

# Fresh air with heat recovery



air  star



## Second generation of Air Star is more silent and better looking.

Think of all the time we spend indoors. Convert that time, day and night. Then it's easy to understand that a good indoor climate is important to health and well being. Air Star produces a fresh indoor climate and a comfortable feeling that makes you and your home blossom!

Second generation Air Star has a new trendy design to fit modern homes and environments and is optional to different applications and colors. New Air Star ventilate with a unrivalled capacity plus that the unit has smart functions and is silent.

### Why ventilation!

Instead of asking someone: how are you? The question is: How is your indoor ventilation? It is conclusive to a healthy life to have good ventilation. Man usually spend 85-90% of the time indoors during a day. Most houses and public premises has a bad ventilation. The Swedish national board of housing policy, Boverket, demands a minimum airconditioning of  $0,351/s/m^2$ . In layman's terms - the air shall be renewed every second hour. The average of the Swedish house holds is considerably lower. Fully functional ventilation according to Swedish standard set by Boverket, the Swedish national board of housing policy.

### More solid houses

In the past, houses were built with natural air leakage. The habitants felt good. With the energy crisis in the seventies came new construction rules that said that all new houses had to be air tight and energy economic. What they did not think of was that natural ventilation disappeared.

A ventilation with (energy) recovery is a mandatory

requirement in the building of new permanent residential buildings, in order to achieve environmental advantages with reduced energy consumption.

### We produce more moist in houses now than before.

We take a shower every day, do our laundry and hang our clothing indoors. The problem starts when the moist pierces the building construction. This leads in many occasions to problems with mould.

### New materials emissions

Most materials, i.e. carpets, liquid putty, paint, etc. emit unhealthy substances. These emissions can be allergic and dangerous to health. Emissions increases with higher moist level. With good ventilation these problems are solved.

**ACCESSORIES** Remote control with functions for higher comfort i.e. "night sleep", exact temperature and reading of energy consumption.





## Moist, unfresh air or condensation

Do you have problems with moist in your bathroom, laundry room, garage or other parts of your house? Air Star assures that new fresh air is ventilated into your house. Every other hour all air is exchanged. In laundry rooms the laundry dries fast. In the bathroom the moist from a shower is gone in just a few minutes. Installation into the garage reduces damp and also provides some extra heat. Air Star takes care of the main problem by adding fresh air and ventilates unfresh air, moist and odor.

### Offices, day nurseries, public premises or residential doesn't matter.

If there is access to a outdoor wall Air Star is the most financial beneficial solution in most cases. For point installation or combined with other solutions we offer a system that has many advantages. Simple installation, individual control of temperature and air flow, silent, limited maintenance, and a great flexibility.

### A weekend cottage at the coast, the mountains or in the country?

By installing Air Star your weekend cottage will be well ventilated concurrent with a more energy effective heating compared to direct electric heating. In the mounting cottage the clothing dries up fast. An even and stable temperature is kept, concurrent with a comfort moisture of air.

If you choose Air Star to heat your mountain cabin you should however consider having access to another heating device during cold peaks.

#### HOW DO WE RECOGNIZE VENTILATION DIFFICULTIES?

Fatigue › Odours › Condensation inside windows › Black stains around air inlets e.g. in bathrooms › Mirror mist in the bathroom › Head ache and allergic problems.



# Better savings on energy with Air Star!

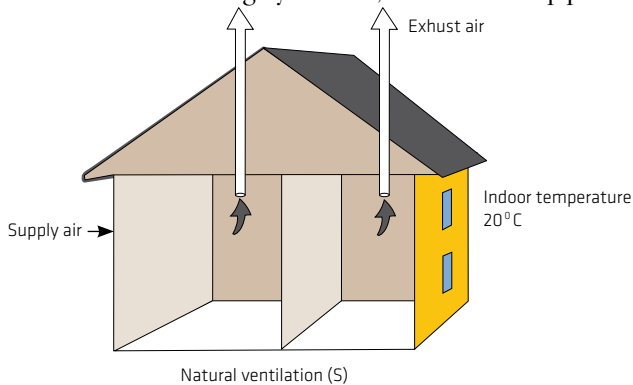
Air Star ventilation regain on average 85% of the heat energy in exhaust air. In a residential of 125 m<sup>2</sup> you can reduce your energy consumption with over 6,000 kwh/year\* with help from Air Star!

