

ComfoFond-L
Manuale installatore
Installatie handleiding
Installer Manual

zehnder

always
around you

Heating

Cooling

Fresh Air

Clean Air



Tutti i diritti riservati.

La presente documentazione è stata redatta con la massima attenzione. L'editore non può comunque essere ritenuto responsabile di eventuali danni derivanti dalla mancanza o dall'inesattezza delle informazioni qui fornite.

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Foreword



Read this manual carefully before use.

This manual contains all information required for safe and optimal installation, operation and maintenance of the ComfoFond-L. The unit is subjected to continual development and improvement. There is therefore a possibility that the ComfoFond-L differs slightly from the descriptions given.

Applicable pictograms

The following pictograms are used in this manual:



Point to watch.



Risk of:

- **damage to the device;**
- **performance of the unit is compromised if instructions are not observed carefully.**



Risk of personal injury for the user or fitter.

Questions

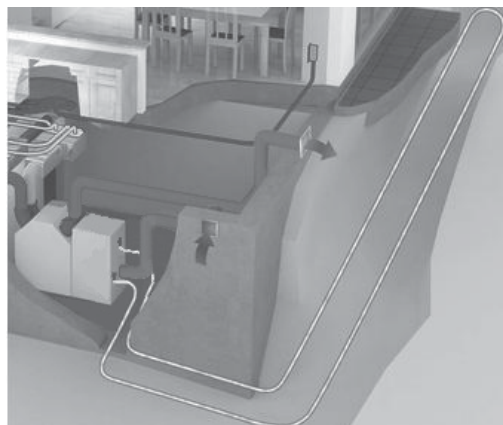
Please contact the supplier if you have any questions. On the rear flap of this manual is a list with the contact details of the main suppliers.

1. Introduction and safety

What is this unit for?

The ComfoFond-L is a brine geothermal exchanger, also known as a terrestrial heat exchanger. The ComfoFond-L heats or cools the outside air using terrestrial heat. The heated or cooled outside air is then supplied into the dwelling.

Function



1. Brine loop pipes;
2. ComfoFond-L;
3. ComfoAir Luxe.

Brine loop pipes are laid in the ground and connected to the dwelling. In the winter the cold outside air is preheated, ensuring the ventilation system continues to operate effectively even at low temperatures. In the summer the warm outside air is precooled.

The ComfoFond-L is specially developed to operate in combination with a Zehnder ventilation system of type ComfoAir 350 Luxe or ComfoAir 550 Luxe. The required pump control for the ComfoFond-L is integrated in this ventilation system as standard.

The ventilation unit installation manual covers in greater detail ventilation issues and how the ventilation system works. A copy of this manual can be obtained from the supplier.

Safety instructions

Always comply with safety regulations in this manual. Personal injury or damage to the ComfoFond-L can arise from non-compliance with the safety regulations, warnings, comments and instructions in this manual.

- The ComfoFond-L may only be fitted, connected, commissioned and set up by a registered installer;
- Installation of the ComfoFond-L must be carried out in accordance with the general and locally applicable construction, safety and installation instructions of the local council, electricity and water boards;
- Always follow the safety regulations, warnings, comments and instructions given in this manual;
- Store the manual in the vicinity of the ComfoFond-L for its entire working life;
- Modifications to the ComfoFond-L or its manual are not permitted;
- The brine in the brine loop is pressurised. The system must be de-pressurised in a controlled manner if maintenance is required on the brine loop. Use the taps and filling valves in the unit to do this;
- When carrying out any work on the ComfoFond-L, make sure the power is disconnected and cannot be inadvertently reconnected;
- To disconnect the ComfoFond-L, you must disconnect the ComfoAir Luxe from the power supply to which it is connected.

2. Transport and unpacking

Take care when transporting and unpacking the ComfoFond-L.



Make sure the packing material is disposed of in an environmentally friendly manner.

Checking delivery

Contact your supplier immediately in case of damage or an incomplete delivery.

The delivery should include:



Most parts are on the inside of the ComfoFond-L. Therefore the front of the ComfoFond-L must be removed to check the delivery.

ComfoFond-L 350

- ComfoFond-L; Check the identification plate to ensure that it is the required type;
- Filter with separate filter handle;
- Condensation drain connection;
- Wall bracket;
- Insulation tape;
- User manual;
- Installer manual..

ComfoFond-L 550

- ComfoFond-L; Check the identification plate to ensure that it is the required type;
- Filter with separate filter handle;
- Condensation drain connection;
- Wall bracket;
- 2 x 90° connection bends;
- Plastic sleeve joint;
- Metal sleeve joint;
- User manual;
- Installer manual.

The ComfoFond-L is supplied in the following types:

Type:	
ComfoFond-L 350 L	ComfoFond-L 350 R
ComfoFond-L 550 L	ComfoFond-L 550 R

Meaning of the suffices:

- ComfoFond-L = Brine geothermal exchanger;
- 350 = Suitable for a ComfoAir 350 Luxe;
- 550 = Suitable for a ComfoAir 550 Luxe;
- L = Concerns a left-side model for a left-side ComfoAir;
- R = Concerns a right-side model for a right-side ComfoAir.

3. Installation conditions and dimensional sketches

In order to determine whether the ComfoFond-L can be installed in a certain area, the following aspects must be taken into account:

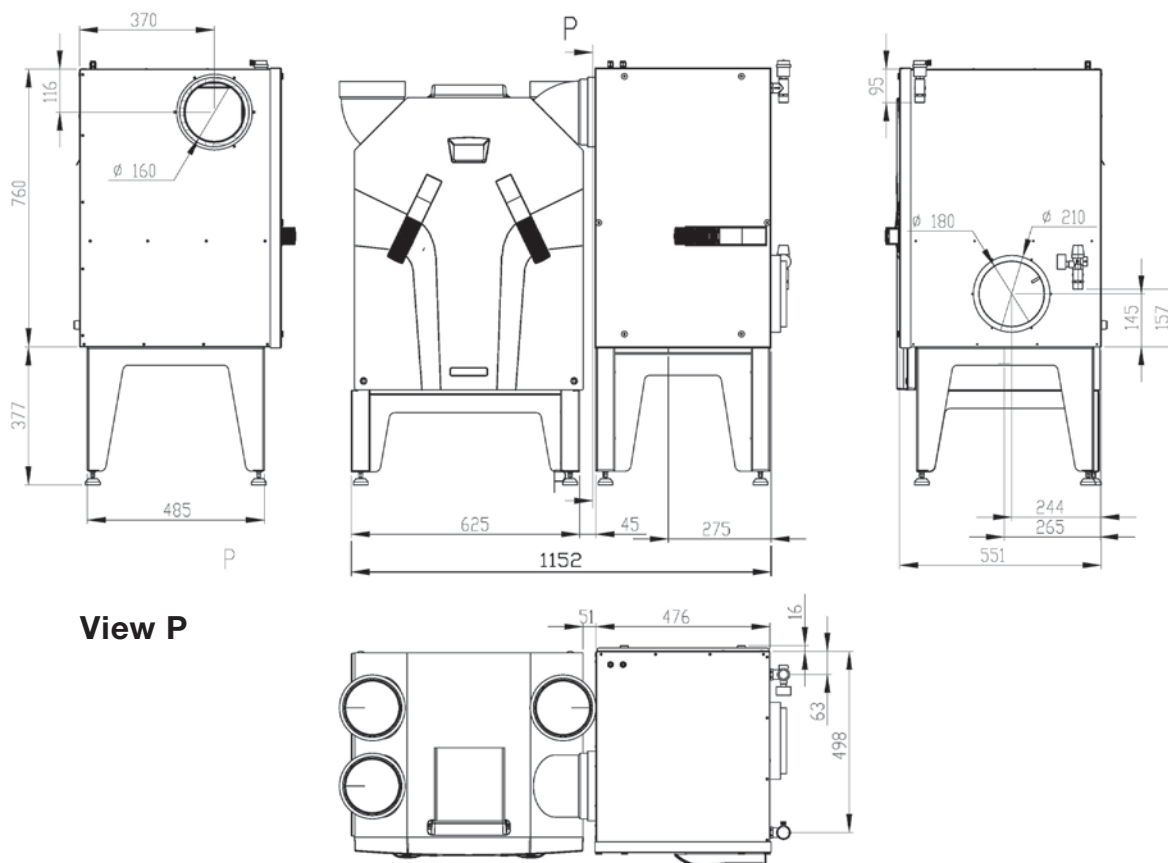
- The system must be fitted to allow sufficient room around the ComfoFond-L and ComfoAir Luxe for the air connections and brine loops as well as for carrying out maintenance activities;
- The room must offer the following provisions:
 - Air duct connections.
 - 230V electrical connection.
 - Provisions for the condensation drain.
 - Brine loops for the pipe system.
- The ComfoFond-L must be installed in a frost-free space;



The brine in the system must not freeze. Irreversible damage will be caused to the machine if the brine freezes.

