



# SERVICE INSTRUCTIONS



VT3130 / VT3131 / VT3132



VT3130 ECO / VT3131 ECO / VT3132 ECO



VT2130 / VT2131 / VT2132



# SERVICE

# INDEX



- Technical data
- Installation requirements
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- Use of coils
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# SERVICE

# TECHNICAL DATA



Voltage/frequency:  
Heat pump output: (with SC10GHH compressor / with BSD122 DT compressor)  
Heat pump input: (with SC10GHH compressor / with BSD122 DT compressor)  
High supplementary heating:  
Fuse protection:  
Thermostat for supplementary heating:  
Protection:  
Water temperature:  
Refrigerant:

Amount of refrigerant:  
Leak tested:  
Air temperature:  
Air flow:  
Stock temperature:  
External pressure in ventilation system without affecting the performance:  
Boiler – VT3130 / VT3130 ECO / VT2130:  
Boiler – VT3131 / VT3131 ECO / VT2131:  
Boiler – VT3132 / VT3132 ECO / VT2132:  
Anode:  
Pressure tested:  
Working pressure:  
Max. boiler temperature:  
Weight without packaging – VT3130 / VT3131 / VT3132:  
Weight without packaging – VT3130 ECO / VT3131 ECO / VT3132 ECO:  
Weight without packaging – VT2130 / VT2131 / VT2132:  
Weight (full load) – VT3130 / VT3131 / VT3132:  
Weight (full load) – VT3130 ECO / VT3131 ECO / VT3132 ECO:  
Weight (full load) – VT2130 / VT2131 / VT2132:  
Water connections:  
Cold water:  
Hot water:  
Condensation water:  
Heat exchanger:  
Cirkulation:

Heat exchanger, heat surface VT3131 / VT3131 ECO / VT2131:  
Heat exchanger, heat surface VT3231 / VT3231 ECO / VT2231:

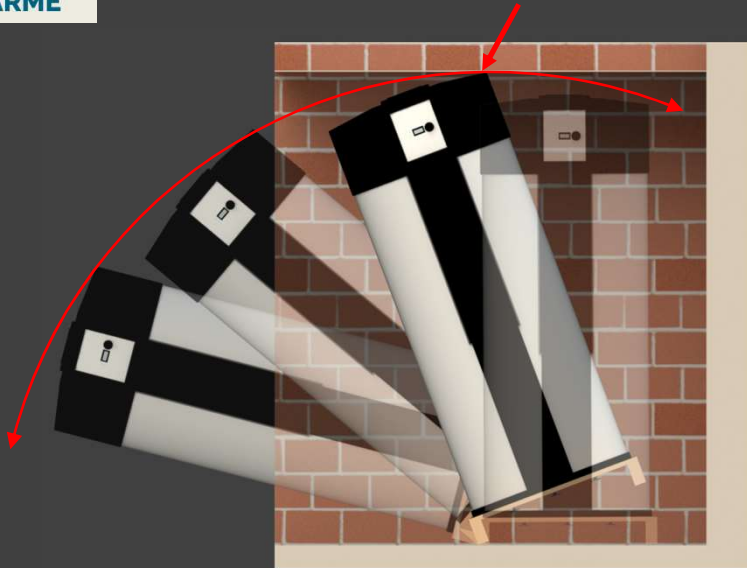
Idle consumption - at 7 ° C outside air and 55 ° C hot water temperature:  
Idle consumption - at 20 ° C ambient air and 55 ° C hot water temperature:  
COP:  
COP:

\*According to EN16147:2011, XL-Profile, outside air 7 ° C / hot water reference 55 ° C

\*\* According to EN16147:2011, XL-Profile, ambient air 20 ° C / hot water reference 55 ° C

230 V ~ 50 Hz (Phase-Neutral-Earth)  
1,4 kW / 1,7 kW  
395 W / 600 W  
2,0 kW / 230 V  
> 13 A  
Bei 65 ° C, Controlled via the display  
IP20  
Adjustable - max. 62 ° C  
R 134 a (CH<sub>2</sub>FCF<sub>3</sub>)  
0,990 Kg or see name plate

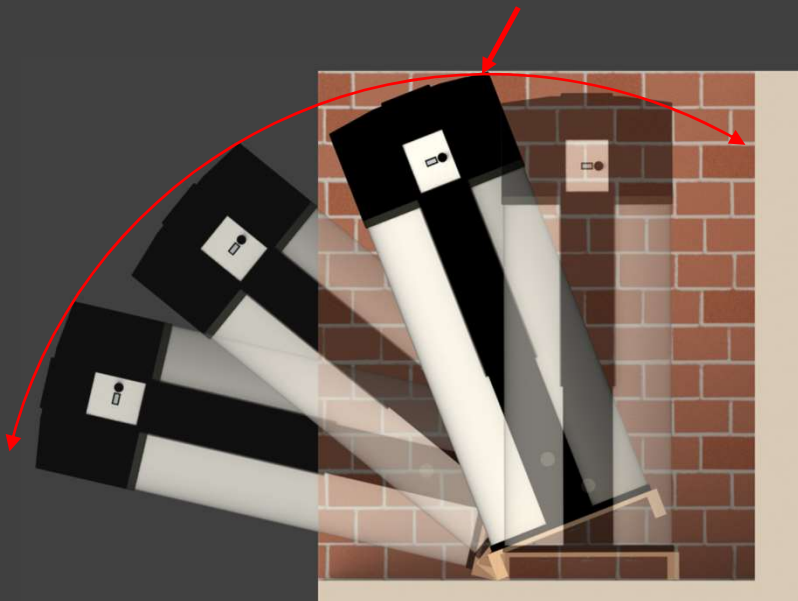
-10 ° C to +35 ° C  
200 to 300 m3/h  
-20 ° C bis +60 ° C  
80 Pa (Fan speed 1)  
270 l, Enamelled  
258 l, Enamelled  
242 l, Enamelled  
5/4" RT  
13 bar / 1.3 MPa  
10 bar / 1 MPa  
65 ° C  
145 Kg / 168 Kg / 190 Kg  
134 Kg / 157 Kg / 179 Kg  
152 Kg / 175 Kg / 197 Kg  
396 Kg / 411 Kg / 417 Kg  
384 Kg / 399 Kg / 405 Kg  
406 Kg / 421 Kg / 427 Kg  
1" RT  
1" RT  
1/2" RT  
1" RT  
3/4" RT  
1.00 m2 (5.90 l)  
Lower 1.5m2 (9.57L) +  
upper 0.6m2 (3..83 L)  
27 W / 24 hours\*  
20 W / 24 hours\*  
2.83\*  
3,61\*\*



Models: VT3130, VT3131 and VT3132

Minimum ceiling height (Still a risk of EPP touching the ceiling) = 1970 mm

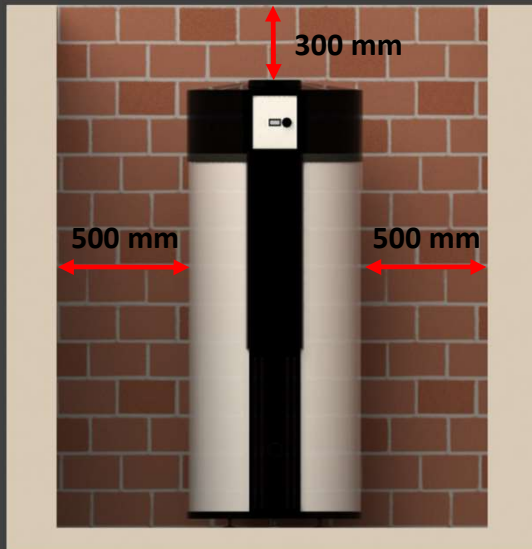
Recommended ceiling height is 1970 mm plus 300 mm = 2270 mm to assure free movement and possibility of mounting duct connections.



