

Installation Instructions for Shower-Save



THE RECOH[®]-VERT, RV2

1 THE 'RECOH[®]-VERT'

Points of attention.

- * Please ensure the heat exchanger is easily accessible so that it can be easily installed and uninstalled.
- * Please ensure that a controllable non-return valve and a cut-off valve have been installed and that these are properly accessible.
- * Please ensure that the heat exchanger is installed in a space in which the temperature normally does not exceed 25 °C.
- * Please watch out for loss of pressure on the tap water side and the discharge capacity if dealing with a rain dome shower head.
- * Please make sure the tap water connections are preferably made using straight thread, that no hemp is used and that the tightening moment is limited to 120 - 150 Nm.

1.1 Introduction

On average, a shower uses 60 litres of water at a temperature of between 40 and 41 °C. This shower water goes straight down the drain, wasting a great deal of heat. By running the hot water through the 'Recoh-vert', this heat can be transferred to the water on its way to the boiler and the cold water tap of the shower's mixer tap. This heat transfer takes place during simultaneous flows i.e. while you shower.

1.2 General

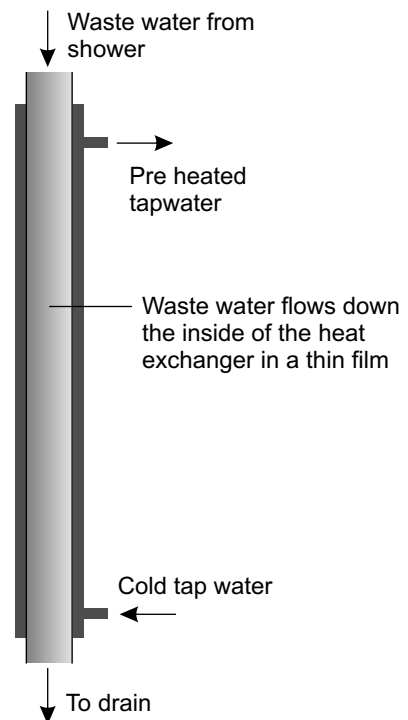
The Recoh-vert, RV2 is also called the Douche pijp-wtw-V2.

The 'Recoh-vert' is 2.1 m long and can only be installed vertically. The 'Recoh-vert' is therefore, generally, only suitable for heat reclamation from shower water from an upstairs shower.

If the flow of water is not simultaneous then applying the 'Recoh-vert' serves no purpose, as is the case with a bath. An additional reason for not using the 'Recoh-vert' with baths is that the non-flowing water in the 'Recoh-vert' could be warmed to over 30 °C which gives Legionaire's Disease the chance to develop.

The 'Recoh-vert' can be installed in the meter box as long as the compartmentalisation of the meter box are taken into account.

When you start showering it takes a little while for the 'Recoh-vert' to start contributing to the heating of the cold water. This means the temperature of the shower water will continue to rise for some time. Using a thermostatic mixer tap is therefore very recommendable.



1.3 Description of the heat exchanger

In principle, the 'Recoh-vert' consists of two concentric pipes; the inner and the outer pipe. Waste water from the shower flows down through the inner pipe. Cold tap water flows up to the boiler and the shower's mixer tap through the space in between the two pipes.

The exceptional thing about the 'Recoh-vert' is that it has a double barrier between the waste water and the tap water. The heat exchanger consist of 3 pipes. A thin-walled pipe, the so-called lining, has been installed around the inner pipe. The miniscule space between the lining and the inner pipe contains air. If the inner pipe develops a leak, this becomes visually apparent as waste water will drip from the heat exchanger. The waste water can never come into contact with the tap water.

The great advantage of a double barrier is that this allows the heat exchanger to be connected directly to the indoor plumbing. No open connection in the indoor plumbing is therefore required!

Every Recoh-vert has a sticker with technical information and unique number. The sticker must always be legible. If not legible the guarantee will expire.

1.4 Connections.

The tap water connections must be able to be taken apart. As can be seen in the diagram, the tap water supply pipe should include a controllable non-return valve and a cut-off valve. Please note: this does not replace the inlet combination required for the water heater.

The heat exchanger can be emptied by demounting both fresh water connections. The amount of water that flows out of the Recoh-vert is less then 1 litre.

The tap water connections are non-conical G1/2, internally threaded. It is recommended that only fittings with non-conical thread be used. Hemp may not be used to seal the thread. A maximum tightening moment of 120 Nm is recommended. To protect the connection nipple on the heat exchanger the tightening moment may not exceed 150 Nm.

The supply of waste water to the 'Recoh-vert' must take place via the rotator. This is comprised of the parts supplied, please refer to the instructional drawings for installation. The rotator makes the waste water rotate as it enters the 'Recoh-vert', whirling it against the side walls of the inner pipe so it flows down the walls along the inner pipe's entire length. This is important for reasons of efficiency.

