

# Installation Instructions



## THE RECOH<sup>®</sup>-TRAY

### 1 THE 'RECOH-TRAY'

#### 1.1 Introduction

On average, a shower uses 60 litres of water at a temperature of between 40 and 41 °C. This shower water is immediately discharged to the drain, wasting a great deal of heat. Running the waste water through the 'Recoh-tray' enables this heat to be transferred to the water on its way to the water heater and the shower's cold water tap. This heat transfer takes place during simultaneous flows i.e. while you shower.

#### 1.2 General

The Recoh-tray is also called the Douchebak-wtw-V1.

The 'Recoh-tray' can be installed underneath a shower tray. The height of the heat exchanger is minimal so that the step up into the shower tray is not or hardly higher than it would be for an ordinary shower tray. The shower has a drain in the middle and has been specially developed for the heat exchanger. The shower has a size of 90 x 90 x 3.5 cm and a standard connection set.

When you start showering it takes a little while for the 'Recoh-tray' 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 recommendable.

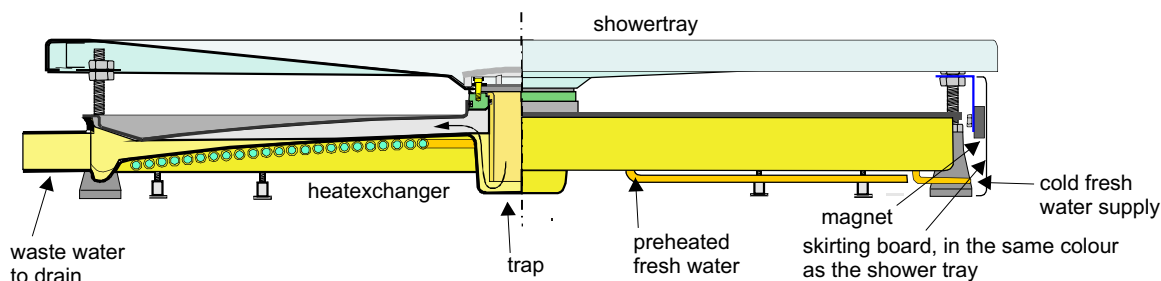
When using the Recoh-tray one should take into account the minimum needed tapwater for good functioning of the heater. It is possible that the energy needed (hot incorporation) becomes lower than the minimum available energy content of the heater (switch off point burner).

#### 1.3 Description of the heat exchanger

The 'Recoh-tray' consists of a globular bowl which the waste water from the shower flows across from the centre. A spiral copper pipe, through which the water to the shower flows, has been soldered to the underside of the dish. The dish is surrounded by a gutter which leads to a pipe through which the waste water is discharged. A siphon has been installed in the middle of the heat exchanger, directly beneath the shower tray.

The exceptional thing about the 'Recoh-tray' is that there is a double barrier between the waste water and the tap water. The great advantage of a double barrier is that the heat exchanger can be directly connected to the indoor plumbing. It does not require an open connection with the indoor plumbing which could lead to odour and damp problems.

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



#### 1.4 Accessibility

The controllable non-return valve should be visible and accessible. Any possible leaks should be able to be seen. To this end, it is recommendable to install a removable skirting board in the same colour as the shower tray.

The heat exchanger is a device and should therefore be accessible. Any possible replacement should be able to take place without having to take everything apart.

## 1.5 Connections

The tap water supply pipe should have a controllable non-return valve and a cut-off valve installed in it. Please note: this does not replace the inlet combination required for the water heater. The tap water supply pipe connections to the heat exchanger should be removable. The heat exchanger is equipped with a special threaded connectors for the water connections. Please refer to the instructional drawings for dimensions and other details. The connections are slightly flexible which helps prevent the tap water pipe exerting too much force on the heat exchanger.

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

The drain's exterior dimensions amount to 50 mm and this enables it to be connected directly to the standard PP and PVC pipe dimensions of the indoor plumbing.

