

# SolarVenti®

Solar Powered Warm Air Ventilation

## Basement

### Handbook for Basement



**Choose the Wise**  
**SolarVenti Basement Solution**

[www.solarventi.uk](http://www.solarventi.uk)

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## K-model Dimensions

Position of Solar Cell and Ventilator

## Dehumidification of basements:

For effective dehumidification of a basement, ventilation as well as heating will be required. Fig. 1 shows the importance of ventilation in the first part of the dehumidification process and the increasing importance of providing heating later on.

The SolarVenti basement kit solution will fulfill these needs by injecting pre-heated, fresh air into the basement and subsequently extracting the moist air from the basement.

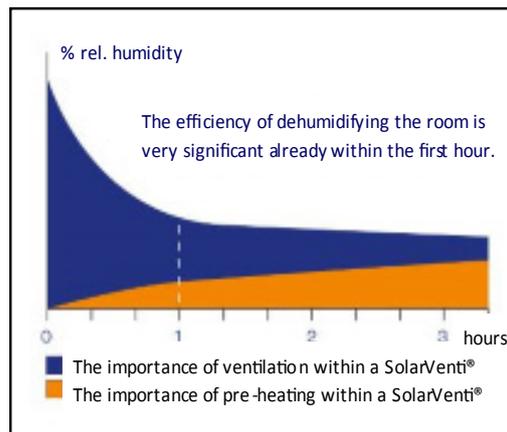


Fig.1: The effect of ventilation and heating

## The SolarVenti Basement Models:

The basement models come in three different sizes: SV14K, SV20K and SV30K.

In size and weight the K-models correspond to the standard SV-models. The only difference is the size of the solar cell (18 W in SV14K & SV20K, 2 x 12 W in SV30K) and the position of the solar cell and the air inlet at the top and bottom, respectively. The powerful solar cell will run the injection as well as the extraction ventilator.

**Increased air exchange needed:** To provide the necessary ventilation in the basement the air must be replaced approx. once every hour instead of every second hour as is the case with a holiday house. All basement models thus cover a smaller area than the corresponding models for use in holiday houses.

The SV14K, for instance, covers a basement area of up to 55m<sup>2</sup>, while an SV14 covers a holiday house area of up to 80m<sup>2</sup>.

Size of Solar Cell	
SV14K	18 W Solar cell
SV20K	18 W Solar cell
SV30K	2 x 12 W Solar cell

Basement area covered	
SV14K	55 m <sup>2</sup>
SV20K	70 m <sup>2</sup>
SV30K	100 m <sup>2</sup>

**Regulator:** The basement model comes with a regulator which adjusts the panel's performance to all conditions.

## SolarVenti Basement Kit:

A SolarVenti basement kit consists of:

- 1x **1** Basement model SV14K, SV20K or SV30K  
incl. wall mounting and air supply kit
- 1x **1a** Regulator type1  
(See p. 6 for detailed list of fittings)

Extraction 2a or 2b:

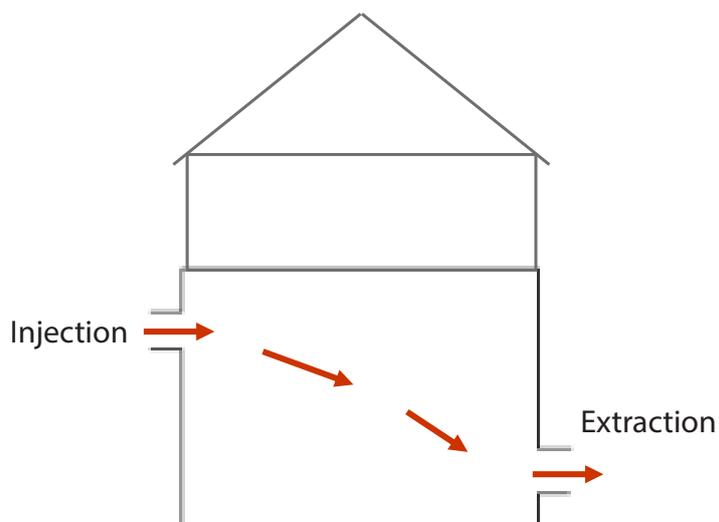
- 1x **2a** Extraction (Basic) for small rooms
- 1x **2b** Extraction (Pro) for large rooms with extraction from the floor  
(See p. 7 for detailed list of fittings)



