provide a siphon, with the proper quantity of water.
Abnormal or excessive consumption than expected	Loss or partial obstructions of the refrigerant circuit	Start your product in heat pump mode, use a leak detector for R134a to verify that there are no leaks.
	Bad environmental conditions or improper installation	
	Partially clogged evaporator	Check the cleanliness of the evaporator grid and ducts.
	Incorrect installation	
Other		Contact the technical support.

8.4 Routine maintenance performed by users

It is advisable to rinse out the appliance after each routine or extraordinary maintenance intervention.

The pressure safety device must be operated regularly to verify that it is not clogged and to remove any limescale deposits.

Check that the condensate drainage pipe is not obstructed.

Check the perfect cleaning of grids and ducts.

In case of using, the batteries must be replaced every year or in case of losses. Make sure that they are correctly disposed of and exclusively replace them with **4 NiMh, AA,-type, rechargeable batteries, minimum 2100 mAh, minimum 1000 recharge cycles, minimum working temperature of 65°C (it is recommended use batteries supplied from the manufacturer's catalogue)** observe the polarities as illustrated in the battery housing. The appliance should be unplugged when you remove the batteries.

8.5 Removing & replacing electric heater element

In the event of the electric heater failing or to replace its anode, the electric heater has to be removed from the Nuos Plus. Only replace with Ariston spare parts.

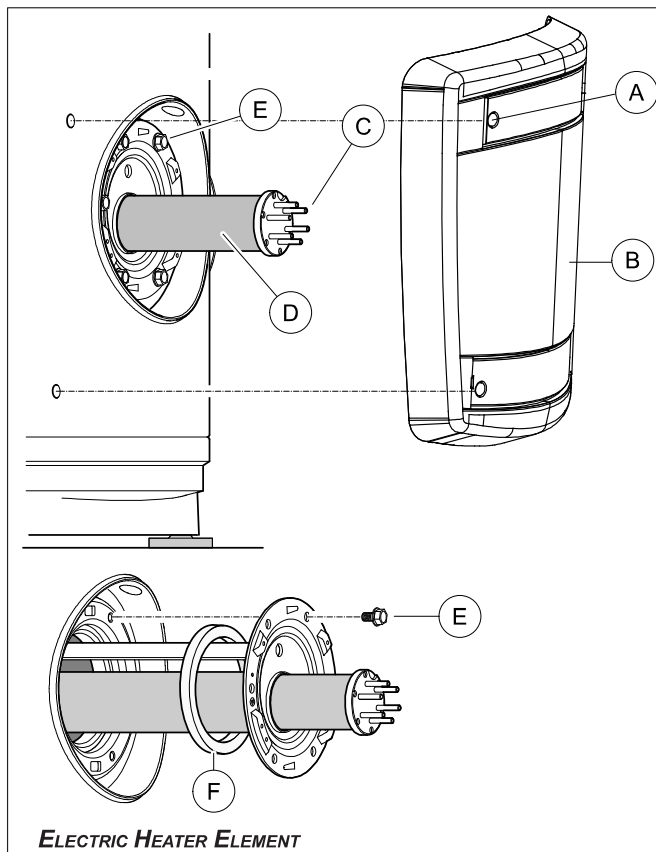
CAUTION: Removing flange screws (E) will release the stored water.

Removal procedure for inspection

Refer to picture above

1. Isolate mains electrical supply to the product by switching off and removing fuse.
2. Unscrew 4 screws (A) and remove cover (B).
3. Disconnect wires and withdraw heating element (C).
4. Replace element and refit, ensure wires are connected correctly.

To descale flange (F) or to replace the magnesium anode the flange (F) has to be removed by removing 6 bolts (E), this necessitates draining the cylinder – see 8.1.



8.6 Internal Cylinder Inspection

To inspect the inside of the cylinder remove flange (F) by undoing 6 bolts (E), this necessitates draining the cylinder – see 8.1

8.7 Water heater disposal

The appliance contains R134a-type refrigerant gas which must not be released into the atmosphere. In case of permanent decommissioning of the water heater, ensure that disposal procedures are carried out by qualified personnel only.