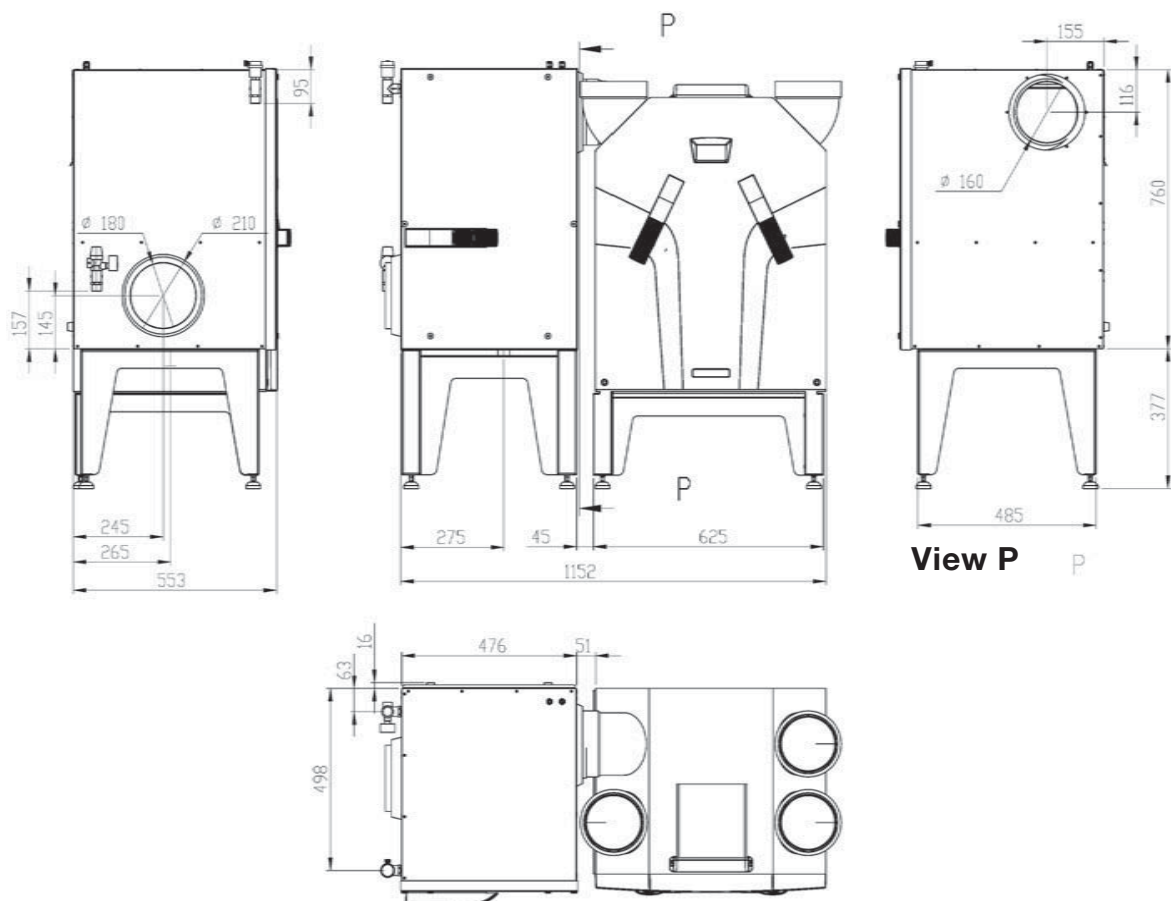
- The condensation must be drained off frost-free, at a gradient, using a siphon;
- We recommend that the ComfoFond-L is not installed in spaces with a higher average humidity (such as a bathroom or toilet). This is to prevent the formation of condensation on the outside of the ComfoFond-L;
- An outer valve is a requirement if the system is used in areas where the temperature is lower than -15°C. This valve must shut off the supply air in the event of a power failure. The system can be damaged during a power failure at temperatures lower than -15°C, this is why an outer valve is a requirement.

3.1 Dimensional sketch ComfoFond-L 350 L



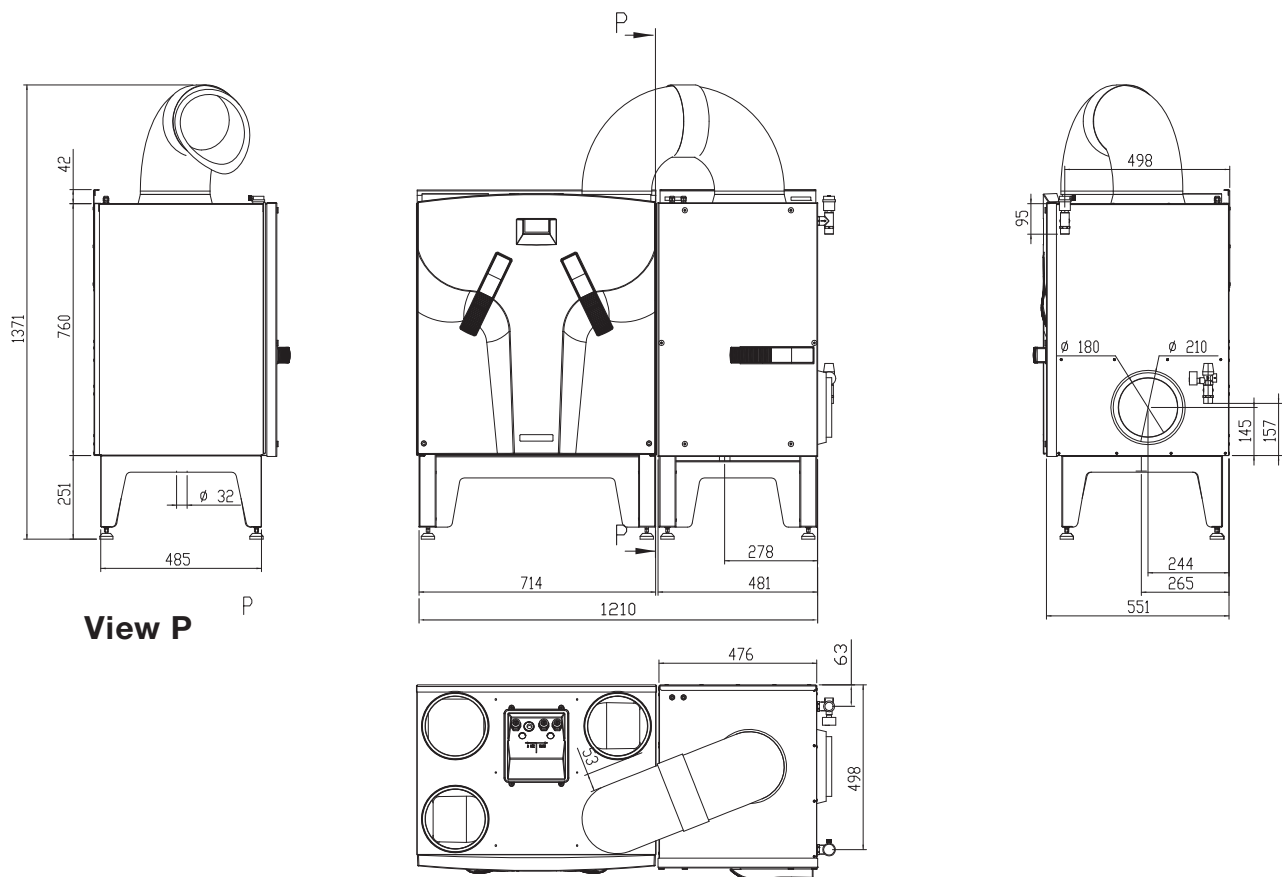
View P

3.2 Dimensional sketch ComfoFond-L 350 R



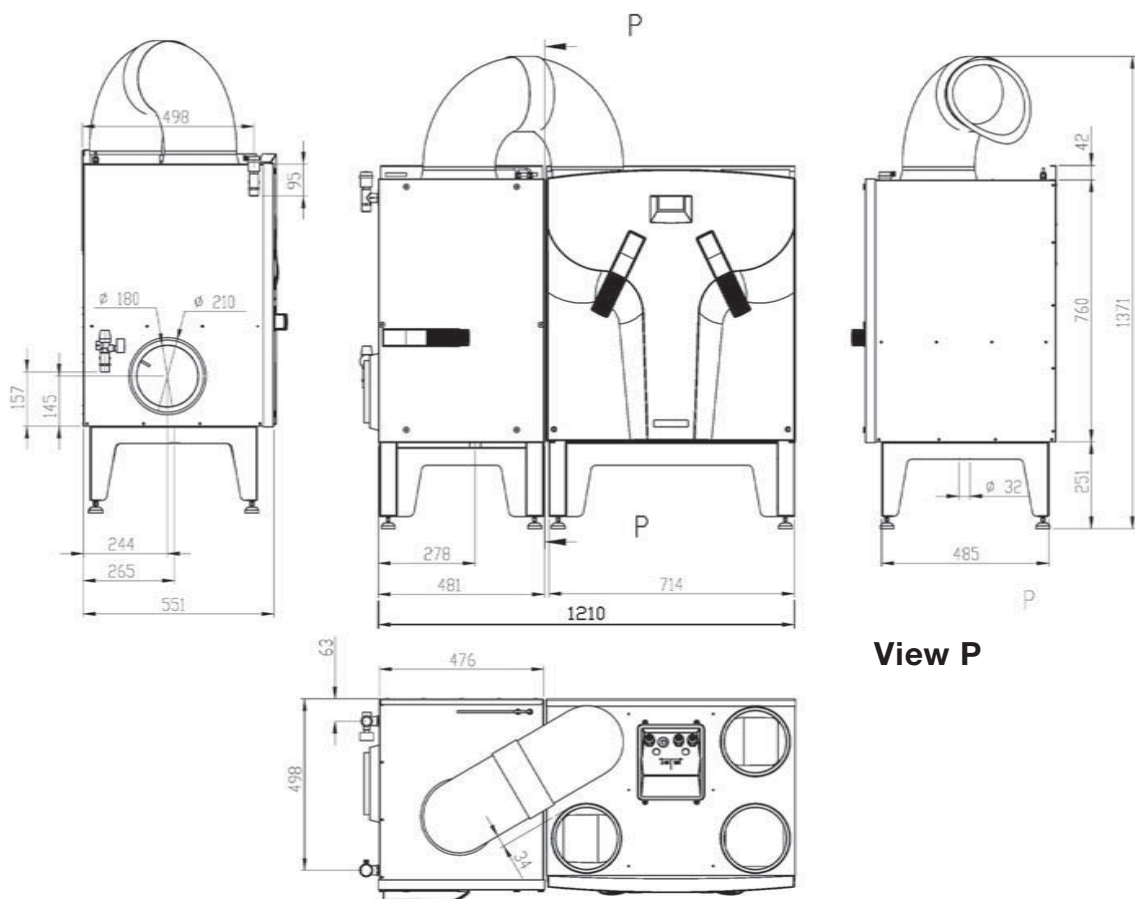
View P

3.3 Dimensional sketch ComfoFond-L 550 L



View P

3.4 Dimensional sketch ComfoFond-L 550 R



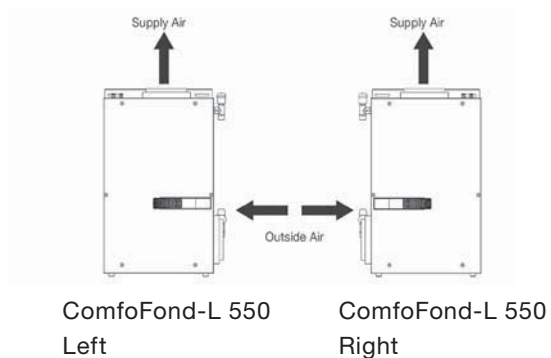
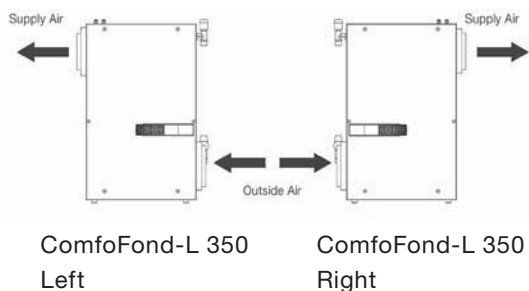
View P

