# THE ROAD TO A HEALTHY INDOOR CLIMATE

VENTILATION & INDOOR CLIMATE SOLUTIONS BY NILAN

Unique indoor climate solutions,
which makes your home your comfort zone

NILAN®
OUTSTANDING INDOOR CLIMATE

# LET US TOGETHER CREATE A HEALTHY INDOOR CLIMATE

*Nilan develops and manufactures premium-quality, energy-saving ventilation and heat pump solutions that are beneficial to the environment and provide a healthy indoor climate and lowlevel energy consumption. Since the company was founded in Denmark in 1974, Nilan's activities have spread steadily to international markets. Today, the market has recognised our skills and approved our products. We are now represented across most of Europe and continue to expand.*

**At the cutting edge of development**
We have always maintained a sharp focus on being at the cutting edge of the technological development in order to produce some of the market's most efficient energy-saving ventilation and heat pump solutions.

Nilan's initial steps were made in an endeavour to meet a need emerging from developments in the construction sector during the oil crisis. The crisis meant that people started to insulate buildings in order to save energy. This in turn meant that there was a need for solutions that would provide healthy indoor climate in these airtight buildings – a need Nilan was able to meet.

That's how things were back then – and still are today: Our solutions are solutions for the future. They reduce your energy consumption and therefore preserve the environment. At the same time, our solutions are based on some of the world's most advanced technologies.

**Why decide on a Nilan unit?**
In more than 40 years Nilan has manufactured and developed ventilations units and heat pump solutions. That makes Nilan is a strong partner for anyone wishing to invest in the ventilation and heat pump solutions of the future. Through our many years of experience in the industry and our market-oriented focus, we have learned to appreciate the importance of quality assurance and product development. These are the areas in which we are sharpest, and our customers and partners benefit from this.

At Nilan, the customer is in focus: We listen to our customers and we meet their needs through a consistent focus on exploiting the opportunities that technology provides. This way we make sure that you receive not just a unit, but rather a solution to your needs.

In order to offer our customers the best solutions, we quality test throughout the entire production process. All components in our ventilation units and heat pumps, from metal plates to valves, are literally tested from all angles, to ensure you a unit that functions for many years.

In short – when you choose a Nilan unit you acquire a quality produced solution, that lasts for many years.

# LET HUMID AIR OUT AND THE FRESH AIR IN

**Why should I ventilate my home?**
Mechanical ventilation ensures a comfortable indoor climate in your home. With mechanical ventilation, the air in your home feels fresh all the time, and has a comfortable temperature. The purpose of ventilation is to remove the poor, humid air from your home and to replace it with fresh, temperate and filtered air.

There are many everyday activities that contribute to polluting the air in your home, including cleaning, cooking, laundry, exhalation and electrical appliances such as televisions and computers. New furniture, carpets and paint on the walls also give off many particles.

Besides particle emissions, the greatest danger to people and the building is damp. A family of two adults and two children produces around 10 litres of liquid a day, which needs to be ventilated out of the home. Modern buildings, which are well insulated, retain damp, so ventilation is important. This is because high humidity provides ideal conditions for dust mites and mould, which in the worst case can lead to rot. If there is more than 2 cm of condensation on your windows in the morning, this indicates that the humidity in your home is too high. A mechanical ventilation unit removes the damp from your home and ensures that the air inside is fresh and filtered, and that there is no condensation on the windows in the morning.

The relative humidity level, RH, in your home will vary over the year, as RH is primarily determined by the outside temperature. In the cold winter months, humidity of less than 40–45 % is desirable. However, it is also important to maintain a humidity of more than 20 %. Any lower and it can lead to the drying out of the mucous membranes, the feeling of dry skin, eye discomfort for wearers of contact lenses, and wood in the home can dry out and possibly crack. In the winter, the humidity should be below 45 %.

The Danish Asthma and Allergy Association recommend that homes are aired out for 3 x 5-10 minutes daily, with a through draught, all year round to expel damp and harmful particles. This is not necessary with mechanical ventilation. At the same time, you also save on heating bills, as the heated air does not disappear out the window in winter.

**Your indoor climate is good when**

The indoor temperature is +21°C.

The Danish Building Research Institute recommends that all the rooms in the building are of a minimum temperature of 18°C. Temperatures lower than this may result in the formation of mould.

The relative humidity should be kept between 20-45 % in winter.

Dust mites thrive at an RH of 60% or more, and at an RH of 75%, mould forms.

*It is cheaper to heat a home with low humidity than one with high humidity.*

# VENTILATION TO SUIT THE NEEDS OF YOU AND YOUR FAMILY

**Control when you need it**

To ensure that you and your family enjoy a good indoor climate, almost all of Nilan's units are equipped with intelligent humidity control. With Nilan's humidity control, there is no need to set it to fixed level of RH to control the ventilation. A built-in humidity sensor calculates the average humidity level in the property over a 24-hour period. Nilan's controls regulate the ventilation according to the calculated humidity level. This demand-controlled ventilation ensures that your home is ventilated according to the actual humidity level.

As a supplement to the humidity control, a $CO_2$ sensor can be purchased for almost all of Nilan units. With the $CO_2$ sensor, the room is ventilated according to the $CO_2$ level. A $CO_2$ sensor can be a good purchase, if the levels vary in the home. This might be in situations with a lot of guests and/or the property is often empty, making it easier to adapt the ventilation to the situation at hand. With the purchase of a $CO_2$ sensor for the unit, $CO_2$ overrides humidity.

In Nilan's CTS 602 and CTS 700 controls, it is possible to set up a weekly program, which adapts the operation of the unit to your family's weekly rhythm.

**The room's $CO_2$ load increases when, for example:**

Electronics are used

Candles are lit

You have guests

**Humidity occurs in your home when:**

You wash and dry clothes indoors

You take a bath or shower

You cook

# CHOICE OF INDOOR CLIMATE SOLUTION

**Which solution should I choose?**
When choosing an indoor climate solution to suit your needs, there are several factors you need to consider. You should determine whether there is a need for a 'basic' ventilation solution, or whether you require a total solution that can ventilate with heated and cooled air, produce sanitary hot water and heat the property.

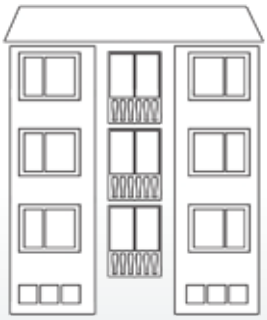
**What type of property do you live in?**
The type of property you live in plays a role when it comes to your choice of indoor climate solution.

A house with eaves has the advantage of having an overhang that provides shade from the sun in summer and lets it shine in in the winter, providing additional heating.

An ideal solution for this type of property would typically be a ventilation unit with passive heat recovery via a counterflow heat exchanger.

A house without eaves, with no shade from the sun in the summer, and without curtains or blinds, places very different demands on the ventilation unit. Not only in summer but in early spring and late autumn, too, there will be additional heat that needs to be ventilated out.

An ideal solution for this type of property would be a ventilation unit with active heat recovery via a heat pump, possibly combined with a counterflow heat exchanger. A heat pump can both heat and cool the supply air. Due to the low air exchange, it does not function in the same way as an air conditioning unit. On cooling, the supply air is dehumidified, contributing to a pleasant climate inside the home



If you live in a flat, we have a solution for this, too. Several of our units are designed as a top-model, so that the unit can be fitted inside a cabinet if ceiling mounting is not an option. We offer ventilation units with either a counterflow heat exchanger or a heat pump.

All the above options can be supplemented with the production of sanitary hot water and combined with the most efficient heat pumps for heating the property via a water-borne central heating system.

# WHAT DID THAT MEAN AGAIN?

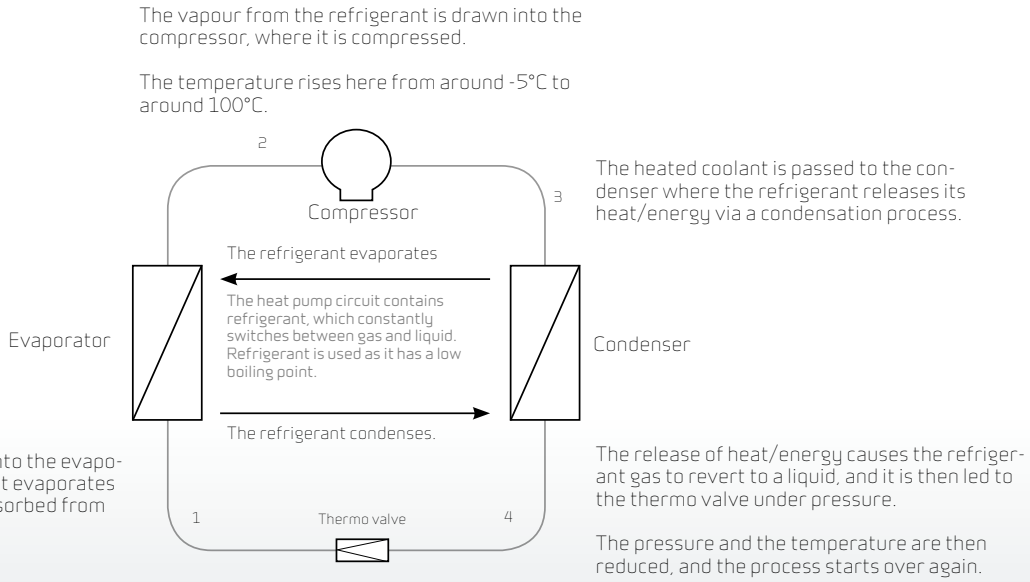
In the world of ventilation, there are certain principles and methods you need to know about. You will find an explanation of the most important ones below.

**What is ventilation with heat recovery?**
A ventilation unit with heat recovery extracts the hot, humid air out of kitchen, bathrooms and utility room, and draws fresh air into all living areas. Via a heat exchanger, counterflow heat exchanger or heat pump, the energy is recovered in the warm, humid air drawn out of the property. The energy is transferred to the fresh air, which is then drawn in again.

**What is active heat recovery?**
Active heat recovery takes place via a heat pump. Broadly speaking, a heat pump consists of an evaporator and a condenser. The energy in the warm air extracted from the home is taken up by the evaporator before the air is led outside. The condenser then transfers the energy from the evaporator to the cold supply air before it is streamed into the property, thereby avoiding heat loss.