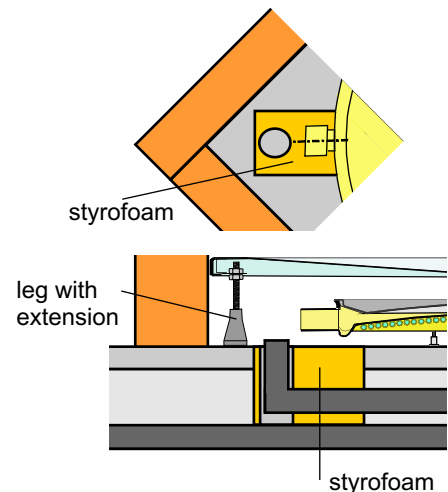
It is recommended that during the construction of the sewer to take into account the installation of the Recoh-tray.

When the drain is placed, before the dumping of concrete, place a piece of styrofoam around the drain (in the direction of the outlet, see figure). After pour concrete.

Note: the leg of the mounting frame and the feet of the Recoh-tray may not be placed on styrofoam.

Recoh-vert is placed and fits or just not fit on the position where the drain is located. In case the drain does not fit, remove a piece of styrofoam around the drain. Then the drain can be dragged a few inches, so the connection with the Recoh-vert can be made.

Deaeration of the Recoh-tray is not necessary, all air will disappear by opening the tap.



## 1.6 Materials and dimensions

All the heat exchanger's parts that come into contact with water have been made of copper. The heat exchanger's lid is made of high-quality plastic. Please refer to the relevant drawing for the dimensions.

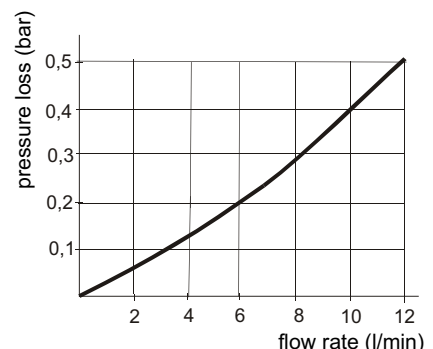
## 1.7 Safety and Legionaire's Disease

The temperature of the tap water in the heat exchanger sometimes exceeds 25 °C. The temperature should not exceed that when the 'Recoh-tray' is not in use (no cold water flowing). The 'Recoh-tray' may therefore not be installed next to heat transporting pipes or on warm surfaces such as on floor heating. The cold tap water pipe and the 'Recoh-tray' may therefore not be insulated.

However, the 'Recoh-tray' contains less than 1 litre of tap water. According to this it may be assumed that no Legionaire's Disease will develop.

## 1.8 Loss of pressure

The figure at right illustrates the pressure loss of the 'Recoh-tray', on the tap water side.



## 1.9 Maintenance and cleaning

Efficiency can decrease as a result of dirt accumulating on the inside of the 'Recoh-tray'.

The surface of the heat exchanger, the dish, can become slightly fouled. It only takes a couple of minutes, once or twice a year to clean the surface using a special brush.