4. Installation

4.1 Connection of the air ducts

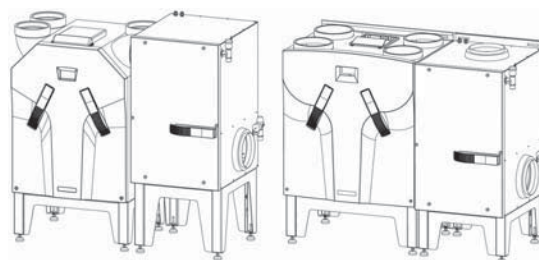
Take account of the following factors when mounting air ducting:

- Only use the supplied connecting material between the ComfoFond-L and ComfoAir Luxe;
- Insulate the outside air supply duct between the roof/wall passage to render the ComfoFond-L damp proof. This prevents the formation of condensation on the outside of the ducts;
- The air outlet on the ComfoFond-L must be connected to the outside air connection on the ComfoAir Luxe;
- The air outlet on the ComfoFond-L 350 is on the side of the ComfoFond-L at the top;
- The air outlet on the ComfoFond-L 550 is on the upper side of the ComfoFond-L;
- The outside air must be connected to the air inlet on the ComfoFond-L. The air inlet on the ComfoFond-L is on the side of the ComfoFond-L at the bottom.



4.2 Mounting on the wall

Mount the ComfoFond-L against a wall with a minimum mass of 200 kg/m². The Zehnder support frame (available as an optional extra) must be used for other walls. This reduces contact noise as much as possible.



Comfond-L 350

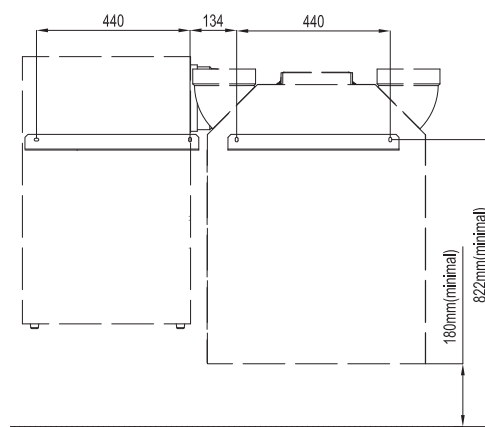
ComfoFond-L 550

Make sure to leave a minimum space of 110 cm in front of the ComfoFond-L in view of the necessary maintenance work.

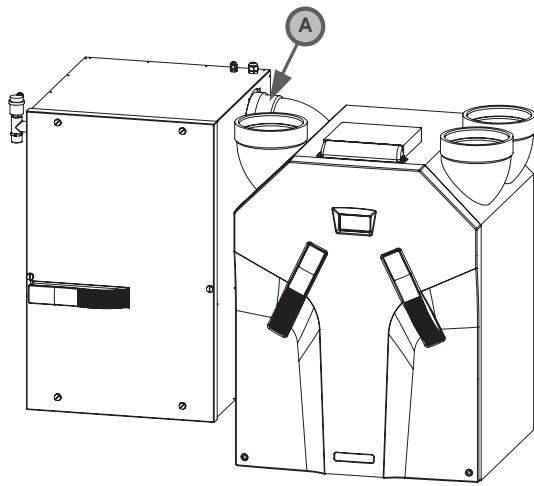


Where necessary, reposition the ComfoAir Luxe documentation to make sure it is still accessible following the installation of the ComfoFond-L.

ComfoFond-L 350



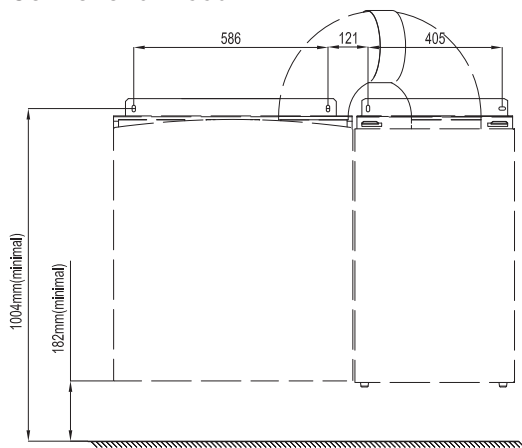
1. Align the wall mounting bracket supplied with the unit to the wall, ensuring it is level. Both wall mounting brackets must be fitted at the same height.
2. Place the ComfoFond-L in the wall mounting bracket.
3. Fit the supplied insulation tape (A) between the niche pipe and the connecting bend (outside air) of the ComfoAir 350 Luxe. This prevents condensation formation.



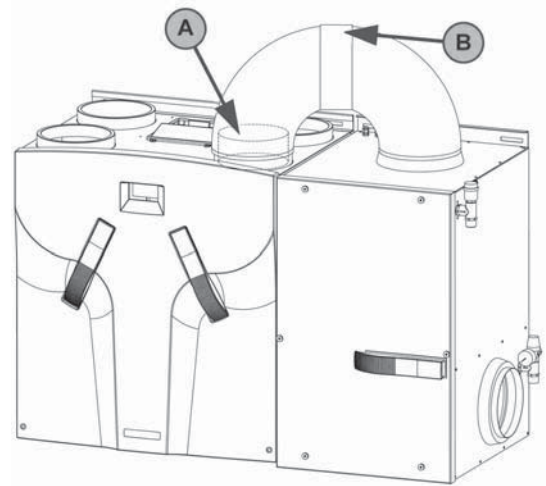
A. Insulating belt

4. Tape off (not included) all air connections on the ComfoFond-L and the ComfoAir Luxe vapour-proof.
5. Fit the condensation drain to the underneath of the ComfoFond-L.

ComfoFond-L 550



1. Align the wall mounting bracket supplied with the unit to the wall, ensuring it is level. Both wall mounting brackets must be fitted at the same height.
2. Place the ComfoFond-L in the wall mounting bracket.
3. Place the metal sleeve joint (A) on the niche pipe (outside air) of the ComfoAir 550 Luxe.
4. Use the plastic sleeve joint to connect both 90° connection bends (B).
5. Place the connected 90° connection bends on the metal sleeve joint (A) of the ComfoAir and the air exhaust of the ComfoFond-L.
6. Tape off (not included) the plastic sleeve joint (B) and all air connections on the ComfoFond-L and the ComfoAir Luxe vapour-proof.



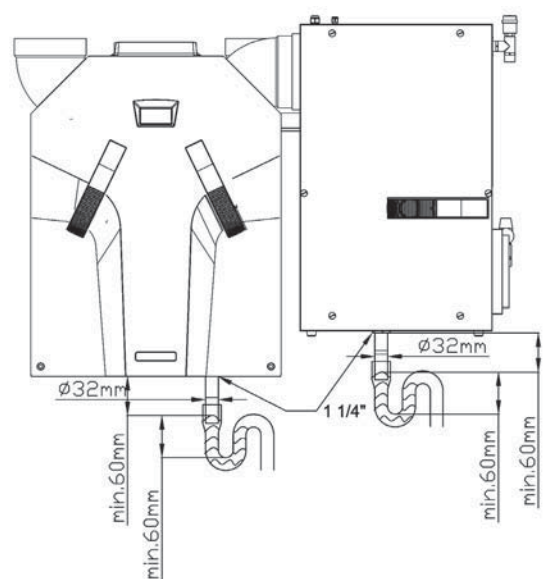
A. Metal sleeve joint
B. Plastic sleeve joint

7. Fit the condensation drain to the underneath of the ComfoFond-L.

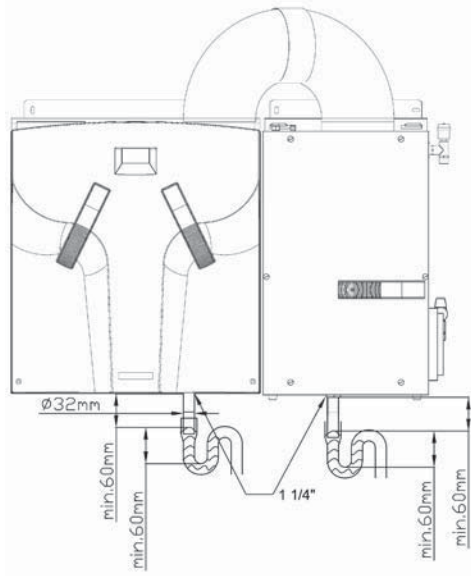
4.3 Connecting the condensation drain

Take account of the following factors when fitting the condensation drain:

- The condensation must be drained off frost-free, at a gradient, using an appropriate siphon;
- Connect the condensation drain (air-tight) via a pipe or a hose with a siphon (with a water seal of at least 60mm) to the sanitary pipework;
- Position the upper edge of the siphon at least 60 mm underneath the condensation drain of the ComfoFond-L.



ComfoFond-L 350



ComfoFond-L 550



The condensation drains of the ComfoFond-L and the ComfoAir Luxe must always be connected with a siphon.

4.4 Connecting the brine loop (terrestrial heat collector)

Insulate all brine loop pipes (C) of the brine loop. This prevents the formation of condensation on the outside of the brine loop.

The ComfoFond-L uses a terrestrial heat collector which extracts heat from the ground and transfers this to the air that flows through the ComfoFond-L. The terrestrial heat collector is formed by a PE pipe. The length of the pipe is subject to local conditions, such as the type of ground and the ground water level. Solid ground contains more energy than loose ground. If the pipe is below ground water level, then substantial quantities of energy can be extracted at the base.

The pipe must be horizontally positioned in the ground (more or less) at an ideal depth of 1,2 to 1,6 metres.

When calculating the length of the pipe, the actual length for the calculation is the length that is physically in the ground. The length inside the house has no further effect on the energy that the system can extract. The required pipe length for sandy soil is twice as long.