During natural ventilation, the air is sucked from the residential house by the thermal force that is created when warm air confronts with cold air. The warm air, which is lighter in weight, rises and is ported through the exhaust piping.

The efficiency of the system is affected by differences in temperature between indoor and outdoor air. This leads to better efficiency during winter time, when the outdoor temperature is low.

In older residential it is common to have the ventilation exhaust pipe mounted around the smoke pipe. The smoke pipe works as an engine and heats the exhaust air, which results in a more efficient natural ventilation system.

Nowadays it is common to change from a wood stove to a more modern solution of residential heating, like a municipal heating network for instance. This renewal creates another problem. The natural ventilation is highly reduced, since the smoke pipe is not in use.



This is S-ventilation, the most common type in villas in Sweden today.

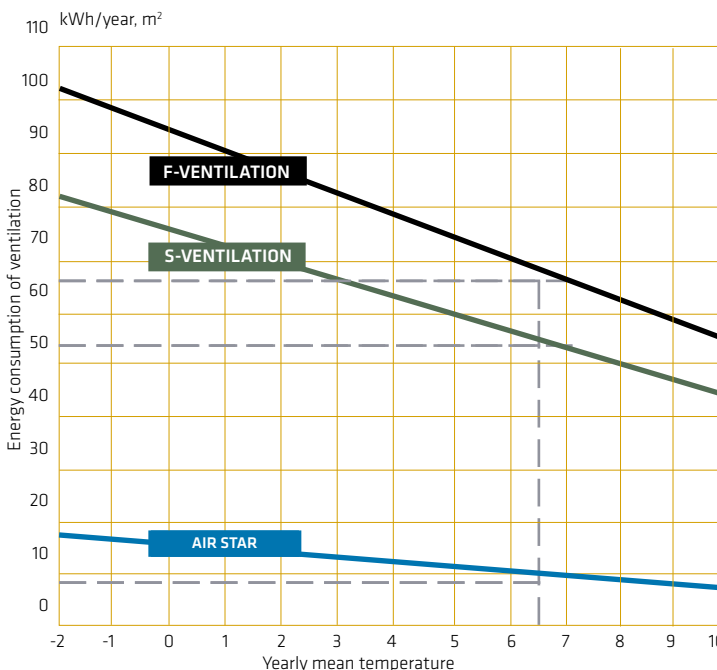
**S-ventilation:** 125 x 53 kwh/year = 6,625 kwh/year

**Air Star:** 125 x 9 kwh/year = 1,125 kwh/year

**Savings with Air Star: 5 5000 kwh/year\***

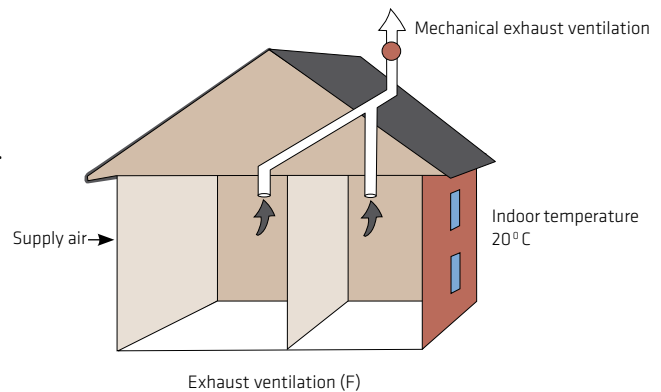
The dashed line in the diagram indicate that energy consumption from ventilation in smaller residential of 125 m<sup>2</sup> around Stockholm is as follows:

The calculation is assuming fully functional ventilation according to Swedish standard set by Boverket, the Swedish national board of housing policy.



