

# TECTRO

## TAW 200



F

MANUEL D'UTILISATION ET D'INSTALLATION

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GB

OPERATION AND INSTALLATION MANUAL

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Dear Sir, Madam,

Congratulations on the purchase of your Tectro heat pump boiler. You have acquired a high quality product that, if used responsibly, will give you many years of pleasure.

Please read these instructions for use first in order to ensure the maximum life span of your heat pump boiler.

On behalf of the manufacturer, we provide a 24-month guarantee on all material and production defects and 48-month guarantee on the stainless steel tank. Please enjoy your heat pump boiler.

Yours sincerely,

PVG Holding b.v.

Customer service

## **READ THIS MANUAL**

Inside you will find many helpful hints on how to use and maintain your heat pump boiler properly. You will find many answers to common problems in the chapter Troubleshooting. If you review chapter H "Troubleshooting" first, you may not need to call for service.

**1. READ THE DIRECTIONS FOR USE FIRST.**

**2. IN CASE OF ANY DOUBT, CONTACT YOUR DEALER.**

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## A SAFETY INSTRUCTIONS



- Please read this manual completely before installing the product.
- The heat pump boiler has no water purification function. Therefore the water supplied to the heat pump boiler must be normal drinkable tap water. Otherwise dangerous situations might occur and/or the lifetime expectation of the product might be significantly reduced.
- The electricity supply to the device must be checked by a recognized professional if you have any doubts regarding the compatibility.
- Install this device only when it complies with local/national legislation, ordinances and standards. This product is intended to be used as a heat pump boiler in indoor residential houses and is only suitable for use in dry locations, in normal household conditions and must only be used to heat normal sanitary tap water.  
Check the mains voltage and frequency. This unit is only suitable for earthed sockets, connection voltage 230 V~ / 50 Hz.



This equipment must be earthed and installed with a ground fault switch. It can possibly cause electrical shock, injury and property damage if grounding is not perfect.



- Tectro recommends that the heat pump boiler is inspected and serviced by an authorized dealer or installer every year: lifespan of the heat pump boiler will be longer, the likelihood of errors will be reduced and the capacity remains high.
- The heat pump boiler is very heavy (100 kg). Use sufficient man power ( $\geq 4$  persons).

- The accurate specifications are presented on the rating label on the unit.
- Installation work must be performed in accordance with all European, national and / or local directives and standards, and repairs must be done by authorized personnel only. The guarantee is invalid for damage caused by neglect or by actions that deviate from those in this instruction booklet.
- When installing or providing maintenance always make sure to wear the correct personal safety protections such as protective eyewear, gloves, mouth caps, ear protection etc.
- Perform electrical work according to the manual and be sure to use an exclusive electrical circuit. If the capacity of the power circuit is insufficient it could result in a fire or an electric shock.
- This device is manufactured according to CE safety standards. Nevertheless, you must take care, as with any other electrical device.
- The plug on the cable of the device must fit into the wall socket.
- Always remove the plug of the heat pump boiler from the wall socket when the heat pump boiler is not in use.
- A damaged power cord or plug must always be replaced by a recognized

electrician or your supplier.


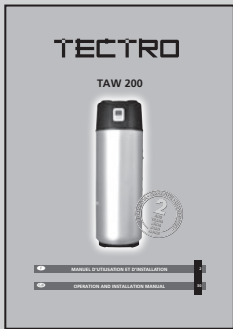

- Never use an extension cable to connect the device to the electric power supply. If there is no suitable, earthed wall socket available, have one installed by a recognized electrician.
  - Do not stop the heat pump boiler by pulling out the power plug. Only use the dedicated buttons on the heat pump boiler.
  - Do not open the heat pump boiler when it is in operation. Always pull out the electrical plug when opening the device.
  - Always pull out the electrical plug when cleaning or servicing the heat pump boiler.
  - Do not cover the air inlet and air outlet.
  - Never allow the device to come into contact with chemicals.
  - Never spray the heat pump boiler with or submerge in water.
  - Do not operate the buttons or touch the heat pump boiler with wet hands.
  - Do not insert hands, fingers or objects into the openings of the heat pump boiler.
  - Do not make any modifications to the heat pump boiler other than described in this manual.
  - Do not remove insulating material.
  - This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
  - Children should be supervised to ensure that they do not play with the appliance.
  - The device must be placed and mounted on a stable surface.
- 
- Install the heat pump boiler securely on a floor surface which can bear the weight of the heat pump boiler **FILLED WITH WATER**. When installed on an insufficiently strong floor surface, the heat pump boiler could fall causing injuries and/or damage.
  - Perform the installation securely referring to the installation instruction (**see chapter C**). Incorrect installation could cause a personal injury due to fire, electric shock, the heat pump boiler falling or leakage of water.
  - Perform the drainage/piping work according to the installation instruction (**see chapter C**).
  - If there is a defect in the drainage/piping work, water could leak from the heat pump boiler and could cause injuries and/or damage.
  - The temperature of the liquid to the secondary heat exchanger must remain below 70 °C at all times.



Have any repairs and/or maintenance only carried out by a Tectro authorized dealer. Follow the instructions for use and maintenance as indicated in the user manual of this device.

## B ITEMS INSIDE PRODUCT BOX

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

The Unit Box		
Item	Image	Quantity
Heat pump boiler		1
Operation and Installation Manual		1
One way safety valve		1

## C INSTALLATION

### 1. QUICK INSTALLATION OVERVIEW

Install the heat pump boiler securely on a floor surface which can bear the weight of the heat pump boiler > 300 kg, including water and mounting materials. When installed on an insufficiently strong floor surface, the heat pump boiler could fall or the floor can break, causing injury and/or property damage.