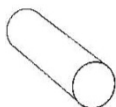




This product conforms to Directive WEEE 2012/19/EU.

The barred bin symbol on the appliance and its packaging indicates that the product must be scrapped separately from other waste at the end of its service life. The user must therefore hand the equipment over to a sorted waste disposal facility for electro-technical and electronic equipment at the end of its service life. Alternatively, the equipment may be returned to the retailer at the time of purchase of a new equivalent type of appliance. Electronic equipment of size less than 25 cm can be handed over to any electronics equipment retailer whose sales area is at least 400 m² for disposal free of charge and without any obligation to purchase new product.

Sorted waste collection for recycling, treatment and environmentally compatible scrapping contributes to the prevention of damage to the environment and promotes reuse/recycling. For more detailed information on the collection systems available, contact the local waste disposal service or the shop where the product was purchased.

The appliance is not provided with rechargeable batteries, but if you use them they must be removed and put into a specific container before disposing of the appliance. The batteries seat is behind the front frame.

ACCESSORIES

Fdfd		Ø150		Ø200		Pa MAX: 110
		Pa	m _{equivalent}	Pa	m _{equivalent}	
1m PVC		9	1	3	1	
1m Al		17	1,9	5	1,7	
Grille ^(A)		18	2	10	3,3	
90° PVC		27	3	9	3	
90° Al		19	2,1	10	3,3	

(A) Dedicated grid.

TERMS AND CONDITIONS OF GUARANTEE

The Ariston External Air Source Heat Pump Water Heater is guaranteed for 5 Years (Tank) and 2 Years (electrical components).

Please read these terms and conditions which are in addition to any terms and conditions detailed in this book or any registration card supplied with your appliance.

Ariston External Air Source Heat Pumps must be installed and commissioned by an accredited and approved installer in compliance with building regulations. Failure to comply with this will invalidate the warranty.

A charge will be made to the owner of the appliance if:

1. The reason for any service visit is as a direct result of a failure to install the appliance in accordance with the manufacturers instructions.
2. Your installer does not complete the necessary commissioning and safety checks.
3. Your appliance is not serviced on or before the 12 month anniversary of installation.
4. Our service engineer calls as required and the failure is a non-manufacturing defect.

Failure to pay an invoice for any such occurrence will be assumed by Ariston Thermo Group that you accept your appliance has not been installed correctly and understand that any manufacturers guarantee has been withdrawn.

On the 12 month anniversary of the appliance installation, you must have it serviced to continue any guarantee offered into the following year. Failure to do so will invalidate your guarantee and should an Ariston Thermo Group engineer be required to attend and no proof of service documentation is made available, then Ariston Thermo Group will charge.

If you have a problem with commissioning on installation, please contact our Technical Department on 0333 240 7777.