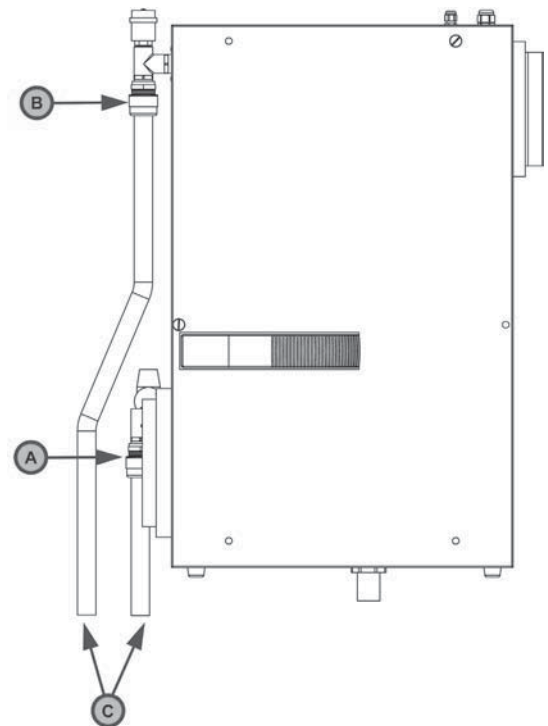
The correct length of pipe can be determined using the ComfoFond-L specifications. Zehnder has special software available for calculating the required pipe length.

The pipe can be laid in any random form. The preferred situation is to lay the pipe in the ground around the house and keep the length inside the house to a minimum. In order to increase the efficiency, a minimum distance of 60 cm between any loops in the pipe is advised. In order to protect the water pipes from freezing, the pipe must be at least 1 meter away from the water pipes present in the ground.

Use an adaptor to connect one end of the PE pipe to the brine connection inlet (A) of the ComfoFond-L.

Use an adaptor to connect the other end of the PE pipe to the brine connection outlet (B) of the ComfoFond-L.

Both connections are 3/4" conical male-threaded.



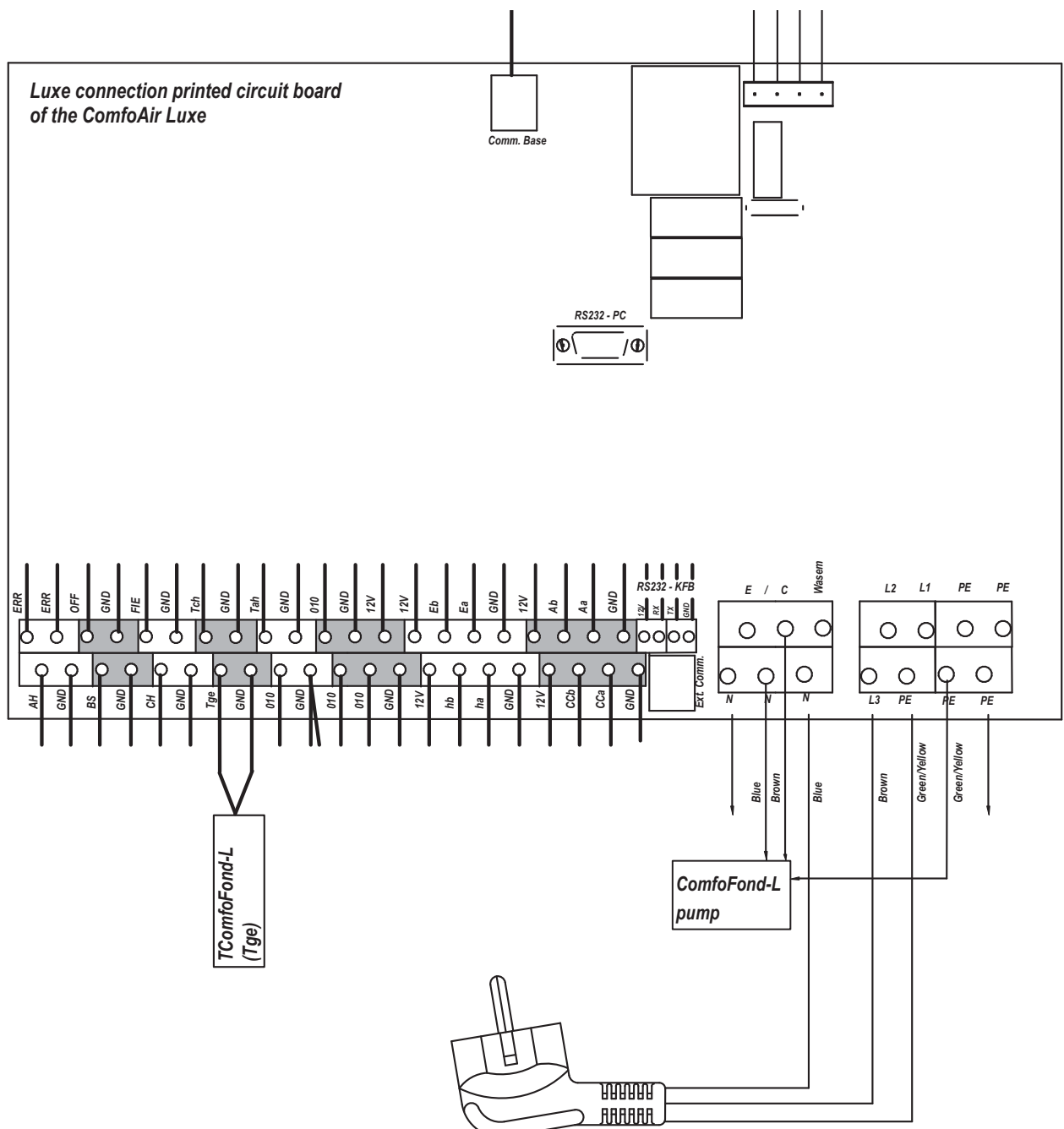
An installation report has been included at the rear of this manual which can be used to note the details of the brine loop laid.

4.5 Electrical connections

The ComfoFond-L is controlled and fed by the ComfoAir Luxe. To do so, the temperature sensor and circulation pump of the ComfoFond-L must be connected to the Luxe connection printed circuit board on the ComfoAir Luxe. This Luxe connection printed circuit board is on the top of the ComfoAir Luxe.

The temperature sensor must be connected to the clamps that are marked with the text Tge and GND. This sensor is not sensitive to direction. Therefore, it does not matter which wire is connected to the Tge or GND clamp.

The circulation pump must be connected to the supply block on the Luxe connection printed circuit board. As the ComfoFond-L pump is not constantly operational, this is connected to a power supply that is switched by the ComfoAir Luxe. This power supply is on the clamp marked with the text C.



5. Commissioning

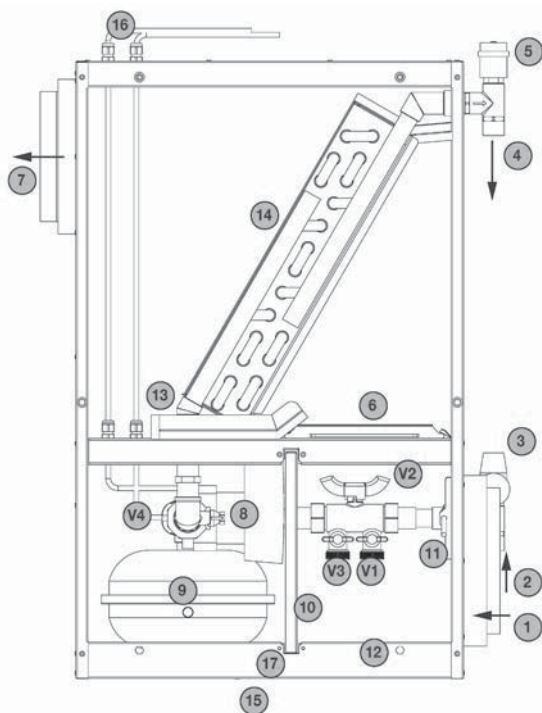


All loose parts, including cardboard and packaging materials must be removed from the system before commissioning.

5.1 Filling the brine loop

During standard operation of the ComfoFond-L, taps V2 and V4 are open and the filling valves V1 and V3 are closed. The ComfoFond-L is filled via the filling valves V1 and V3.

The tap is open when the handle is parallel to the pipe. The tap is closed when the handle is at a right angle to the pipe.



- V1. ¾" filling valve
- V2. tap
- V3. ¾" filling valve
- V4. tap
- 1. 180 mm Ø air inlet
- 2. ¾" inlet brine connection
- 3. pressure meter with pressure relief valve
- 4. ¾" outlet brine connection
- 5. de-aerator
- 6. air filter
- 7. air outlet
- ComfoFond-L 350: 160 mm Ø side
- ComfoFond-L 550: 180 mm Ø upper side
- 8. circulation pump
- 9. expansion vessel
- 10. detachable air partition
- 11. temperature sensor
- 12. lower drip tray
- 13. upper drip tray
- 14. battery
- 15. condensation drain 1 ¼" with 32 mm adapter

- 16. temperature sensor and circulation pump connection
- 17. internal siphon

All brine loop connections are conical male-threaded.

Filling instructions

Proceed as follows:

1. Disconnect the ComfoAir Luxe from its power supply.
2. Remove the filter handle from the ComfoFond-L.
3. Release the front panel by removing the 6 screws.
4. Remove the front panel from the ComfoFond-L.
5. Check the pre-pressure in the expansion vessel. In a no-pressure condition, the pressure must be 0.5 bar.
6. Connect the external rinsing pump to filling valve V3
7. Connect a drainage hose to filling valve V1.
8. Put the other end of the discharge hose in a container. We recommend a rinsing system with an open circuit.
9. Open filling valves V1 and V3.
10. Close tap V2.
11. Open the de-aerator cap.
12. Flush the brine loop until no more bubbles are visible in the collector of the rinsing pump, but at least 10 minutes.



Only fill the system with a ready-made brine mixture. The correct brine mixture can be determined using the ComfoFond-L specifications.

13. Close filling valve V1.
14. Open V2.
15. Increase the pressure in the device to 1.5 bar. To that end, use the filling hose connected to filling valve V3. Use an additional pressure pump if necessary.
16. Check the system pressure again and add more in order to increase pressure if necessary.
17. Close filling valve V3 and disconnect the filling hose.
18. Adjust the circulation pump to the correct setting. More information about this is available in the 'Adjusting the circulation pump' section.
19. Install all parts in reverse order (from point 4 back to point 1).



An installation report has been included at the rear of this manual which can be used to note the details of the brine used.

5.2 Adjusting the circulation pump



The circulation pump supports two user modes. The 'constant pressure' mode is always used on the ComfoFond-L.