- Step 1)** Close the main water supply.
- Step 2)** Choose a suitable place to install the heat pump boiler. Think about the transportation to this place, the required service space and whether this floor surface can bear the weight of the heat pump boiler filled with water. **See Chapter C.3, C.4, C.5 and C.6**
- Step 3)** Position the heat pump boiler level by twisting the feet at the bottom of the heat pump boiler. Make sure the weight on the various feet is divided evenly. **See Chapter C.2, C.3 and C.5**
- Step 4)** Connect the tap water tube of your water system to the heat pump boiler. Make sure to install the one way safety valve and a Y-shaped filter (not included) in the circuit. **See Chapter C.2**
- Step 5)** Connect the one way safety valve water drain to the sewer. **See Chapter C.2 and C.7**
- Step 6)** Connect the water drain pipe with manual valve to your sewer. **See Chapter C.2 and C.7**
- Step 7)** Connect the condensing water drain pipe to sewer. **See Chapter C.2**
- Step 8)** Connect the hot water outlet to your sanitary hot water system. **See Chapter C.2**
- Step 9)** When using a secondary heating source connect the inlet and outlet with the heat pump boiler. The temperature of the liquid to the secondary heat exchanger must remain below 70 °C at all times. **See Chapter C.2**
- Step 10)** Connect the inlet air duct and/or outlet air duct. **See Chapter C.8**
- Step 11)** Plug in the power plug. **See Chapter C.9**
- Step 12)** Open main water supply and fill the heat pump boiler with water and start the test run. **See Chapter D.1 and D.2**

## 2. INSTALLATION OVERVIEW

- A: Hot water outlet
- B: Secondary heat source inlet
- C: Condensing water drain
- D: Water drain
- E: Magnesium anode
- F: Electrical heating element
- G: One way safety valve
- H: Y-shaped filter
- I: Water inlet tap valve
- J: One way safety valve drain
- K: Sewer
- L: Manual valve

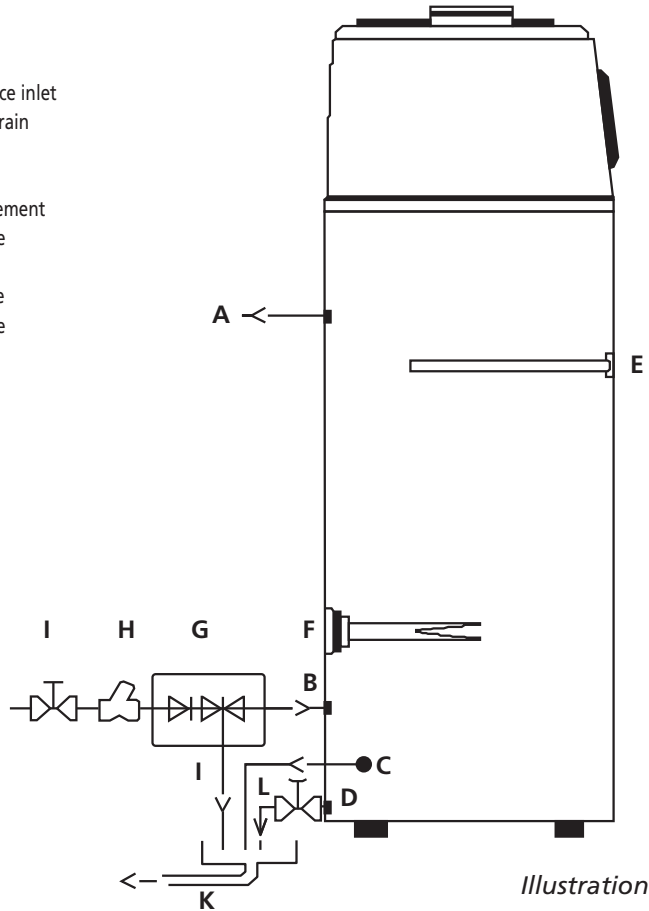
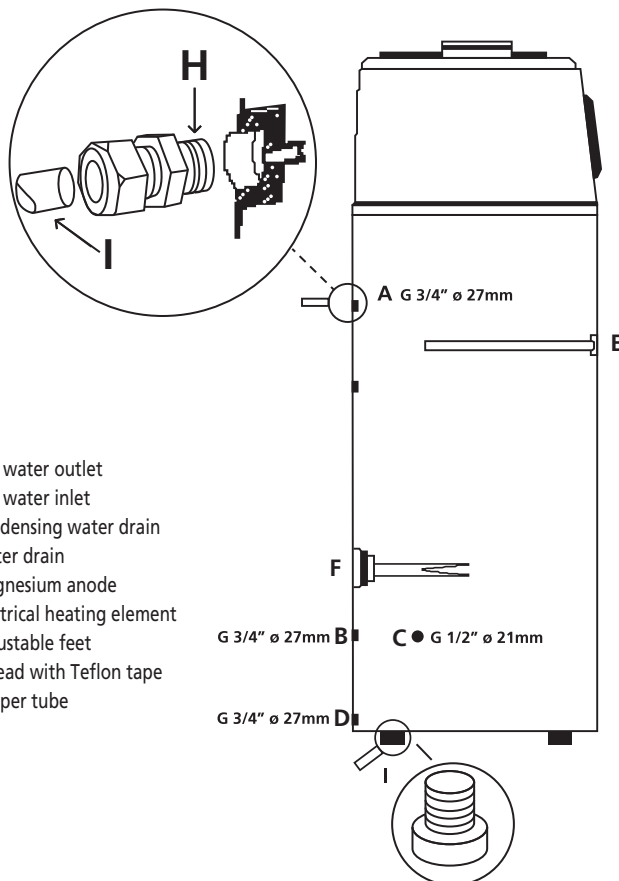


Illustration 1



- A: Hot water outlet
- B: Tap water inlet
- C: Condensing water drain
- D: Water drain
- E: Magnesium anode
- F: Electrical heating element
- G: Adjustable feet
- H: Thread with Teflon tape
- I: Copper tube

Illustration 2



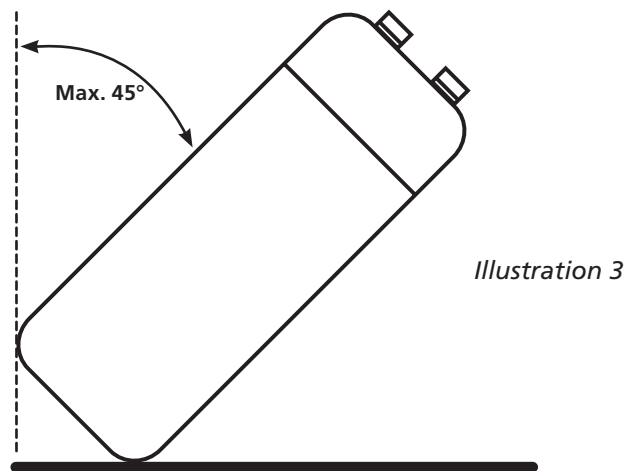
### 3. TRANSPORT

#### MANUAL TRANSPORT

The maximum permissible inclination angle is 45 degrees. If transport in an inclined position of over 45 degrees cannot be avoided, let the heat pump boiler settle at its final position for at least two hours before taking the unit in operation.