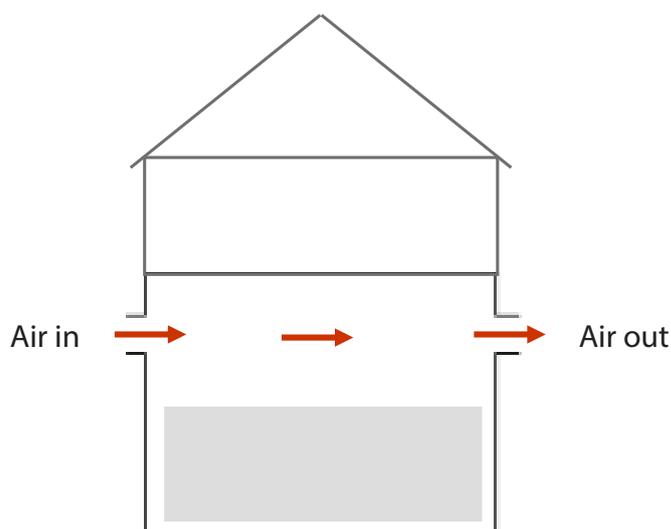
## Why inject right under the ceiling ... ...and extract from the bottom?

**Fig. 2:** If the injection temperature is higher than the room temperature, which is typically the case with a SolarVenti, this solution is clearly the best. Extraction from the floor level forces the air to move through the entire basement.

To ensure the best possible dehumidification of a large basement, extraction from the floor is recommended. The ventilation efficiency will be 100% with this solution.



**Fig. 2:** Optimal ventilation with SolarVenti



**Fig. 3:** Problematic SolarVenti installation

**Fig. 3:** If the basement is small, injection and extraction close to the ceiling will suffice.

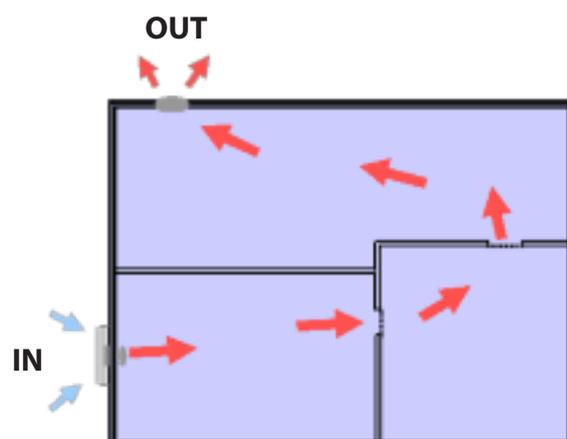
In large basements, however, the air may not be mixed but stay in the upper part of the room, and the ventilation efficiency will drop to **40-70%**.

*(Source: Byggningsreglement BR10 and Ventilationsnorm DS447)*

## Make sure to ventilate the entire basement

The extraction kit should be mounted so that the air moves through the entire basement (see fig. 2). As far as possible inject the air into the driest room and extract from the most humid room to eliminate the risk of leading the moisture through the entire basement.

In case the position of the rooms calls for further ventilation or to avoid long cabling between the injection and the extraction, the ventilator may be attached to an additional solar cell (add-on).



## Basement solutions:

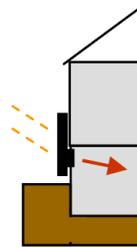
Basements are extremely diverse. That is why it is impossible to offer one single solution that fits all basements. This handbook provides an overview of all the basement kits sold by SolarVenti, and in addition inspiration is given as to solutions we do not sell as ready-made kits.

### Colour codes:

-  - SV Basement model
-  - Extraction ventilator
-  - Pipes
-  - Racks

## Basement kits

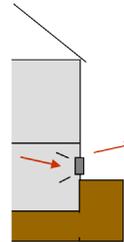
- 1 Air is injected straight into the basement



The kits consist of:

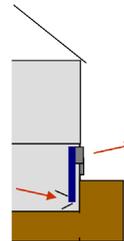
- Basement models SV14K, SV20K or SV30K
- Incl. regulator 1a (see p. 5)

- 2a Extraction **Basic**



- Ventilation Kit (see p. 6)

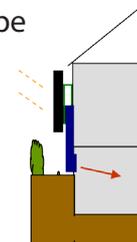
- 2b Extraction **Pro**



- Ventilation kit
- Extraction from floor (see p. 6)

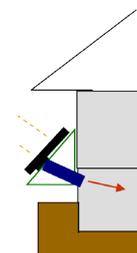
## Accessories for basements

- 3 Add-on: Descending pipe



- Basement extension kit for different models (see p. 7)

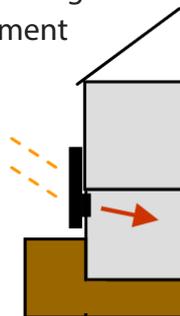
- 4 Add-on: Tilted



- Angulation kit for SV14K, SV20K or SV30K (see p. 8)

## Basement Kits Injection

- 1 Air is injected straight into the basement



### Application

This very simple injection solution is well suited for basements where the solar panel can be placed on the exterior wall of the basement to inject air into the basement without any extension pipe.