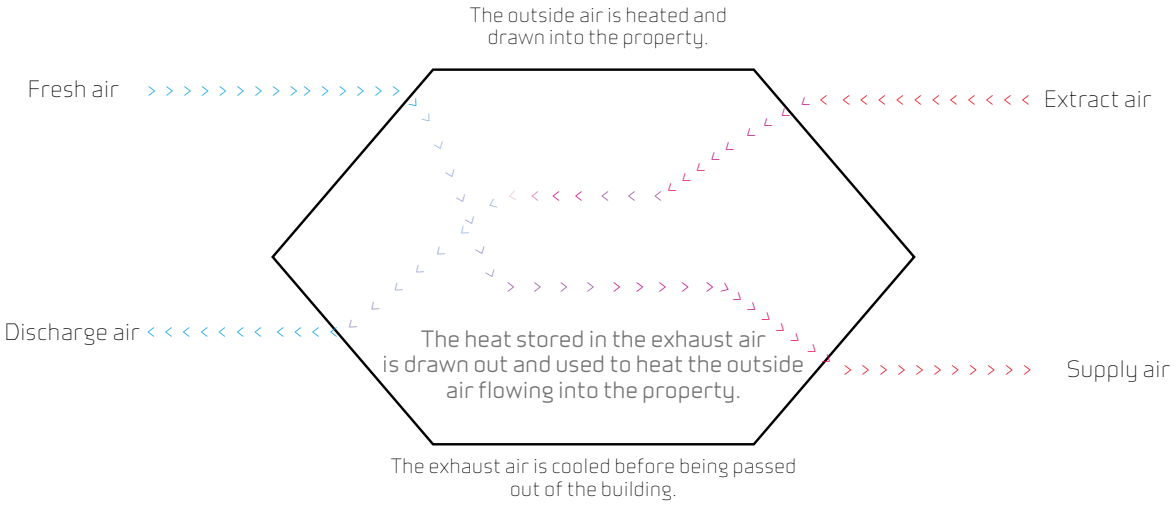
Active heat recovery is optimal in several contexts, as the heat pump can be combined with the production of sanitary water for your home. What's more, active heat recovery makes it possible to cool the supply air actively through the reversible cooling circuit, which can switch between heating and cooling, depending on the time of year. Read more about cooling on page 7.

With active heat recovery, the efficiency of the unit is assessed on the basis of a COP value. The COP value indicates how many kilowatts of electricity the unit gives back for every kilowatt of electricity it uses.



**What is passive heat recovery?**
Passive heat recovery takes place via a counterflow heat exchanger. Here, the heat recovery works by the warm humid exhaust air being passed close by the fresh outdoor air in the heat exchanger. As they pass each other, the energy is transferred from the exhaust air to the fresh outdoor air. In summer, with this type of heat recovery, there is the possibility of bypass cooling. Read more about this in the next section.

With passive heat recovery, the efficiency of the unit is assessed on the basis of the level of temperature efficiency, which is a measure of how efficiently the energy in the exhaust air is being utilised. The level of temperature efficiency is not constant throughout the year, as it depends on the volume of air, indoor and outdoor temperatures and humidity levels in the exhaust air.




**Cooling with your ventilation unit**
Cooling with a ventilation unit cannot be compared to an air conditioning unit as the air exchange with a ventilation unit is too low. Air exchange with a ventilation unit is half a time on a hourly basis, whereas, with an air conditioner, it is 7–8 times an hour.

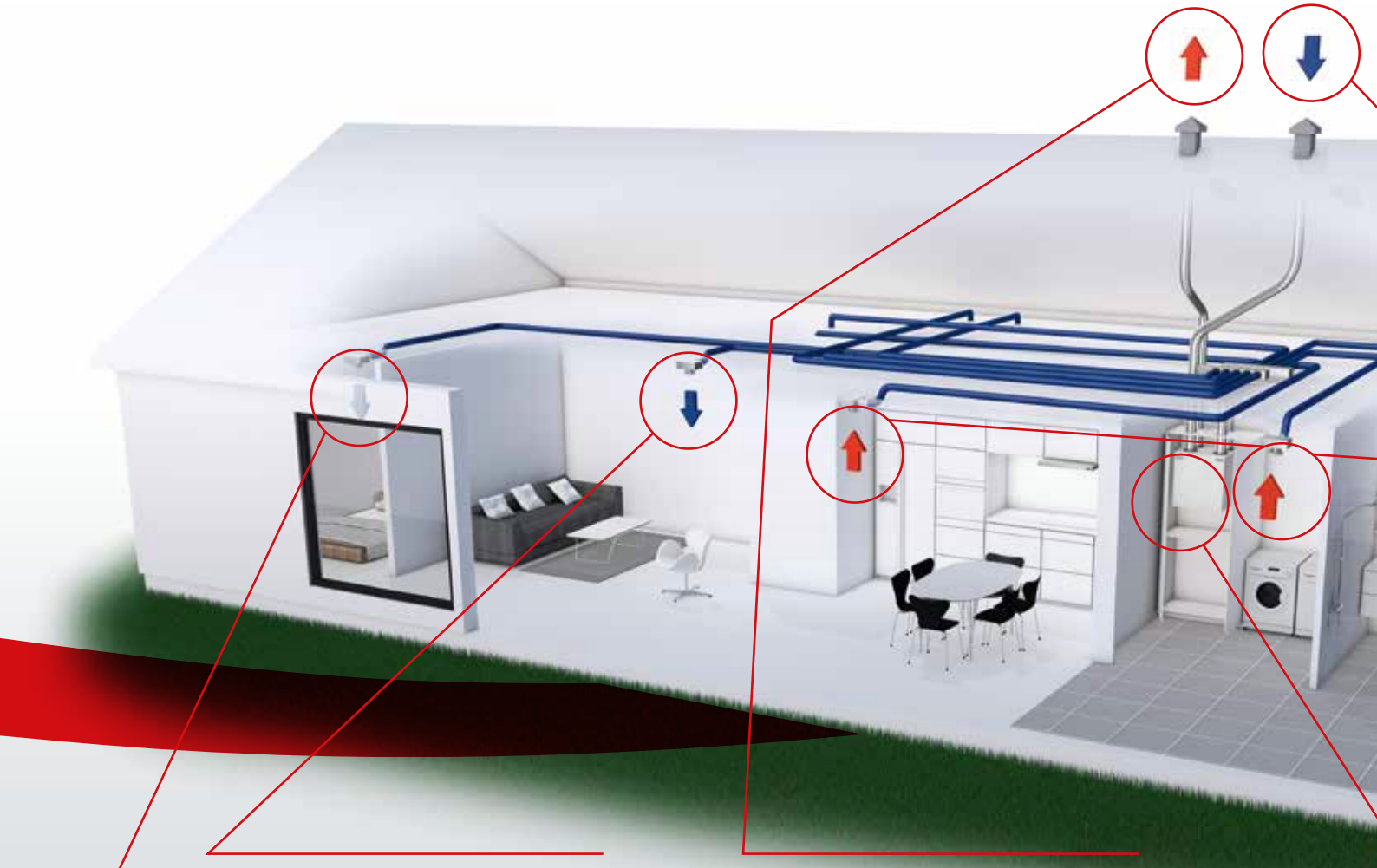
**Passive and bypass cooling**
In units with a counterflow heat exchanger, the supply air can be cooled in two ways. (1) One way is heat recovery on cooling via the counterflow heat exchanger. This is possible when the outside air is warmer than the indoor air. The unit uses exhaust air to cool the outside air via the counterflow heat exchanger before the outdoor air is drawn into the property. The outdoor air cannot be cooled down to a temperature lower than the indoor temperature. (2) The other way is bypass cooling, which is possible when the outside air is cooler than the indoor air. Here, via a bypass damper, the outside air is led past the counterflow heat exchanger, then it is not being heated by the exhaust air. The outdoor air is heated slightly through the unit and the duct unit, as both are heated during the day. The unit's motors also emit heat.

**Active cooling**
Units with a heat pump can cool the supply air more actively, but do not function like an air conditioning unit either due to the low exchange of air. The heat pump can cool the supply air by up to 10–12 °C. The main characteristic of cooling is that the unit dehumidifies the air drawn into the property, which makes it feel colder and therefore more pleasant.

# VENTILATION SOLUTIONS

A ventilation solution ensures you a healthy indoor climate with fresh air around the clock. If you dream of a fresher, healthier and far more comfortable indoor climate, a ventilation unit is the natural choice. This energy-friendly unit replaces the stale, humid air in your home with fresh, temperate and filtered air. This means that dust particles, house mites and odours are removed – and pollen is prevented from penetrating the home. The risk of developing irritations or allergies in the form of asthma, hay fever and other adverse effects is also reduced. This is healthy for both you and your family.

Nilan offers a wide range of ventilation units; ventilation units with active and passive heat recovery and a combination thereof. We operate with three ranges of ventilation units.



**Cooled supply air (VPL & Combi)**
Fresh, filtered and cooled air is drawn into all living areas in the home to give a healthy and comfortable indoor climate during the warm summer months.

**Discharge air**
When the ventilation unit has recovered the energy from the extract air, the stale and humid air is discharged from the home.

**Heated supply air (VPL & Combi)**
Fresh, filtered and heated air is drawn into all living areas in the home to give a healthy and comfortable indoor climate during the cold winter months.

**Supply air**
Fresh, filtered and temperate air is drawn into all living areas in the home to give a healthy and comfortable indoor climate around the clock.

## The Comfort range

The Comfort range consists of a number of units, all with a counterflow heat exchanger that can replace up to 525 m³/h. A Comfort unit is for people who want a simple ventilation solution that delivers fresh, filtered air indoors.

The Comfort unit can be fitted with an electric heating surface, which is connected to the electricity or central heating unit. This gives you a comfortable supply air temperature, even in the coldest winter months.

## The VPL range

The VPL range consists of a number of ventilation units, all with a heat pump that can replace up to 1,000 m³/h. A VPL unit is for people who want a more advanced ventilation solution. As a VPL unit has a heat pump and not a counterflow heat exchanger, it can both cool and heat the supply air. As a VPL unit is equipped with a heat pump, the unit's COP value must be looked at to assess its efficiency. The COP value indicates how many kilowatts of electricity the VPL unit gives back for every kilowatt of electricity it uses.

A filter unit, with a built-in heat pipe, can be purchased for the VPL unit, which can further boost heat recovery – for free! The heat pipe increases the heat effect by up to 40% in the cold season – without using extra electricity.

## Combi Polar range

Combi Polar are ventilation units with both a counterflow heat exchanger and heat pump. The units can replace 350 - 430 m³/h. Combi Polar is for those looking for an advanced ventilation solution. As Combi Polar is equipped with both a heat pump and a counterflow heat exchanger, the supply air can be cooled and heated via the reversible cooling circuit. Combi Polar recovers the energy from the extracted air using a highly efficient counterflow heat exchanger. The residual energy not used by the counterflow heat exchanger is used by the heat pump for additional heating or cooling of the supply air.

Combi Polar has a built-in pre-heating element for frost protection of the counterflow heat exchanger during the cold periods of the year, ensuring stable operation of the unit all year.

**Fresh air**
An air valve in the facade or roof of your home draws in fresh air and channels it on to the ventilation unit.

**Ventilation unit**
The unit regulates the air flows and heat recovery and exchanges the air inside the home.

**Extract air**
Stale and humid air is extracted from the home via ceiling valves in all wet rooms and in the kitchen.

# COMFORT RANGE

## Comfort CT150-CT200

The Comfort CT150-CT200 unit's compact design makes it ideal for use in new and refurbished flats, terraced housing and holiday homes, where space is limited and easy fitting is required. The unit can be installed in the ceiling and on the wall, and the mounting rail supplied makes installation easy. Comfort CT150 is Passive House certified.