Models: VT3130 ECO, VT3131 ECO and VT3132 ECO

Minimum ceiling height (Still a risk of EPP touching the ceiling) = 2100 mm

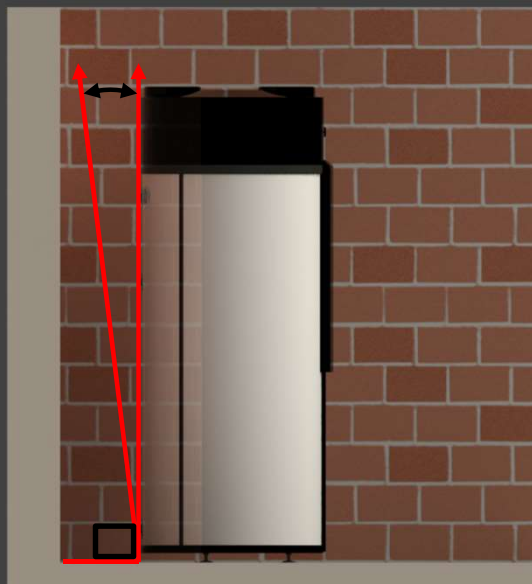
Recommended ceiling height is 2100 mm plus 300 mm = 2400 mm to assure free movement and possibility of mounting duct connections.



Recommended free space around the heat pump for optimal maintenance and servicing possibilities and duct connections.

On the backside of the heat pump please also respect free space for maintenance and servicing all hydraulic connections.

All damage and service impossibilities due to reduced accessibility are part of the installer/user responsibility and not covered by the manufacturer's warranty.



The heat pump should always be positioned in correct level or 1° backwards for the defrost water to run out in a proper way.

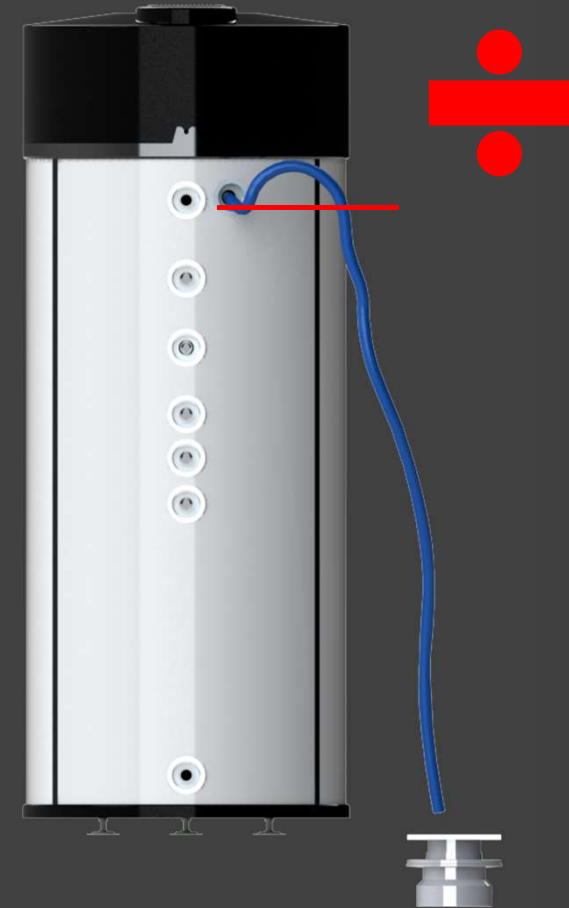


# SERVICE

# INSTALLATION REQUIREMENTS



Defrost water tube must be mounted in correct level of the defrost water outlet of the heat pump and into the drainage. If tube is above correct level the defrost water will run backwards and into the heat pump and could cause water leakage and this will cause exclusion of warranty.





# SERVICE

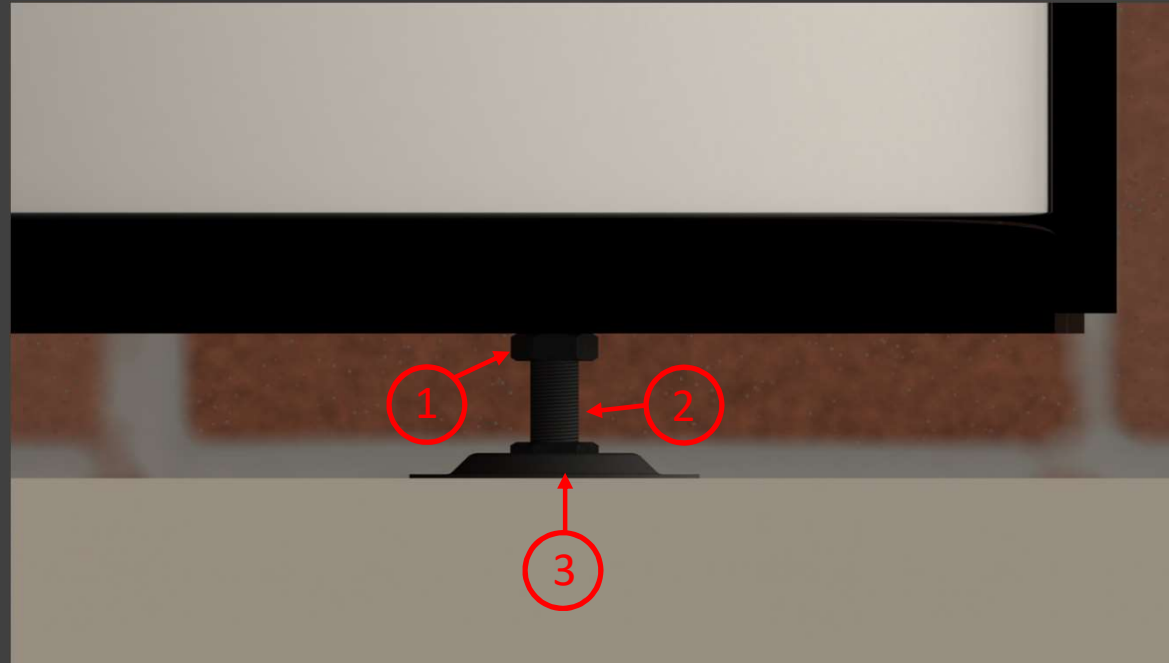
## REMOVE HEAT PUMP FROM PALLET



When the heat pump is placed at the customer the pallet must be removed.

- Tip or place the heat pump horizontal on the floor for easy dismounting of the pallet
- Loosen the screws that act as adjustable feet. (*do not remove the screws*)
- Remove the disc from all three feet
- Remove the pallet





To adjust the feet do the following.

- The thrust washer (3) is placed under the adjustment screw
- The lock nut (1) is loosened
- The foot screw (2) is adjusted so that the heat pump is in a vertical position (90° or 1° backwards) and does not tilt (important for the outlet of the defrost water)
- The lock nut (1) is tightened again.
- Ensure that the heat pump is installed in the right level to keep Manufacturer's warranty



LED for compressor

LED for supplementary heating



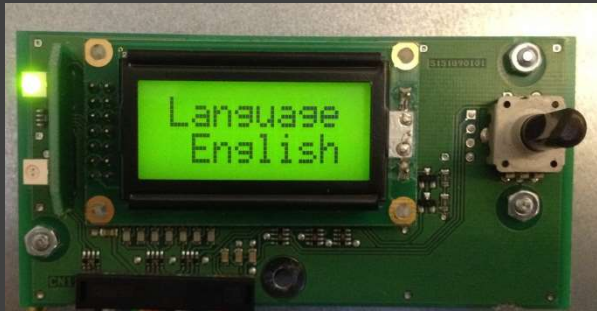
Display

Button:

- choose option by rotation
- Accept option by press
- If submenus are available a flash will appear; rotate and press for acceptance

### Display View – Main menu

Main menu is visible for the consumer



When the power is first connected select language  
(Factory setting is standard ENGLISH)

You can choose between: Danish, German, English, Spanish, French,  
Polish, Slovenian and Italian.