This diagram shows two Swedish cities, Malmö and Kiruna. In Kiruna, in northern Sweden the savings reach about 7750 kwh per year and in Malmö 4 874 kwh per year compared to natural ventilation. If you have mechanical ventilation you will save even more, while the savings will not be as much if there is ventilation with a central heat exchanger unit with ducts.

Air Star however will always be a good financial solution when it comes to ventilation.



This is F-ventilation, where a fan draws out the exhaust air.

**F-ventilation:** 125 x 67 kwh/year = 8,375 kwh/year

**Air Star:** 125 x 9 kwh/year = 1,125 kwh/year

**Savings with Air Star: 7,250 kwh/year\***

\* The calculation assume that both comparing objects has fully functional ventilation according to Swedish standard set by Boverket, the Swedish national board of

## YEARLY MEAN TEMPERATURE:

Stockholm +6,6°	Edinburgh +8,5°	The heat exchanger recovers, on average, 85 % of the heat from the exhaust air.
Moskva +5,0°	Groningen +8,6°	
Berlin +8,9°	Maastricht +13,3°	
Wien +9,9°	Paris +10,6°	
London +9,6°	Madrid +14,3°	

## TECHNICAL FACTS

<b>Product:</b>	COMFORT 20 COMFORT 30
<b>Air flow:</b>	16-32 m <sup>3</sup> /h 16-48 m <sup>3</sup> /h
<b>Energy efficiency:</b>	>85%
<b>Rated efficiency:</b>	830W
<b>Voltage:</b>	230-240V
<b>Fans alternative operating:</b>	10-20 W
<b>Radiator:</b>	0-800 W
<b>Noise level:</b>	LA 101: 29-40 dB (A) • LA 202: 26-37 dB (A)
<b>Unit housing:</b>	Sheet metal, aluminium
<b>Size (WxHxD):</b>	297 x 340 x 240 mm. Door: 15-50 mm
<b>Wall entrance:</b>	100 mm diameter.
<b>Guarantee:</b>	5 years
<b>Quality assurance:</b>	Air Star is S-certified, CE-certified and Europe patented
<b>For technical specifications of other products enter our web site:</b>	
<a href="http://www.airstar.se">www.airstar.se</a>	

<sup>1</sup> LA10 correspond to a sound absorber in bedroom

<sup>2</sup> LA20 correspond to a sound absorber in a living room

# Air Star – an invention for ventilation and heat!

Compact ventilation units that brings both supply air and exhaust air with regain of additional heat.

Earlier the alternatives was restricted. For the ones who wanted full ventilation and good economy by reuse of the heat in the exhaust air there were only central controlled distribution networks of ventilation existing. Not anymore.

## A versatile room unit

With Air Star room ventilator installed in the building you will be guaranteed good and economical ventilation.

In addition there will be no need for extra heat in most cases, whilst the unit has an additional heating function. A fresh indoor climate is however much more than just the right temperature. With Air Star ventilating unit you will also have enough circulation, right humidity and a good balance between supply air and exhaust air. You will not experience drafts of cold air sinking towards the floor during cool days, and further more you will save money with this very economically beneficial way of ventilating and heating a house.

Air Star is a ventilationsystem with incremental heating that works excellent in combination with other heating sources.

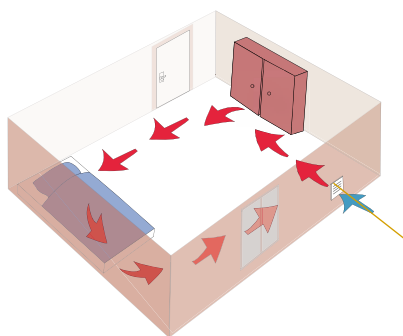
## Do it your self

Our system does not demand any advanced installation or adjustments. The ventilating units is inserted into or onto the interior wall. An ordinary ventilating opening is the only thing that needs in the facade for achieving inlet and exhaust of air. The units is connected to the electric network thru a plug. During the inlet phase fresh air is taken from outside into the room. The air gets heated in the heat exchanger and, if it is needed, from the heat element.