The heat pump boiler is very heavy (100 kg.). Use sufficient manpower ( $\geq$  four persons).



Attention: due to the high center of gravity and thus low overturning moment, the heat pump boiler must be secured against tipping over.

### 4. REQUIRED SERVICE SPACE

Minimum space required to be able to complete service and maintenance tasks on the heat pump boiler:

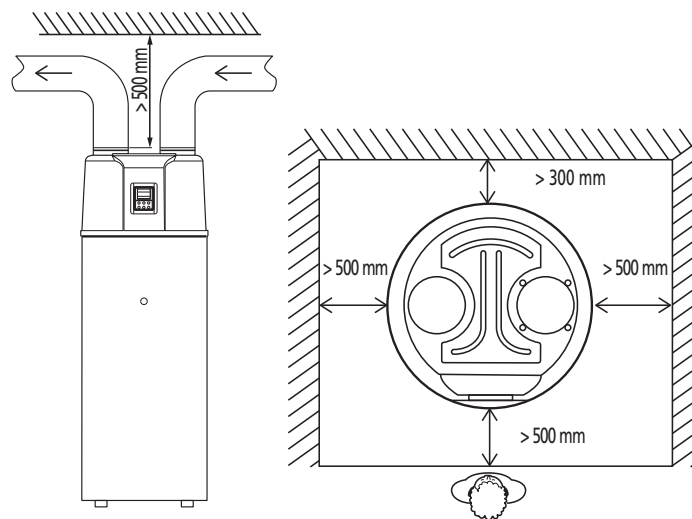
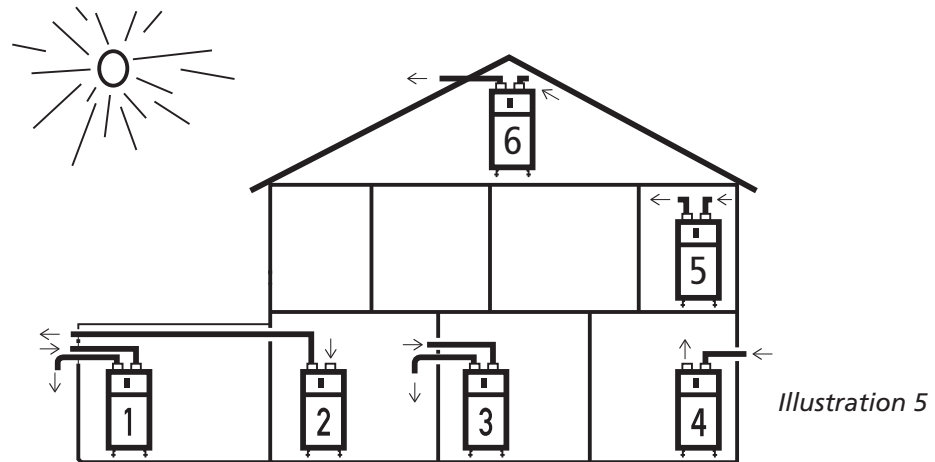


Illustration 4

## 5. INSTALLATION POSITIONS

- Install only indoors.
- Install the heat pump boiler securely on a floor surface which can bear the weight of the heat pump boiler > 300 kg, including water and mounting materials. When installed on an insufficiently strong floor surface, the heat pump boiler could fall or the floor can break, causing injury and property damage.
- The heat pump boiler must be installed only in upright position with the air inlet and air outlet at the top.

## 6. INSTALLATION EXAMPLES



- 1) Basic installation, using outdoor air and returning used air back to outdoors.
- 2) Using energy contained in the indoor air.
- 3) Using the heat pump boiler as a boiler as well as to cool an other room.
- 4) Using outdoor air and blowing the cold air into the same room as where the heat pump boiler is placed. The cooled air functions as an air conditioner and maintains the heatpump hot water function.
- 5) Using the heat pump boiler as boiler and dehumidifier (cooled air can contain less moisture).
- 6) Using a space with a large amount of waste heat (in this case for example because the sun is burning very heavily on the roof).



The higher the air inlet temperature the more efficient the heat pump boiler will work (max. air inlet temperature 43°C).  
Bear in mind: the air outlet temperature is always lower than the air inlet temperature.

## 7. WATER LOOP AND DRAINAGE PIPE CONNECTION

PLEASE PAY ATTENTION TO THE BELOW POINTS WHEN CONNECTING THE WATER LOOP PIPE.



Make sure to close the main water supply.

- 1 Make sure the water pipe is internally completely clean, and the water loop is smooth with no obstructions.
- 2 Install the water pipes and accessories (not included). Refer to the pipeline connection sketch (see illustration 1 and 2).
- 3 A one-way safety valve must be installed (see illustration 1). The one-way safety valve will prevent water from flowing back to the water grid. This safety valve also has an important safety function; it is also a pressure relief valve which (when correct installed) will prevent that the pressure in the boiler can become too high. If not installed, it could cause damage to the heat pump boiler, or even cause injuries. The set point of this safety valve is 0.7 MPa. For installation position refer to the pipeline connection sketch (see illustration 1).
  - The water drain pipe from one way safety valve to sewer is to be installed in a continuously downward direction and in a frost-free environment.
  - The water should drip from the discharge pipe of the one-way safety valve. Therefore this pipe must be left open to the atmosphere.
- 4 A Y-shaped filter (not included) should be placed in the water inlet (see illustration 1).
- 5 Always run the condensing water drain hose/pipe downward all the way. Do not block the water flow by a rise, and do not put the end of the condensing water drain hose/pipe into water.

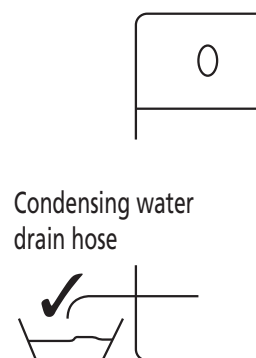
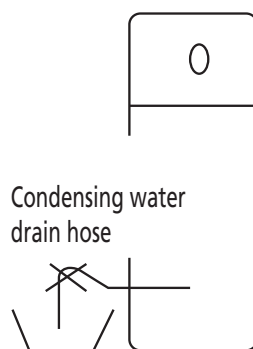


Illustration 6



Do not block water flow by rise.