If you need to change language at a later stage, this can be done  
through the installers menu (service menu).



Shows the consumer the current water temperature

Only Info

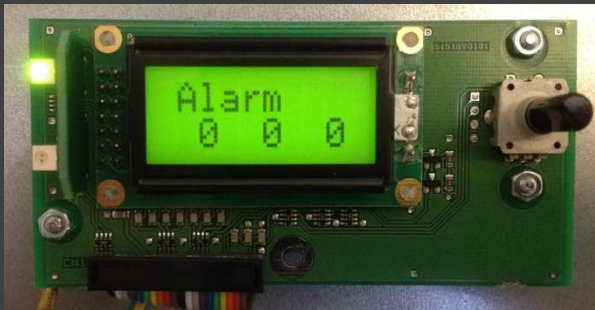


Shows the customer the current evaporator temperature

Only info

### Display View – Main menu

Main menu is visible for the consumer



Shows the different alarms that can appear.

Up to 3 alarms are shown. "0" = no alarm.

See alarm descriptions later in the service instructions.

Alarms are reset through pressure of the button.



Shows the current operating condition of the heat pump.

The following announcements can occur:

"off" = switched off

"Standby" = standby

"H. Water" = Works

"Legionel" = 65°C heating up in course (once a week)

"Def. Gas / Def. Stop" = Defrost condition



Shows the adjusted operating temperature.

*Please note! This is an average temperature and not the hot water output.*

The temperature can be changed through pressure and again released of the button, the operating temperature will then flash. By turning the button, the desired water temperature will occur. If the desired water temperature is reached, the button is pressed again for acceptance. The standard factory setting temperature is **"45°C"**.

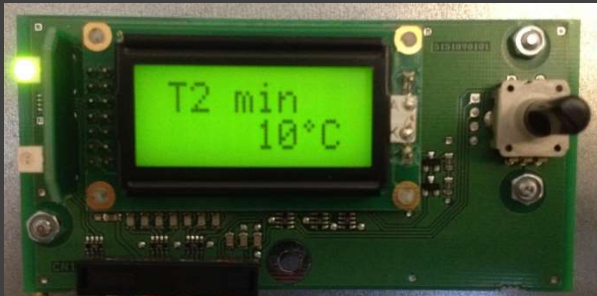
### Display View – Main menu

Main menu is visible for the consumer



Minimum temperature.

The temperature can be changed through pressure and again release of the button, the operating temperature will then flash. By turning the button, the desired minimum water temperature will occur. If the desired temperature is reached, the button is pressed again for acceptance. The minimum temperature is normally about. **"35°C"**. If the water temperature become lower than **"T min"**, the additional heating system will be activated, if you in the menu **"H.pump"** have selected, e.g. **"HP+EL"** (or HP+Boil if boiler is installed)



Similar function as T min. Used for "Draw Down function" and "Holiday" function . The factory setting is "10 ° C".



Select the combination of the Heat source.

There are the following options in the program:  
**"OUT", "HP", "EL", "HP+EL", "BOILER", "HP+BOIL"**.

If no boiler is installed, the last 2 combinations are not in use

### Display View – Main menu

Main menu is visible for the consumer



Here the automatic Legionella function can be switched on.

If switched ("**ON**") the heat pump will once weekly increase the temperature to 65°C, in order to eliminate possible bacteria.

We recommend activating the legionella function in the night time where hot water is not used.

The procedure must be activated in the parameter menu.

If the legionella procedure is activated, the legionella sequence will start immediately.

If the legionella procedure is deactivated, the legionella sequence will stop immediately.

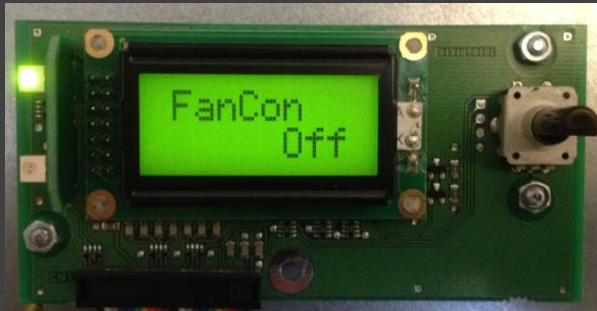
If activated a new "legionella protection" cycle starts automatically after 7 days (168 hours). The function will be deactivated at power cut.

In order to protect your installation against "legionella" or other bacteria, the water temperature goes up to 62°C by means of the HP and the supplementary additional heating. At 62°C the device switches to the "supplementary heating only mode" to heat further up to 65°C. This temperature is maintained for 1 hour before it will switch back to normal operating mode. The "legionella protection cycle" is limited to 12 hours. If the legionella temperature is not reached\*, an alarm will be displayed. The alarm will disappear automatically after the next successful legionella sequence or be reset on user acknowledgement.

\* If the air temperature is too low and/or the DHW energy requirement during the "legionella protection" cycle is higher than the needed output for the "legionella-protection" procedure.



Display View – Main menu  
Main menu is visible for the consumer



When selected "0" the fan will stop together with the heat pump.

When selected "1" for low speed or "2" for high speed in the condition standby. (= constant ventilation)



Fan speed, when the heat pump runs.

"1" = low speed

"2" = high speed



This function permits to operate the DHW HP with cheap and environmentally friendly energy from your own solar cell panels.

"Off" = Solar cells are not connected to system or not chosen to be used by the user.

"HP only" , "EL only" and "HP + EL": These values indicate the chosen operation mode, when the solar cell function is activated by the external inverter signal, see electrical diagram for correct wiring.

Display View – Main menu  
Main menu is visible for the consumer



5°C – T max

Set point temperature of “HP only” operating mode, when Solarcel function activated (inverter signal)



5°C – T max

Set point temperature of “EL only” or “HP + EL” operating mode, when Solarcel function activated (inverter signal)



This parameter activates/deactivates the holiday mode.

The holiday mode can be selected with the rotary/push button. The possible selection are:

“Off”, “1 week”, “2 weeks”, “3 weeks”, “3 days”, “Manual”

When the holiday mode is activated, “T2 min” is the safety level for frost protection.



### Display View – Main menu

Main menu is visible for the consumer

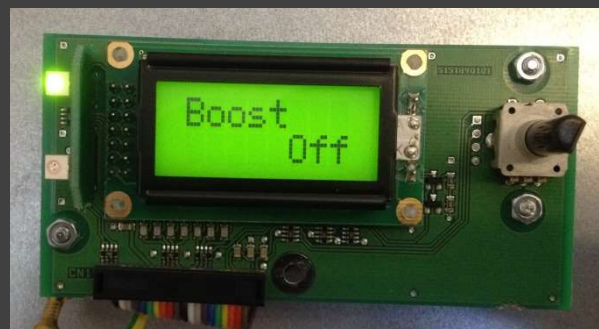


This parameter displays the number of holidays at individual (manual) choice.

The holiday days can be selected with the rotary/push button. The possible selection are: **1-99**



This parameter displays status of the remaining number of holidays. The possible values are: **0-99**



This parameter activates/deactivates the BOOST operating mode in the case of additional need for DHW. If the BOOST operating mode is activated "ON", the DHW production will be made by the HP and the supplementary electrical heating either for a maximum cycle of 1 hour or if Tmax is reached.