**Comfort CT150**

| | |
|---|---|
| Air volume | 175 $m^3/h$ |
| SEC | -42,7 $kWh/(m^2.a)$ |
| Temperature efficiency | 92 % |
| SEL | 0,16 $W/(m^3/h)$ |
| Sound data | 49 dB (A) |
| Dimensions (W x D x H) | 1000 x 524 x 333 mm |
| Weight | 30 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |


**Comfort CT200**

| | |
|---|---|
| Air volume | 200 $m^3/h$ |
| SEC | -41,5 $kWh/(m^2.a)$ |
| Temperature efficiency | 91,3 % |
| SEL | 0,209 $W/(m^3/h)$ |
| Sound data | 49 dB (A) |
| Dimensions (W x D x H) | 1000 x 524 x 333 mm |
| Weight | 30 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

## Comfort CT300

The unit is certified for passive houses and does already live up to the forthcoming and more toughen Danish 2020-requirements regarding heat recovery and energy consumption. The unit is perfect for all types of low-energy buildings with a ventilation requirement of up to 400 $m^3/h$. Comfort CT300 is a top models for installation in a utility room, either inside a cupboard or on the wall. Comfort CT300 is also available in a Polar-version with a built-in defrosting element, which ensures a quick defrosting of the counter flow heat exchanger after it has built up ice.


| | |
|---|---|
| Air volume | 400 $m^3/h$ |
| SEC | -40,0 $kWh/(m^2.a)$ |
| Temperature efficiency | 87 % |
| SEL | 0,22 $W/(m^3/h)$ |
| Sound data | 46 dB (A) |
| Dimensions (W x D x H) | 715 x 583 x 1000 mm |
| Weight | 59 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

## Passive House Certification

A Passive House Certification means that the unit is pre-approved for passive buildings, so no further documentation is required. Passive House certified units are tested according to uniform criteria and meet strict energy requirements.

# COMFORT RANGE

## Comfort 300-450

The Comfort 300-450 units, which have been designed for ceiling installation, are suitable for homes with air replacement requirements of up to 525 m³/h. An integrated humidity sensor ensures optimum air replacement according to the humidity of the air in the house. In the summer, the units are able to lead the fresh air around the heat exchanger (bypass).


### Comfort 300LR

| | |
|---|---|
| Air volume | 400 m³/h |
| SEC | -38,9 kWh/(m².a) |
| Temperature efficiency | 87 % |
| SEL | 0,27 W/(m³/h) |
| Sound data | 37 dB (A) |
| Dimensions (W x D x H) | 1000 x 508 x 560 mm |
| Weight | 33 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water* |

* Water heating element is integreted in the unit


### Comfort 450

| | |
|---|---|
| Air volume | 450 m³/h |
| SEC | -39,8 kWh/(m².a) |
| Temperature efficiency | 86 % |
| SEL | 0,22 W/(m³/h) |
| Sound data | 48 dB (A) |
| Dimensions (W x D x H) | 1100 x 650 x 640 mm |
| Weight | 70 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

# COMFORT RANGE

## Comfort 200 Top

Comfort 200 Top is a system with compact dimensions and with a depth of only 42 cm makes the system suitable for refurbishing projects..


| | |
|---|---|
| Air volume | 308 $m^3/h$ |
| SEC | -38,1 kWh/($m^2$.a) |
| Temperature efficiency | 89 % |
| SEL | 0,33 W/($m^3$/h) |
| Sound data | 56 dB (A) |
| Dimensions (W x D x H) | 600 x 420 x 650 mm |
| Weight | 41 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

## Comfort 252 Top

Comfort 252 Top is a system with compact dimensions that can be built into a cabinet with a width of 60 cm.


| | |
|---|---|
| Air volume | 253 $m^3/h$ |
| SEC | -42,3 kWh/($m^2$.a) |
| Temperature efficiency | 91 % |
| SEL | 0,17 W/($m^3$/h) |
| Sound data | 43 dB (A) |
| Dimensions (W x D x H) | 562 x 585 x 1118 mm |
| Weight | 41 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

## Comfort 302 Top

Comfort 302 is a system with compact dimensions that can be built into a cabinet with a width of 60 cm.


| | |
|---|---|
| Air volume | 345 $m^3/h$ |
| SEC | -40,4 kWh/($m^2$.a) |
| Temperature efficiency | 88 % |
| SEL | 0,22 W/($m^3$/h) |
| Sound data | 47 dB (A) |
| Dimensions (W x D x H) | 562 x 585 x 1118 mm |
| Weight | 41 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

# COMBI POLAR

## Combi Polar

Combi Polar combines the best from the Comfort and VPL range. Combi Polar combines two heat recovery techniques, where the unit first recovers 85-90 % of the heat via the highly efficient counter flow exchanger. The residual energy is recovered via the unit's heat pump, which is able to both heat and cool the supply air.

The heat pump also makes it possible to cool the supply air in the summer by up to 12 °C. Due to the low air exchange, this does not function as an air conditioning unit, but cooling the supply air reduces its humidity, giving a more pleasant and comfortable climate inside the home, even when the indoor temperature is high.

### Combi 302 Polar

| | |
|---|---|
| Air volume | 350 m³/h |
| Temperature efficiency | 90 % |
| COP air/air | > 4 |
| Sound data | 57 dB (A) |
| Dimensions (W x D x H) | 1300 x 580 x 700 mm |
| Weight | 83 kg |
| Heating element | Not necessary |

### Combi 302 Polar Top

| | |
|---|---|
| Air volume | 430 m³/h |
| Temperature efficiency | 94 % |
| COP air/air | > 4 |
| Sound data | 46 dB (A) |
| Dimensions (W x D x H) | 900 x 604 x 700 mm |
| Weight | 85 kg |
| Heating element | Not necessary |

### Combi S 302 Polar Top

| | |
|---|---|
| Air volume | 375 m³/h |
| Temperature efficiency | 84 % |
| COP air/air | > 4 |
| Sound data | 46 dB (A) |
| Dimensions (W x D x H) | 600 x 600 x 1015 mm |
| Weight | 87 kg |
| Heating element | Not necessary |

# VPL RANGE

## VPL 15-28

The VPL 15 unit is designed for attic installation and is suitable for homes and apartments with air exchange requirements of up to 325 $m^3$/h. VPL 15 comes with built-in plate and pollen filter.

The VPL 28 unit is a attic model that exchange air with up to 1,000 $m^3$/h and is suitable for large homes or small offices and institutions with large air exchange requirements. The plate filter is installed externally in the duct set or in the heat pipe (see page 15).

**VPL 15**

| | |
|---|---|
| Air volume | 325 $m^3$/h |
| COP (air/air) | > 4 |
| Dimensions (W x D x H) | 750 x 415 x 680 mm |
| Weight | 54 kg |

**VPL 28**

| | |
|---|---|
| Air volume | 1,000 $m^3$/h |
| COP (air/air) | > 4 |
| Dimensions (W x D x H) | 700 x 570 x 765 mm |
| Weight | 65 kg |

## VPL 15 Top M2

The VPL 15 Top M2 unit is designed for installation in a cupboard or on a wall and is suitable for anyone who wants to keep the unit close at hand. The unit is suitable for homes with air exchange requirements of up to 325 $m^3$/h. VPL 15 Top M2 comes with built-in plate and pollen filter.

| | |
|---|---|
| Air volume | 400 $m^3$/h |
| COP (air/air) | > 4 |
| Dimensions (W x D x H) | 600 x 600 x 710 mm |
| Weight | 64 kg |

# NILAN APP

## Control your ventilation system and heat pump directly from your mobile phone

Nilan has developed a new APP with smart functions that allow the user to control the ventilation system and heat pump in their home directly from a mobile phone. The APP is intuitive, and easy and safe to use. It enables the user to set e.g. room temperature. You can connect multiple ventilation units to the same APP so you can control the indoor climate in, for instance, your home as well as your holiday home. You can attach multiple users to the same APP.

### Easy to set up, easy to use

When the ventilation system is connected up to the internet via a Nilan gateway, you will be able to control the unit remotely by using Nilan User APP. It can be downloaded for free to your mobile phone. The APP is available from both APP Store and Google Play. Using a LAN connector, you connect up the gateway to the Modbus of the unit and then to the user's internet router via a LAN or a WiFi connection. This creates a secure cloud connection between the unit and the smartphone.

### Quick and useful overview

With the APP, you can follow the operation of the unit and adjust user settings on the ventilation unit for e.g. room temperature, fan speed level and the humidity control system. Importantly, the APP also shows when filters next need replacing, and it notifies you if an alarm is triggered, for instance when a filter is due to be replaced.

All existing units with a CTS602 control system can be controlled via the Nilan User APP. It requires the ventilation unit to be connected to the internet via a Nilan gateway (the gateway is available for LAN or WiFi connection). A few units will require a software update in order for the users to get full benefit from the APP. The brand new CTS400 control system enables you to use the APP. Most units for private and commercial use therefore enable you to use the APP.

# ACCESSORIES

You can get more out of your Nilan unit with the addition of various optional accessories. Some increase the comfort of your home, while others are primarily designed to protect your unit and ensure continuous operation. Not all accessories are compatible with all units. Contact your nearest dealer to find out what accessories can be used with your particular ventilation unit, or read more about the various products at www.nilan.dk.

## Pre-heating element

With a pre-heating element, the outdoor air is pre-heated before it is drawn into the unit. The pre-heating element ensures the continuous operation of the unit, as the unit does not have to be defrosted as a result of the formation of ice in the counterflow heat exchanger. Ice forms during extended periods of frost, as the exhaust air condenses when it is cooled during heat recovery. Due to the high temperature efficiency, the condensation is slowly converted into ice, which blocks the counterflow heat exchanger.

In the absence of a pre-heating element, the unit will defrost the counterflow heat exchanger if ice forms. While defrosting takes place, cold air will be led into the property in the absence of a heating element.

The modulating pre-heating element does not run at maximum output, but adapts to requirements, i.e. it uses only the necessary amount of energy. The pre-heating element can be built into the duct set.

The example below shows the energy used to frost protect versus defrosting.

| Air volume | 126 m³/h | 216 m³/h |
|---|---|---|
| Frost protection when outside temperature is | -2 °C | -2 °C |
| Hours during the year | 676 | 676 |
| Energy used to frost protection via pre-heating | 107 kWh/year | 183 kWh/year |
| *Loss of energy when icing* | *105 kWh/year* | *180 kWh/year* |
| *Loss of energy when deicing* | *200 kWh/year* | *343 kWh/year* |
| **Energy savings by using frost protection** | **198 kWh/year** | **340 kWh/year** |

Average calculation by Danish dry weather data.

*The energy used for a pre-heating element is not wasted, because it ensures a constant heat recovery.*

## Filters

To protect the unit, it must be fitted with at least one filter.

