

Cooling Unit

For Heat Recovery Unit santos (F)
570 DC



Operating Manual
Please keep this manual
with the unit!

Status: 04.10

Design version:

- R – Right (supply air)
- L – Left (supply air)

All rights reserved.

This operating manual has been produced with the greatest care and attention. Nevertheless, the publisher accepts no liability for damage resulting from missing or incorrect information in this operating manual.

Table of Contents

User Manual	1
1. General Information	1
2 Warranty and Liability	1
3 Mode of Operation of the System	1
4. Operation.....	2
5 Maintenance.....	2
6. Troubleshooting.....	3
7. Ventilation Advice.....	3

1. General Information

Congratulations! You have a ventilation system combined with a cooling unit from Paul Wärmerückgewinnung GmbH in your home. This system will supply your home with cool, fresh air. For optimum comfort it is important that you know how the system works and how to operate it. Therefore, please read this manual carefully before using the system.

Cooling unit

In a balanced ventilation system with heat recovery unit the cooling unit serves to reduce the temperature and humidity of the supply air to pleasant levels.

Paul Wärmerückgewinnung GmbH wishes you the very best of living comfort in your home with the cooling unit.

What is ventilation?

Did you know that on average we spend about 70 % of our time in closed rooms? You may consider the figure a bit high, but think about it for a moment: during the day we work indoors, in the evening we live indoors, and we sleep indoors at night.

Consequently, we spend the majority of our lives in closed rooms. And there is nothing to be said against this per se, provided we ventilate the rooms well. When we breathe we exhale CO₂ into the indoor air. In addition, humidity in indoor air (for example resulting from perspiration, cooking and showering) not only leads to the formation of condensation water and mould but also to unpleasant deposits accumulating and smells. Diminished air quality (increased concentrations of CO₂) increases the risk of health problems. Consequently, ventilation is important for healthy indoor air. Opening a window briefly, however, only has a short-term effect. The fresh outside air is used up as soon as you close the window again. Put simply, it is important to ventilate around the clock.

2 Warranty and Liability

Please refer to the installer section of this manual for more information about warranty and liability.

Safety Regulations

The cooling unit contains the refrigerant R134a. This is a non-flammable and non-toxic refrigerant. It is colourless and has a very weak smell reminiscent of ether. The unit has been designed to ensure that under normal circumstances no refrigerant can escape

If refrigerant does escape as a result of damage or a defect:

- Do not touch the system for at least one hour;
- Open all windows and doors of the room in which the unit is installed for at least one hour;

- Contact a qualified installer.

The quantity of refrigerant contained in the cooling unit is so low that no harmful concentrations can arise in the rooms of your home.

3. Mode of Operation of the System

The system consists of several components: a heat recovery unit (santos 570 DC) and the cooling unit. These units are operated via a touchscreen.



santos 570 DC with cooling unit





Touchscreen

In winter the heat recovery unit provides energy-saving ventilation of the rooms of your home. In doing so it removes energy in the form of heat from the used air to heat the supply air to a pleasant temperature. In the summer the system provides energy-saving cooling of the rooms of your home. To achieve this the system is designed to function as follows:

- Where possible the comfort temperature set by you is achieved by interrupting the heat recovery process. For this purpose the so-called "bypass" is opened. Your home continues to be ventilated as long as the temperature of the supply air is pleasant. This is mainly the case during the night.



A symbol on the touchscreen enables you to view the bypass setting:


- o  indicates that the bypass valve is open;
- o  indicates that the bypass valve is closed.

- The heat recovery system is also able recover "cooling energy". This ensures the supply

air has a pleasant temperature.






- If the desired temperature cannot be achieved through a process of recovering cooling energy or by opening the bypass valve the system actively takes over the cooling process. A cooling circuit is activated for the purpose. The system then reduces the temperature of the supply air, which in turn cools the rooms of your home. Moreover, the system also removes moisture from the air to create a pleasant indoor climate.