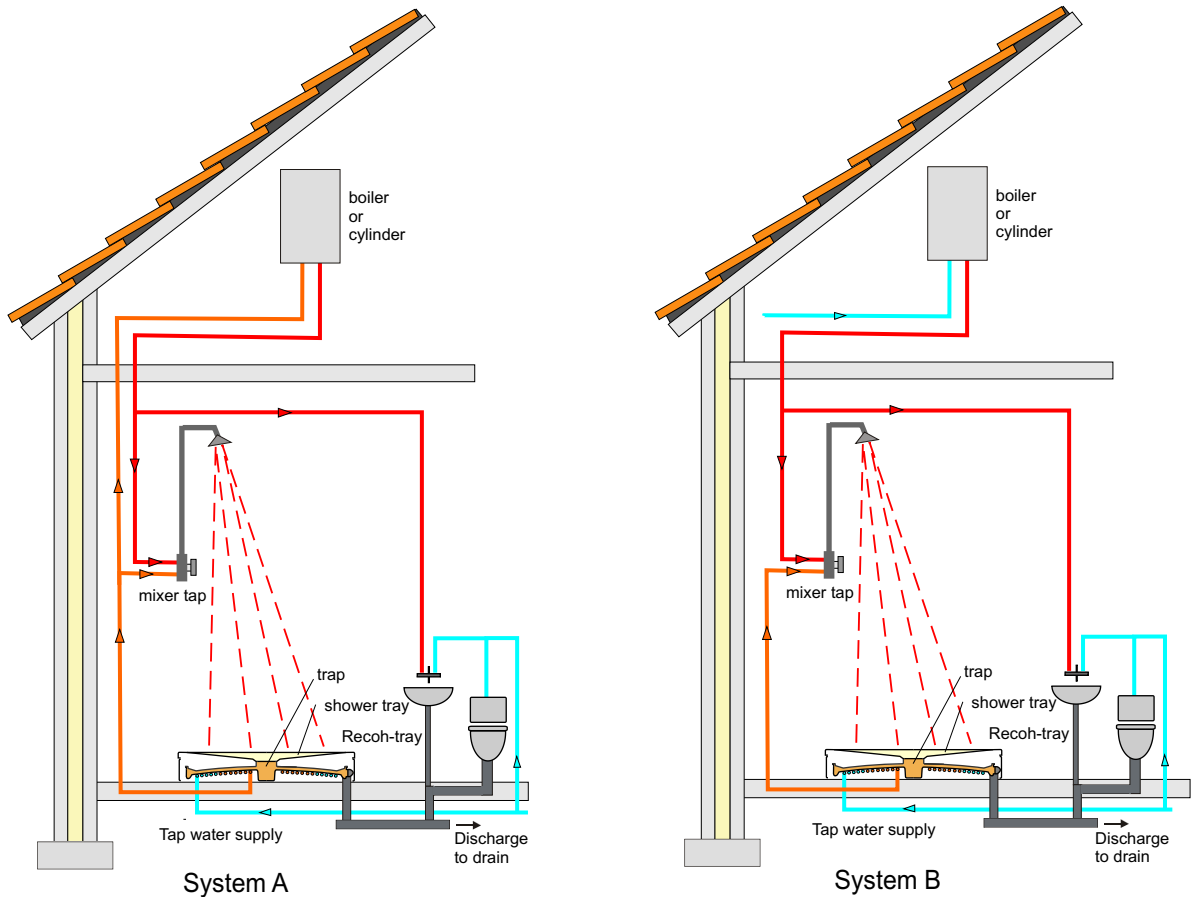
## 2 INSTALLING THE 'RECOH-TRAY'

### 2.1 Systems A and B

The inlet side of the 'Recoh-tray' can be connected to the tap water system in the house. The outlet side can be created in several ways, namely:

- A. Combined connection of the heat exchanger to the cold water connection of the shower's mixer tap and the water heater.
- B. Connection solely from the heat exchanger to the tap water connection on the shower's mixer tap.

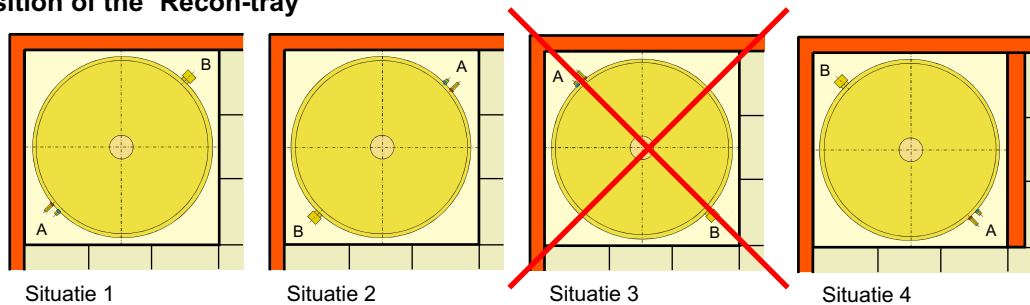
The largest energy saving with the 'Recoh-tray' can be achieved by using System A. If System B is chosen the saving will be 70 to 75% of the saving achieved using System A.