Variable pressure..



Constant pressure.

The ComfoFond-L uses a circulation pump to pump the brine through the brine loop. This circulation pump must be adjusted correctly to achieve the best possible performance of the ComfoFond-L. The circulation pump setting is subject to the ComfoAir Luxe type:

- The circulation pump for the ComfoFond-L 350 must achieve a flow rate of 6-8 litres per minute;
- The circulation pump for the ComfoFond-L 550 must achieve a flow rate of 8-10 litres per minute.

The pump setting is subject to:

- The total length of the terrestrial heat collector;
- The internal diameter of the terrestrial heat collector;
- The composition of the brine mixture;
- The temperature of the brine mixture.



The correct setting for the circulation pump can be determined using the ComfoFond-L specifications.



An installation report has been included at the rear of this manual which can be used to note the setting used.

5.3 Registering the ComfoFond-L on the ComfoAir Luxe

The control for the ComfoFond-L is not activated as standard on the ComfoAir Luxe. This must be registered first.

This is done by selecting option '1' in P-menu 'P60'.

Registering via display



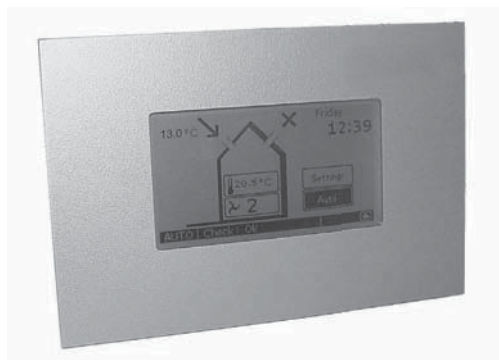
1. Press 'MENU'.
 - 'P2' will be displayed on the screen.
2. For 3 seconds, press simultaneously on '▲' and '▼'.
 - 'P3' will be displayed on the screen.
3. Press '▲' 3 times.
 - 'P6' will be displayed on the screen.
4. Press 'OK'.
 - 'P60' will be displayed on the screen.
5. Press 'OK'.
 - Current setting of P-menu P60 will be displayed on the screen.
6. Press '▲' until '1' is displayed on the screen.
7. Press 'OK'.
 - 'P60' will be displayed on the screen.
8. Press 'MENU' 2 times.
 - Current ventilation setting will be displayed on the screen.

Registering via CC-Ease



1. Press '⏸' and '▲', together for 3 seconds.
 - 'P2' will be displayed on the screen.
2. Press '▲' and '▼', together for 3 seconds.
 - 'P3' will be displayed on the screen.
3. Press '▲' 3 times.
 - 'P6' will be displayed on the screen.
4. Press '⏸'.
5. Press '⏸'.
 - Current setting of P-menu P60 will be displayed on the screen.
6. Press '▲'. until '1' is displayed on the screen.
7. Press '⏸'.
8. Press '⏸' 2 times.
 - The main screen will be displayed on the screen.

Registering via CC-Luxe



1. Press 'Settings'.
- A new menu will be displayed on the screen.
2. Press 'System'.
- A new menu will be displayed on the screen.
3. Press '▼'.
- The second section of the menu will be displayed on the screen.
4. Press 'Service login'.
- A code entry screen will be displayed on the screen.
5. Enter the code '3520'.
- A new menu will be displayed on the screen. 'ComfoCool' is selected/white.
6. Press '▲'.
- Ventilation will be selected/white.
7. Press 'OK'.
- A new menu will be displayed on the screen. 'P3 Ventilation' is selected/white.
8. Press '▼' 3 times.
- 'P6 options' will be selected/white.
9. Press 'OK'.
- A new menu will be displayed on the screen. 'P60 Base exchanger' is selected/white.
10. Press 'OK'.
- Current setting of P-menu P60 will be displayed on the screen.
11. Press '▲' until '1' is displayed on the screen.
12. Press 'OK'.
- A new menu will be displayed on the screen. 'P60 Base exchanger' is selected/white.
13. Press '▶' 2 times.
- The main screen will be displayed on the screen.

5.4 Adjusting the control temperatures

The ComfoAir Luxe switches the circulation pump of the ComfoFond-L on and off at pre-set temperatures. These desired temperatures can be set in the P-menus "P62" and "P63" of the ComfoAir Luxe.

- In the Winter mode, the ComfoAir Luxe will switch around the temperature that is set in P-menu "P62".

The best setting for P-menu P62 is a few degrees below the lowest brine temperature. The lowest brine temperature is a few degrees above the average local annual temperature;

- In the Summer mode, the ComfoAir Luxe will switch around the temperature that is set in P-menu "P63".

The best setting for P-menu P63 is a few degrees below the set comfort temperature of the ComfoAir Luxe.



The minimum and maximum values for the available settings parameters are preset in the software of the ComfoAir Luxe.

The circulation pump of the ComfoFond-L will be activated if:

- The temperature sensor of the ComfoFond-L measures a temperature lower than the temperature that is set in menu P62 when in Winter mode;
- The temperature sensor of the ComfoFond-L measures a temperature higher than the temperature that is set in menu P63 when in Summer mode.

The circulation pump of the ComfoFond-L will be deactivated if:

- The temperature sensor of the ComfoFond-L measures a temperature higher than the temperature that is set in menu P62 when in Winter mode;
- The temperature sensor of the ComfoFond-L measures a temperature lower than the temperature that is set in menu P63 when in Summer mode.



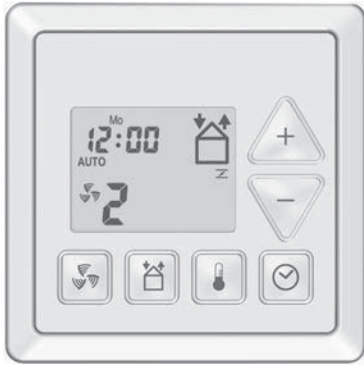
An installation report has been included at the rear of this manual which can be used to note the set temperatures.

Adjusting temperature via display



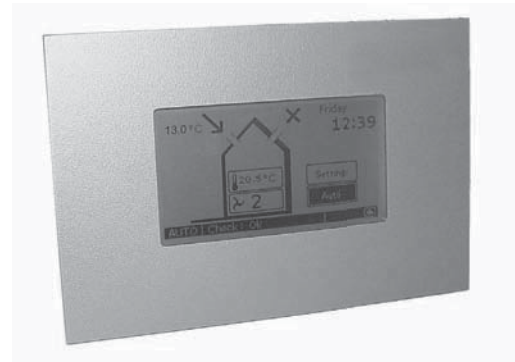
1. Press 'MENU'.
 - 'P2' will be displayed on the screen.
2. For 3 seconds, press simultaneously on '▲' and '▲'.
 - 'P3' will be displayed on the screen.
3. Press '▲' 3 times.
 - 'P6' will be displayed on the screen.
4. Press 'OK'.
 - 'P60' will be displayed on the screen.
5. Use '▲' to select the desired P-menu (P62 or P63).
6. Press 'OK'.
 - Current setting of selected P-menu will be displayed on the screen.
7. Use '▲' or '▲' to select the desired temperature.
8. Press 'OK'.
 - 'P60' will be displayed on the screen.
9. Press 'MENU' 2 times.
 - Current ventilation setting will be displayed on the screen.
10. Note the set values on the rating plate of the ComfoFond-L and the installation report in the back of this manual.

Setting temperature via CC-Ease



1. Press '⏏' and '▲', together for 3 seconds.
 - 'P2' will be displayed on the screen.
2. Press '▲' and '▼', together for 3 seconds.
 - 'P3' will be displayed on the screen.
3. Press '▲' 3 times.
 - 'P6' will be displayed on the screen.
4. Press '⏏'.
5. Use '▲' to select the desired P-menu (P62 or P63).
6. Press '⏏'.
7. Current setting of selected P-menu will be displayed on the screen.
8. Use '▲' or '▼' to select the desired temperature.
9. Press '⏏'.
10. 'P60' will be displayed on the screen.
11. Press '⏏' 2 times.
 - The main screen will be displayed on the screen.
12. Note the set values on the rating plate of the ComfoFond-L and the installation report in the back of this manual.

Setting temperature via CC-Luxe



1. Press 'Settings'.
2. A new menu will be displayed on the screen.
3. Press 'System'.
4. A new menu will be displayed on the screen.
5. Press '▼'.
6. The second section of the menu will be displayed on the screen.
7. Press 'Service login'.
8. A code entry screen will be displayed on the screen.
9. Enter the code "3520".
10. A new menu will be displayed on the screen. "ComfoCool" is selected/white.
11. Press '▲'.
12. Ventilation will be selected/white.
13. Press 'OK'.
14. A new menu will be displayed on the screen. "P3 Ventilation" is selected/white.
15. Press '▼' 3 times.
 - "P6 options" will be selected/white.
16. Press 'OK'.
17. A new menu will be displayed on the screen. "P60 Base exchanger" is selected/white.
18. Use '▲' to select the desired P-menu (P62 or P63).
19. Press 'OK'.
20. Current setting of selected P-menu will be displayed on the screen.
21. Use '▲' or '▼' to select the desired temperature.
22. Press 'OK'.
23. A new menu will be displayed on the screen. "P60 Base exchanger" is selected/white.
24. Press '▶' 2 times.
 - The main screen will be displayed on the screen.
25. Note the set values on the rating plate of the ComfoFond-L and the installation report in the back of this manual.

6. Maintenance



Failure to carry out (periodic) maintenance on the ComfoFond-L ultimately compromises the performance of the system.

To ensure a hassle-free lifespan for your ComfoFond-L, we recommend you take out a service agreement with an expert company.

The following maintenance may be carried out by the user:

- Replacing the filter;
- Checking the system pressure.

The following maintenance may be carried out by the fitter:

- Cleaning the condensation drain;
- Inspecting the brine loop;
- Cleaning the internal siphon;
- Inspecting and cleaning the ComfoFond-L casing;
- Inspecting and cleaning the ComfoFond-L battery;
- Replacing the circulation pump (where required);
- Replacing the expansion vessel (where required);
- Replacing the filling valve (where required);
- Replacing the pressure meter (where required);
- Replacing the de-aerator (where required).

A concise explanation of these maintenance activities is given in the paragraphs below.



Ensure the ComfoFond-L has been disconnected from mains power before carrying out any maintenance work. To do this disconnect the ComfoAir Luxe from the power supply to which it is connected.