Deaeration of the Recoh-vert is not necessary, all air will disappear automatically because the water flows from the bottom to the top.

The connection of the drain pipe between the shower and the shower pipe on the expansion pipe (de-aeration pipe) from the domestic sewage will generally not be necessary.

Occasionally extra noise or emptying of the odour valve can occur. In this case aeration is necessary. This can be done by means of a connection on the expansion pipe or by means of a aerator. For this purpose there is a rotator available with a aerator (see photograph).



1.5 Materials and dimensions

The 'Recoh-vert' is made of copper. The external diameter of the inner pipe is 50 mm which means it can be directly connected to standard PP and PVC pipe dimensions for indoor plumbing. Please refer to the instructional drawings for dimensions and further details.

The pipe lengths (both pre-heated water and drain water) should be minimised.

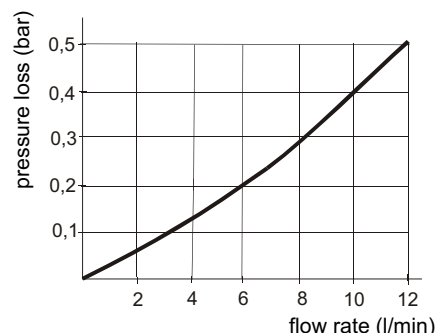
1.6 Safety and Legionaire's disease

When no cold water is flowing up the 'Recoh-vert' the temperature in the pipe should be prevented from becoming higher than 25 °C. The 'Recoh-vert' may therefore not be installed near heat conducting pipes or on warm surfaces. The cold water pipe, connection and the outer wall of the 'Recoh-vert' may therefore not be insulated.

1.7 Loss of pressure

The figure at right illustrates the loss of pressure for the 'Recoh-vert' at the tap water side.

Because of this pressure drop Shower-Save is generally only suitable for use with un-vented (mains pressure) hot water systems in situations with a dynamic cold water pressure in excess of 1.5 bar. A small reduction in maximum flowrate will be inevitable, the amount being a function of the mains water pressure available and distribution pipework specification.



1.8 Maintenance and cleaning

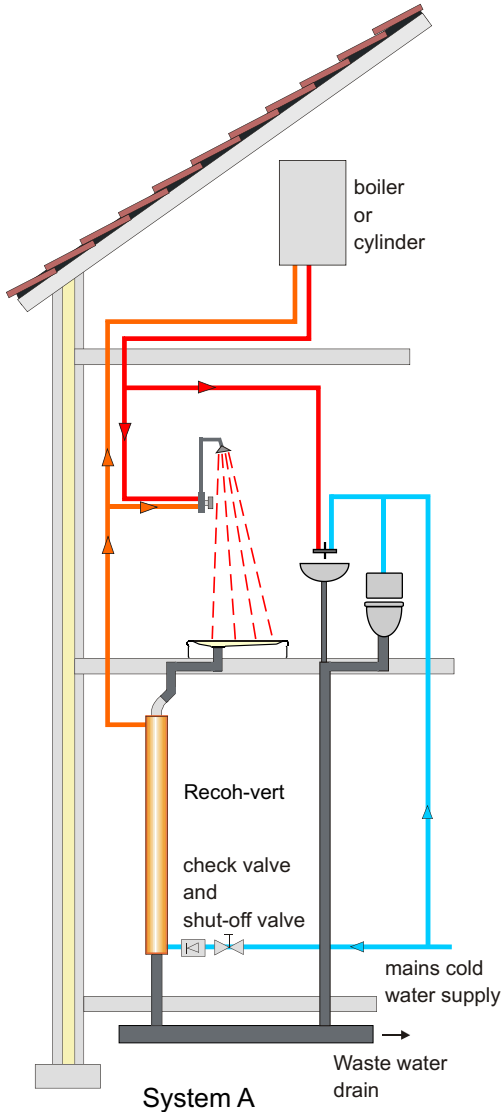
Efficiency can decrease as a result of dirt accumulating on the inside of the 'Recoh-vert'. However, the waste water from the shower flows at a high speed of over 1 m/s along the inner pipe's wall. This is comparable to the water speeds in a dishwasher. The water flows through the pipe in 2 seconds and so no dirt can accumulate. To a large extent the 'Recoh-vert' is self cleaning.

If, for whatever reason, dirt accumulates, then a soap-based cleaning agent can be used to flush the pipe. Cleaning agents based on scouring or polishing agents are not recommended as these can stick to the wall of the pipe, reducing its efficiency.

Connecting a wash basin to the 'Recoh-vert' is also not recommended as shaving gel and toothpaste are very sticky and could adhere to the wall of the inner pipe.