Possible values are:

"Off", "On". The factory setting is "OFF".

Display View – Main menu

Main menu is visible for the consumer



“AUS”, 30m/15s, 30m/30s, 60m/15s, 60m/30s, 90m/15s, 90m/30s

When activated the fan will stop for either 15 or 30 seconds every full operating 30 minutes, 60 minutes or 90 minutes, according to the selected value.



# SERVICE

## SYSTEM OPTIONS

### Display View – Service menu

Service menu is only for the installer. Press the button for approx. 5 seconds



#### SERVICE MENU – Only for the installer.

The menu **"software"** tells which software version is installed.

The number **"1.58"** is the current installed version



#### SERVICE MENU – Only for the installer

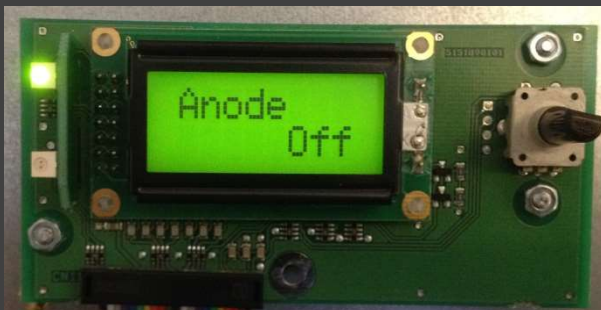
**"Defrost"** shows the defrosting method:

**"GAS"**, Only for VT2130 / VT2131 / VT2132

Only for VT3130 / VT3131 / VT3132

Only for VT3130 ECO / VT3131 ECO / VT3132 ECO

**Service Def.None, Def.Gas**

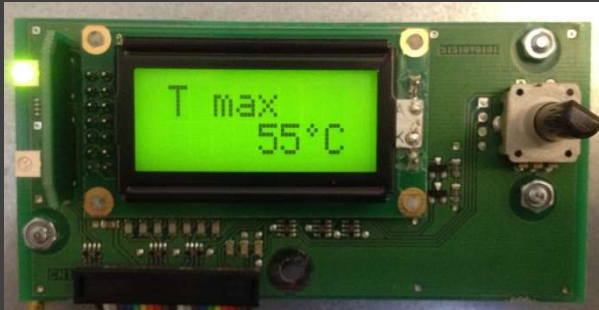


If the signal anode is factory mounted the value of the parameter **"ANODE"** is already set to **"ON"**. If the signal anode is retrofit, the parameter **"ANODE"** has to be set manually to **"ON"**. If a standard anode is installed, the parameter **"ANODE"** has to be set to the value **"OFF"**.

If no signal anode is installed the normal anode must be checked for replacement with a new anode 1 time per year due to different local water quality.

Display View – Service menu

Service menu is only for the installer. Press the button for approx. 5 seconds



### SERVICE MENU – Only for the installer

Temperature "**T max**". Here the maximum desired operating temperature can be adjusted. The temperature adjusted under "**T max**" is afterwards the highest possible temperature in menu "**SETPOINT**".

"**T max**" can be adjusted from 5°C to 62°C. Please note, that efficiency of the heat pump is reduced at higher temperatures = higher current consumption.



# SERVICE

## ALARM DESCRIPTIONS

There are 3 alarm levels.

- Information alarm.
- Cooling circuit alarm.
- Alarm for the whole heat pump.

3 different alarms can be show at the same time. The alarm must be reset by pressing the control button push/rotate at the control panel.

### **The information alarm**

- it does not affect the heat pump, but tell the user that there is a problem, which must be solved as soon as possible. (alarm no. 8, 9 and 10).

### **The cooling circuit alarm**

- warm water production with the compressor stops. When the heating element is chosen, it will take over the hot water production to the setPoint. (Alarm no. 3, 4, 5 and 6).

### **Alarm for the whole heat pump**

- warm water production stops completely. It acts probably over a defective operating sensor (alarm no. 1 and 2). The user can see the alarms in the alarm menu when the alarms are acknowledged. The error must be eliminated and the alarm has to be acknowledged before the normal operation will take place again. If the error is not eliminated the alarm will continue. In the case of several simultaneous alarms they are placed in row. The alarms will be shown in a priority list.

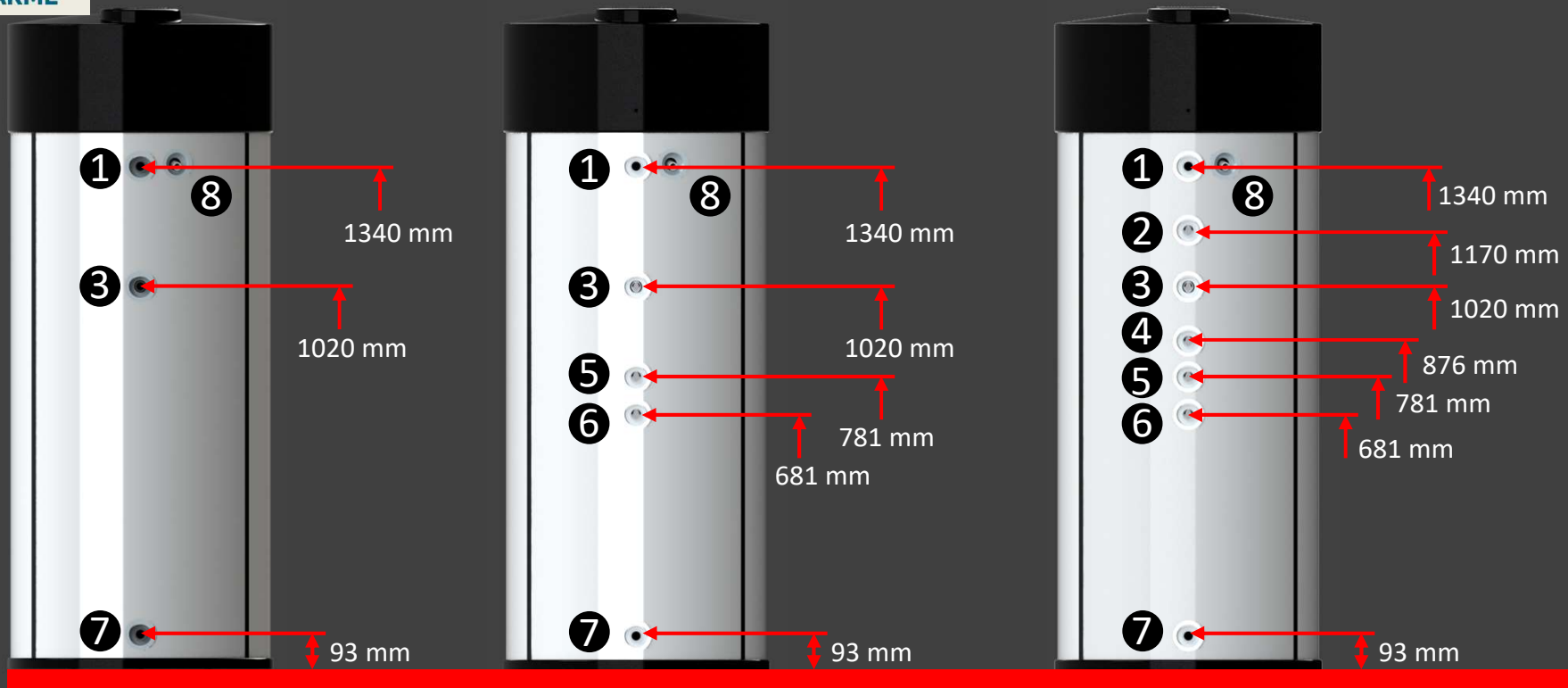


# SERVICE

## ALARM DESCRIPTIONS

Number	Alarm Lamp: No. 3 No.4	Name	Remark
1	X (red)      X (red)	Short circuit in the temperature sensor in the top of the tank	Heat pump and alternative heating stop
2	X (red)      X (red)	Temperature sensor in the top of the tank is switched off	Heat pump and alternative heating stop
3	X (red)	Short circuit in the temperature sensor for the evaporator	Compressor stops
4	X (red)	Temperature sensor for the evaporator is switched off	Compressor stops
5	X (red)	First pressure switch alarm	Compressor stops and starts again automatically , if the error is eliminated, possibly resetting.
6	X (red)	Second pressure switch alarm	Compressor stops and starts only again after resetting and user acceptance
8	X (red)	Temperature sensor "Temp.1" short curcuit	Information
9	X (red)	Anode to be changed	Information
10	X (red)	Legionella temperature is not reached	Information