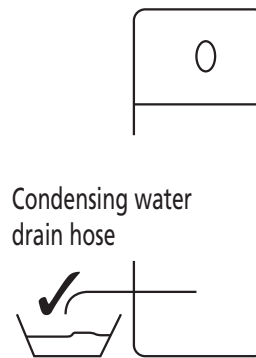
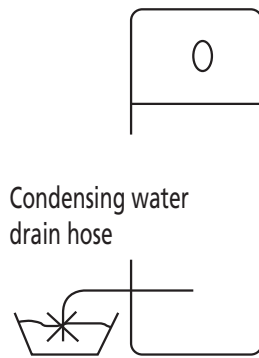


Illustration 7



Do not put the end of the condensing water drain hose/pipe into water.

## 8. INSTALLATION OF AIR DUCTS

- 1 If the heat pump boiler is connected with air ducts it should be DN 200mm for pipes or 200mm internal diameter when using flexible hoses.
- 2 Minimize the air resistance caused by the duct work or flexible hose:
  - Minimize the length of the air duct.
  - Maximize the diameter of the air duct.
  - Minimize curves, bends and restrictions in the air duct/hose.
 As a rule of thumb; max length of total air system should be shorter than 6 meter.
- 3 Ensure that there are no air leaks.
- 4 Make sure the ducts are easy to disconnect from the top cover. The top cover needs to be removed periodically, to be able to perform the necessary maintenance.
- 5 Make sure that there is nothing in the duct and that the air flow is smooth.



More air resistance will lead to decrease of the capacity and lower COP of the heat pump boiler.

## 9. WIRE CONNECTION

- The power supply wire is 3 x 1.5 mm<sup>2</sup>.
- For each heat pump boiler an exclusive, separate electrical circuit with a safety switch is needed. The current of the fuse should be 16A.



- This equipment must be earthed and installed with a ground fault switch. It can possibly cause electrical shock, injury and property damage if grounding is not perfect.
- The electrical supply needs to be done with a proper earthed connection.

## D OPERATING THE HEAT PUMP BOILER

### 1. WATER SUPPLY AND WATER EMPTYING

#### WATER SUPPLY:

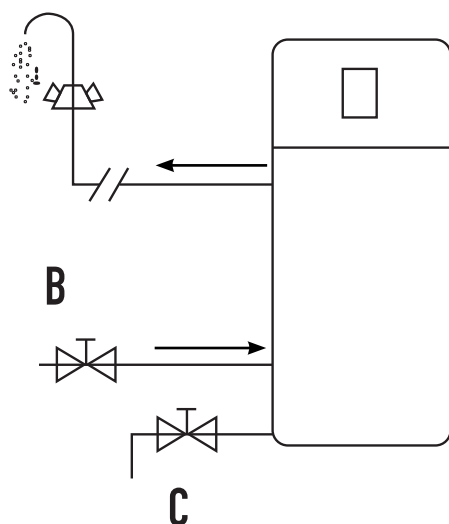


Operation without water in water tank may result in damage of heat pump and electrical heater and is not covered by the warranty!



The heat pump boiler has no water purification function. Therefore the water supplied to the heat pump boiler must be normal drinkable tap (or sanitary) water, otherwise dangerous situations might occur and/or the lifetime expectancy of the product might be significantly reduced.

A



A: Hot water outlet tap  
B: Cold water inlet tap  
C: Manual drain valve

Illustration 8

If the heat pump boiler is used for the first time or used again after emptying the tank, please make sure that the tank is full of water and vented (see point 3 below) before turning on the power:

- 1 Check if the manual drain valve (C) is closed.
- 2 Open the cold water inlet tap (B) and a hot water outlet tap (A).
- 3 When water is flowing out of the opened hot water tap (A) without any abnormalities then the tank is full, and automatically the heat pump boiler is vented.
- 4 Close the hot water tap (A) and water supply will stop.

#### WATER EMPTYING:

To empty the tank if the heat pump boiler needs cleaning, moving etc.:

- 1 Stop the heatpump (see chapter E).

- 2 Remove the plug from the socket
- 3 Close the cold water inlet tap (B).
- 4 Open the hot water tap (A) and open the manual valve (C) of drainpipe.
- 5 After emptying, close the manual valve (C).

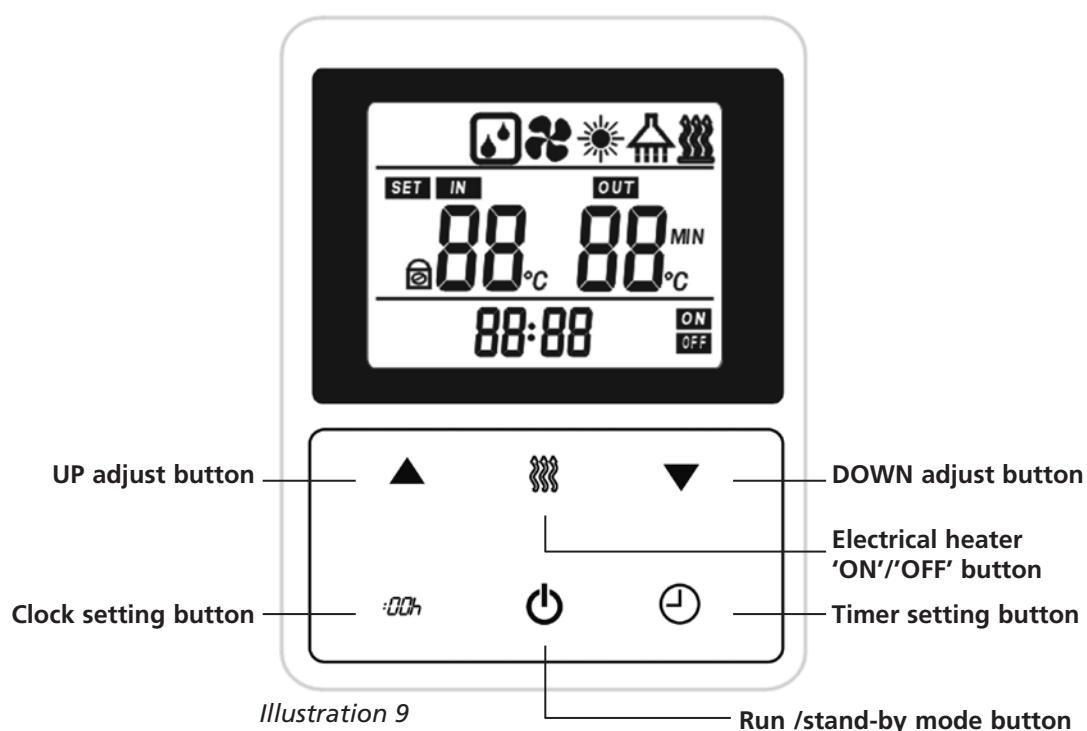
## 2. TEST RUN

### FINAL CHECKS BEFORE TEST RUN






- 1 Open the main water supply and the water supply to the heat pump boiler and check the water pipe connection for possible leaks.
- 2 Check the electrical system, make sure that the power supply is 230V – 50Hz, and whether the power cord is plugged correctly into the socket.
- 3 Check whether the socket of the electrical system is having an earthed connection.
- 4 Check whether water is flowing out of the hot water tap by opening the hot water tap, this to be sure that the tank is full with water before turning on the power (**See chapter D**).
- 5 Use the control panel to start the heat pump boiler (**See chapter E**).
- 6 When you hear an abnormal sound turn the power of the heat pump boiler off.