2 INSTALLING THE RECOH-VERT

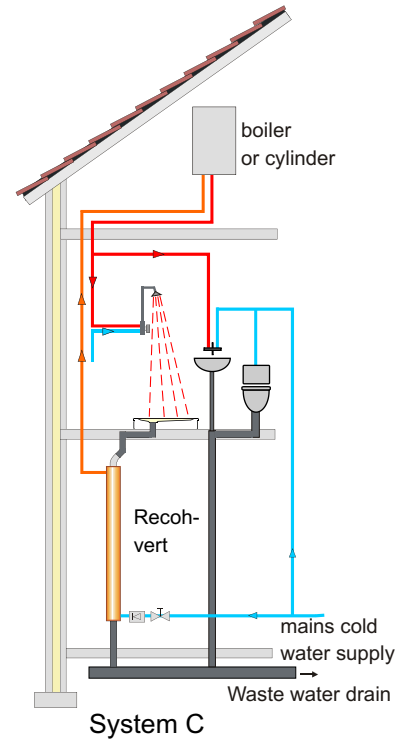
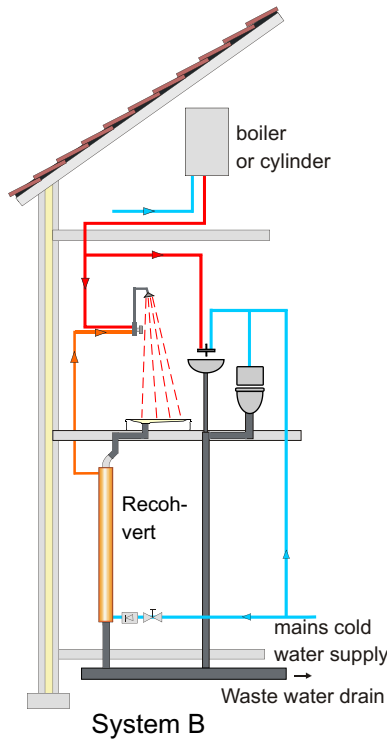
2.1 System A, B and C



The inlet side of the 'recoh-vert' can be connected to the tap water system. The outlet side can be installed in three different ways, namely:

- A. Combined connection to the shower mixer tap's cold water connection and the water heater.
- B. Separate connection of the cold water connection to the shower's mixer tap.
- C. Separate connection of the cold water connection to the water heater.

The largest saving is achieved by using System A



Only system A, in which there is a combined connection from the Recoh-Vert to both the cold water feed to the boiler or cylinder and the cold water feed to the shower mixing valve, is recognised by SAP for energy saving calculations. This will provide the maximum energy saving. Arrangements B and C are alternatives to be used only where System A is not possible. Please also note that there must be no draw-off from the feed pipe between outlet from Recoh-vert and inlet to cylinder or boiler or shower mixing valve, as this is pre-heated water. It is not suitable for vented systems.