Bear in mind that the brine loop is pressurised.



A maintenance log has been included at the rear of this manual which can be used to note all performed maintenance.

For maintenance of the ComfoAir Luxe, please read the instructions in the ComfoAir Luxe manual.

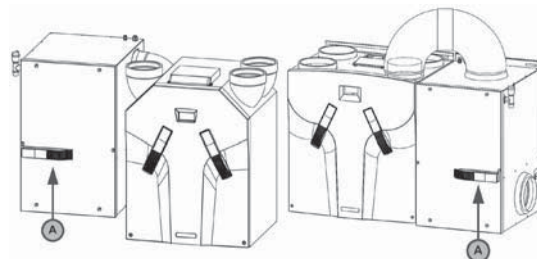
6.1 For replacing filters

The replacement period of the filter depends on local circumstances. We recommend replacing the filter when replacing the ComfoAir Luxe filter.



Replace the filter (at least) once every six months.

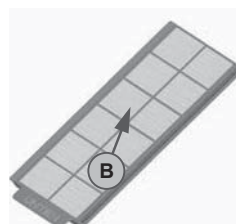
1. Disconnect the ComfoAir Luxe from its power supply.
2. Remove the filter handle (A) from the ComfoFond-L.



ComfoFond-L 350

ComfoFond-L 550

3. Remove the old filter (B) from the ComfoFond-L.



4. Slide the new filter back into the ComfoFond-L.
5. Click the filter handle (A) in the ComfoFond-L.
6. Return power to the ComfoAir Luxe.



Filters must be replaced with the original manufacturer's filters only.

6.2 Cleaning condensation drain



Inspect the ComfoFond-L condensation drain at least once a year.

1. Disconnect the ComfoAir Luxe from its power supply.
2. Disconnect the condensation drain.
3. Perform the following checks of the condensation drain siphon:
 - Check whether the drain is still open by adding extra water to the siphon;
 - Visually inspect the condensation drain for contamination;
 - Check that there is enough water in the siphon. Air may not pass through the siphon;
4. Resolve any established problems;
5. Reconnect the condensation drain;
6. Return power to the ComfoAir Luxe.

6.3 Inspecting brine loop



Inspect the brine loop at least once a year.

Check the system pressure on the pressure meter. Top up the system if required.



The brine loop pressure must be between 0.5 and 2.5 bar for the system to operate well. The ideal pressure is 1.5 bar.

Filling instructions:

Top up the system as follows:

1. Disconnect the ComfoAir Luxe from its power supply.
2. Remove the filter handle from the ComfoFond-L.
3. Release the front panel by removing the 6 screws.
4. Remove the front panel from the ComfoFond-L.
5. Connect a filling hose to filling valve V3.
6. Open filling valve V3.
7. Measure the glycol percentage using a glycol meter.
 - Fill the system with a ready-made brine mixture first if required. The filling instructions for this are given in the 'Filling the brine loop' section.



The glycol percentage deviation from the selected percentage during installation may not exceed -3%. The desired glycol percentage must be restored first after topping up the system twice with water.

8. Increase the pressure in the device to 1.5 bar. To that end, use the filling hose connected to filling valve V3. Use an additional pressure pump if necessary.
9. Closing filling valve V3 and disconnect the filling hose.
10. If no further maintenance is required: Install all parts in reverse order. (from point 4 back to point 1)

6.4 Cleaning internal siphon



Inspect the ComfoFond-L internal siphon at least once a year.

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Perform the following checks of the ComfoFond-L internal siphon:
 - Check whether the drain is still open by adding extra water to the siphon;
 - Visually inspect the siphon for contamination;
 - Check that there is enough water in the siphon. Air may not pass through the siphon.
3. Resolve any established problems.
4. If no further maintenance is required: Install all parts in reverse order (as described in the maintenance section for the brine loop) and switch the power supply to the ComfoAir Luxe back on.

6.5 Maintenance of ComfoFond-L casing



Inspect the ComfoFond-L casing at least once a year.

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Perform the following checks:
 - Check the seals for damage;
 - Check the inside and outside for dirt and damage;
 - Check the duct connections for dirt and damage.



Any signs of corrosion and other damage must be treated directly and appropriately.

To clean the whole ventilation system, we recommend hiring a specialized cleaning firm.

3. If no further maintenance is required:
Install all parts in reverse order and switch the power supply to the ComfoAir Luxe back on. (as described in the maintenance section for the brine loop)

6.6 Maintenance of ComfoFond-L battery



Inspect the ComfoFond-L battery once every 2 years.

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Check the fins in the ComfoFond-L battery for dirt and damage.
 - Use a fin comb to restore the fins.
 - Rinse the battery with lukewarm tap water.



Do not use aggressive cleaning agents or solvents to clean the ComfoFond-L.

3. If no further maintenance is required:
Install all parts in reverse order and switch the power supply to the ComfoAir Luxe back on. (as described in the maintenance section for the brine loop).

6.7 Replacing circulation pump

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Close taps V2 and V4.
3. Connect a drainage hose to filling valve V3 to drain the brine.
4. Open filling valve V3 slowly until the system is depressurised.
5. Replace the circulation pump.
6. Top up the system to the nominal pressure of 1.5 bar in accordance with the filling instructions in the brine loop maintenance section.
7. If no further maintenance is required:
Install all parts in reverse order and switch the power supply to the ComfoAir Luxe back on. (as described in the maintenance section for the brine loop)



The lowest point of the power cable for the pump must be below the pump level. This prevents condensation water from running to the pump via the power cable.

6.8 Replacing expansion vessel

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Close taps V2 and V4.
3. Connect a drainage hose to filling valve V3 to drain the brine.
4. Open filling valve V3 slowly until the system is depressurised.
5. Replace the expansion vessel.
6. Top up the system to the nominal pressure of 1.5 bar in accordance with the filling instructions in the brine loop maintenance section.
7. If no further maintenance is required:
Install all parts in reverse order and switch the power supply to the ComfoAir Luxe back on (as described in the maintenance section for the brine loop).

6.9 Replacing filling valve

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Close tap V4 only.
3. Connect a drainage hose to filling valve V1 or V3 to drain the brine.
4. Open the selected filling valve slowly until the system is depressurised.
5. Replace the filling valve.
6. Top up the system to the nominal pressure of 1.5 bar in accordance with the filling instructions in the brine loop maintenance section.
7. If no further maintenance is required:
Install all parts in reverse order and switch the power supply to the ComfoAir Luxe back on (as described in the maintenance section for the brine loop).

6.10 Replacing pressure meter

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Close taps V2 and V4.
3. Connect a drainage hose to filling valve V1 to drain the brine.
4. Open filling valve V1 slowly until the system is depressurised.
5. Replace the pressure meter.
6. Top up the system to the nominal pressure of 1.5 bar in accordance with the filling instructions in the brine loop maintenance section.
7. If no further maintenance is required:
Install all parts in reverse order and switch the power supply to the ComfoAir Luxe back on (as described in the maintenance section for the brine loop).

6.11 Replacing de-aerator

1. Remove the front panel of the ComfoFond-L as described in the brine loop maintenance section.
2. Close taps V2 and V4.
3. Connect a drainage hose to filling valve V1 to drain the brine.
4. Open filling valve V1 slowly until the system is depressurised.
5. Replace the de-aerator.
6. Top up the system to the nominal pressure of 1.5 bar in accordance with the filling instructions in the brine loop maintenance section.
7. If no further maintenance is required: Install all parts in reverse order and switch the power supply to the ComfoAir Luxe back on (as described in the maintenance section for the brine loop).

7. Malfunctions

The ComfoFond-L does not have a digital control system that indicates malfunction codes. The ComfoAir Luxe has a digital control system that indicates malfunction codes. The ComfoAir Luxe manual states what the malfunction codes mean and how to rectify these malfunctions.

Not all malfunctions are displayed on the digital control system of the ComfoAir Luxe, even though there may be malfunctions (or problems). Below is a list of the malfunctions (or problems) that may occur without a malfunction code being displayed on the digital control system.

Problem/Malfunction	Indication	Check / action
The pump does not run	The EWT text is not visible on the CC Ease or CC Luxe.	Check the ComfoAir Luxe, the measured outside temperature and the comfort temperature setting.
	The EWT text is visible on the CC Ease or CC Luxe.	Check the pump setting, the wiring and connection points on the connector printed circuit board of the ComfoAir Luxe - The pump is defect if there is power on the clamps of the connector printed circuit board.
High intake temperature in summer.	The EWT text is not visible on the CC Ease or CC Luxe.	Lower the P63 temperature on the ComfoAir Luxe.
Little or no cooling or heating capacity.	The EWT text is visible on the CC Ease or CC Luxe.	Check the system pressure and the pump setting.
Little or no supply air	Filters clogged.	Replace the filter.
	Battery clogged.	Clean the battery.
Too much noise	Whistling noise - Air escaping through crack somewhere	Seal the crack using insulating tape (not included).
	Slurping noise - Siphon is empty - U bend is not sealed properly	Fill the siphon, reconnect the siphon.
Condensation leak	Condensation drain clogged.	Clean both condensation drains (at the top and bottom of the ComfoFond-L).
	Condensation on the pipes and/or brine and air connections.	Insulate the connections and pipes.
	Frost-free set up not achieved	The ComfoFond-L was not installed in accordance with the installation requirements. Insulate the area that accommodates the ComfoFond-L or relocate the ComfoFond-L to a frost-free area.
	High humidity	Lower the humidity by ventilating the area. If the humidity remains high, then relocate the ComfoFond-L to an area with a lower humidity or insulate the areas where condensation forms.