### 2.2 Mounting the 'Recoh-tray'

The 'Recoh-tray' is placed on a subsurface using adjustable legs. It is important that the 'Recoh-tray' is perfectly horizontal i.e. within 0.1 degree. (one side may be 1.5 mm higher or lower than the other).

### 2.3 The position of the 'Recoh-tray'



A = Inlet and discharge fresh water 15 mm diameter

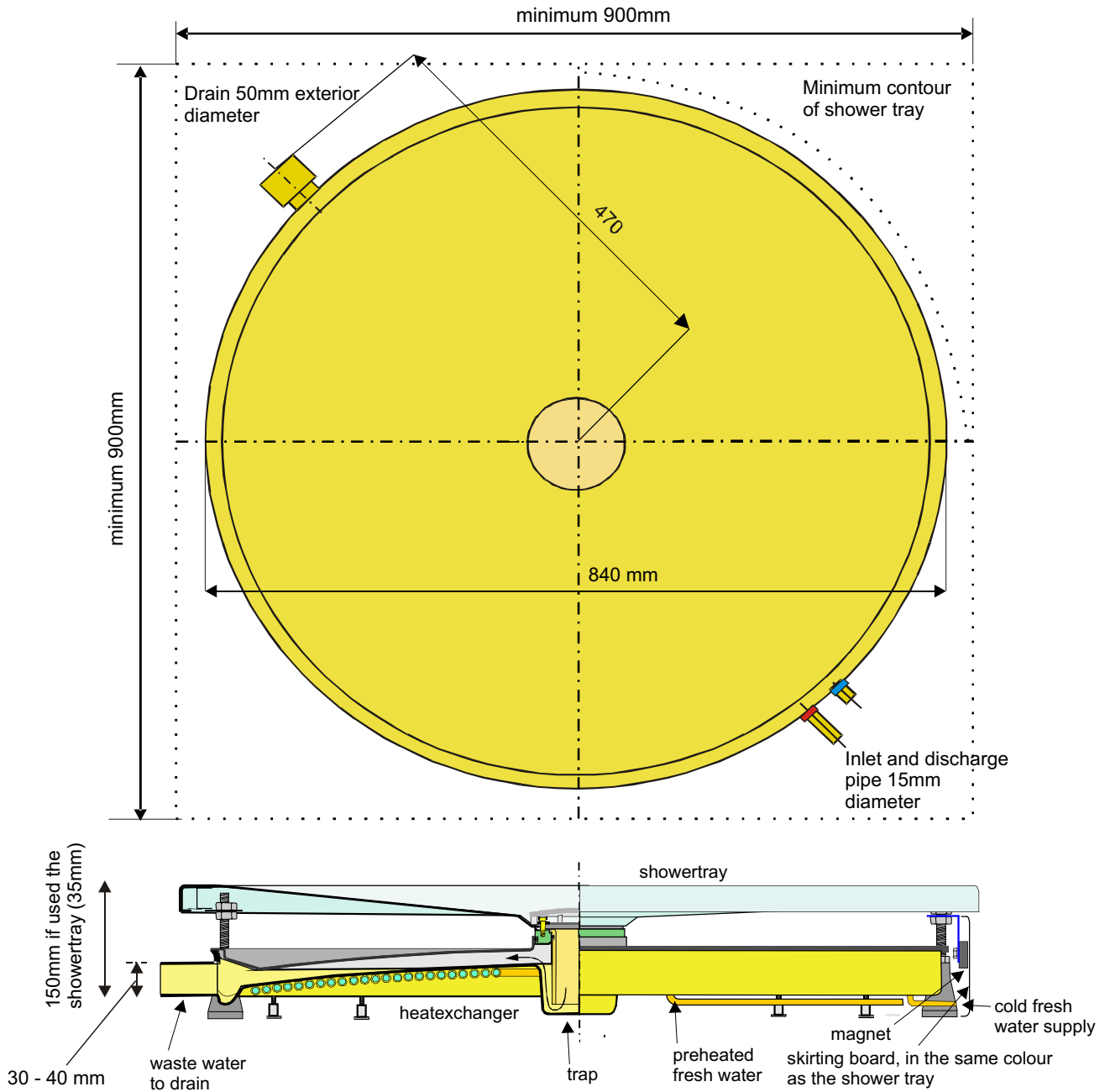
B = Discharge to drain 50mm diameter external