The G4 (ISO Coarse >65%) filter protects the unit against dust and other particles. The G4 (ISO Coarse >65%) filter is a coarse filter.

The M5 filter protects the unit against dust and other particles. The M5 (ISO ePM10 >50%) filter is a medium-fine filter.

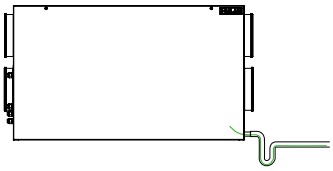
The F7 (ISO ePM1 50-65%) filter protects you and your family from the pollen that enters your home. It is only necessary to install a pollen filter in your unit if you or someone in your family suffers from a pollen allergy.

## Electrical heating element

With a heating element, the temperature of the supply air into the property can be further increased. Either a water heating element or an electric heating coil can be fitted. The water heating element is recessed in ceiling models and mounted in the duct in the case of top-models. The water heating element is connected to the primary heat supply. The electrical heating element is mounted in the duct.

## Installation kit

The installation kit consists of vibration dampers and a water trap for the condensation drain. The ball in the water trap also prevents false air from entering the unit. Both the vibration dampers and the water trap can be ordered separately.



## Heating cable

To protect the condensation outlet against frost, a 3 metre-long self-regulating heating cable can be ordered.

## $CO_2$-sensor

With a $CO_2$-sensor installed, the ventilation speed can be pre-programmed with CTS 602 to run at a higher ventilation steps when $CO_2$ reaches high level in the extract air. $CO_2$-level is programmable. Read more about demand control via $CO_2$ on page 4.

## Expansion PCB

The expansion PCB provides extra functions for the CTS 602 control unit. May be necessary in some cases in order to use extra functions.

## EM-box

An EM-box allows heat recovery from the air from the range hood and thereby helps to heat the supply air. The EM-box is equipped with a steel filter which efficiently cleans the range hood air of fat particles and thereby protects the unit.

## Nilan APP

Control the ventilation system and heat pump in your home directly from your mobile phone. The APP is intuitive, and easy and safe to use. It enables the user to set e.g. room temperature. You can connect multiple ventilation units to the same APP so you can control the indoor climate in, for instance, your home as well as your holiday home. The CTS602 and CTS400 control systems enables you to use the APP.

# VENTILATION & SANITARY HOT WATER

A ventilation unit with a built-in hot water tank can ventilate your home, heat the fresh supply air and produce sanitary hot water, giving you a healthy indoor climate and lower heating bills in one solution. When a home is ventilated by the unit, the energy from the extracted air is reused to heat the fresh air flowing into the home. A constant temperature can thus be maintained. VP 18 M2 is also available in a version with comfort cooling (this is standard with Compact P), which cools the supply air in the summer months, ensuring a pleasant indoor temperature all year round.

The effective heat recovery function of the unit means that, besides heating the supply air, your home also has an optimum supply of hot water.

## Compact P

Compact P ventilates your home via passive and active heat recovery. Compact P is intended for homes with a ventilation requirement of up to 300 $m^3$/h. Compact P recovers the energy from the extracted air using a highly efficient counter flow heat exchanger. The remaining energy that is not utilised by the counter flow heat exchanger is used by the heat pump to produce hot water, and to further heat the supply air.

The Compact P is a modular system that offers not only one but several solutions, thus enabling you to select the solution most suitably proportioned to match the size of your house and accommodate the requirements of your family.

## VP 18 M2

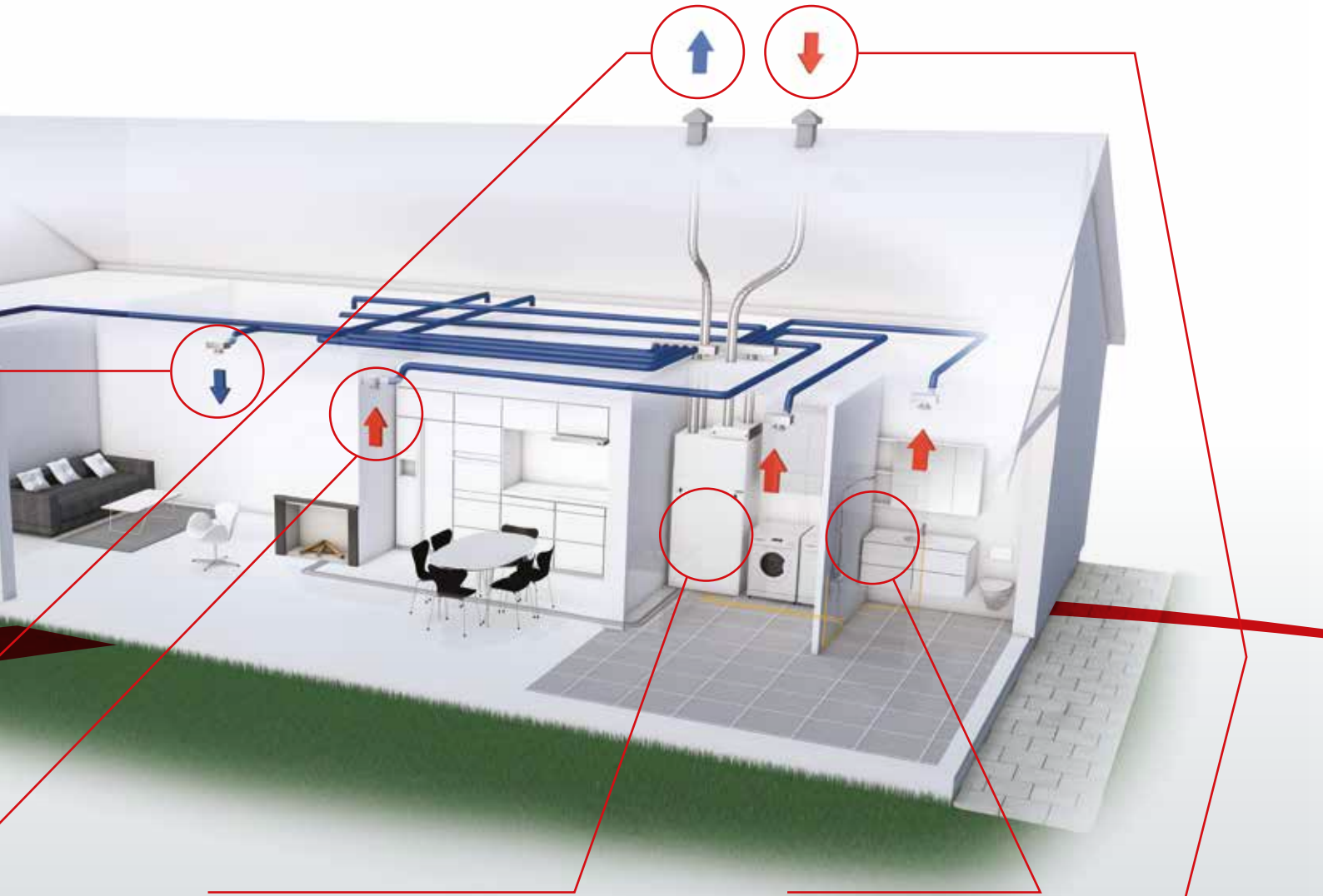
VP 18 M2 ventilates your home via active heat recovery. VP 18 M2 is intended for use in homes with a ventilation requirement of up to 300 $m^3$/h. Residual energy not used for ventilation or to heat the supply air is used for the production of sanitary hot water. VP 18 M2 is available in a version offering the possibility of cooling the supply air.

In the VP 18 M2, all functions are gathered in one solution, so that the unit takes up no more space than a wall cupboard. This is a space-saving solution compared to traditional solutions with separate ventilation, heating and sanitary hot water installations that require a special technical room.

**Supply air**
Fresh, filtered and temperate air is drawn into all living areas in the home to give a healthy and comfortable indoor climate around the clock.

**Discharge air**
When the unit has recovered the energy from the extract air, the stale and humid air is discharged from the home.

**Extract air**
Stale and humid air is extracted from the home via ceiling valves in all wet rooms and in the kitchen.



**Nilan unit**
The unit regulates the air flow, heat recovery and production of hot water. The unit can be placed in a utility or plant room.

**Sanitary hot water**
The unit recovers the energy from the outgoing air and uses it to produce sanitary hot water.

**Fresh outdoor air**
An air valve in the facade or roof of your home draws in fresh air and channels it on to the unit.

# COMPACT P / COMPACT S

Compact P is intended for installation in a utility room or plant room. Compact P is a compact total solution that does not take up more space than an American refrigerator. Compact P is suitable for use in residential housing with a ventilation requirement of up to 300 m³/h. Compact P comes with a built-in plate and pollen filter.

Compact P ventilates the home, ensuring a good indoor climate. While also producing hot water. Compact P is an untraditional ventilation unit that, in contrast to other ventilation units, recovers 100% of the heat in the extracted air. Via a counter flow heat exchanger, up to 95 % of the energy in the extracted air is used to heat the supply air. The built- in heat pump uses the remaining energy to further heat the supply air, while also producing hot water.

As only one of very few compact ventilation and heating solutions in the world, Compact P from Nilan has received the internationally recognised Passive House Certification – as an unquestionable recognition of the environmental benefits it stands up to due to its high effectiveness. The certification means that the Compact P is preapproved for passive housing without any additional documentation ever being needed.

Compact P is also available in a Polar version with built-in pre-heating element, to protect the heat exchanger from ice.

Compact S has the same functions as Compact P but has other dimensions.



**Compact P**

| | |
|---|---|
| Air volume | 300 m³/h |
| Temperature efficiency | up to 94 % |
| COP (air/air) | > 4 |
| Capacity hot-water tank | L (large) 1081 kWh/annum |
| Sound data | 46 dB (A) |
| Dimensions (W x D x H) | 900 x 610 x 2065 mm |
| Weight | 202 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

**Compact P XL**

| | |
|---|---|
| Air volume | 400 m³/h |
| Temperature efficiency | up to 94 % |
| COP (air/air) | > 4 |
| Capacity hot-water tank | XL (x-large) 1081 kWh/annum |
| Sound data | 51 dB (A) |
| Dimensions (W x D x H) | 900 x 610 x 2065 mm |
| Weight | 202 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

**Compact S**

| | |
|---|---|
| Air volume | 375 m³/h |
| Temperature efficiency | up to 84 % |
| COP (air/air) | > 4 |
| Capacity hot-water tank | L (large) 852 kWh/annum |
| Sound data | 46 dB (A) |
| Dimensions (W x D x H) | 600 x 600 x 2250 mm |
| Weight | 160 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

# VP 18 M2

The VP 18 M2 unit is designed for installation in utility or technical rooms and is suitable for homes with an air exchange requirement of up to 300 m³/h. The unit combines ventilation with active heat recovery, production of sanitary hot water and comfort heating, in one compact, space-saving indoor climate solution.