## E BASIC CONTROL PANEL FUNCTIONS

### CONTROL PANEL



### LCD ICONS

- 1 Defrosting**   
When lit the icon indicates that the automatic defrost function is enabled.
- 2 Ventilating**   
When lit the icon indicates that the fan function is enabled.
- 3 Heating**   
When lit the icon indicates that the current operation mode is heating.  
Before the compressor is started up, this icon keeps flashing, and will change to bright when the compressor is 'ON'.
- 4 Hot water available**   
When lit the icon indicates that the domestic hot water temperature inside the water tank has reached the set point. This icon also appears for 5 seconds when the heat pump boiler is switched from the stand-by mode to the running mode. In these 5 seconds the program is checking the hot water temperature.
- 5 Electrical heating**   
When lit the icon indicates that the electrical heating function is enabled according to factory default. The electrical heater will work according to the control program.

- 6 Child lock**  When lit the icon indicates the key lock function is enabled. The keys cannot be operated until this function is disabled.
- 7 Left hand side temperature display** **IN**  The display shows the current temperature in the lower area of the water tank. When checking or adjusting parameters this side of the display will show the relating parameter number. In case of any malfunction, it shows the related error code.
- 8 Right hand side temperature display** **OUT**  The display shows that the current upside temperature of the water tank. When checking or adjusting the parameter this section will display the related parameter value. In case of any malfunction, it shows the related error code.
- 9 Clock display**  The clock display shows the current time. When reading or programming the scheduled timer, the clock display shows the action time.
- 10 Timer 'ON'**  The icon indicates that the timer 'ON' function is enabled.
- 11 Timer 'OFF'**  The icon indicates that the timer 'OFF' function is enabled.




## OPERATIONS

- 1 Power 'ON'**  
When the power to the heat pump boiler is switched on, all icons are displayed on the controller screen for 3 seconds. The heat pump boiler will enter into the stand-by modus.



Illustration 10

Stand-by mode.

- 2**  **button**  
When pressing the run/stand-by mode button when the heat pump boiler is in stand-by mode the heat pump boiler switches to running mode. The heating-  or hot water available icon  will be displayed on the screen. The heat pump will heat the water to the temperature as set with parameter "0" (see chapter F), with a maximum of 55°C.





Running mode.

Illustration 11

Pressing the run/stand-by mode button again the heat pump boiler switches back to the stand-by mode.

### 3 ▲ And ▼ buttons


These are the multi-purpose buttons. Used for parameter checking, parameter setting, clock adjustment, adjustment of the timer and lock and unlock the user interface (child lock ).






Illustration 12

Check and adjust the set parameters.

#### PARAMETER CHECKING.

- Press ▲ or ▼ button, in running or stand-by mode, to check the relating set parameters. Press the run/stand-by button  to exit the checking. If no action to the buttons for 5 seconds, the controller will exit the parameter checking automatically.

#### PARAMETER SETTING.

- Parameters can only be set and/or changed in stand-by mode. If the parameters need to be adjusted select the parameter which need to be adjusted. Press ▲ or ▼ button first, the parameter and the default value starts to flash. Pressing the ▲ or ▼ button again, the next parameter appears. Select the parameter which needs to be adjusted. Then press  and  buttons at the same time to enter the parameter set program. Only the default value flashes. Change the default value by pressing the ▲ or ▼ button. Press  button to confirm the setting. If the settings are not confirmed within 5 seconds, the unit will save the settings automatically.



Check chapter F to see which parameters can be adjusted. Adjusting parameters which are marked as "Do not change" in chapter F should not be adjusted. Otherwise malfunction of the heat pump boiler may occur.

#### CHILD LOCK.

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




#### NOTE:

- You can check and adjust the set parameters during stand-by modus; you cannot adjust the set parameters when the heat pump boiler is running.
- The parameters have been preset by the factory. Only parameters with the remark "**adjustable**" may be changed by the end user (see **parameter list chapter F.**). Parameters with the remark "**do not change**" must be changed by a local dealer only, to prevent damage and/or malfunction of the heat pump boiler.










The warranty does not cover damage by incorrect setting of parameters.

#### 4 button (clock time setting)



Press  once, hour icon "88" will flash, use the ▲ and ▼ buttons to set the exact hour(s). Press  again, minute icon "88" will flash, use the ▲ and ▼ buttons to set the exact minute(s). After finishing the setting, press the button  once again to confirm and exit.

#### 5 button

##### Setting the timer:

Press  button once, the clock icon "88:88" and timer on icon "ON" will flash. Press  again, hour icon "88" will flash, use the ▲ or ▼ button to set the desired timer "ON" hour(s). Press  again, minute icon "88" will flash, use the ▲ or ▼ button to set the desired timer "ON" minute(s). Press  again to confirm the set time. The timer on icon "ON" stop flashing, at the same time the clock icon "88:88" and the timer off icon "OFF" will flash. Press  again, hour icon "88" will flash, use the ▲ or ▼ button to set the desired timer "off" hour(s). Press  again, minute icon "88" will flash, use the ▲ or ▼ button to set the desired timer "off" minute(s). Press  again to confirm the set time. The timer icon "off" stops flashing. The timer function has been switched.

##### Cancel the timer settings:

Press  button once, the clock icon "88:88" and timer icon "ON" will flash. Press the button  once, and the timer settings are cancelled.



#### NOTE:

- 1) The timer settings will apply to every day of the week.
- 2) The timer settings are still remembered after a sudden power cut.







## 6 button

The electric heater button is used to switch on the "turbo" mode function, for heating the water to a temperature above 55°C, to enable or disable the ventilation function and for the auto disinfection function.