Preferably connect the Recoh-tray as shown in situation 1 and 2, the discharge to drain and fresh water connections are directly behind the removable skirting board. The cut-off valve and the non-return valve can also be mounted in this corner.

Situation 3, fresh water connections in the corner, is difficult to mount and after mounting the cut-off valve and the

non-return valve are no longer accessible.  
 Preferably use a shower cabinet in case of building-up and a removable skirting board.  
 In case of a niche, mount the fresh water connections as shown in situation 4.

## 2.4 Mounting the Recoh-tray in 6 steps



### Step1:

Set up the heat exchanger. For it to operate properly it is important that it is perfectly horizontal. One side may be 1.5 mm higher or lower than the other. Use the adjustable legs on the bottom to make the heat exchanger horizontal. Ensure that all the legs are used. Please also ensure that the heat exchanger is in the correct position i.e. has the right distance from the wall.

When using the special frame for mounting the shower tray, pay attention to the position off the legs of the frame. Together with the frame an extension is delivered, that makes sure one leg can exteriorize 40mm and enough space

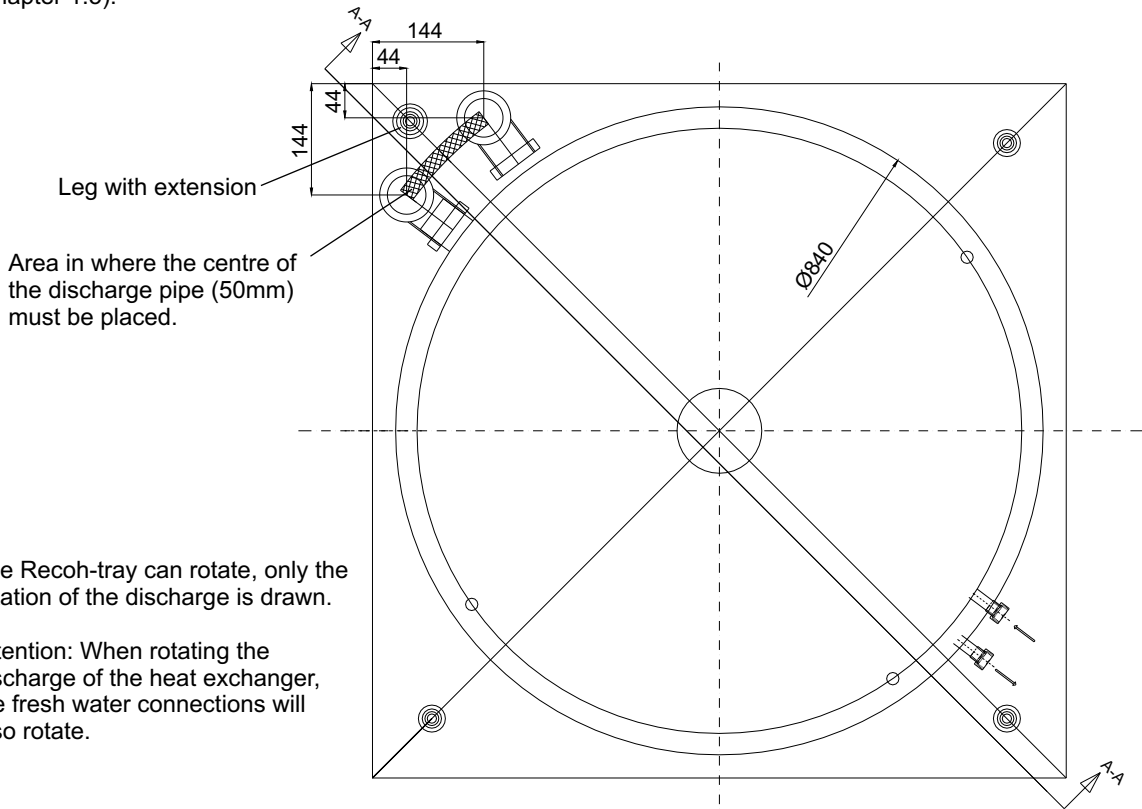
will be available to connect the discharge of the Recoh-tray.