AIR TO WATER HEAT PUMP COMMISSIONING CHECKLIST

This Commissioning Checklist is to be completed in full by the competent person who commissioned the heat pump and associated equipment as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Customer name:										Telephone number:																								
Address:																																		
Heat Pump Make and Model																																		
Heat Pump Serial Number																																		
Commissioned by (PRINT NAME):										Certified Operative Reg. No. [1]																								
Company name:										Telephone number:																								
Company address:																																		
										Commissioning date:																								
Building Regulations Notification Number (if applicable) [2]																																		
CONTROLS - SYSTEM AND HEAT PUMP (tick the appropriate boxes)																																		
Time and temperature control to heating										Room thermostat and programmer/timer					Programmable Roomstat																			
										Load/weather compensation					Optimum start control																			
Time and temperature control to hot water										Cylinder thermostat and programmer/timer					Combined with Heat pump main controls																			
Heating zone valves (including underfloor loops)										Fitted					Not required																			
Hot water zone valves										Fitted					Not required																			
Thermostatic radiator valves										Fitted					Not required																			
Heat Pump Safety Interlock [3]										Built In					Provided																			
Outdoor Sensor										Fitted					Not required																			
Automatic bypass to system										Fitted					Not required																			
Buffer Vessel Fitted										Yes		No		If YES		Volume:		Litres																
ALL SYSTEMS																																		
The heating system has been filled and pressure tested																		Yes																
Expansion vessel for heating is sized, fitted & charged in accordance with manufacturer's instructions																		Yes																
The heat pump is fitted on a solid/stable surface capable of taking its weight																		Yes																
The system has been flushed and cleaned in accordance with BS7593 and heat pump manufacturer's instructions																		Yes																
What system cleaner was used?																																		
What inhibitor was used?																		Quantity		litres														
Is the system adequately frost protected?																		Yes																
OUTDOOR UNIT																																		
Are all external pipeworks insulated?																		Yes																
Is the fan free from obstacles and operational?																		Yes																
Has suitable consideration been made for waste water discharge?																		Yes																
CENTRAL HEATING MODE																																		
Heating Flow Temperature										°C										Heating Return Temperature										°C				
DOMESTIC HOT WATER MODE Measure and Record:																																		
Is the heat pump connected to a hot water cylinder?										Unvented					Vented					Thermal Store					Not Connected									
Hot water has been checked at all outlets										Yes					Have Thermostatic Blending Valves been fitted?					Yes					Not required									
ADDITIONAL SYSTEM INFORMATION																																		
Additional heat sources connected:										Gas Boiler					Oil Boiler					Electric Heater					Solar Thermal					Other:				
ALL INSTALLATIONS																																		
The heating, hot water and ventilation systems complies with the appropriate Building Regulations																		Yes																
All electrical work complies with the appropriate Regulations																		Yes																
The heat pump and associated products have been installed and commissioned in accordance with the manufacturer's instructions																		Yes																
The operation of the heat pump and system controls have been demonstrated to the customer																		Yes																
The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer																		Yes																
Commissioning Engineer's Signature																																		
Customer's Signature																																		
(To confirm satisfactory demonstration and receipt of manufacturer's literature)																																		

Notes: [1] Installers should be members of an appropriate Competent Persons Scheme. [2] All installations in England and Wales must be notified to Local Area Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer. [3] May be required for systems covered by G3 Regulations



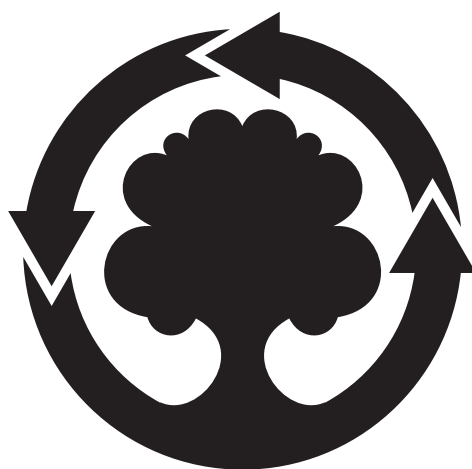
SERVICE RECORD

It is recommended that your heating system is serviced regularly and that the appropriate Service Interval Record is completed.

Service Provider

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions. Always use the manufacturer's specified spare part when replacing controls.

<div><div>SERVICE 01</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>	<div><div>SERVICE 02</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>
<div><div>SERVICE 03</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>	<div><div>SERVICE 04</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>
<div><div>SERVICE 05</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>	<div><div>SERVICE 06</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>
<div><div>SERVICE 07</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>	<div><div>SERVICE 08</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>
<div><div>SERVICE 09</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>	<div><div>SERVICE 10</div><div>Date:</div><div>Engineer name:</div><div>Company name:</div><div>Telephone No:</div><div>Operative ID No:</div><div>Comments:</div><div></div><div></div><div></div><div>Signature</div></div>



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