8. Technical specifications

Description	ComfoFond-L 350	ComfoFond-L 550
Mass ComfoFond-L	42 kg	42 kg
Unit dimensions (l x b x h)	476 x 551 x 760 mm	476 x 551 x 760 mm
Air inlet dimensions	180 mm	180 mm
Air outlet dimensions	160 mm	180 mm
Outside temperature operating area	-22°C to 45°C	-22°C to 45°C
IP class	44	44
Power supply	220/230V AC, 50/60Hz, 1 phase	220/230V AC, 50/60Hz, 1 phase
Maximum power consumption	0.58 A	0.58 A
Power consumption nominal	0.20 A	0.20 A
Energy consumption maximum *	70 W	70 W
Energy consumption nominal *	46 W	46 W
Energy consumption minimum setting *	5 W	5 W
Heating capacity	1800 W**	2500 W****
Cooling capacity	2000 W***	3000 W*****
Maximum sound capacity	40 dB(A)	40 dB(A)
Ideal brine pressure	1.5 bar	1.5 bar
Brine volume ComfoFond-L	+/- 2 l	+/- 2 l
Brine flow rate	6-8 l/min.	8-10 l/min.
Brine composition	30%-50% ethylene glycol water mixture	30%-50% ethylene glycol water mixture
Brine connections	¾" conical male-threaded	¾" conical male-threaded
Pump Class circulation pump	A	A
Maximum head circulation pump	7m	7m
Condensation drain connection	1¼" male-threaded with 32 mm adapter	1¼" male-threaded with 32 mm adapter
Colour	RAL7035	RAL7035

* Linear adjustment of the energy consumption is possible

** $Q_v = 350 \text{ m}^3/\text{h}$, $T_{\text{outside air}} = -12 \text{ }^\circ\text{C}$, $T_{\text{brine flow}} = 8 \text{ }^\circ\text{C}$, $v_{\text{brine flow}} = 6 \text{ l/min}$, $T_{\text{supply air}} = 1 \text{ }^\circ\text{C}$.

*** $Q_v = 350 \text{ m}^3/\text{h}$, $T_{\text{outside air}} = 35 \text{ }^\circ\text{C}$, $T_{\text{brine flow}} = 12 \text{ }^\circ\text{C}$, $v_{\text{brine flow}} = 6 \text{ l/min}$, $T_{\text{supply air}} = 25,5 \text{ }^\circ\text{C}$.

**** $Q_v = 550 \text{ m}^3/\text{h}$, $T_{\text{outside air}} = -12 \text{ }^\circ\text{C}$, $T_{\text{brine flow}} = 8 \text{ }^\circ\text{C}$, $v_{\text{brine flow}} = 8 \text{ l/min}$, $T_{\text{supply air}} = 1 \text{ }^\circ\text{C}$.

***** $Q_v = 550 \text{ m}^3/\text{h}$, $T_{\text{outside air}} = 35 \text{ }^\circ\text{C}$, $T_{\text{brine flow}} = 12 \text{ }^\circ\text{C}$, $v_{\text{brine flow}} = 8 \text{ l/min}$, $T_{\text{supply air}} = 25 \text{ }^\circ\text{C}$.

8.1 Brine loop dimensions

The ComfoFond-L terrestrial heat collector (recommendations)				
Type	Pipe type	Brine volume per 10 metre pipe [l]	Minimum length pipe in solid ground [m]	Minimum length pipe in sandy ground [m]
ComfoFond-L 350	25/20.4 PE	3,3	65	130
ComfoFond-L 550	32/26.2 PE	5,3	100	200

8.2 Brine mixture

Desired ethylene glycol percentage	
Maximum outside temperature [°C]	Percentage [%]
-15	35
-20	40
-25	45
-30	50



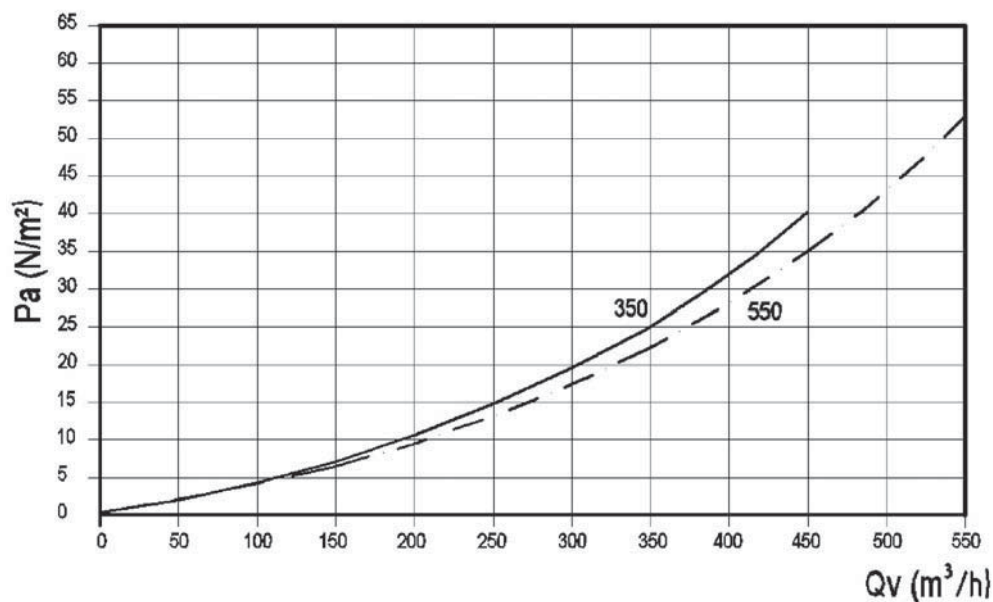
Higher concentrations of ethylene glycol can cause flow-related problems on account of the viscosity of the mixture. Irreversible damage will be caused to the machine if concentrations in excess of 50% are used.

8.3 Circulation pump settings

Terrestrial heat collector type [mm]	Terrestrial heat collector length [m]	Circulation pump setting ComfoFond-L 350	Circulation pump setting ComfoFond-L 550
25/18,0	65	7	No setting suitable*
25/20.4	65-75	5	No setting suitable*
25/20.4	76-90	6	No setting suitable*
25/20.4	91-100	7	No setting suitable*
32/26.2	65-100	4	5
32/26.2	101-150	5	6
32/26.2	151-200	6	7
32/26.2	201-250	7	No setting suitable*
40/29.0	65-100	3	4
40/29.0	101-175	4	5
40/29.0	176-250	5	6
40/29.0	251-300	6	7
40/29.0	301-400	7	No setting suitable*
40/32.6	65-100	3	4
40/32.6	101-200	4	5
40/32.6	201-325	5	6
40/32.6	326-450	6	7
40/32.6	451-600	7	No setting suitable*

* The pump's capacity is insufficient under these circumstances. Use a hose with a larger inner diameter.

8.4 Air resistance



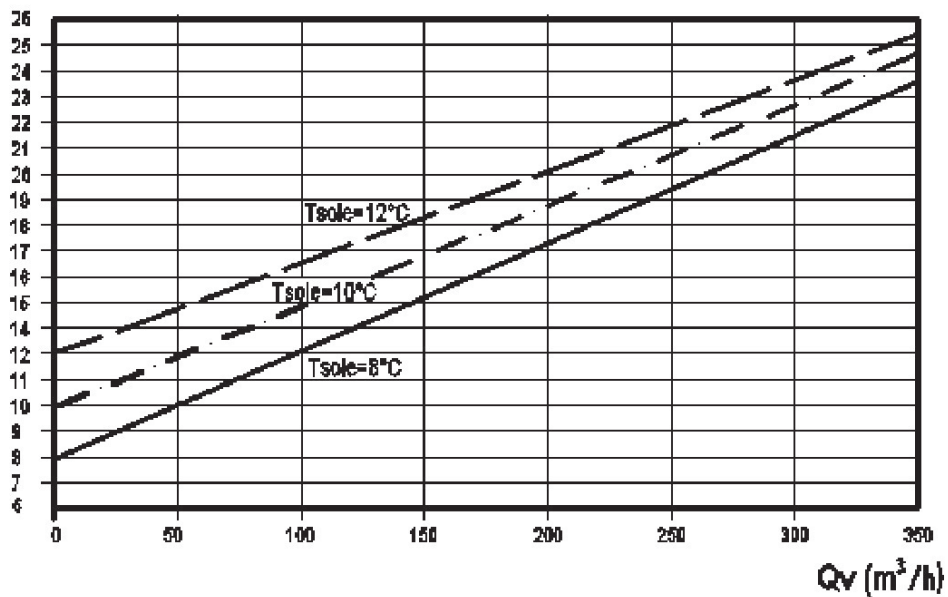
8.5 Cooling capacity

ComfoFond-L 350

Qv.brine = 6 l/min.

T air in = 35°C

RH = 50%

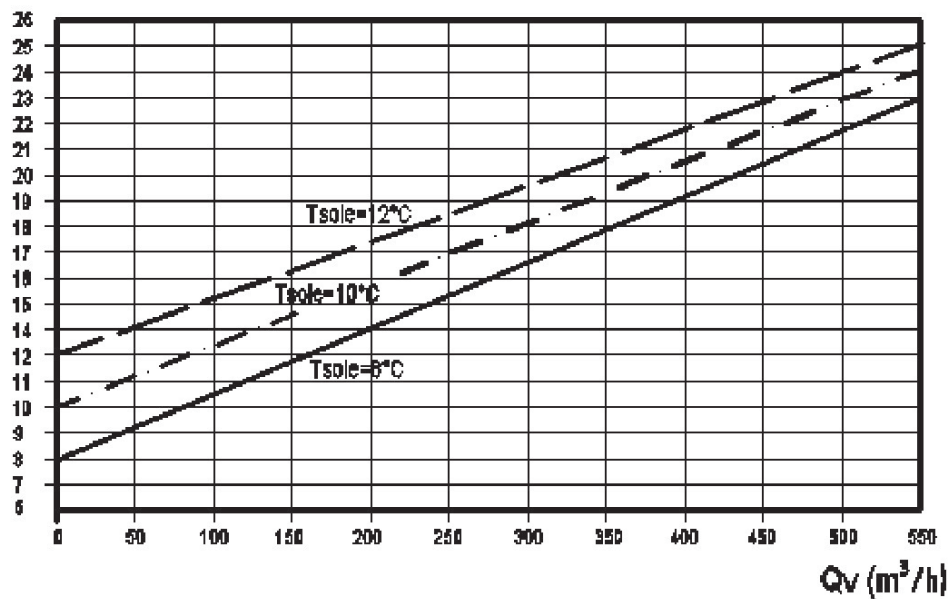


ComfoFond-L 550

Qv.brine = 8 l/min.