The extension is placed on the frame's corner and together with the magnet holder fastened with screws. The leg is connected at the end of the extension. See photograph.



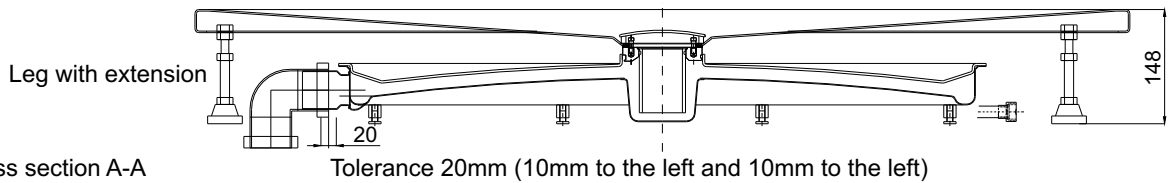
The following illustration shows the tolerances and dimensioning according to the discharge and leg with extension.

It is recommended to place a piece of styrofoam in the direction of the outlet, before the concrete is poured (see Chapter 1.5).



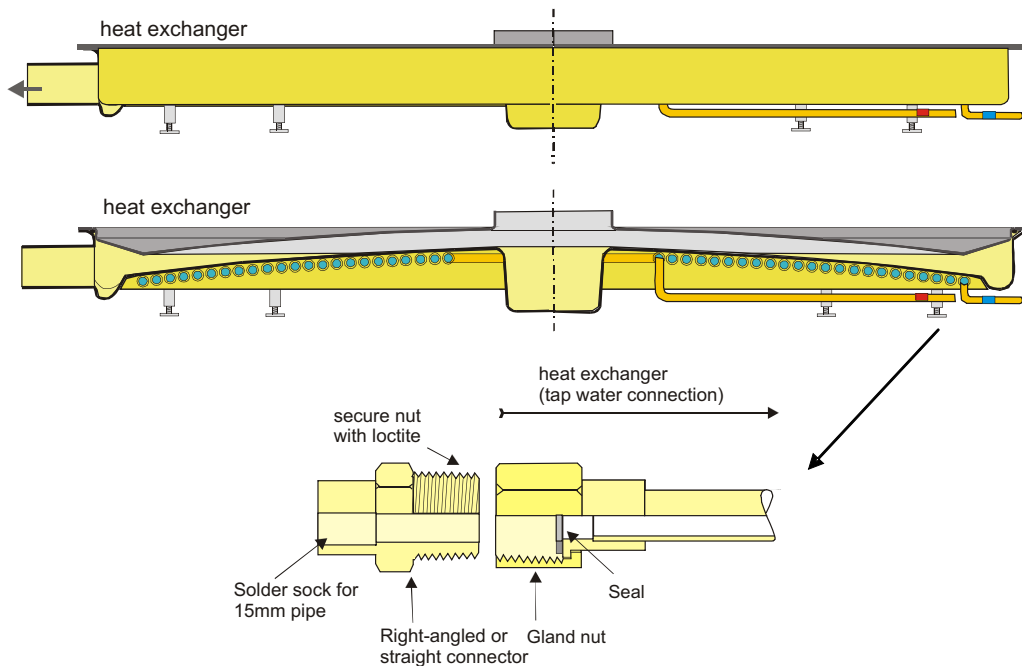
The Recoh-tray can rotate, only the rotation of the discharge is drawn.