Note! Compressor protection: A timer of 5 minutes from compressor stop to new start is inserted



1. Hot water outlet – 1" outer thread
2. Outlet upper heat exchanger / coil (models with 2 coils only) – 1" outer thread
3. Circulation. 3/4" outer thread
4. Inlet upper heat exchanger / coil (models with 2 coils only) – 1" outer thread
5. Inlet lower heat exchanger / coil (models with 1 and 2 coils) – 1" outer thread
6. Outlet lower heat exchanger / coil (models with 1 and 2 coils) – 1" outer thread
7. Cold water inlet – 1" outer thread
8. Defrost water outlet – 1/2" outer thread

*Always mount a safety group / Feet are not included the measurement due to their adjustability*





# SERVICE

## SAFETY GROUP (WATER CONNECTIONS)

1: **Cold water inlet**

2: **Ball valve 1"**: Must be open during operation

3: **Dirt collector 1"**: Collects rust and other unwanted particles in the pipe system

4: **Contra valve 1"**: To prevent excessive pressure and backflow

5: **Safety valve 1"**: Max. Pressure 1 Mpa / 10 bar. Discharge pipe connected to safety valve must be installed downwards and in frost free environment

6: **Drain valve 1"**: Open when the boiler needs to be emptied

7: **Hose connections**: For drainage of water from safety valve and drain valve

8: **Drain**: Connect hoses to safety valve and drain valve and lead the water into drain

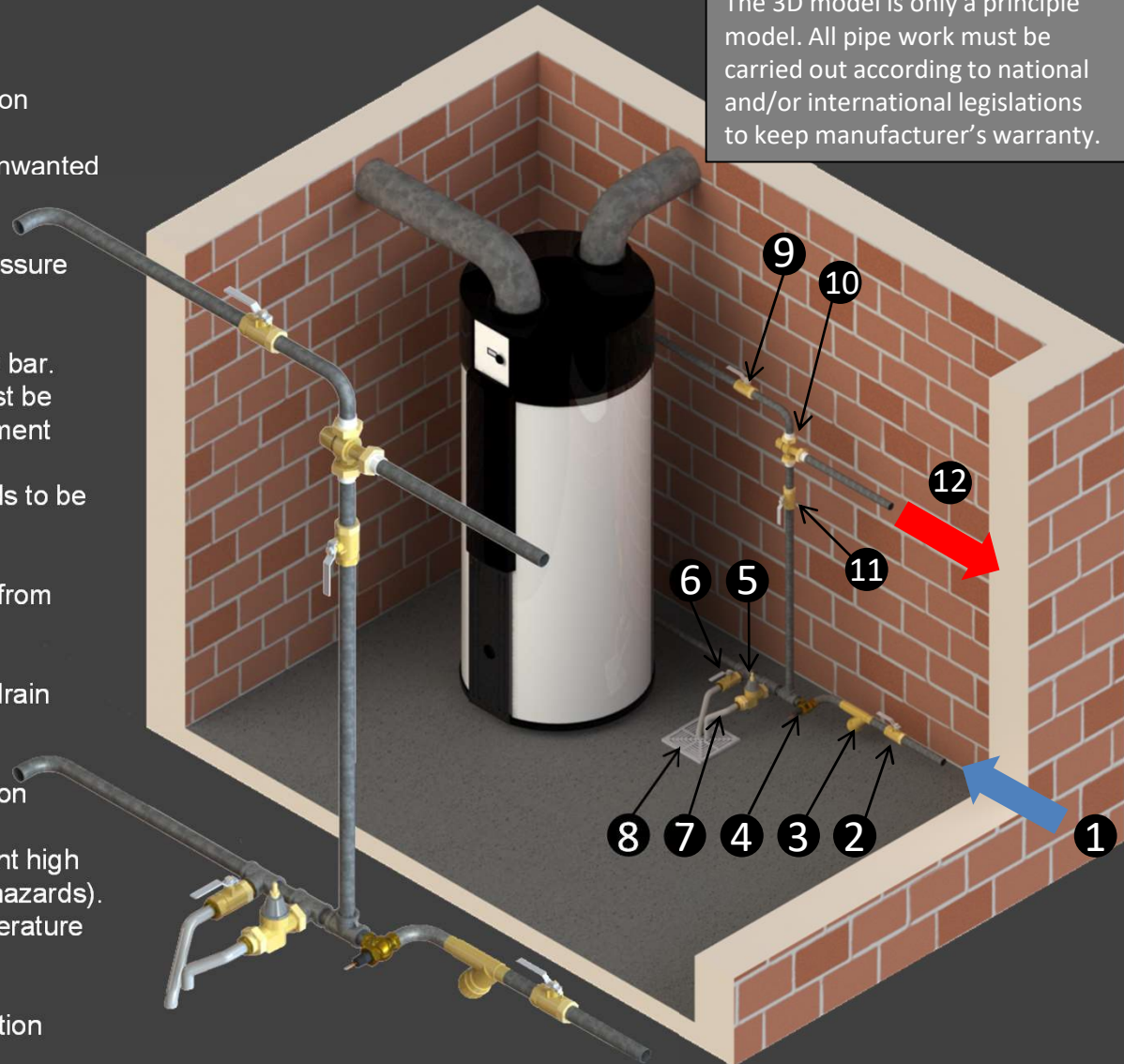
9: **Ball valve 1"**: Must be open during operation

10: **Thermostatic mixing valve 1"**: To prevent high temperature of hot water at outlets (scalding hazards). Use it to adjust an acceptable hot water temperature output.