The panel may be mounted either horizontally or vertically.

### Basement models:

Item No	SV14K	SV20K	SV30K
Alu.	014902K	020902K	030902K
Black	014904K	020904K	030904K
White	014906K	020906K	030906K
Size in mm	1974 x 704 x 55	1974 x 1004 x 55	3000 x 1020 x 75



**Example:** The basement ceiling is above ground level.

### Basement model SV14K / SV20K / SV30K

1 x See table above SV14K / SV20K / SV30K      18 W solar cell, 5 m cable  
2 x 12W solar cell, 5 m cable

1 x 050002 Regulator **1a**

#### Including Mounting kit

1 x 400072 Aluflex pipe      50 cm

1 x 400500 Insulating ring

1 x 400202 SV humidity stop/non-return valve (Patented)

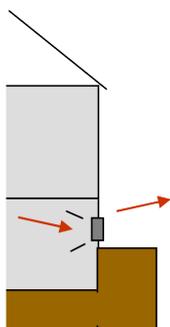
1 x 400170 Supply air valve with frame      Ø 125 mm

1 x 700642 Wall brackets (2 top & 2 bottom)  
incl. a bag of mounting screws



## Basement Extraction Kits

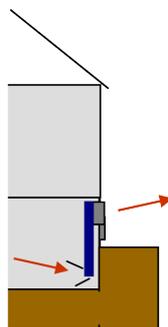
### 2a Extraction Basic



#### Application

Extraction Basic is suitable for small basements where extraction can be placed above ground level.

### 2b Extraction Pro



#### Application

Extraction Pro ensures that the air passes through the entire basement so that unventilated areas are avoided. Particularly suited for large basements.

	Extraction Basic	Extraction Pro
Ventilation kit (air in/out) (Item No. 050040 - for SV14K, SV20K) (Item No. 050042 - for SV30K)	✓	✓
Extraction kit from floor (2m pipe) (Item No. 060027)		✓



Outside



Inside  
BASIC



Inside  
PRO

#### Ventilation kit (air in/out) for SV14K/SV20K - item no. 050040

#### Ventilation kit (air in/out) for SV30K - item no. 050042

1 x 400180	Inlet ring	Ø 125 mm
1 x 400200	Non-return valve	Ø 125 mm
1 x 050005	Duct Fan in aluflex	3,4 W incl. 10 m cable
050006	Duct Fan in aluflex	5,1 W incl. 10 m cable
1 x 050018	Grid (alu)	
10 x 700041	Mounting screws	
1 x 400170	Supply air valve with frame	
1 x 400202	SV Humidity Stop	Patented



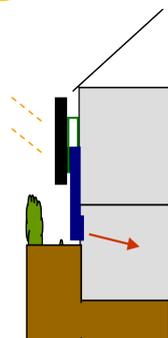
#### Extraction kit from floor (2m pipe) - Item No. 060027

1 x 400503	Basement connection	
1 x 400501	Basement Duct	(each pipe 100cm)
1 x 400502	Duct Assembler	
1 x 050018	Basement Duct clips	



## Add-on Basements

### 3 Add-on: Decending pipe



#### Application

The Basement Expansion Kit makes it possible to mount the SolarVenti in a higher position with an extended pipe which runs on the wall down to the basement.

This add-on is especially suitable if bushes etc. provide shade for the lower part of the wall so that a position higher up will provide a better solar influx.



**Example:** Mounted Basement Expansion Kit with add-on alu cover.

### Basement Expansion Kit SV14/20/30 - Item No. 060018

4 x	050028	Basement Brackets Wall	(2x top & 2x bottom brackets)
1 x	400501	Basement Duct	100 cm
1 x	400503-A	Basement Connection Wall	
1 x	400503-B	Bas. Connect. Air Collector	
1 x	500585	Sabetofix Glue	75 ml
1 x	400504	Basement Duct Clips	



\* Add-on: Alu Cover (start module) possible - Item No.: 400505

\* Add-on: Insulating Mat - Item No.: 400506

\* The Basement Expansion Kit with additional lengths of pipe is available

### \* Basement Extension Kit -Item No.: 060025

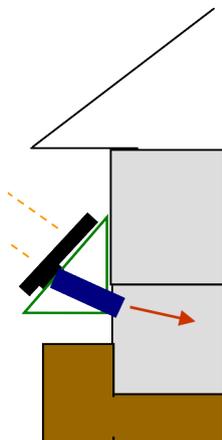
1 x	400501	Basement Duct	100cm
1 x	400502	Duct Assembler	
1 x	400504	Basement Duct Clips	

\* Alu Cover (**end** module) available - Item No.: 400505-S



## Add-on Kit for Basements

4 Add-on: Tilted



### Application

When tilted on the wall the Solar Air Collector will reach a higher injection temperature in the summer, and the result is a more efficient dehumidification.