Attention: When rotating the discharge of the heat exchanger, the fresh water connections will also rotate.



**Step2:**

Connect the drain using a sleeve, 50 mm diameter.

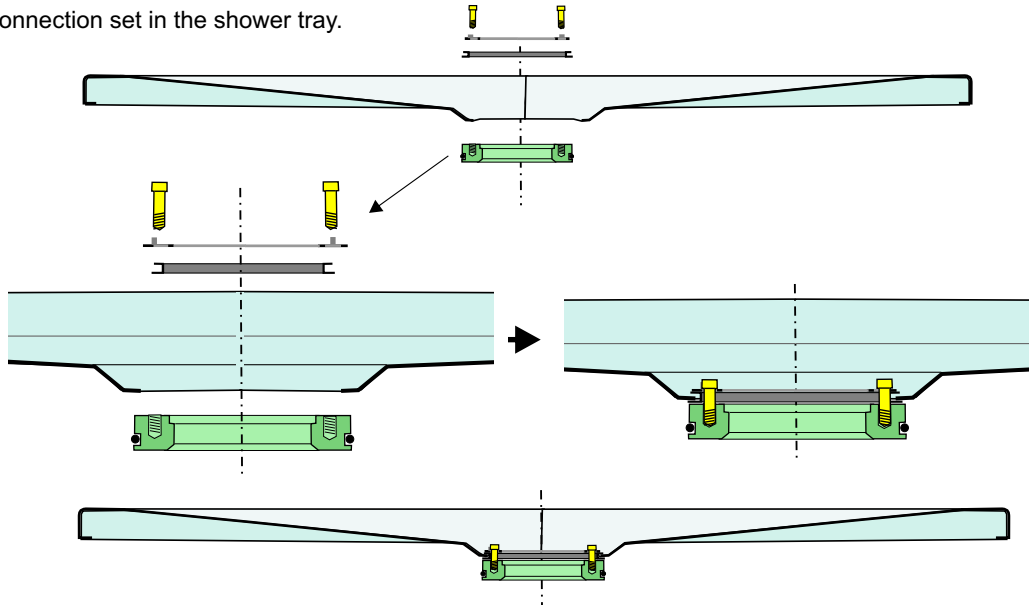


**Step 3:**

Connect the supply and the tap water drain. Blue is supply, red is drain. The heat exchanger is equipped with connections with a gland nut and a seal. A straight or right-angled connector can be screwed into this. Secure the thread using heat loosened loctite. Ensure the pipes are not tensioned.

**Step 4:**

Install the connection set in the shower tray.

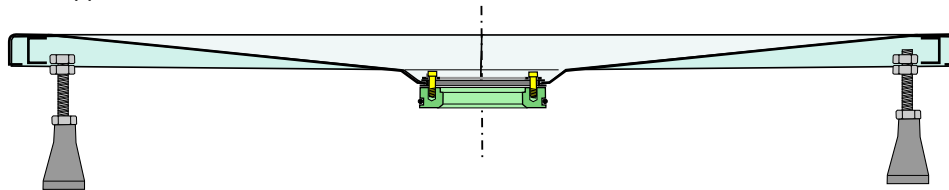


**Step 5:**

Install the mounting frame under the shower tray, see the regulations included in the packaging.

For connecting the discharge, the extension must be mounted in the corner. By using the extension the leg will exteriorize 40 mm. More space is available for connecting the discharge (see photographs, drawings an explanation step 1).