VP 18 M2 is the obvious choice for homes with limited space, as it does not require more space than an ordinary wall cupboard. This should be compared to solutions with separate ventilation, heating and hot water installations, which can fill up a utility or technical room.

VP 18 M2 is also available in a version that can cool the supply air.


| | |
|---|---|
| Air volume | 325 m³/h |
| COP (air/air) | > 3,6 |
| Capacity hot-water tank | L (large) 852 kWh/annum |
| Sound data | 57 dB (A) |
| Dimensions (W x D x H) | 600 x 600 x 2000 mm |
| Weight | 150 kg |
| Pre-heating element | Electrical |
| Heating element | Electrical or water |

# TOTAL SOLUTION

A total solution from Nilan combines five functions in one compact unit: Ventilation with heat recovery, comfort heating, comfort cooling, production of sanitary hot water and heating of your home. The result is a pleasant, well-ventilated and healthy indoor climate while saving money on your heating bill.

Nilans total solutions are based on renewable energy, and the system's main operating principle is to use as little energy as possible and get the most out of what is already in play. The more heat your choice of solution is able to produce and maintain, the less you depend on traditional energy sources, thus curbing the $CO_2$ emission and reducing the exploitation of traditional energy reserves at the same time.

### Compact P AIR 9

When you install a Compact P AIR 9, your home will become self-sufficient in sustainable energy and it will no longer be necessary to use other sources of energy, such as district heating, oil or gas, to heat your home. The Compact P AIR 9 is the eco-friendly choice for anyone who wishes to exploit sustainable sources of energy to heat their homes and at the same time reap the benefits in the form of lower heating bills and a good, healthy indoor climate.

The system is equipped with an outside air heat pump, AIR 9 Compact, which, in contrast to the system itself, is set up outside. The heat pump absorbs the energy in the outside air and coverts this energy into heat that is used to heat water in your central heating system, which is then pumped to the radiators or underfloor heating in your home.

The Compact P AIR 9 solution can reduce your heating bill by up to 50%. For each kW power used by the outside air heat pump, you get more than five times as much heat in return. Read more on page 24-25.

### Compact P GEO 3/6/9

Compact P GEO has the same features and benefits as the Compact P, but can also use the energy stored in the ground to heat your home.

With the Compact P GEO will your home be self-sufficient with renewable energy, and it is no longer necessary to use energy sources such as district heating, oil or gas for heating. Compact P GEO is an environmentally responsible choice for those who want to use renewable energy for heating of the home and at the same time use the benefits in the form of markedly lower heating bills and a good and healthy indoor climate.

With help from ground pipes Compact P GEO uses and exploits the energy stored in the ground to heat your home using underfloor heating or other heating solutions at low temperatures. The system has an integrated 3 kW (Compact GEO 3), 6 kW (Compact P GEO 6) or 9 kW (Compact P GEO 9) geothermal pump. All have a variable compressor which can be regulated 0.5-3 kW, 1-6 kW and 1,5-9 kW. This means that the solution adapts the need for heating, thus ensuring low power consumption.

Compact P GEO solution can reduce your heating bill by up to 50%. For each kW of electricity the geothermal heat pump uses, you will get more than five kW back.

GEO 3, GEO 6 and GEO 9 are geothermal heat pumps that have a high output and low energy consumption compared to their size. Read more on p. 26-27.

## VP 18 M2 EK

If you choose a VP 18 M2 EK unit you will get all the functions and options from the VP 18 M2 unit, but also built-in cooling and heating function of your home. The unit has a built-in 9-kW electric boiler that can be connected to a hydronic central heating unit, using electricity to heat the home. Learn more on page 28-29.


| | |
|---|---|
| Air volume | 300 m³/h |
| Temperature efficiency | 40 % (D) |
| Capacity hot-water tank | 180 L |
| Dimensions (W x D x H) | 600 x 600 x 2,200 mm |
| Weight | 150 kg |

## Compact P AIR / GEO /EK

The Compact P unit can be connected to a central heating unit, thereby providing electrical heating to the home. Read more on p. 28-29.


A+++

### Compact P AIR 9 - Air/water heat pump

| | |
|---|---|
| Heat output | 8.7 kW |
| SCOP | 5.11 (A+++) |
| Dimensions outside part (W x D x H) | 962 x 542 x 1,301 mm |

A+++

### Compact P GEO 3/6/9 - Geothermal pump

| | |
|---|---|
| Heat output | 3/6/9 kW |
| SCOP GEO 3 | 5.17 (A+++) |
| SCOP GEO 6 | 5.15 (A+++) |
| SCOP GEO 9 | 5.49 (A+++) |

D

### Compact P EK - Electrical boiler

| | |
|---|---|
| Temperature efficiency | 40 % (D) |
| Heat output | 3/6/9 kW |
| Weight | 21 kg |

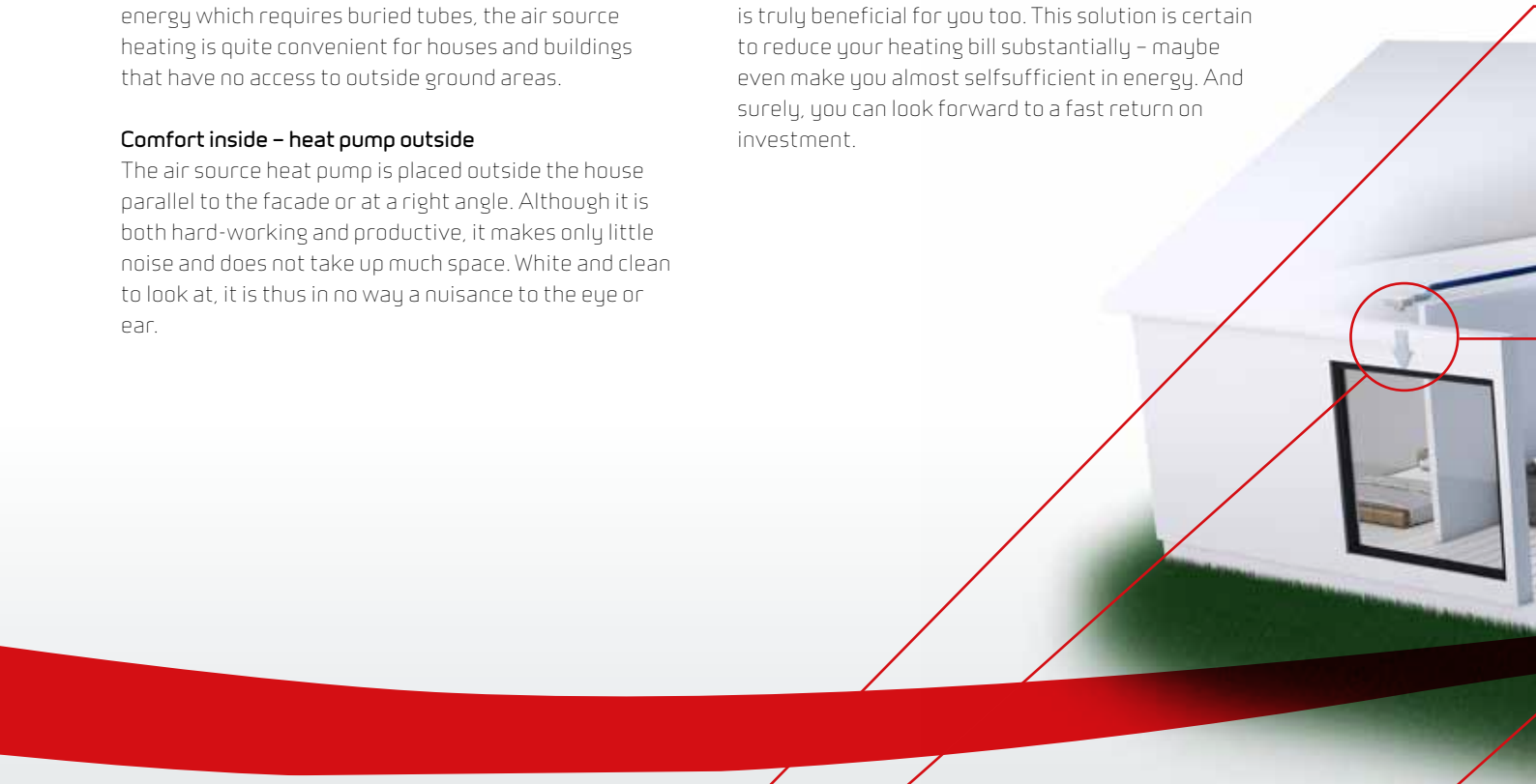
# COMPACT P AIR 9

When the basic Compact P system is supplemented with an air source heat pump, it becomes a total heating solution. It has the same benefits and features as the Compact P on its own – and then some, because it is able to take over the central heating of the house too. The air heat pump extracts the energy from the outdoor air and converts it to heating of the water for the underfloor heating system that heats up the entire house and maintains a constant and pleasant room temperature.

**Get up to 8 kW of heat for free**
An air source heat pump is useful everywhere. The outdoor air always contains energy, and for each kW of electricity that the air source heat pump consumes, it returns more than five times as much energy as heat. As the alternative to air-based energy is ground-based energy which requires buried tubes, the air source heating is quite convenient for houses and buildings that have no access to outside ground areas.

**Comfort inside – heat pump outside**
The air source heat pump is placed outside the house parallel to the facade or at a right angle. Although it is both hard-working and productive, it makes only little noise and does not take up much space. White and clean to look at, it is thus in no way a nuisance to the eye or ear.

**Fast return on investment**
The Compact P AIR 9 solution with an air source heat pump is a great investment in the future. It uses renewable energy to produce heat to the benefit for the environment as it eases the strain on traditional energy resources and reduces the $CO_2$ emission. However, it is truly beneficial for you too. This solution is certain to reduce your heating bill substantially – maybe even make you almost selfsufficient in energy. And surely, you can look forward to a fast return on investment.