11: **Ball valve 1"**: Must be open during operation

12: **Hot water outlet**

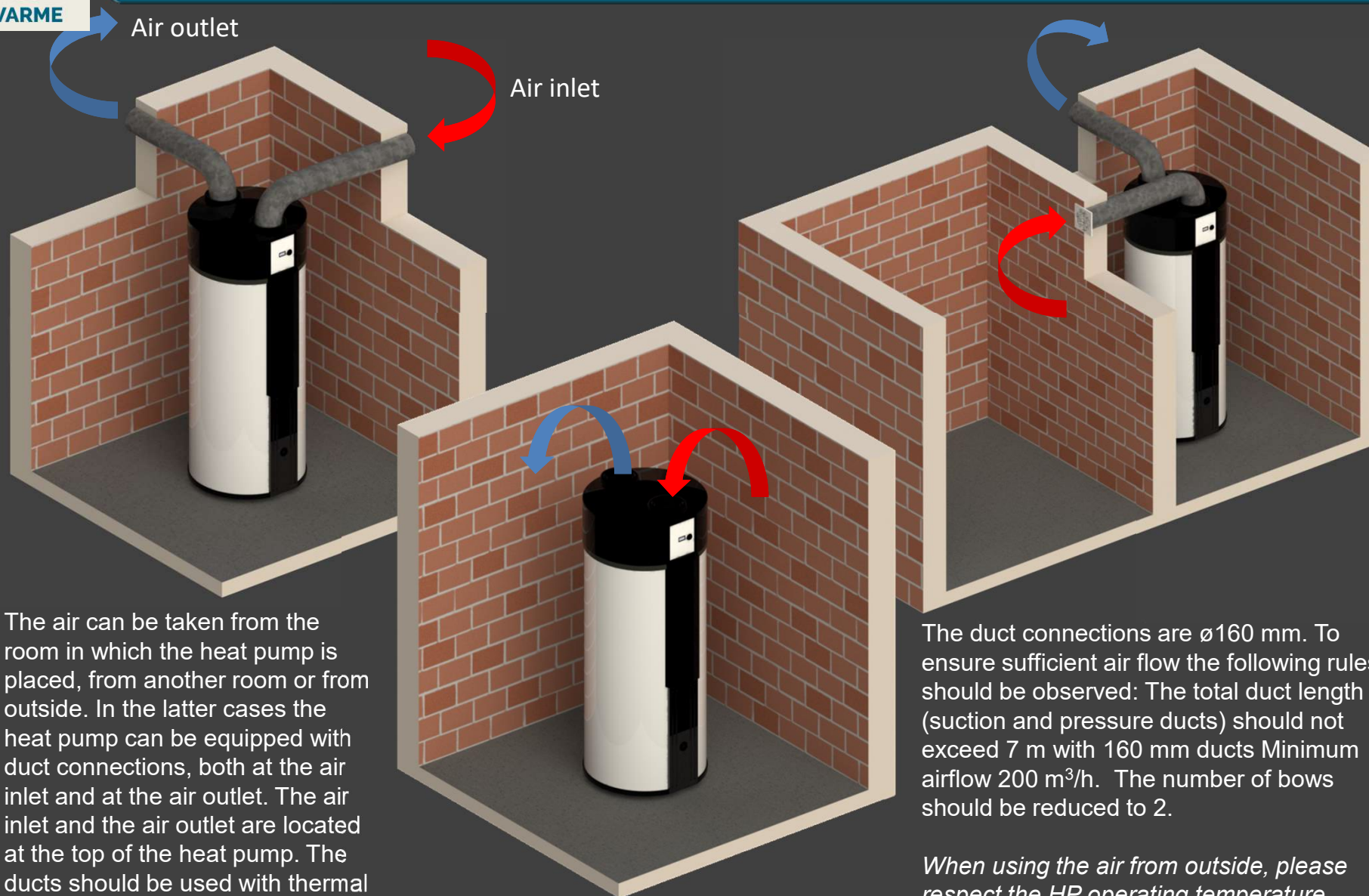
The 3D model is only a principle model. All pipe work must be carried out according to national and/or international legislations to keep manufacturer's warranty.





# SERVICE

## PIPING (AIR CONNECTIONS)



The air can be taken from the room in which the heat pump is placed, from another room or from outside. In the latter cases the heat pump can be equipped with duct connections, both at the air inlet and at the air outlet. The air inlet and the air outlet are located at the top of the heat pump. The ducts should be used with thermal and acoustic insulation.

The duct connections are  $\varnothing 160$  mm. To ensure sufficient air flow the following rules should be observed: The total duct length (suction and pressure ducts) should not exceed 7 m with 160 mm ducts. Minimum airflow 200 m<sup>3</sup>/h. The number of bows should be reduced to 2.

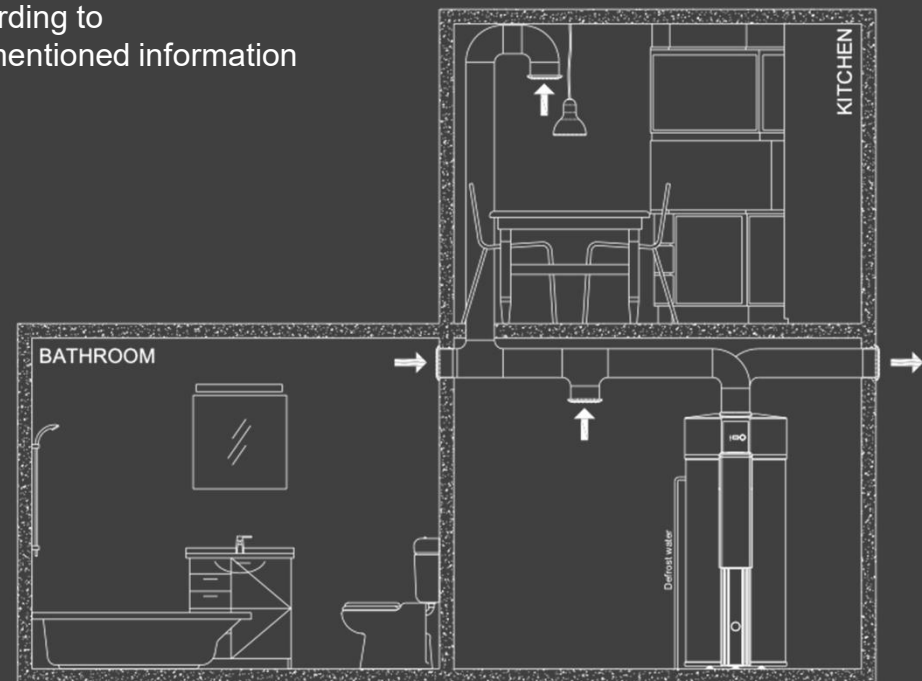
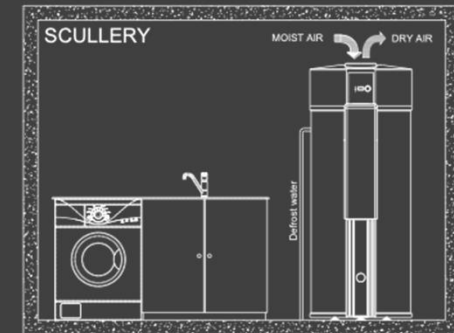
*When using the air from outside, please respect the HP operating temperature range.*

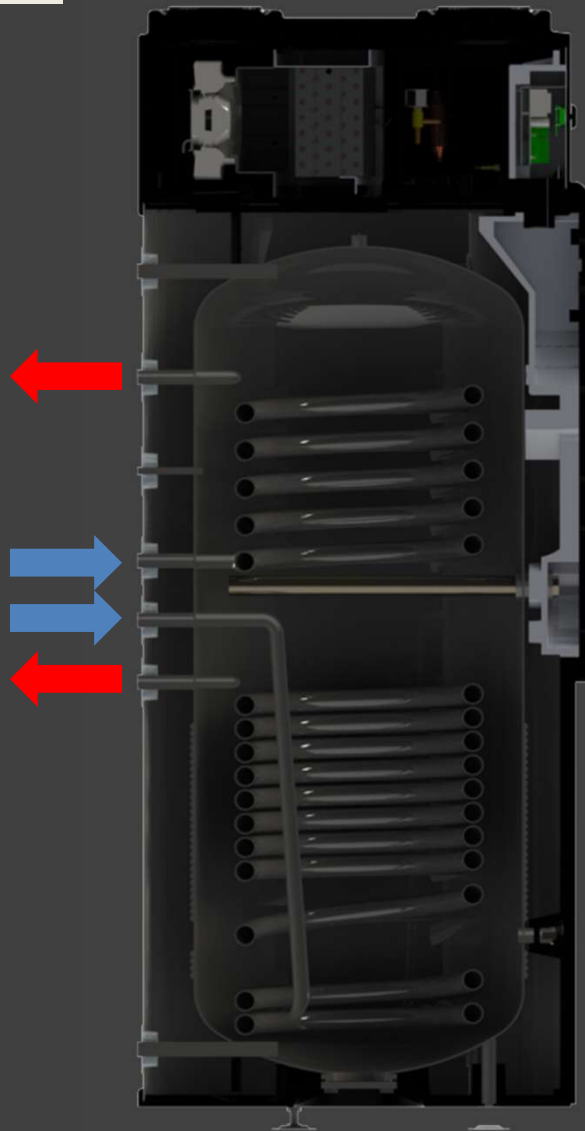
Note! If more pipes are needed you must have an extra ventilator installed to prevent air pressure drop and hereby the effectiveness of the heat pump is degraded.