### Electric heater only.

1. Switch to stand-by mode.
2. Press the  button, the Electrical heating icon  is show on the display. The water is heated by the electric heater only to the temperature set by parameter "2".








### Heating the water to temperatures above 55°C in "turbo" mode.

1. Switch to stand-by mode. Check if parameter "2" > parameter "0" and is > 55°C.
2. Press the  button, the electrical heating icon  is shown on the display.
3. Press the  button the **Heating icon**  is also shown on the screen. The heat pump boiler is now in 'turbo' mode and will heat the water to the set temperature parameter "2".
  - When pressing the  button the heat pump boiler will return to the stand-by mode.
  - When pressing the  button the heat pump boiler stays in running mode, without the electric heater operating.

### "Turbo" mode function.


1. Switch to stand-by mode. Set parameter "2" and parameter "0" to the desired water temperature.
2. Press the  button, the Electrical heating icon  is shown on the display.
3. Press the  button. The **Heating icon**  is also shown on the display. The heat pump boiler is now in "turbo" mode: both methods of heating (heat pump and electric) are now working at the same time.
  - When pressing the  button the heat pump boiler will return to the stand-by mode.
  - When pressing the  button the heat pump boiler stays in running mode, without the electric heater operating.

### Heating the water to temperatures above 55°C.

1. Switch to stand-by mode. Set parameter "0" to the desired water temperature. ( max. 70°C )
2. Press the  button. The **Heating icon**  is shown on the display.
3. Press the  button. The Electrical heating icon  is also shown on the display. The heat pump boiler will now heat the water to the desired set temperature.
  - When pressing the  button the heat pump boiler will return to the stand-by mode.
  - When pressing the  button the heat pump boiler stays in running mode, without the electric heater operating. The icon  will not be shown on the display.

### Enable/disable fan function when heat pump stops.

By pressing the  button and hold it for five seconds the fan ventilation

function can be enabled or disabled. If this function is enabled the Fan ventilation icon  appears on the display, the fan will continue to ventilate the air when the water temperature reaches the set point and the heat pump boiler switches to stand-by position. If this function is disabled the fan will stop when the water temperature reaches the set point and the heat pump boiler switches to the stand-by position.

#### **Disinfection.**

To prevent legionella the heat pump boiler is equipped with anti legionella function. This function will heat up the water once every week up to 70°C and keeps this temperature for half an hour after which the heat pump boiler will return to the set program. This time is sufficient to prevent contamination of the water with the legionella bacteria. The disinfection starting time is adjustable with parameter 13.



#### **BE CAREFUL WHEN USING A THERMOSTATIC TAP.**

The scale of the thermostat hot water tap should be adjusted to an inlet water temperature of 55°C. However, during the disinfection, the hot water temperature will reach the set value of parameter 4. ( default 70°C.) The thermostatic hot water tap scale does not match the normal outlet temperature of the domestic hot water any more. The domestic hot water temperature will become higher as the temperature shown on the thermostat valve scale.

#### **NOTE:**

- 1) The heat pump stops running at 55°C to protect the compressor. If water is needed at temperatures higher than 55°C an electric heater will heat the water from 55°C to the desired temperature. (Parameter "0")
- 2) The turbo function is used to heat the water to the default value in a shorter time.

In 'turbo' mode both the heat pump and the electric heater are operating. When the water temperature reaches 55°C, the heat pump stops to protect the compressor, now only the electric heater heats the water to the heat pump boiler water setting temperature.

#### **7 Error codes and reset**

If there is a malfunction during stand-by or running status the heat pump boiler will stop automatically and show the error code on the screen of the controller. To reset the heat pump boiler cut off the power by taking out the electrical plug for 10 seconds. Then switch the power on again. If the error code returns contact your local dealer.



*Illustration 13*

## F PARAMETER LIST



Adjusting parameters which are marked as "Do not change" should not be adjusted. Otherwise malfunction of the heat pump boiler may occur.



The warranty does not cover damage by incorrect setting of parameters.

Parameter No.	Description	Range	Default	Remarks
0	Hot water set temperature	10 ~ 70°C	55°C	Adjustable
1	Temperature difference between inlet / outlet hot water		5°C	Do not change
2	Electric heater hot water set temperature	10 ~ 70°C	55°C	Adjustable
3	Electric heater delay time		30 min	Do not change
4	Weekly disinfection temperature.		70°C	Do not change
5	High temperature disinfection time.		30 min	Do not change
6	Defrosting period.		45 min	Do not change
7	Defrosting entry coil temperature.		-7°C	Do not change
8	Defrosting exit coil temperature.		13°C	Do not change
9	Max defrosting cycle period		8 min	Do not change
10	Electronic expansion valve adjustment.		1	Do not change
11	Target over-heat degree.		5°C	Do not change
12	Steps of manually adjusting the electronic expansion valve.		35 steps	Do not change
13	Disinfection start up time adjusting.	00.00~23.00	23.00	Adjustable(hour)
A	Inlet water temperature	°C		
B	Outlet water temperature	°C		
C	Evaporator coil temperature	°C		
D	Return gas temperature	°C		
E	Ambient temperature	°C		
F	Electronic expansion valve step.			

## G MAINTENANCE

### MAINTENANCE ACTIVITIES

In order to ensure an optimal operation of the heat pump boiler, a number of checks and inspections on the heat pump boiler and the electrical wiring have to be carried out at regular intervals.

#### 1. MONTHLY

- Check if the water tube connections are in good condition. This to avoid water leakage.
- Keep the heat pump boiler clean by means of a soft damp cloth.
- Clean the air filter, if applicable, to keep an efficient performance.
- Clean the evaporator every month. The evaporator is placed under the top cover (See illustration 16).

#### HOW TO CLEAN THE EVAPORATOR.

- 1) Switch off the heat pump boiler.
- 2) Take out the power plug from power socket.
- 3) Remove the top cover by removing the 3 screws (see illustration 14), removing the ducts when mounted, and disconnect the plug connected to the control panel.
- 4) Wait until the evaporator is dry.
- 5) Clean the evaporator with a vacuum cleaner or brush.



Be careful when cleaning the evaporator as the fins are easy to be deformed. This deformation must be prevented.

- 6) Reposition the top cover.