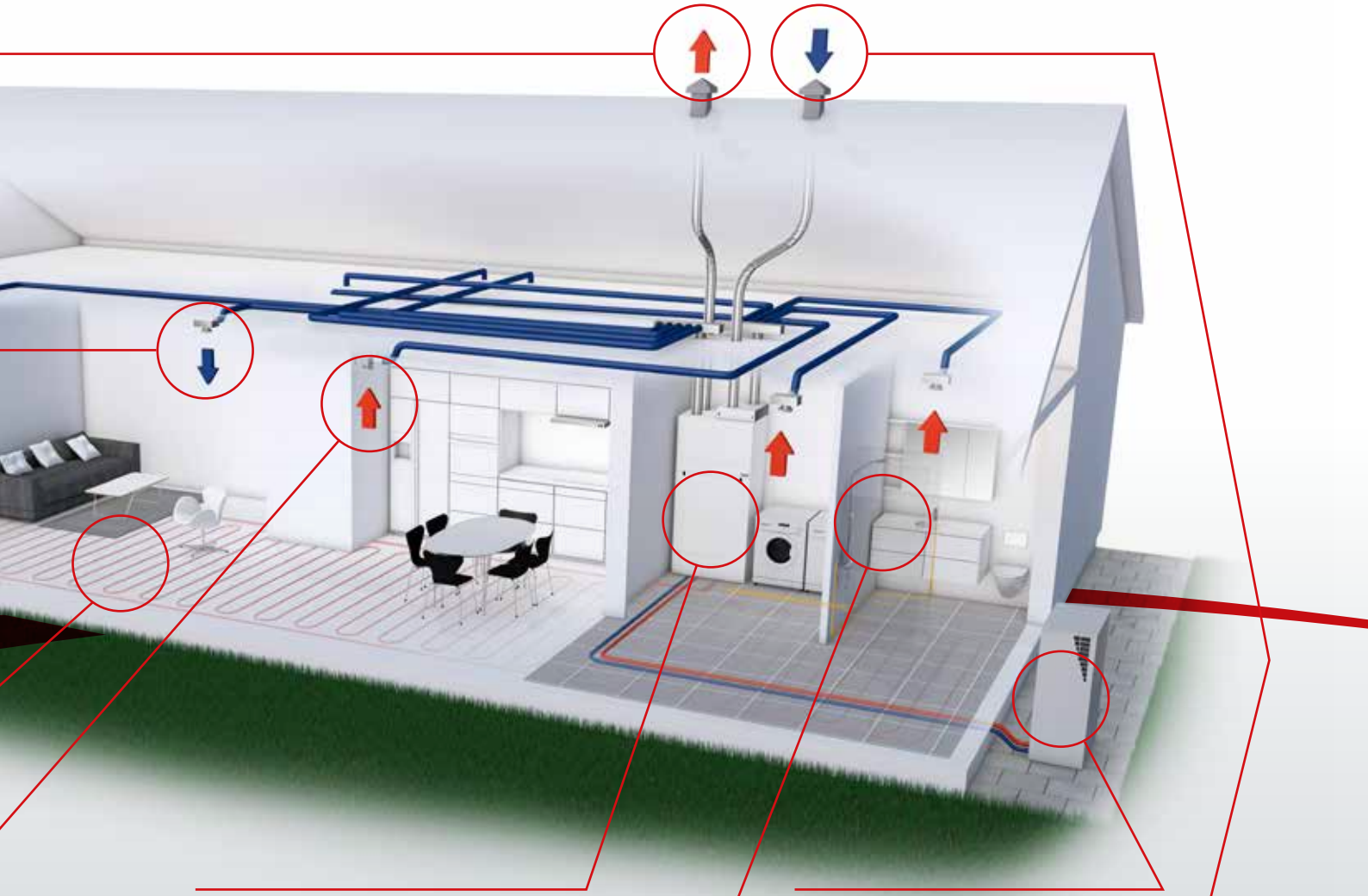
**Discharge air**
When the Compact system has recovered the energy from the extract air, the stale and humid air is discharged from the home.

**Underfloor heating**
The central heating water from the Compact P AIR 9 system is used for heating using a hydronic underfloor heating system.

**Supply air**
Fresh, filtered and temperate air is drawn into all living areas in the home to give a healthy and comfortable indoor climate around the clock.

**Extract air**
Stale and humid air is extracted from the home via ceiling valves in all wet rooms and in the kitchen.

## Compact P AIR 9

**Compact P AIR 9 system**
The system regulates the air flow, heat recovery, production of hot water and heating of the home using a built-in air heat pump. The system can be placed in a utility or plant room.

**Sanitary hot water**
Compact P AIR 9 recovers the energy from the outgoing air and uses it to produce hot water.

**AIR Compact**
The air source heat pump extracts the energy in the outdoor air and transfers it to the Compact P AIR system where the energy is used to heat the water for the central heating system.

**Fresh air**
An air valve in the facade or roof of your home draws in fresh air and channels it on to the Compact P system.

# COMPACT P GEO

A Compact P GEO system with built-in ground source heat pump ensures very reliable heating of the home as well as a constant and pleasant room temperature. On top of that, the solution is one of the most energy-friendly heat supplies you can get. A ground source heat pump absorbs the energy stored in the ground and converts it into heat that does both the environment and your pocket a favour.

**Get up to 5 kW of heating for free**
The ground source heat pump has the same energy benefits as the air source heat pump. For each kW of electricity the pump uses, it gives more than five times as much energy back again. This means that you are able to reduce your heating bill substantially if you are currently using traditional forms of heating such as a gas or oil-fired boiler. The ground source heat pump, however, requires a larger outdoor area than the air source heat pump due to the pipes that need to be buried in the ground. On the other hand, the pipes are invisible when they have been installed. The ground source heat pump itself is integrated into the Compact P cabinet so that it does not take up additional space in the plant or utility room.

**Matches all heating requirements**
Irrespective of the size of your home, there is a Compact P GEO solution to match your heating requirements. Choose between a 3 kW, 6 kW and 9 kW ground source heat pump. All have a variable compressor so the output continuously can be adapted to current needs with a range of 0.5-3 kW, 1-6 kW and 1,5-9 kW respectively. The heat pump therefore never uses more energy than necessary and meets all the varying heating requirements of the home – all year round.

**The most energy-efficient solution**
By combining Compact P with a ground source heat pump, you achieve the most efficient utilisation of an extremely energy-efficient renewable energy source. The temperature in the ground is almost constant all year round (6-8 °C) and therefore always delivers the same stable amount of energy. This means that it is the most long-term investment based on future-safe technology. Both you and the environment benefit from this as you get a significantly reduced heating bill, excellent overall economy and vastly reduced $CO_2$ emissions.

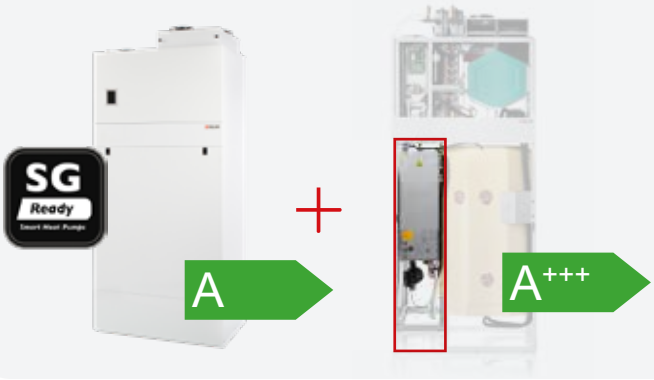
**Discharge air**
When the Compact P system has recovered the energy from the extract air, the stale and humid air is discharged from the home.

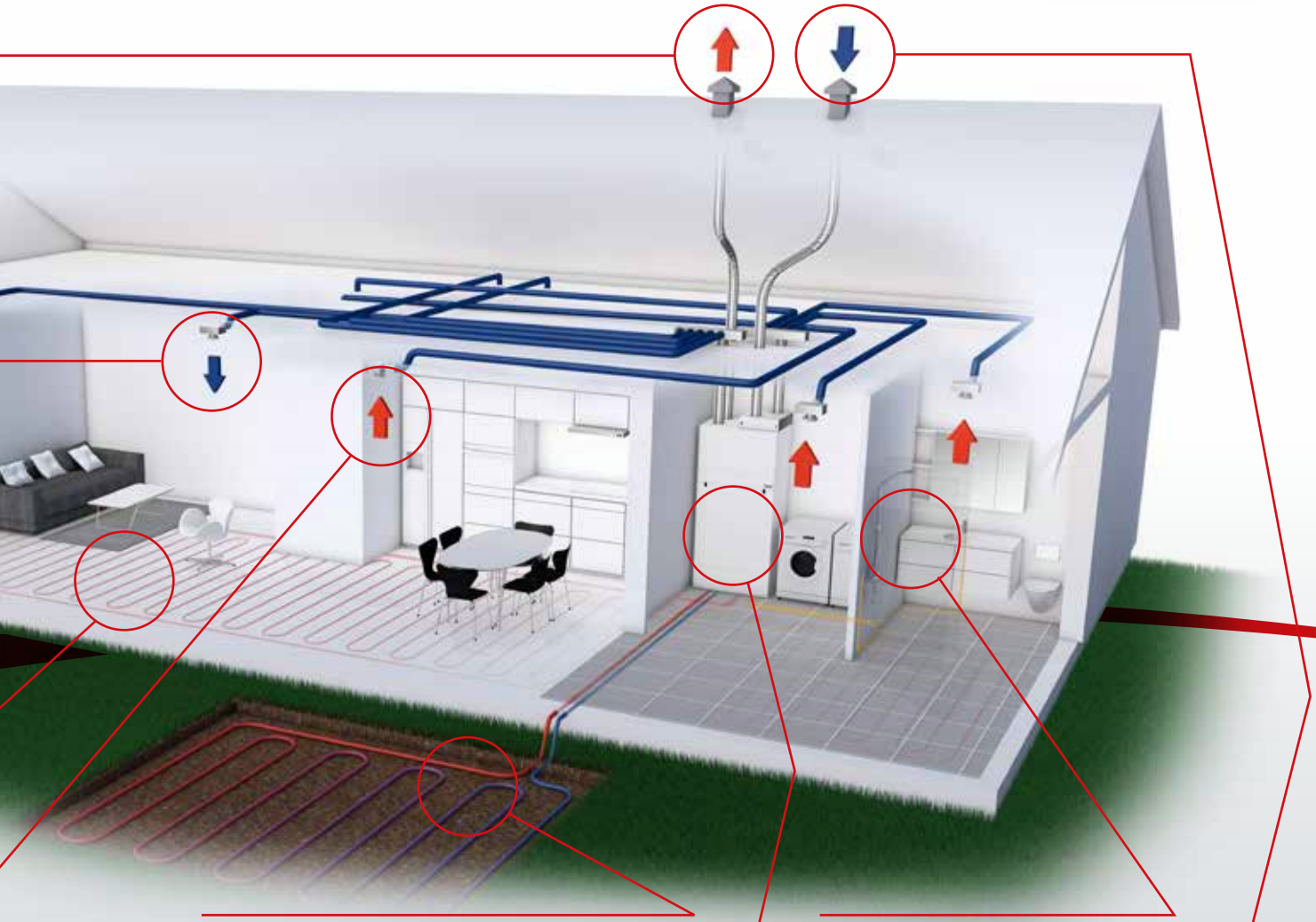
**Underfloor heating**
The central heating water from the Compact P GEO system is used for heating using a hydronic underfloor heating system.

**Supply air**
Fresh, filtered and temperate air is drawn into all living areas in the home to give a healthy and comfortable indoor climate around the clock.

**Extract air**
Stale and humid air is extracted from the home via ceiling valves in all wet rooms and in the kitchen.

## Compact P GEO



**Ground pipes**
The ground pipes extract the energy stored in the ground and supplies it to the ground source heat pump in the Compact P GEO system. The pipes are placed at a depth of approximately one metre in the ground. This means that they are well protected against frost.