The kit is also well suited if the eaves of the roof provide shade for a large part of the outer wall. By using the angle brackets to place the panel at some distance from the wall it may be possible to increase the solar influx.

If the house has no south facing wall the brackets may be used to place the panel in a vertical position where the solar influx is improved (see picture below).



Angle wall mounting kit SV14 - Item No.: 060021

Angle wall mounting kit SV20/30 - Item No.: 060022

2 x	050025	Angle Bracket SV14/	
	050026	Angle Bracket SV20, 30	
1 x	400074	Aluflex Duct	175 cm
1 x	400140	Flex Hose	Ø 160 mm, Length 75 cm
1 x	400303	Armaflex Fittings	
1 x	500513	Plastic Strips	

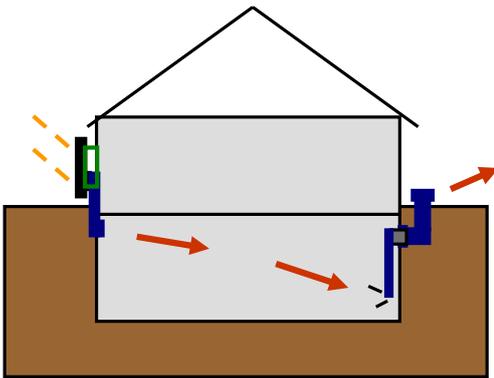


## Inspiration to Underground Solutions

The SolarVenti Basement Kit may be used in connection with underground piping. The solutions will vary from case to case. However, the SolarVenti modules are compatible with all types of Ø 125 mm pipes, so be creative and find your own solution.

Some suggestions for underground solutions are presented here. But make sure always to check the building regulations in force and adjust your solution to the local conditions (groundwater level, nature of the soil, etc.)

### Inspiration to Underground Solutions



#### *Make a waterproof solution*

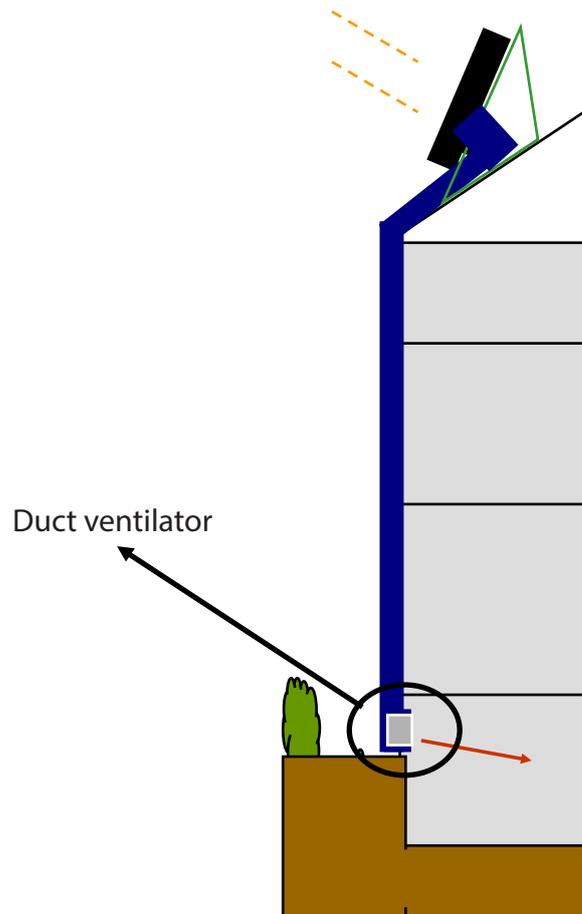
A waterproof solution is necessary no matter what. To dig an air shaft or work with waterproof pipes and piping straight in the ground is a matter of preference, and the choice may vary from case to case.



From a basement installation in a housing association

## Inspiration to Roof Installations

If the Solar Air Collector has to be mounted on the roof to inject the air down to the basement, we recommend a panel with a duct ventilator instead of a built-in ventilator. A duct ventilator placed at basement level performs well in case of long piping as it injects air more efficiently through several meters of piping.



This handbook is under development.

For updates please go to [www.solarventi.uk](http://www.solarventi.uk)

Thank you

## K-Model Dimensions

- Position of solar cell and ventilator