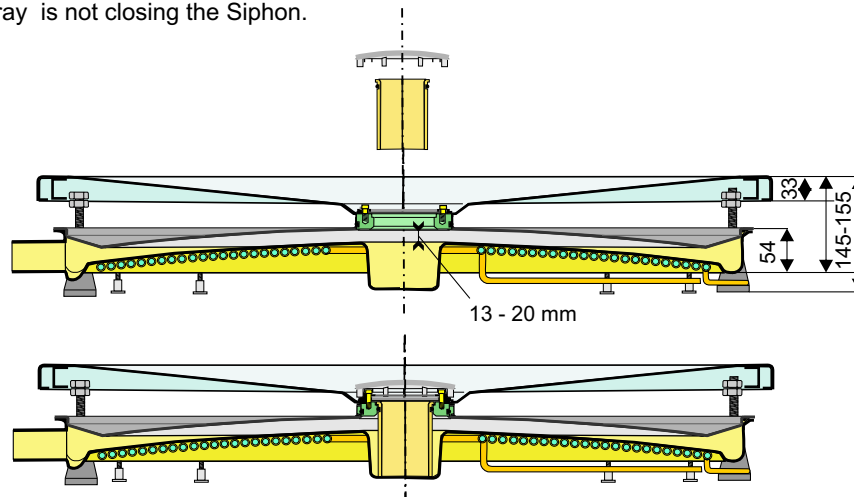
Other methods, without mounting frame, are also possible, such as, for example, a wooden frame. The shower tray does not need to be supported in the middle.



**Step 6:**

Install the shower tray on top of the heat exchanger. Check whether the seal has been properly settled into the heat exchanger's plastic hood. Also check the dimension indicated in the drawing below.

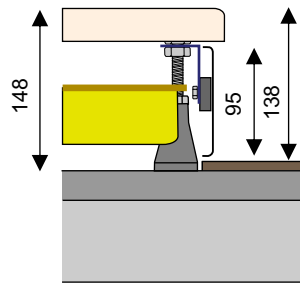
After placement of the siphon tube, for placing the cap, always check whether there is sufficient space between the bottom of the siphon tube and the bottom of the heat exchanger (about a finger thickness is sufficient) so that taxation of the showertray is not closing the Siphon.



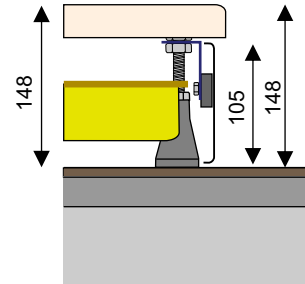
## 2.5 Application removable skirting board.

Specially for the Recoh-tray a removable skirting board, with magnet connection, was developed. Which makes the Recoh-tray easily accessible and it makes a nice finish. The removable skirting board is available for niche and corner installed Shower Trays.

When the Recoh-tray is placed on the cement screed another height of skirting board is necessary as placed on a tiled floor. Placed on a cement screed, 95mm is needed and placed on a tiled floor 105mm is needed (see drawings below).

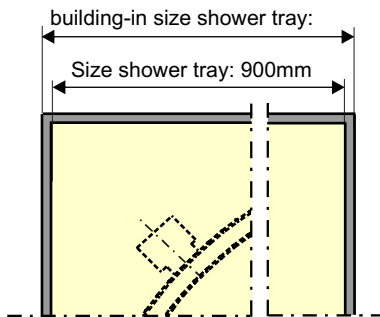


Cross section:  
removable skirting board of  
95mm.



Cross section:  
removable skirting board of  
105mm.

## 2.6 Building-in a niche.



The build-in size of the shower tray (900mm) in a niche is 905mm. This is the size between the finished walls. Depending on the finish that is used on the walls, the gap between the walls must be determined. For building-in a niche, a removable skirting board is available.

## 2.7 Finally.

We would like to congratulate you on your purchase of the 'Recoh-tray'. The 'Recoh-tray' is one of most economically interesting forms of energy saving. The pay-back time is short! Using the 'Recoh-tray' saves on fossil fuels. The stocks of fossil fuels are limited and using the 'Recoh-tray' can help reduce global warming.

Should you have any comments or additions to this manual, please do inform us.