**Compact P GEO**
The system regulates the air flow, heat recovery, production of hot water and heating of the home using a built-in ground source heat pump. The system can be placed in a utility or plant room.

**Sanitary hot water**
Compact P recovers the energy from the outgoing air and uses it to produce sanitary hot water.

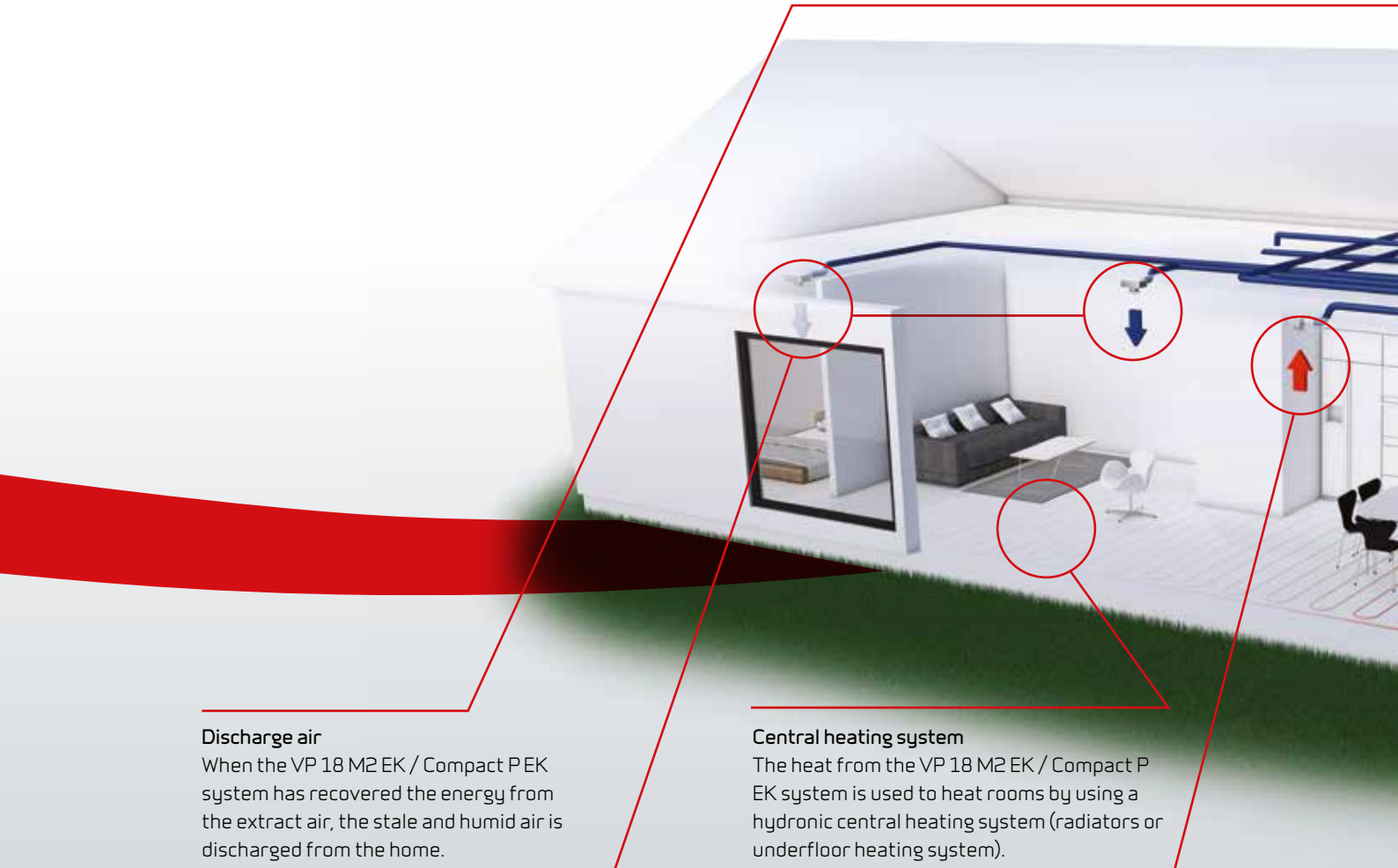
**Fresh air**
An air valve in the facade or roof of your home draws in fresh air and channels it on to the Compact P system.

# COMPACT P EK & VP 18 M2 EK

The advantage of Compact P EK / VP 18 M2 EK is that it does not require buried geothermal tubes, or the installation of an air extraction heat pump, which is the case for traditional heat-pump based heating solutions. This makes installation easier and less expensive.

Electrical heating is a good solution for very well-insulated homes that do not use a lot of energy for heating, such as passive buildings. However, it must be checked whether electrical heating is legally permitted.

This makes installation easier and less expensive, so that the investment is quickly recovered via the reduced heating bills.



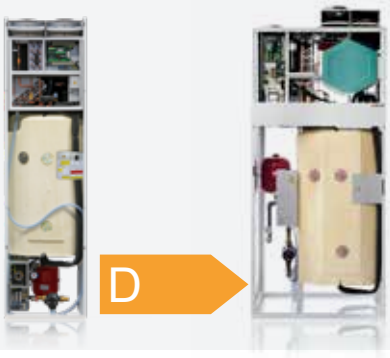
**Discharge air**
When the VP 18 M2 EK / Compact P EK system has recovered the energy from the extract air, the stale and humid air is discharged from the home.

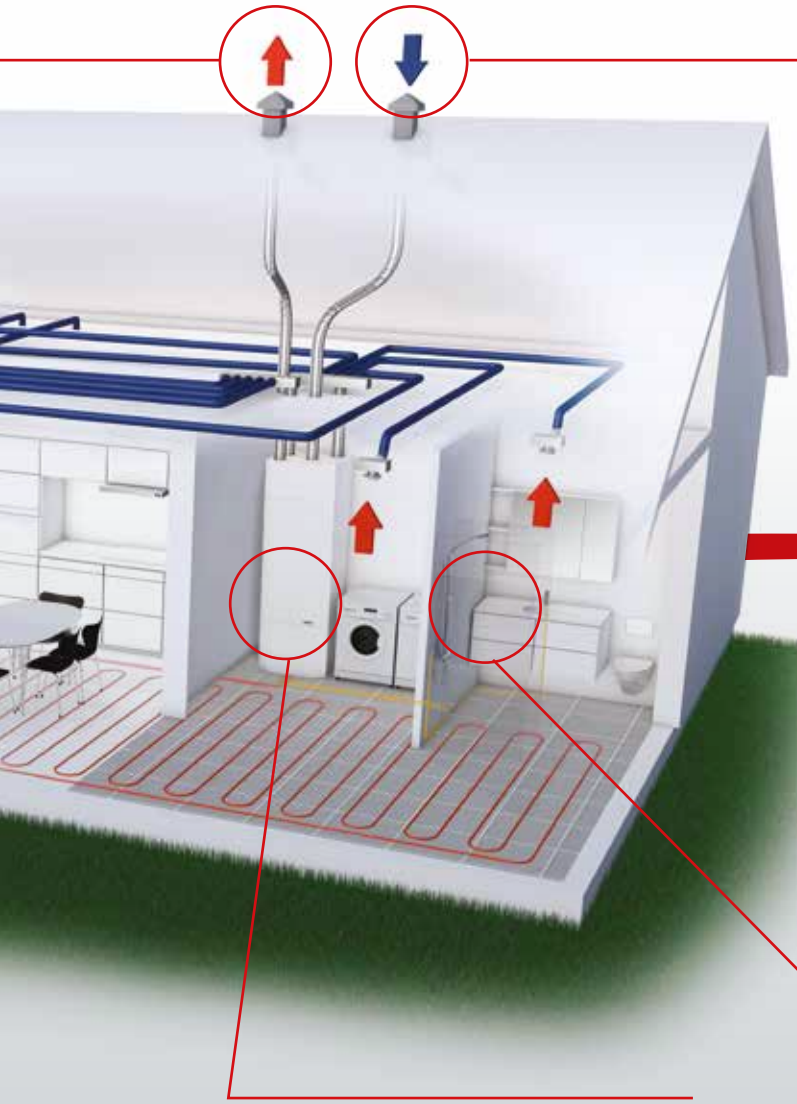
**Central heating system**
The heat from the VP 18 M2 EK / Compact P EK system is used to heat rooms by using a hydronic central heating system (radiators or underfloor heating system).

**Supply air**
Fresh, filtered and temperate air is drawn into all living areas in the home to give a healthy and comfortable indoor climate around the clock.

**Extract air**
Stale and humid air is extracted from the home via ceiling valves in all wet rooms and in the kitchen.

## VP 18 EK & Compact P EK



**Fresh air**
An air valve in the facade or roof of your home draws in fresh air and channels it on to the VP 18 M2 EK / Compact P EK system.

**VP 18 M2 EK/Compact P EK system**
The system regulates air flows, heat recovery, production of sanitary hot water and any heating of the home that is required. It can be located in a utility or technical room.

**Sanitary hot water**
VP 18 M2 EK / Compact P EK recovers the energy from the extracted air and uses it to produce sanitary hot water.

# ACCESSORIES COMPACT P/VP 18

You can get more out of your Nilan unit with the addition of various optional accessories. Some increase the comfort of your home, while others are primarily designed to protect your unit and ensure continuous operation. Not all accessories are compatible with all units. Contact your nearest dealer to find out what accessories can be used with your particular ventilation unit, or read more about the various products at www.nilan.dk.

### SHW Sol Compact

With a 250 l hot water tank in addition to the built-in tank in Compact P, you are assured a virtually unlimited supply of hot water - for several consecutive, long showers, heating of spa bath, etc.

The container is designed to be connected to a solar panel, so you can use solar energy to produce hot water. It is a plug and play solution that is easy to install and very cheap to run. When the sun is not shining, the energy comes from Compact P's heat pump, so you are always guaranteed hot water.

Can only be used for Compact P GEO and Compact P AIR.

### Electrical heating element

With an electrical heating element, the temperature of the supply air flowing into the home can be further increased. The electrical heating coil is mounted in the duct.

### Pre-heating element

With a pre-heating element, the outdoor air is pre-heated before it enters the unit, thereby frost-proofing the counterflow heat exchanger. This prevents the need to defrost the unit, which leads to a loss of efficiency. Read more about the benefits of the pre-heating element on page 16.

### Filters

To protect the unit, it must be fitted with at least one filter.

The G4 (ISO Coarse >65%) filter protects the unit against dust and other particles. The G4 (ISO Coarse >65%) filter is a coarse filter.

The F7 (ISO ePM1 50-65%) filter protects you and your family from the pollen that enters your home. It is only necessary to install a pollen filter in your unit if you or someone in your family suffers from a pollen allergy.

## $CO_2$-sensor

With a $CO_2$-sensor installed, the ventilation speed can be pre-programmed with CTS 602 to run at a higher ventilation steps when $CO_2$ reaches high level in the extract air. $CO_2$-level is programmable. Read more about demand control via $CO_2$ on page 4.