The cooling symbol  is displayed on the touchscreen when active cooling is in process. A compressor in the cooling unit is activated. This generates a noise comparable to that of a refrigerator.

4. Operation

The ventilation system with cooling is operated by means of a touchscreen. This is a touch-sensitive display panel that displays information and buttons. Please refer to the touchscreen manual for more detailed information. The most important operating functions of the system are:

- The ventilation levels: you can choose between the following settings:
 - o Absent  (depending on the system version). You should only use this level if you plan to be absent for a longer period of time. The cooling unit is turned off when this level is selected.
 - o Level 1  This is the lowest level. Select this level if only a small number of people are normally present in the rooms of your home.
 - o Level 2  This is the normal level. Select this level if the rooms in your home are used at a normal level.
 - o Level 3 . This is the highest level. Select this level when increased ventilation is desired, for instance when cooking, showering or when receiving a lot of guests. You can also select this level if you wish to cool the rooms in your home significantly.
 - o Temporary highest level . When this level is selected the system operates at level 3 for a given time, before returning to the previous setting. Select this level when cooking or showering.
- Comfort temperature: The ventilation system with a cooling unit continuously attempts to maintain the set temperature in the room in which the touchscreen is installed (comfort temperature). For this purpose the system can automatically open the bypass valve or initiate active cooling. Please refer to Chapter 3 for more information.
 - o The comfort temperature can be set between COOL and WARM. Within this range the desired temperature can be set between 18 and 24 .
- When set to COOL the system attempts to achieve the lowest possible temperature. If circumstances allow, the active cooling function is activated. Select this level if you wish to cool the rooms in your home.
- The active cooling function is never activated when the system is set to WARM; the bypass valve also remains closed. Select this level when heating at

high power.

- The santos 570 DC is equipped with a system that recognises summer and winter. This allows the active cooling function to be activated in summer, whereas this function is not desired under normal circumstances in winter. However, if you do wish to activate the active cooling function in winter all you have to do is set the temperature to "COOL".
 - o It is possible to deactivate active cooling. For this purpose the buttons "Cooling Auto" or "Cooling Off" are located in the menu for setting the comfort temperature. Deactivate active cooling if you wish it to remain turned off, even if the temperature should rise above the set comfort temperature.

5 Maintenance

The ventilation system and cooling unit must be inspected and cleaned every four years by your installer. **Caution:** Qualified refrigeration engineers only are permitted to dismantle and clean the cooling unit.

Cleaning the condensation drain

The ventilation system is equipped with a condensation trap for the condensation drain. During operations a maximum of 2.5 l condensate is discharged per hour. For that reason it is extremely important that the trap and in particular the connection between condensation drain and the wastewater system are kept clean and free of blockages.

Cleaning the ventilation valves

The ventilation system is equipped with valves for the supply and discharge of air. The exhaust air valves are fitted in the wall or ceiling of the kitchen, bathroom or toilet. The supply air valves are fitted in the wall or ceiling of the living room and bedrooms. Clean any valve that you see is soiled. Hold the valve at its rim and pull it completely out of the wall or ceiling with a turning motion. Clean the valve with soapy water, then rinse with clean water and dry thoroughly. Always return the valve to the same position in the wall or ceiling from where you removed it. When doing so ensure that you do not accidentally swap the valves or alter the settings.

Filters

The santos 570 DC is equipped with filters to prevent the heat exchanger from being soiled with dust. It is imperative that these filters are cleaned or replaced as required. For more information please refer to the operating manual

of the santos 570 DC.

6. Troubleshooting

Touchscreen displays malfunction code

When the system recognises a malfunction you are informed via the touchscreen. A code consisting of a letter and a number is displayed on the display. Please note down this malfunction code.

- You should try to rectify the malfunction yourself by pressing the "reset" button on the touchscreen information screen. Please refer to the touchscreen manual for

more information.