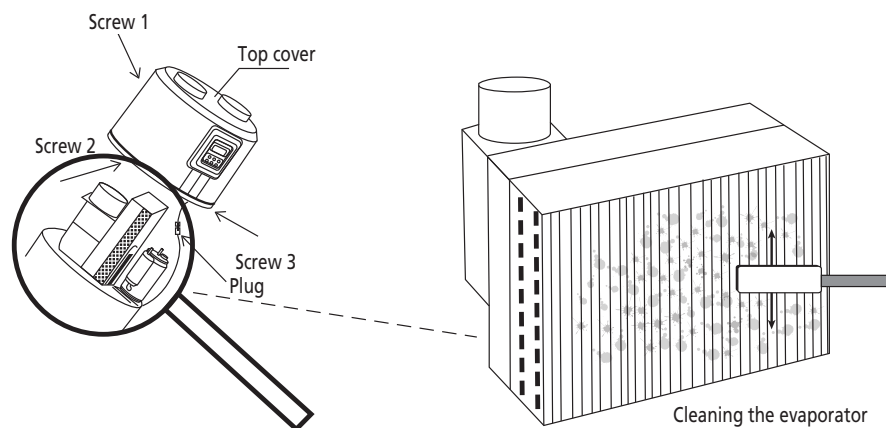


Illustration 14

## 2. EVERY 6 MONTHS



The magnesium anode is an anti-corrosion element. It is assembled in the water tank to avoid corrosion inside the heat pump boiler tank, to protect the heat pump boiler tank and other components. The magnesium anode is crucial to the life-span of the heat pump boiler.

- Check the magnesium anode every 6 months and replace it if it has worn out.
  - If, during the first three inspections (with max. 6-months interval), one can experience that the wearing down time of the Magnesium anode is 12 months or more, than –based on this experience- the inspection interval of the magnesium anode can be extended to the maximum of 12 months.
- 1) Make sure to write down the actual installation date on the sticker on the unit.
  - 2) In the first cell: mark the date which the magnesium anode must be checked again, this date to be maximum 6 months away from the date of installation.
  - 3) On or before the date as mentioned in 2.: check the magnesium anode.
  - 4) Mark that the magnesium anode was checked with "✓" in the dedicated area.
  - 5) For your own reminding: write down the next date on which the magnesium anode must be checked again (max 6 months from date as mentioned in 2.)
- How to check/replace the magnesium anode.



Illustration 15

- 1) Turn the power of the heat pump boiler 'OFF' and pull out the plug.
- 2) Drain the water out of the tank. **See chapter D.1**
- 3) Remove the old magnesium anode from the tank by turning the magnesium anode anti clockwise.
- 4) Replace the magnesium anode for a new one when:
  - The average diameter of the anode is less than 10 mm
  - Or the average length is less than 150 mm
  - Or the magnesium anode looks so much worn out that on some spots down the length of the anode the diameter is certainly less than 12 mm.Otherwise reposition the disassembled magnesium anode. Mind to reinsert the rubber sealing ring.
- 5) Recharge the heat pump boiler with water. **See chapter D.1**

### 3. EVERY YEAR

The heat pump boiler should be inspected and serviced every year by an authorized dealer every year.

The authorized dealer will:

- Check the power supply and the electrical system and wiring, replace damaged and worn out parts in time. Check if there is a damaged part.
- Replace damaged parts in time.
- Clean the heat pump boiler tank and electric heater, to keep an efficient performance.
- Check each part of the heat pump boiler and the pressure of the refrigerant system. Replace defect parts, and recharge refrigerant if it is required.

## H TROUBLESHOOTING

This section provides useful information for diagnosing and correcting certain troubles in the unlikely case they should occur. Before contacting a local dealer, read this chapter carefully.

The guidelines below might help to solve the problem.

Problem	Cause	Solution
The heat pump boiler does not start.	Power cut.	Wait for power to be restored Check if main power is still connected.
	Unit may have become unplugged.	Check power cord.
	Wrong timer program.	Reprogram timer.
	Wrong temperature set point	Reprogram set point.
	Unit is in disinfection mode.	Wait until disinfection mode is over.
	An error code appears on the control panel	Reset the heat pump boiler. See chapter E.7. Contact a local dealer if the error code returns back.
The heat pump boiler is running but does not heat the water.	Dirty evaporator.	Clean evaporator.
	Air ducts are blocked.	Clean air ducts.
The safety valve is constantly leaking water.	Defect safety valve.	Replace safety valve.
	Boiler pressure is too high.	Contact a local dealer or a heat pump boiler engineer.

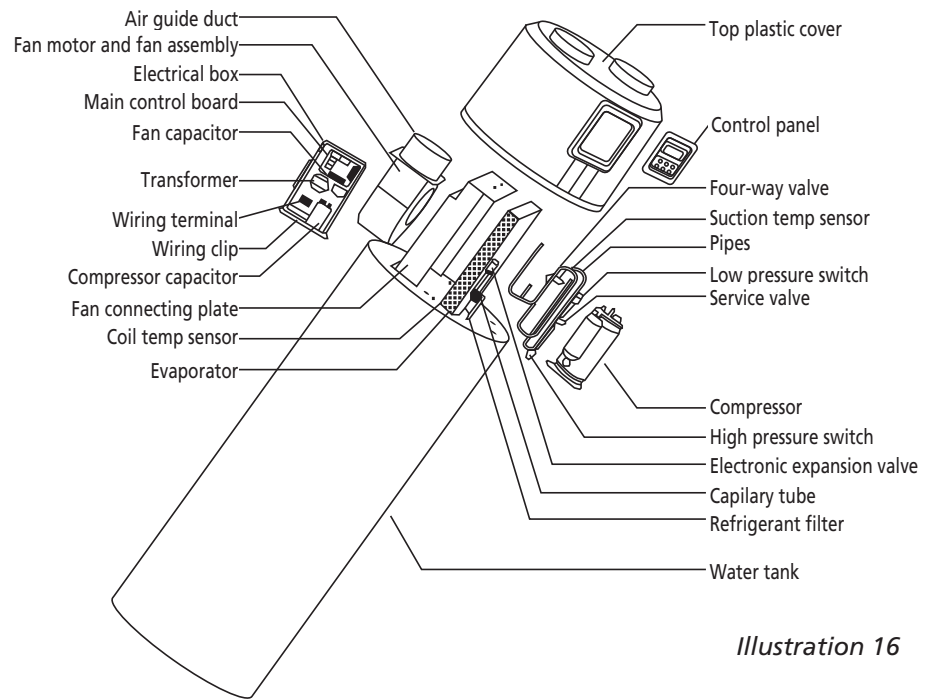




If the malfunction is not caused by one of the above causes, stop the heat pump immediately. Disconnect the power and contact a local dealer.