## Expansion PCB

The expansion PCB provides extra functions for the CTS 602 control unit. May be necessary in some cases in order to use extra functions.

## EM-box

An EM-box allows heat recovery from the air from the range hood and thereby helps to heat the supply air. The EM-box is equipped with a steel filter which efficiently cleans the range hood air of fat particles and thereby protects the unit.

## Nilan APP

Control the ventilation system and heat pump in your home directly from your mobile phone. The APP is intuitive, and easy and safe to use. It enables the user to set e.g. room temperature. You can connect multiple ventilation units to the same APP so you can control the indoor climate in, for instance, your home as well as your holiday home. The CTS602 and CTS400 control systems enables you to use the APP.

# AIR DISTRIBUTION

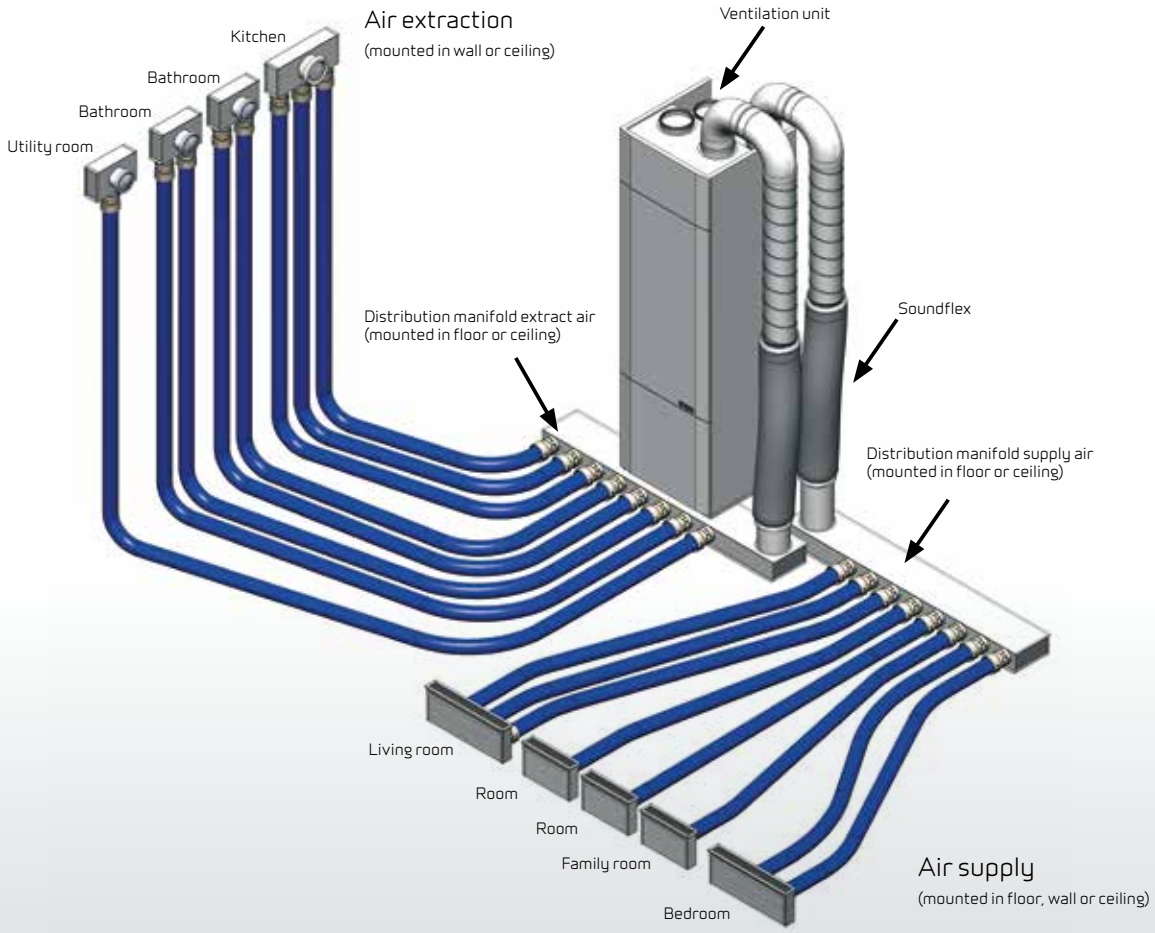
Nil*AIR* is an air distribution system, which is installed together with a ventilation system. Nil*AIR* consists in all its simplicity of distribution boxes, from which tubes lead out to extraction and supply boxes in each room of the property. Nil*AIR* can be installed in ceilings, walls or floors. The lightweight tubes can be used for even the most complicated of tube guides, and run where conventional ducting cannot.

**How the Nil*AIR* system works**

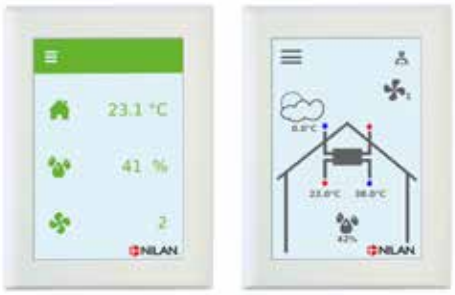
The Nilan system is connected to two distribution boxes – exhaust air and supply air. From the supply air distribution box, supply air is led into the property via Nil*AIR* tubes, which in the living areas are connected to the supply boxes. The exhaust air is led out of the property via extraction boxes, which are placed in damp rooms, after which it is led through the Nil*AIR* tubes to the extraction distribution box. The exhaust air is then fed into the system, where the heat is recovered.

**Advantages**

- Flexible and space-saving solution
- Dimensionally stable and corrosion-resistant quality material
- Low weight
- Easy to clean
- Prevents sound travelling from room to room
- Rapid and simple installation with a click system
- Simple regulation of the air supply volume
- Airtight
- Easy to handle and transport



# MANAGING YOUR NILAN UNIT




As standard, Nilan's unit is controlled by the supplied CTS 602 HMI touch panel, which offers a long list of functions such menu-controlled operation, weekly programme settings, timer-controlled filter flow meter, fan speed adjustment, summer bypass (free cooling), heat element control, error messages, etc.

It makes good sense to set the unit to a weekly program, as most families have a weekly rhythm that follows much the same pattern week after week. The operating unit comes equipped with three weekly programs. The purpose of this is to adjust the unit to match your family's rhythm, and ensure a perfectly balanced indoor climate for your everyday lives.

A weekly program is used to set the air exchange, ventilation rate, required temperature, including a lower temperature at night, times to activate settings, etc.

There is an option for selecting between 2 front page images for the main screen.

# PLENTY OF HOT WATER IN YOUR HOLIDAY HOME

If you are looking for cheap hot water in your holiday home, Nilan also has a solution for you. We have two types of units that draw air from the property, and use the energy to heat water. This solution is only suitable for holiday homes that are only used in the summer when heat recovery is not needed.

### VGU 250 Sol

This compact unit offers highly efficient heat recovery – and is sure to minimise heating bills.

The unit removes hot, humid air from kitchens, bathrooms, utility rooms, etc., thus also removing dust particles, moisture and odours from your home. The energy in the exhaust air is recovered and used to produce sanitary hot water so efficiently that the unit uses only 1/3 of the energy used by a conventional water heater.

"Sol" means the unit is available with a supplementary heating element and can thus be connected to solar panels, oil or gas-fired heating, district heating or any other type of heating unit to boost the production of hot water.

VGU 250 Sol offers low energy consumption, long service life and low installation costs. VGU 250 Sol is a compact unit requiring no more space than a standard tall cupboard.


| | |
|---|---|
| Air volume, extraction | 325 $m^3$/h |
| Heating kW | 1.2 |
| Capacity hot-water tank | 230 L |
| Dimensions (W x D x H) | 600 × 600 × 1,810 mm |
| Weight | 144 kg |

## VT 2130 / VT2131 / VT2132 / VT 3130 / VT 3131 / VT 3132

The units remove hot, humid air from kitchens, bathrooms, utility rooms, etc., and also remove dust particles, moisture and odours from your home. The energy from the exhaust air is used to produce hot water. This uses just a third of the energy used by traditional electric water heaters for the production of hot water. The VT range can be connected to another type of heating, such as oil, gas or solar.

The VT range offers low energy consumption, long service life and low installation costs, and requires no more space than a standard tall cupboard. The units can extract between 200 and 300 $m^3$ of air per hour, and are intended for utility rooms or plant rooms.

The VT range is able to cover the annual consumption of an average family. It has a tank capacity of 270 litres and the units can produce up to around 800 litres of hot water a day. The energy-saving heat pump makes it possible to save up to 65% on the production of hot water.



**VT2130/VT2131/VT2132**

| | |
|---|---|
| Air volume, extraction | 200-300 $m^3$/h |
| Heating kW | 1.85 |
| Capacity hot-water tank VT2130 | 270 |
| Capacity hot-water tank VT2131 | 258 |
| Capacity hot-water tank VT2132 | 242 |
| Dimensions (W x D x H) | 600 × 720 × 1,720 mm |
| Heating coils VT2130 | 0 |
| Heating coils VT2131 | 1 |
| Heating coils VT2132 | 2 |

**VT3130/VT3131/VT3132**

| | |
|---|---|
| Air volume, extraction | 200-300 $m^3$/h |
| Capacity hot-water tank VT2130 | 270 |
| Capacity hot-water tank VT2131 | 258 |
| Capacity hot-water tank VT2132 | 242 |
| Abmessungen (W x H) | Ø707 × 1,768 mm |
| Heating coils VT3130 | 0 |
| Heating coils VT3131 | 1 |
| Heating coils VT3132 | 2 |

# INFORMATION FROM A TO Z

Nilan develops and manufactures premium-quality, energy-saving ventilation and heat pump solutions that provide a healthy indoor climate and low-level energy consumption with the greatest consideration for the environment. In order to facilitate each step in the construction process - from choosing the solution through to planning, installation and maintenance - we have created a series of information material which is available for download at www.nilan.dk.

**Brochure**

General information about the solution and its benefits.


**Product data**

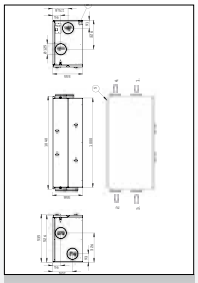
Technical information to ensure correct choice of solution.


**Installation instructions**

Detailed guide for installation and initial adjustment of the solution.


**User manual**

Detailed guide for regulation of the solution to ensure optimum day-to-day operation.



**Drawings**

Tender documents and 3D drawings are available to down-load for planning purposes.

WWW.NILAN.DK

Visit us at www.nilan.dk to find out more about our company and solutions, download further information and find your nearest dealer.

NILAN®
OUTSTANDING INDOOR CLIMATE

Nilan A/S
Nilanvej 2
8722 Hedensted
Denmark
Tel. +45 76 75 25 00
Fax +45 76 75 25 25
nilan@nilan.dk
www.nilan.dk



Ver. 2.4 - 2021.08