The heat pump needs at min. 200 m<sup>3</sup>/h.

With extra ventilator and pipe system be sure not to push/force too much air through the heat pump as it is best to let it pull the air through instead.

The 3D model is only a principle model  
All ventilation pipe systems must be carried out according to national and/or international legislations and above mentioned information to keep manufacturer's warranty.





The heat pump can be equipped with a heating coil (15) 1m<sup>2</sup> heat surface or with 2 heating coils (15) + (22) with a heating surface of 1.5 m<sup>2</sup> for the bottom and 0.6 m<sup>2</sup> for the upper. By using supplementary heating from 2 systems for example solar and oil / gas boiler, the solar installations must be connected to the lower and oil / gas boiler to the top. It is also possible to connect both heating coils in series.

There must always be mounted thermostats on flow and container to ensure the correct temperature. The water temperature must have 1st priority. Heating of the heat pump through the heating coil the temperature in the boiler may not exceed 65°C. At higher temperatures the heat pump's refrigerant circuit can be damaged

Capacity of coils:

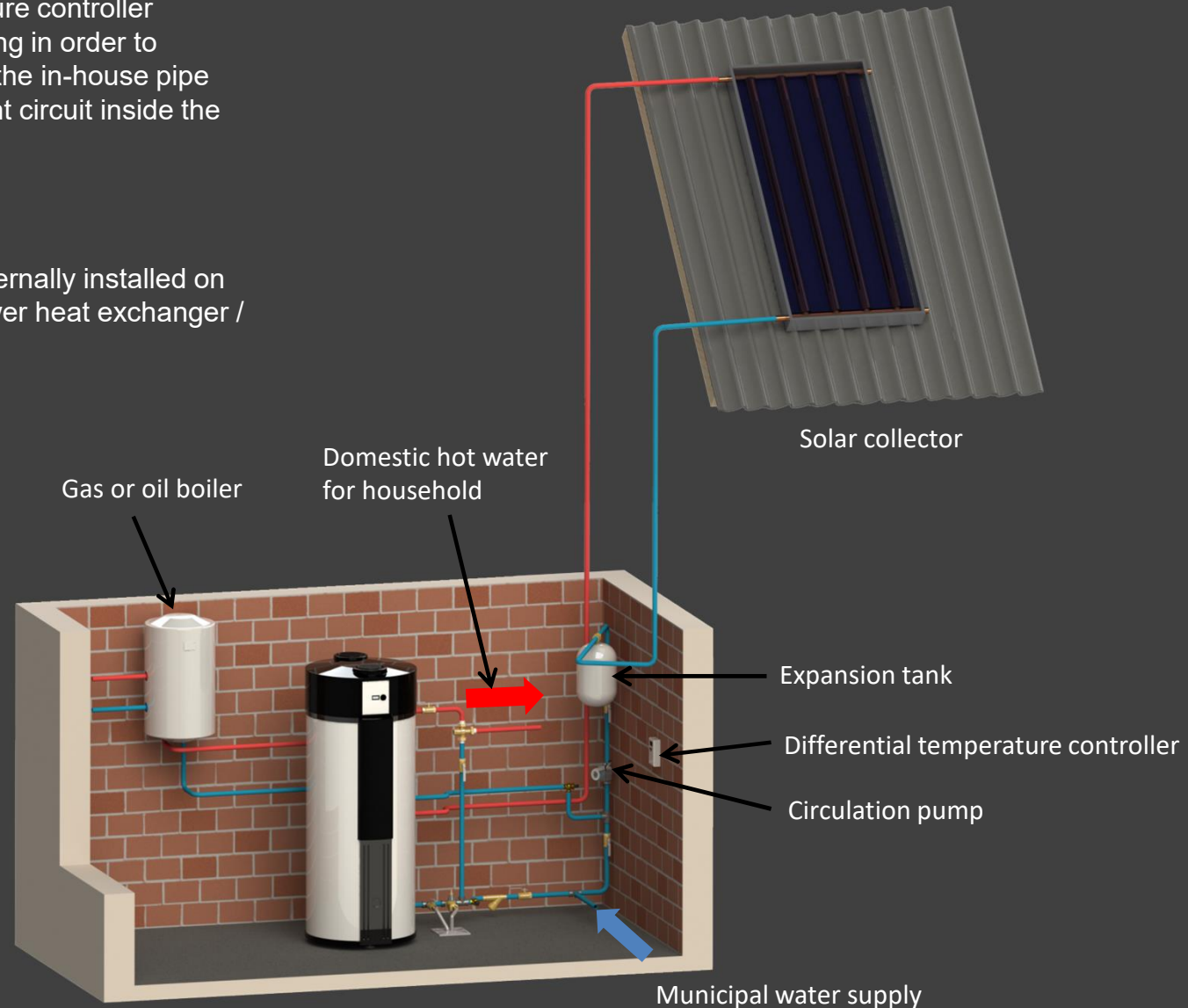
1 coil = 5.90 L

2 coils = Top: 3.83 L / Bottom: 9.57 L



The differential temperature controller should control the following in order to prevent any damages to the in-house pipe system and the refrigerant circuit inside the heat pump:

- Solar collector
- Circulation pump
- Open / close valve externally installed on the inlet side of the lower heat exchanger / coil



The 3D model is only a principle model  
All pipe work must be carried out according to national and/or international legislations to keep manufacturer's warranty.



# SERVICE

## USE OF COILS

Floor heating can be connected to the lowest heat exchanger / coil in the heat pump. The maximum floor heating is for a 4-7 m<sup>2</sup> room like a small bathroom for an example or else there is a chance that the floor heating will consume all energy stored in the hot water boiler of the heat pump.



The 3D model is only a principle model  
All pipe work must be carried out  
according to national and/or international  
legislations to keep manufacturer's  
warranty.



# SERVICE

## USE OF PHOTOVOLTAIC

### 1: Solar PV collector (module) array

Sun rays excite electrons inside the solar panels which create DC electric current.

### 2: DC isolation switch

Isolates the generating system from the electrical grid when needed.

### 3: DC / AC inverter

Converts the DC power into standard household AC power for use in the home, synchronizing with utility power whenever the electrical grid is distributing electricity.

### 4: AC isolation switch

Isolates the generating system from the electrical grid when needed.