T air in = 35°C

RH = 50%

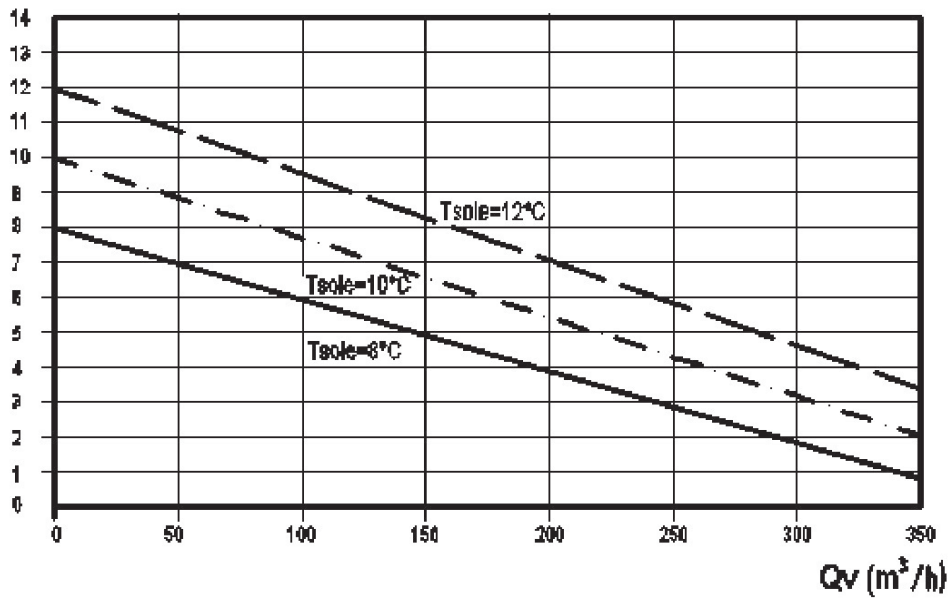


8.6 Heating capacity

ComfoFond-L 350

Qv.brine = 6 l/min.

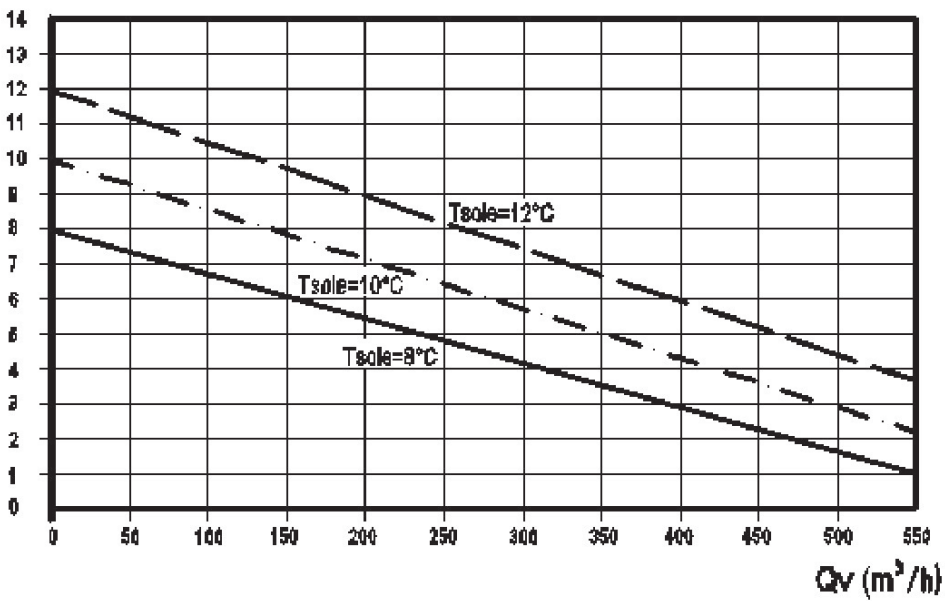
T air in = -12°C



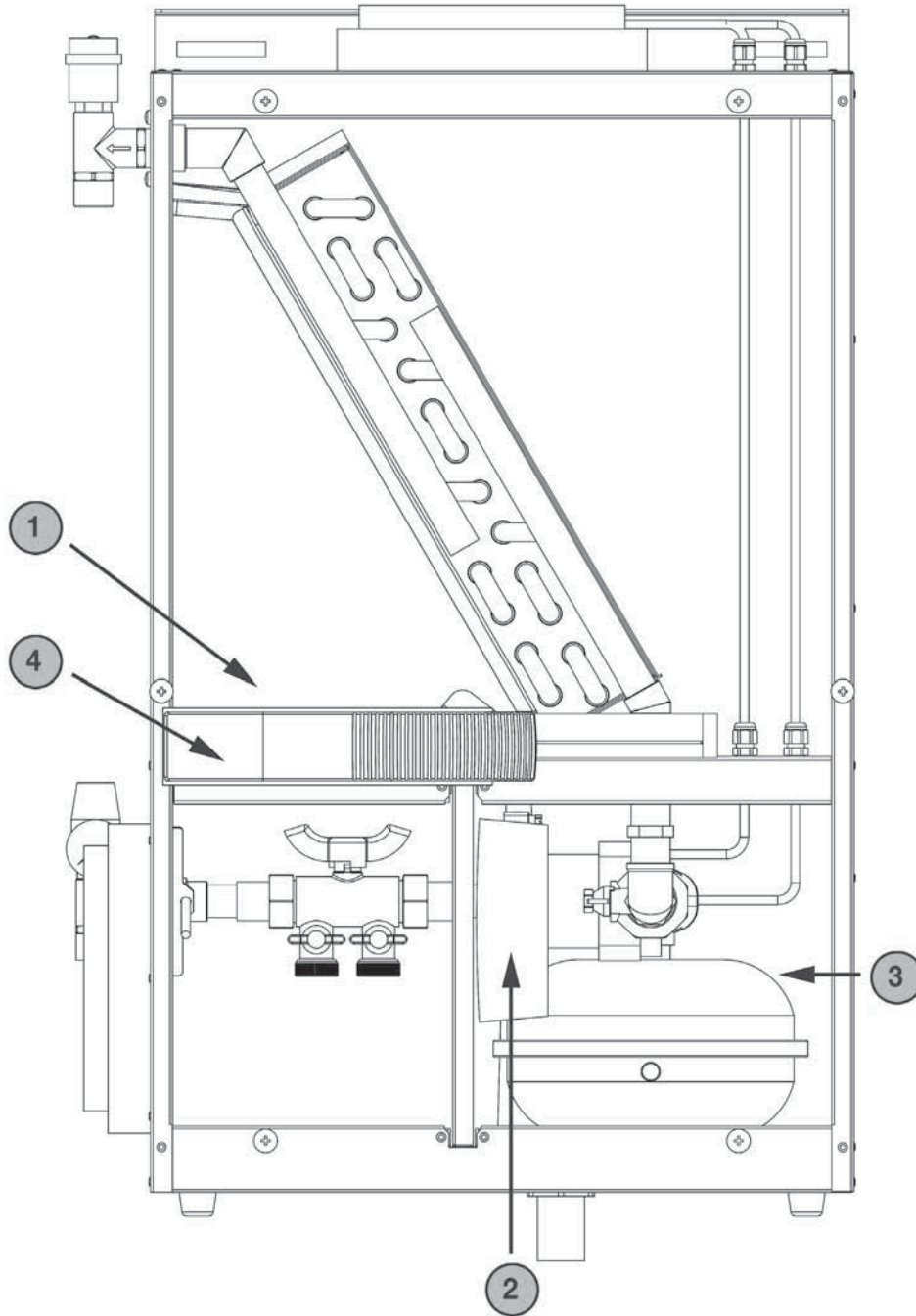
ComfoFond-L 550

Qv.brine = 8 l/min.

T air in = -12°C



8.7 Service parts



Number	Part	Article number
1	Filter set G4/G4	006040202
1	Filter set F7/G4	006040250
1	Filter G4	400100065
2	Circulation pump Left	400600081
2	Circulation pump Right	400600080
3	Expansion vessel	400600082
4	Filter handle	400100020

9. CE certification and warranty

Warranty conditions

The ComfoFond-L is covered by a manufacturer's warranty for a period of 24 months after fitting up to a maximum of 30 months after the date of manufacture.

Warranty claims may only be submitted for material faults and/or construction faults arising during the warranty period. In the case of a warranty claim, the ComfoFond-L must not be dismantled without written permission from the manufacturer. Spare parts are only covered by guarantee, if they were supplied by the manufacturer and have been installed by an approved installer.

The warranty becomes invalid if:

- The guarantee period has elapsed;
- The unit is used without filters;
- The unit is not installed according to the instructions;
- Parts are used which were not supplied by the manufacturer;
- Unauthorized alterations and/or modifications have been made to the unit.

Liability

The ComfoFond-L has been designed and manufactured for use in balanced ventilation systems incorporating Zehnder heat recovery systems. Any other application is seen as inappropriate use and can result in damage to the ComfoFond-L or personal injury, for which the manufacturer cannot be held liable. The manufacturer is not liable for any damage derived from:

- Non-compliance with the safety, operating and maintenance instructions in this manual;
- The use of components not supplied or recommended by the manufacturer. The responsibility for the use of such components lies entirely with the fitter;
- Normal wear and tear.

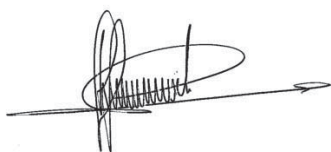
EC declaration of conformity

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Tel.: +31 (0)38-4296911
Fax: +31 (0)38-4225694
Company register Zwolle 05022293

EC declaration of conformity

Machine description:	Ground-source heat exchanger:	ComfoFond-L
Complies with directives:	Machinery Directive	(2006/42/EEC)
	Low Voltage Directive	(2006/95/EEC)
	EMC Directive	(2004/108/EEC)
	Pressure Equipment Directive	(97/23/EEC)

Zwolle, 02.12.10
Zehnder Group Nederland B.V.



E. van Heuveln,
Managing Director

I. Installation report

Date	<input type="text"/>	Address	<input type="text"/>
Work instruction	<input type="text"/>	Town/city	<input type="text"/>
Commissioning party	<input type="text"/>	Residence	<input type="text"/>
Installed by	<input type="text"/>	ComfoFond-L type*:	350/550 Left/Right
		*Delete as applicable	

Settings ComfoAir Luxe

P-Menu P62	<input type="text"/>	P-Menu P63	<input type="text"/>
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Terrestrial heat collector details

Brine volume	<input type="text"/>	Circulation pump setting	<input type="text"/>
Selected glycol %	<input type="text"/>	ø Inside pipe	<input type="text"/>
Meeasured glycol %	<input type="text"/>	Pipe lengtj	<input type="text"/>

Pipe lay out

II. Maintenance log

Date	Activity	Initials

Asia

(China)

Zehnder (China)
Indoor Climate Co., Ltd.
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