## I OVERVIEW OF THE UNIT

### PARTS AND DESCRIPTIONS



*Illustration 16*

## J TECHNICAL DATA

TECHNICAL DATA		TAW200
Capacity	W	2020 (1500**)
Nominal power consumption	kW	0,49 (+1,5**)
COP DHW*	W/W	2,95
Power supply	V/Ph/Hz	230/1/50
Water tank Volume	L	200
Nominal Current	A	2,1 (+6,5**)
Max. Current	A	16
Outlet water temperature (When using heat pump only)	°C	55
Max. water temperature (when using E-heater)	°C	70
Air flow (nom.)	m <sup>3</sup> /h	700
Operating temp. range Heat pump only mode.	°C	-5 / 43
Operating temp. range E-heater mode only mode.	°C	-15 - 43
Refrigerant pressure suction discharge	MPa	0,2 / 1,4
Refrigerant pressure suction (min.) / discharge (max.)	MPa	0,45 / 1,8
Compressor		Rotary
Max. tank pressure	MPa	1,0
Anti legionella function		yes
Magnesium anode		yes
Inside body material of tank		Stainless steel 304
Heat pump heat exchanger material		Stainless steel 316
Refrigerant type/charge	g	R134a/635
Net Weight empty/full	kg	100/300
Sound pressure level	dB (A)	48
Unit protection class	IP	IP XI

\* According to: En16147 Standard, measured at 20°C / 12°C heat source, ambient, DB/WB

\*\* Related to electrical heater

## K GUARANTEE CONDITIONS

The heat pump boiler is supplied with a 24-month guarantee (48 month guarantee on the stainless steel tank), commencing on the date of purchase. All material and manufacturing defects will be repaired or replaced free of charge within this period. The following rules apply:

1. We expressly refuse all further damage claims, including claims for collateral damage.
2. Repairs to or replacement of components within the guarantee period will not result in an extension of the guarantee.
3. The guarantee is invalidated if any modifications have been made, non genuine parts are fitted or repairs are carried out by third parties.
4. Components subject to normal wear, such as the magnesium anode, are not covered by the guarantee.
5. The guarantee is valid only when you present the original, dated purchase invoice and if no modifications have been made.
6. The guarantee is invalid for damage caused by neglect or by actions that deviate from those in this instruction booklet.
7. Transportation costs and the risks involved during the transportation of the Heat pump boiler and/or components shall always be for the account of the purchaser.
8. Damage to the Heat pump boiler which are mounted, connected not following local law and/or legislation and/or not following the guidelines in this manual is not covered by the guarantee conditions applicable to this product.

Consult your dealer for repairs if these instructions do not provide a solution. Make sure that disconnection is always done according to your local laws and legislation.

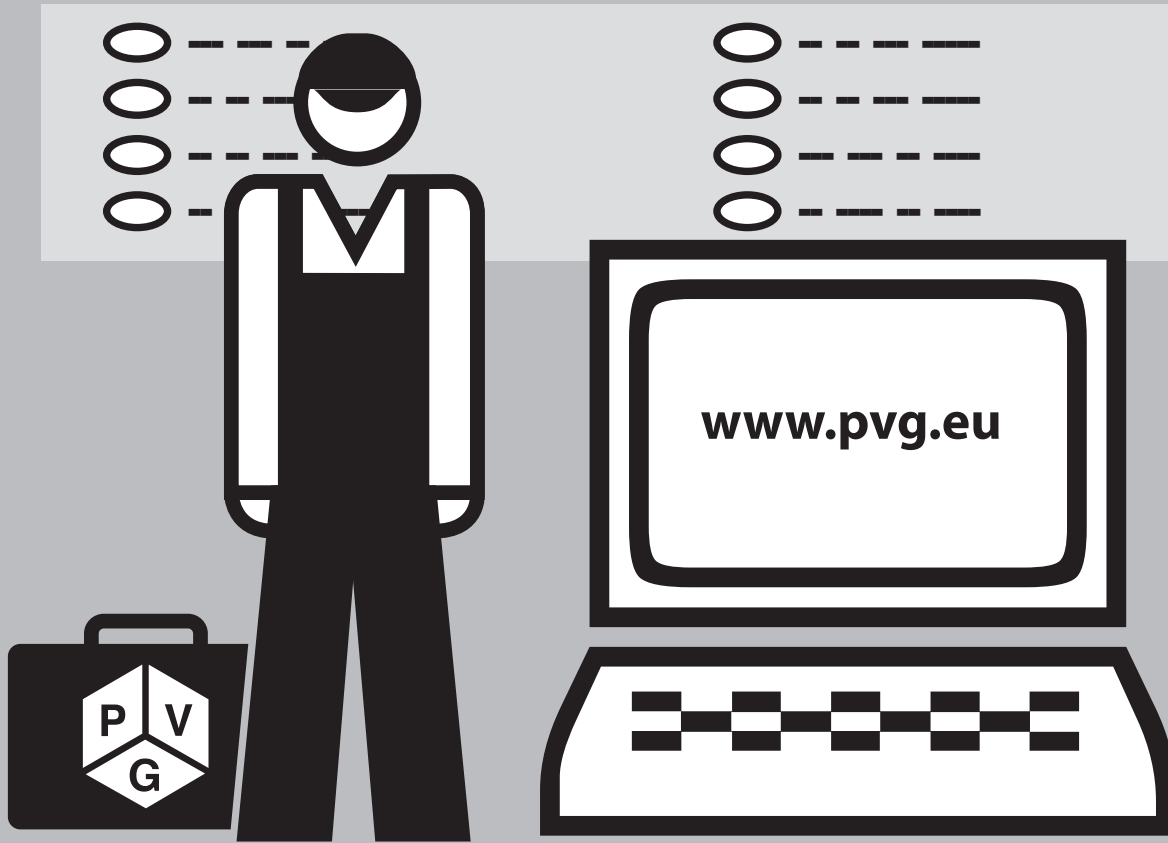
## L ENVIRONMENTAL INFORMATION



Waste electrical products should not be disposed with household waste. Please recycle where facilities exist. Check with your local authority or dealer for recycling advice.

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

This equipment contains R134a refrigerant in the amount as stated on the rating label on the unit. Do not vent R134a into atmosphere: R134a, is a fluorinated greenhouse gas with a Global Warming Potential (GWP) = 1300



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