### 5: Credit meter / net meter

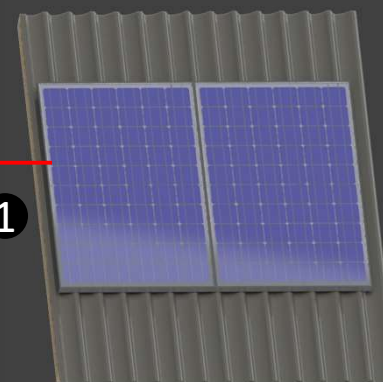
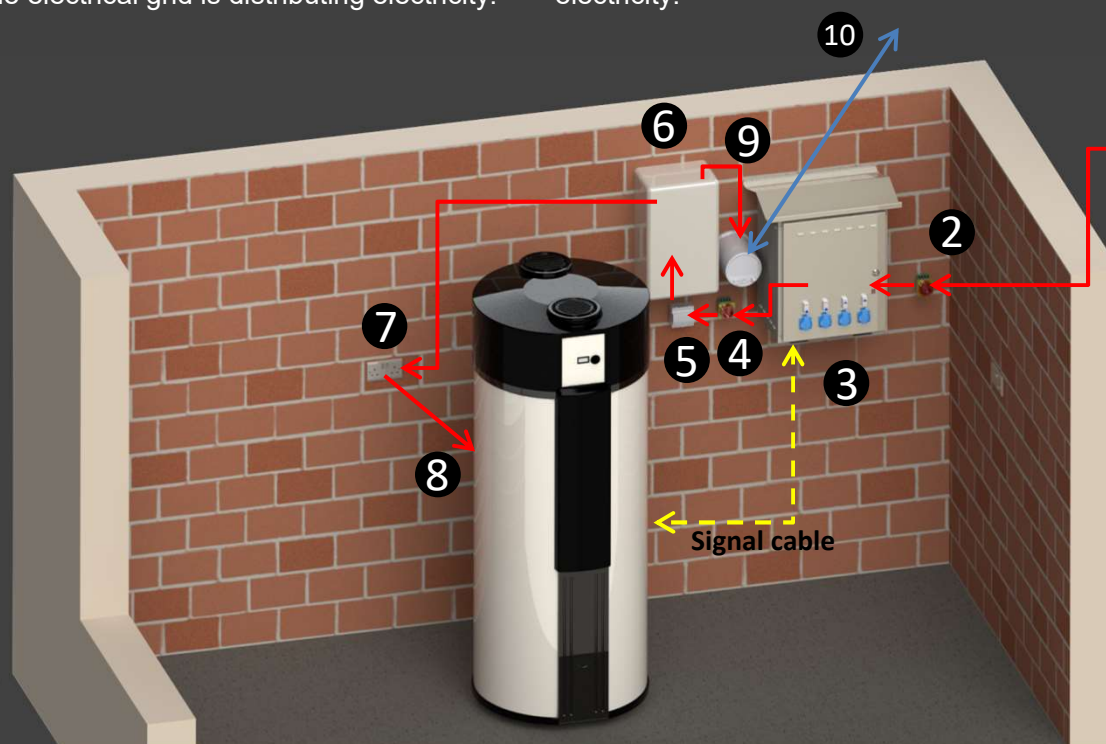
The produced PV electricity that is not used in the household goes back to the national grid and by this the net meter can keep track of what the owner of the PV system have in credit at the national electrical power supply company and will only be charged for the consumed electricity.

### 6: Electrical panel (consumer unit)

Distributes solar electricity and utility power throughout the household.

### 7: Household supply

**8: Heat pump (connected to household supply)**  
(by connecting a DC signal from the inverter to the heat pump, the heat pump will recognize when there are free solar power available on the grid in the household. PV function must be activated. Read more details in our user manual)



### 9: Electricity meter

Measures the amount of electricity consumed by the household.

**10: Utility power** is automatically provided at night and also during day time when the demand exceeds the solar power production.

The 3D model is only a principle model. All external connections must be carried out according to national and/or international legislations to keep manufacturer's warranty.





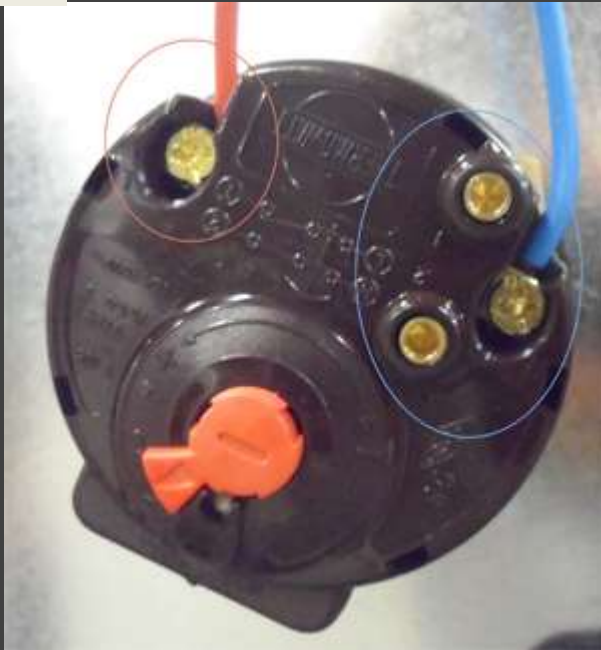
The hot water tank is enamelled inside in order to protect against corrosion.

In order to avoid corrosion completely an anode is mounted in the middle and in the bottom (only by 2 coils) of the boiler. To inspect the anode the front cover must be removed.

It must be examined once a year and replaced when the diameter has reached 6-10 mm. The boiler of the heat pump is emptied by turning off the cold water supply and then turning on the drain valve, which must be mounted on the cold water inlet of the heat pump. At the same time a hot water tap is turned on to avoid negative pressure inside the tank.

To remove the anode use a 32mm socket.





Picture 1



Picture 2

To change the thermostat pull it out of the heating element (picture 2) and remove the red and blue wire. Make sure to install the wires correct as picture 1.

If the heating element is damaged the boiler must be emptied before replacing the heating element. (picture 2)

To remove the anode use a 55mm socket.





Controller for  
VT3130 / VT3131 / VT3132 and  
VT3130 ECO / VT3131 ECO / VT3132 ECO

To remove controller press the 4 taps (picture 1) to loosen the controller.

If the terminals are intact pull them out of the controller and insert them in the new controller.  
Always check the electrical diagram for correct installment of all wires and terminals



Picture 1

Controller for  
VT2130 / VT2131 / VT2132

To remove controller press the 4 taps (picture 1) to loosen the controller.

If the terminals are intact pull them out of the controller and insert them in the new controller. Always check the electrical diagram for correct installment of all wires and terminals





Electrical components for compressor can be ordered separately

Use electrical diagram to connect correctly according to the correct compressor.



To replace the high pressure switch you must cut the tube as marked by red circle and when replaced it must be soldered again.

Important! Make sure to empty the cooling system first. (Should be done by a cooling technician)



The capacitors are created as Plug 'n' play function in the models where EPP material is used. For easy replacement remove the damaged capacitor and replace with new. Use electrical diagram to connect correctly.





Picture 1



Picture 2



Picture 3



Picture 4

To change the fan unscrew the 4 screws holding the fan bracket. (Picture 1)

Unscrew the 4 screws holding the fan. (Picture 2)

Replace with new fan and fasten again.

When fasten the fan bracket, make sure that there is free space of 3-4 mm between fan and box. (Picture 3)

Make sure that the cable doesn't touch the fan in any circumstances. (Picture 4)



To replace a new evaporator the inlet and outlet must be unsoldered.  
Marked with red circles

Important!

Make sure to empty the cooling system first.  
(Should be done by a cooling technician)

When new evaporator is replaced and correct soldered together  
again new refrigerant must be filled.

See nameplate for correct amount of refrigerant



# SERVICE

## HOW TO CHANGE COMPONENTS



Picture 1

To replace the compressor, the inlet and outlet must be unsoldered. Marked with red circles. (Picture 1)

Important!

Make sure to empty the cooling system first.  
(Should be done by a cooling technician)

When a compressor is replaced and correct soldered together again new refrigerant must be filled. Picture 2 shows the filling pipe.

See nameplate for correct amount of refrigerant



Picture 2





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# COMPLAINTS

By any complaints on your product please use below E-mail.



# SERVICE

# CONTACT INFORMATION

For any questions regarding our business agreements please contact:

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