## This is how our system works

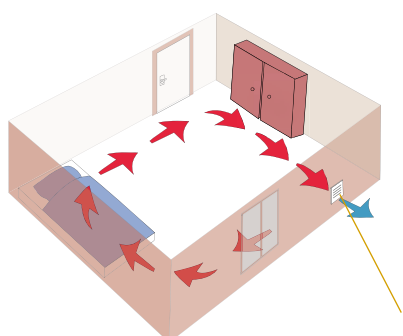
Air Star ventilation units is built on well-ried technique provided with our own innovations. The ventilation units care for supply and exhaust air. The heat from exhaust air regains inside an air exchanger and is reused in the supply air.

A radiator is included in the aggregate which not only just ventilates but also provides additional heating. There are filters for both dust and particles that purifies the air. The concept of Air Star ventilation is based on one ventilation unit which takes care of ventilation and heating of one room. Every single unit manages to ventilate a residential area of 20-35 m<sup>2</sup> depending on which type and the system automatically manages to hold the set temperature. In larger rooms more units are installed. This gives a flexibility where you can choose an exhaustive installation or point installation



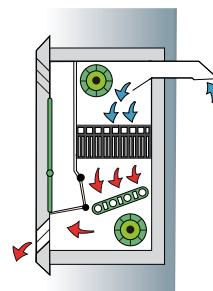
During air supply phase, outside air is pumped and then blown into the room. This air is heated by the heat exchanger as well as by a radiator if needed.

Placement of the ventilation unit



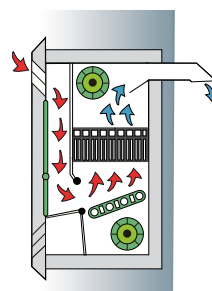
The exhaust air fan starts in the same moment as the make-up air stops. The exhaust air go through the air exchanger and recover 85% of the heat energy from the exhaust air. During this moment the radiator is off.

Placement of the ventilation unit



### MAKE-UP AIR

The radiator automatically turns on as much as it needs to hold the temperature that has been set. The ventilating unit changes in cycles of 30 seconds. It means that it is full balance between supply air and exhaust air.



### EXHAUST AIR

Air Star works as a lung, meaning that the supply fan and exhaust fan runs alternatively. When the exhaust fan runs a flip valve closes the air inlet and exposes the air exhaust.



Covers in many styles and colors!

Made in  
Scandinavia

## Examples of how Air Star ventilation units is used.

### Newly constructed

In a new house Air Star is a very good solution for ventilation and heating. In a new well isolated house Air Star ventilation units manages the heat requirements most parts of the year. To take care of cold peaks it is recommended to use heat displacement as complement. Air Star ventilationsystem gives the best total economy.

Some of the markets manufacturers of smaller houses and worksheds, mount the units as default directly from the factory.

### Measures in existing house

Are you fronting an exchange of heating and ventilation system? Air Star room based unit provides an excellent possibility to start a new system, where you can begin ventilation the parts in the house with the most needs and then expand successively.

### Air Star together with other systems

Do you already have an air heating pump unit, or thinking about installing one? A very good functional choice regarding heat and ventilation could be to combine an air heating pump with a couple of Air Star units that takes care of ventilation and heating in those parts of the house where the air heating pump can not reach.

### Radon

Do you have, like many hundred of thousands Swedish house owners, have problems with too much radon? In houses with blue concrete, our ventilation unit is an aid to increase air ventilation and thereby lower the content of radon. From the function of the heat exchanger, that recovers 85% of the heat from the exhaust air, a cost effective system is offered which also gives comfort advantages.

### Good for those with allergy

A filter is used during the colder parts of the year that binds a big part of the particles that is in the air. For spring and summer there is a more powerful pollen filter which is especially good for allergic.

#### FACTS ABOUT AIR STAR

Room controlling of temperature and air exchange › Regain of the heat that's inside ventilation air (*energy capacity is average 85%*)  
Well suited function for wet rooms. › No energy demanding cold airflow during cold days. › No non. hygienic and dust collecting air tubes. › Ventilation of radon. › Easy to manually install.

RETAILER

air  star

Fresh air with HEAT RECOVERY

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