- In addition, check if power is being supplied to the cooling unit and heat recovery unit (santos 570 DC). The cooling unit connections are located on the side of the unit. Check if the connectors are seated firmly in the connections.
- If the problem persists please contact your specialist ventilation and cooling system installer.

The cooling unit does not turn on

If the cooling unit does not turn on as you expect check the following points:

- Is the ventilation level set correctly? The cooling unit will not turn on when "Absent" is selected.
- Is the comfort temperature set correctly? The system will only become active when the temperature in the room in which the touchscreen is installed rises above the comfort temperature.
- Is it cold outside? If it is cold outside (below 12 °C) the active cooling function will not be activated.
- Is it colder outside than inside? If it is colder outside than indoors the system utilises the bypass to save energy when cooling. Please refer to Chapter 3 for more information.
- Is it autumn or winter? The system does not activate the cooling function during the heating season - in other words when the heating is running permanently. However, if you can simply set the comfort temperature to "COOL" if you wish.
- Have you enabled cooling unit activation? A button is available for this purpose in the menu for setting the comfort temperature. The cooling unit can only be turned on when this is set to "Cooling Auto".
- Did the cooling unit turn off a short while ago? For safety reasons there is a 5 minute delay before the cooling unit is turned on again.
- Is the cooling unit enabled on the touchscreen? You can check if it is enabled in the main screen of the touchscreen. When the cooling unit is enabled it is not possible to turn off the supply and exhaust air fans. If the cooling unit is not enabled, remove the plugs from the mains socket outlets to isolate the heat recovery unit and cooling unit from the power supply. Then reconnect the cooling unit followed by the heat recovery unit (santos 570 DC) to the power supply.

The cooling unit turns on, but the cooling does not work

Proceed as follows if the rooms in your home are not (sufficiently) cooled although the cooling system is turned on:

- Set the ventilation to level 3. The higher you set the ventilation the more cool air will be introduced and the more the rooms will be cooled.
- Provide protection from the sun. The sun is a power source of heat. The greater the insolation the more the rooms will be heated. This is possibly more powerful than the cooling effect of the your cooling system.
- You should be clear about the fact that the cooling unit is a refrigerant compressor unit that - in contrast to split air conditioning units (recirculation air) - cools the outside air for all of your home. In combination with effective sun shading the cooling unit is able to cool the room temperature by several degrees. We recommend that in summer you set the comfort temperature several degrees below the outdoor temperature.

Irregular ventilation

If the ventilation system is set to level 1 the cooling unit will occasionally increase the flow rate temporarily to maintain the components responsible for cooling at an acceptable temperature. You can set a higher ventilation level if this disturbs you.

7. Ventilation Advice

Do you need assistance with a problem or require advice about ventilation?

All you or your installer need do is simply call our advice line on +49(0)375 - 303505 - 0

or send an e-mail to info@paul-lueftung.de.

For further information on ventilation and about Paul Wärmerückgewinnung GmbH visit www.paul-lueftung.de.

EC Declaration of Conformity

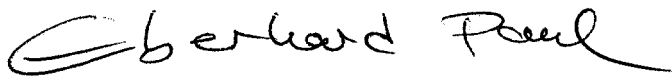
Paul Wärmerückgewinnung GmbH
August-Horch-Strasse 7
08141 Reinsdorf
Tel.: +49(0)375 - 303505 - 0
Fax: +49(0)375 - 303505 - 55

EC Declaration of Conformity

Designation of the appliance: Cooling unit for heat recovery unit santos 570 DC
L/R

Conforms to the directives: Machinery Directive (2006/42/EC)
Low Voltage Directive (2006/95/EC)
EMC Directive (2004/108/EC)

Reinsdorf, 4th January 2010
Paul Wärmerückgewinnung GmbH

A handwritten signature in black ink that reads "Eberhard Paul". The signature is written in a cursive style with a large initial 'E'.

Eberhard Paul,
General Managing Director