2.2 The position of the 'Recoh-vert'.

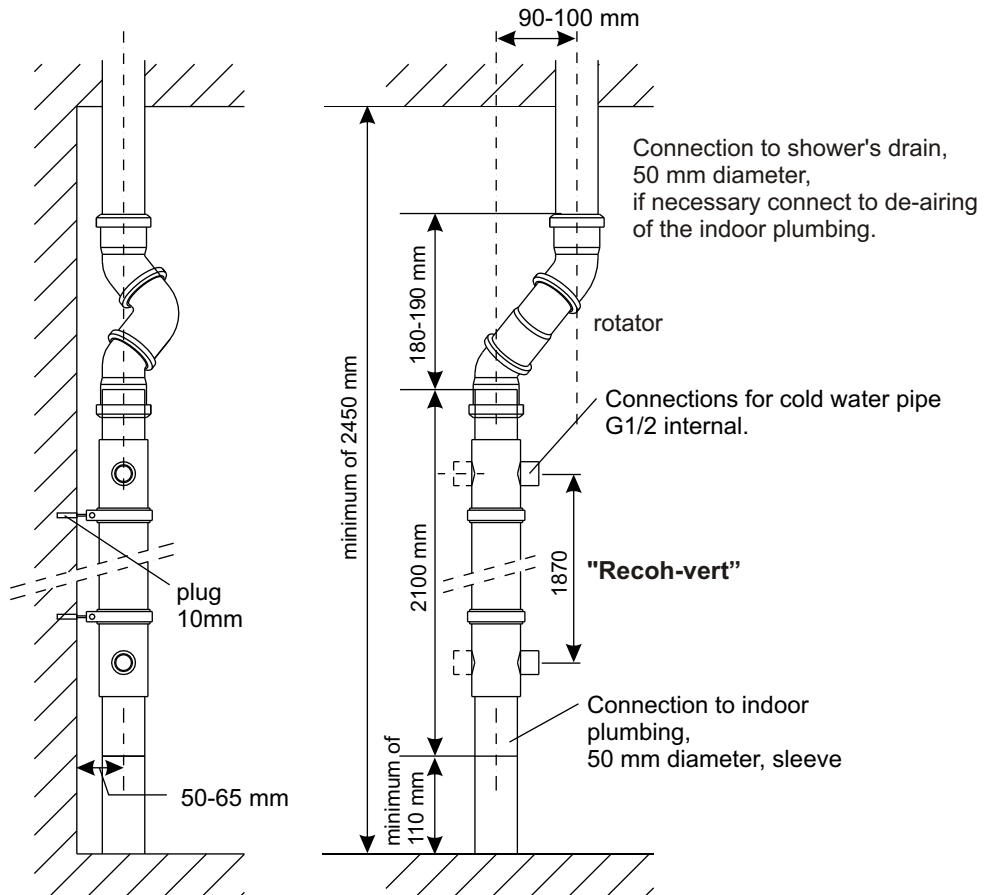
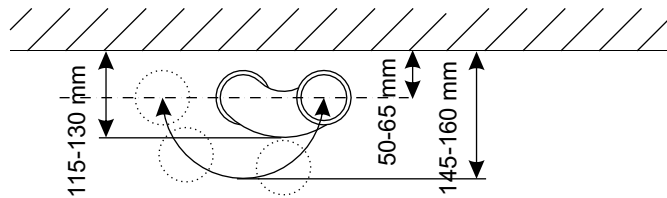
The 'recoh-vert' is considered a device. The space it is installed in should be large enough to enable proper maintenance activities and inspection. Access should be possible without too much work.

The Rech-vert can be placed in a trunk, if the trunk is provided with a dismantable panel.

The 'Recoh-vert' can be installed in the meter box as long as the compartmentalisation of the meter box is in accordance with NEN 2768. Meter boxes and the accompanying structural facilities for pipe laying in homes have been taken into account. It can be necessary to slightly enlarge the meter box. However, if the meter box is equipped with an outlet for district heating the 'Recoh-vert' may not be installed in the meter box.

In general, a connection between the discharge pipe between the shower and the 'Recoh-vert' on the (de-airing pipe) of the indoor plumbing will not be necessary. Because the 'Recoh-vert' has a large diameter of 50 mm a parallel pipe is generally not required unless the shower in question is a rain dome shower head. In that case, you should also check whether the pressure loss on the tap water side is not too high.

Top View
Rotator can be turned on the heat exchanger's axis



2.3 Mounting the 'Recoh-vert'

2 brackets attach the 'Recoh-vert' to the wall. It is important that the 'Recoh-vert' be installed perfectly vertically, i.e. within 1 degree.

2.4 Finally

We would like to congratulate you on the purchase of the 'Recoh-vert'. The 'Recoh-vert' is one of most economically interesting forms of energy saving. The pay-back time is short! Using the 'Recoh-vert' saves on fossil fuels. The stocks of fossil fuels are limited and using the 'Recoh-vert' can help reduce global warming. Should you have any comments or additions to this manual, please do inform us.

Installation Certificate for Shower-Save

The following installation certificate must be completed by the installer to identify the details of the installed product(s) and components(s) and verify that they have been fitted in accordance with the preceding Installation Instructions. This is required for the purposes of recognition by SAP (Government's Standard Assessment Procedure for Energy Rating of Dwellings). Only "System A" installations are recognised by SAP.

The installation certificate must be given to the customer with the recommendation it is retained; e.g. for future inspection when selling the property.

Installation Certificate	
Full Address of Property:	
A. Details for rooms with showers but NOT baths (e.g. dedicated shower room)	
Total Number of ALL showers	
Showers with Shower-Save Recoh-vert RV2 installed as "System A" *	
Showers with Shower-Save Recoh-tray RT1 installed as "System A" *	
B. Details for rooms with showers AND baths (e.g. shower over bath, or bath and shower)	
Total Number of ALL showers	
Showers with Shower-Save Recoh-vert RV2 installed as "System A" *	
Showers with Shower-Save Recoh-tray RT1 installed as "System A" *	
* showers installed with plumbing arranged as shown for "System A" in the Installation Instructions, where the cold water outlet from the Recoh-vert RV2 or Recoh-tray RT1 is connected to both the shower mixing valve and either a combi boiler or unvented hot water storage vessel. Showers installed with other plumbing arrangements are not to be counted.	
I certify that the installation complies with the Installation Instructions and the details in this Installation Certificate	
Name (print):	
Company Name:	
Signature:	
Date:	

Installers Notes: