



## Installation & Maintenance Manual

Waste Water Heat Recovery Unit

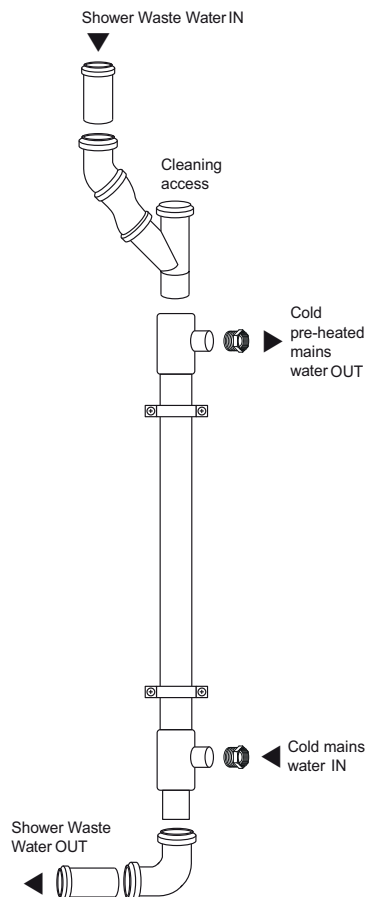
### **Assure Vertical SHRU**

These instructions are to be left with the user.  
The Assure Vertical SHRU should only be installed by a competent  
plumber who has the expertise to be guided by this manual.

Please read the entire manual before commencing the installation process.

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## 1.0 Introduction

1. The Assure Vertical SHRU (Shower Heat Recovery Unit) is a waste water heat recovery system (WWHRS) that recovers heat from the warm waste water when taking a shower. It relies on the waste water from the shower flowing through a heat exchanger that pre-warms the mains cold water feed to a shower mixing valve and combination boiler or hot water storage cylinder

2. The Assure SHRU system consists of a stainless steel 316L exchanger and is supplied with the necessary fittings for installation. It has been developed for dwellings with the bathroom on the first or higher floor, so that when taking a shower the waste water flows under natural conditions through the heat exchanger installed on the floor below the bathroom.

**Important:** The Assure SHRU has been tested and approved to the UK water regulations and the installation must be carried out in accordance with:

- UK Water Regulations/Water Byelaws (Scotland)/Water supply regulations (Northern Ireland)
- All current Building Regulations
- Health & Safety at Work Act 1974, Approved Code of Practice and Guidance L8 (not applicable to private homes, some landlord owned properties)

3. Energy Saving Performance Recognised by SAP - The successful operation of the Assure SHRU which is a Waste Water Heat Recovery System (WWHRS) – Instantaneous Shower Heat Recovery Device, depends entirely upon the adherence to these instructions. Additionally, for dwellings within the UK, recognition of the system's energy saving performance within the National Calculation Methodology (NCM) for the energy rating of dwellings, known as the Standard Assessment Procedure (SAP) requires that these instructions are complied with in conjunction with a system design checklist and an installation checklist and certificate of installation, supplied with this document and available at: [www.ncm-pcdb.org.uk/sap](http://www.ncm-pcdb.org.uk/sap).

4. The system should be installed by a suitably qualified plumber, with system design consideration being equally important to a correct installation. For recognition of the Assure SHRU within SAP, a system design checklist and an installation checklist and certificate of installation should be completed and signed, with copies kept for the home user pack (home owner), the installer, and sent to Baxi at the post or e-mail address shown on the back page. Building Control Officers may also request a copy. For the purpose of system identification of product data without SAP, the product will have an NCM (SAP) Identifier label permanently fixed to the unit, whereby the 'model qualifier' states 'refer to installation certificate, if unknown assume System B'. A second NCM (SAP) Identifier label is also supplied and must be affixed to a nearby boiler or service cupboard (the label must be visible for inspection without disassembly of nearby products or systems) and the 'model qualifier' states 'System A, System B or System C delete as appropriate'.

### Note:

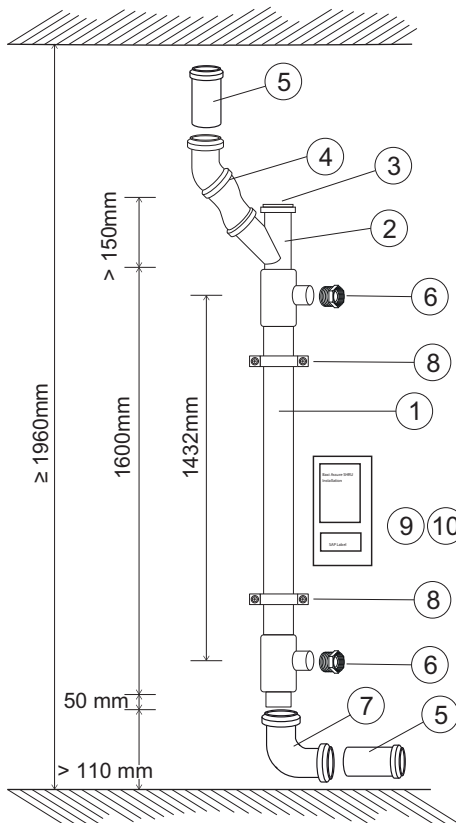
- i) The unit must be installed vertically and must self drain to the trap downstream.
- ii) Failure to install this unit correctly to system A, System B or System C configuration diagrams will invalidate the guarantee and may have an adverse effect on its efficiency.
- iii) Not sending back the completed and signed system design checklist, the installation checklist and certificate of installation to Baxi will invalidate the guarantee.
- iv) Manufacturer's instructions must NOT be taken in anyway as over-riding statutory obligations.

## 2.0 Technical Data

### 2.1 General Data

Description	Unit	Value
Overall length without fittings	mm	1650
Overall length including compression fittings and T-piece with cap insert	mm	1800
Outside diameter of external tube	mm	80
Material internal tube	-	SS 316L
Material external tube	-	PVC
Recommended shower flow rate range	L/m	5.8 to 12.5
Max. mains water inlet pressure	bar	10
Min. mains water pressure	bar	1
Max. water working temperature	°C	60
Mains water connections	inch	3/4" - 1/2"
Waste water connections (compression fitting)	mm	43
Weight	kg	8
Water content – secondary	Litres	0.9

### 2.2 Components & Dimensions (Fig. 1)



1. Product Body
2. Tee Piece 45°
3. Cap - Cleaning Access Ø50
4. 45° Elbow Ø50 - 2 off
5. Adaptor - Ø50 to Ø43 - 2 off
6. Reducer - Male 3/4" to Female 1/2" (inc. cap) - 2 off
7. 90° Elbow - Female Ø50/Female Ø50
8. Mounting Bracket - 2 off
9. Installation & Maintenance Manual
10. SAP Label

In addition it is strongly recommended to obtain two suitable isolation valves to be installed on the mains inlet & pre-heated outlet pipework. These will enable isolation of the unit from the mains water circuit in the event of replacement.

Fig. 1

- Mains Cold
- ▶ Pre-heated Mains
- To Shower

### System A

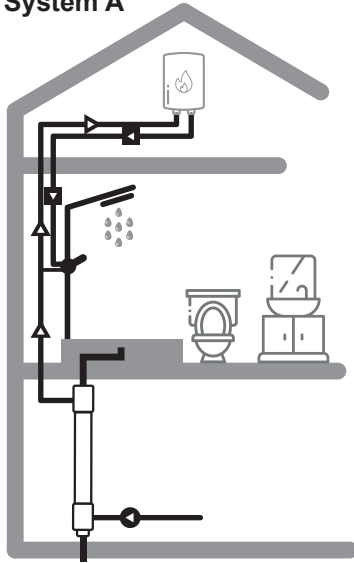


Fig. 2

### System B

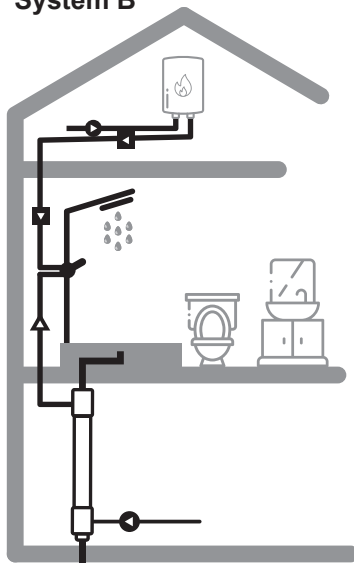


Fig. 3

### System C

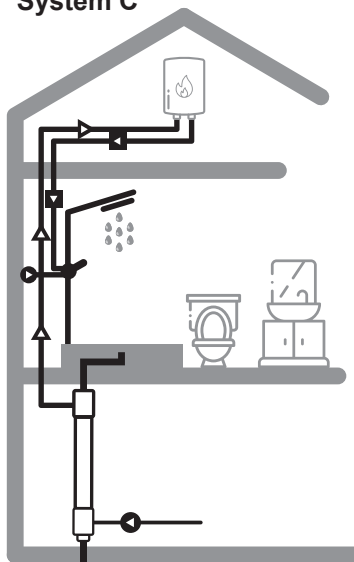


Fig. 4

## 3.0 Installation Preparation

### 3.1 System Principle

1. The Assure Shower Heat Recovery Unit (SHRU) is a waste water heat recovery system (WWHRS) that recovers heat from the warm waste water when taking a shower.

2. It relies on the waste water from the shower flowing through a heat exchanger that pre-warms the mains cold water feed to a shower mixing valve and instantaneous boiler or hot water storage cylinder.

3. It is recommended that the pre-heated mains water from the unit is connected to both the cold water supply of the shower mixing valve and the combination boiler or hot water cylinder, as shown (recommended System A configuration). System A configuration will provide a balanced water flow and is the most efficient way to recover the maximum amount of energy.

4. In case of an unbalanced water flow if, for example, only the cold water supply to the shower mixer valve is pre-heated (System B configuration) or the pre-heated mains water from the unit is only connected to the combination boiler or hot water cylinder (System C configuration), the efficiency of the SHRU will decrease by at least 15%.

#### System A (Fig. 2)

SHRU outlet connects to water heater inlet AND shower cold inlet.

#### System B (Fig. 3)

SHRU outlet connects to shower cold inlet ONLY

#### System C (Fig. 4)

SHRU outlet connects to water heater ONLY

5. Fig. 5 shows the SHRU serving two showers and being served by the waste water from both. The example is a System A configuration.

**Pipework between the SHRU preheated water outlet and water heater and/or shower cold water inlet(s) (depending on installation configuration, A, B or C) must be labelled to indicate that no other services can be interconnected.**

**Note: It is ESSENTIAL that a trap is installed downstream of the SHRU and that NO trap is installed directly underneath the shower tray.**

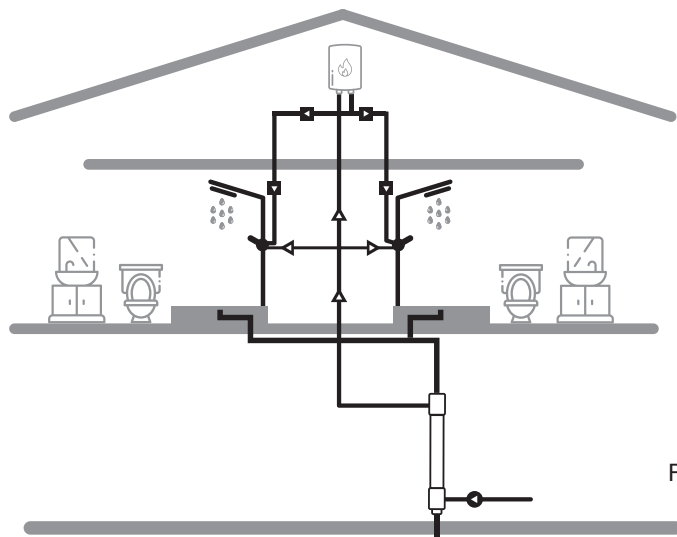


Fig. 5

### 3.2 Location & Clearances

1. The Assure SHRU has been developed for dwellings with the bathroom on the second or higher floor, so that when taking a shower the wastewater flows under natural conditions through the heat exchanger installed on the floor below the bathroom.

2. Therefore, the unit must be mounted vertically securely onto a flat wall with the supplied.

It is recommended that the SHRU is installed in a location where all parts of the unit are accessible and routine maintenance such as cleaning can be carried out with reasonable ease.

3. Prevent the SHRU from being heated above 25°C by an external source. Also, the SHRU must not be located where ambient temperatures may be above 25°C.

4. The preheated water supply inline of the SHRU must be insulated in accordance with the requirements of the 'Building Services Compliance Guide'.

**Note:** Do not insulate the SHRU itself.

It is required that the distance from the shower tray to the SHRU is kept to within 3 metres to reduce any heat losses and ensure good efficiency is maintained. Minimum clearances of 80mm around the main body should be maintained and adequate clearances must be maintained at the top and bottom to ensure all components are accessible and can be cleaned or replaced, if necessary.

### 3.3 Installation Recommendations

1. When showering with the SHRU installed, the cold water inlet temperature will increase slowly because it will be warmed from the heat transferred from the waste water, via the SHRU heat exchanger.

2. If a non-thermostatically controlled showerhead is fitted, continued adjustment of the valve will be required to avoid hotter water temperatures from the shower. Therefore, it is required that a thermostatically controlled showerhead is always fitted.

3. Ensure full flow shut off valves are fitted at both connections of the unit to allow for any replacement of parts.

4. The cold/preheated feed pipe work to the shower from the SHRU must be plumbed up to the T connection at the thermostatic mixing valve of the shower, and then from this T connection to the cold inlet of the combination boiler or hot water store. This will ensure static water is not held in the line for long periods without being flushed, providing other hot water taps are being used.

5. After installation all domestic water pipe work should be flushed and cleaned. This also applies if a system has been substantially altered. However, this would be required even if a shower heat recovery unit had not been fitted. (Refer Approved COP – L8 for guidance)

6. Pipework between the SHRU preheated water outlet and the water heater and /or shower cold water inlet(s) (depending on installation configuration) must be labelled to indicate that no other services can be interconnected.

7. The hot water store or combination boiler must be set to provide and distribute hot water at a temperature of at least 60°C.

### 3.4 Design Flow Chart - Checklist

1. With reference to the information in this section, take into account the items in the checklist are required before the Assure SHRU is installed to ensure it is suitable for installation in the dwelling.

Item	Description	Decision (tick as appropriate)
1	Has consideration been given to DHW delivery performance (water pressure and flow rate)?	
2	Is the dwelling hot water system (DHW) a mains pressure system?	
3	Does the water heater accept a preheated water inlet (Max 30°C) (N/A if installed in System B configuration)?	
4	The length of drain pipe between shower and SHRU is less than 3 metres?	
5	Is a trap/s-bend installed?	
6	Is sufficient space for service and cleaning available?	
7	Has a 'System A, B or C' configuration been selected?	
8	Is the plumbing design configured in order to prevent connection of hot water take-off points, such as taps, from the SHRU preheated water outlet?	
9	Is an installation location specified for the SHRU that does not normally exceed 25°C?	
10	Can the SHRU be installed within a tolerance of ±20mm of vertical?	
11	If shut-off valves are specified for SHRU inlet and/or outlet, are they 'full flow' (non-restricting) shut-off valves? (Tick if N/A)	

## 4.0 Installation

### 4.1 Contents of Pack

1. The Assure Vertical SHRU is supplied in two packs, one for the unit itself and the other containing various fittings - see Section 2.2 Fig. 1 on page 4.

### 4.2 Installing

1. Once a suitable position for the SHRU has been established mark two points on the wall 1100mm vertically apart (Fig. 6) for fixing clamp mounting holes.

2. If the wall is of masonry, brick or similar construction drill & plug the two holes. It is not necessary to plug a wooden structure (Fig. 7).

3. Fit the fixing clamps to the wall and mount the SHRU body in them with the waste water discharge at the bottom. Ensure the body is vertical in all planes (Fig. 8) & tighten the clamps.

4. Take the 45° fork and determine the correct orientation (Fig. 9), then using a suitable adhesive fix it in place.

5. Fit the 45° waste water inlet connectors to the 45° fork (Fig. 10) and connect one of the Ø50 to Ø43 adaptors. Rotate them until they align with the shower waste water pipework (Fig. 11).

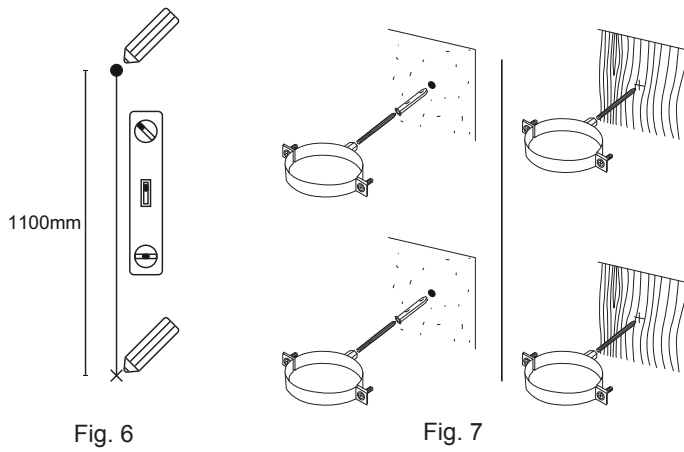


Fig. 6

Fig. 7

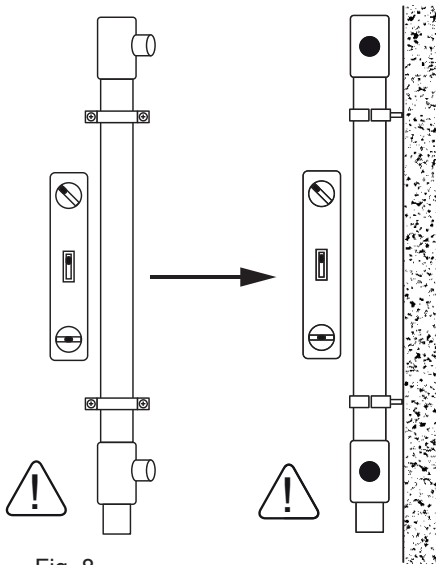


Fig. 8

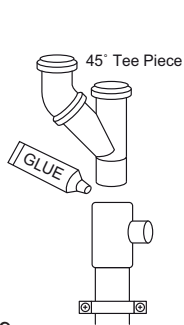


Fig. 9

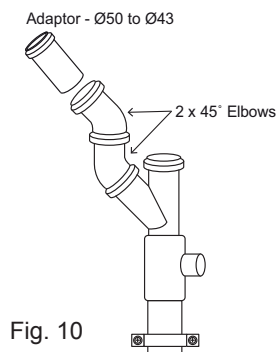


Fig. 10

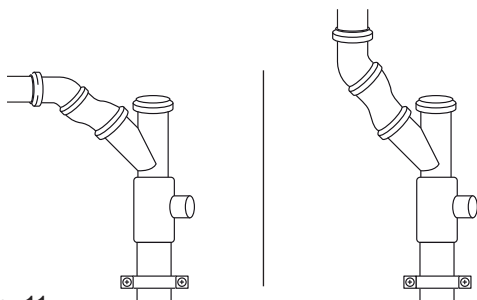


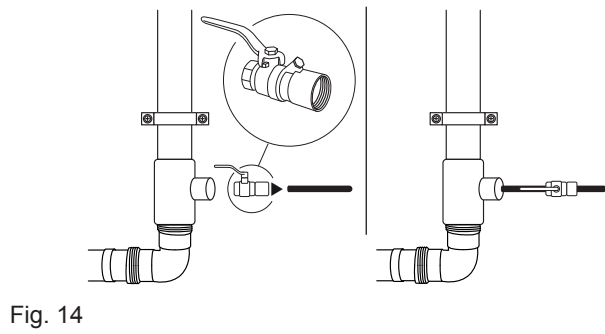
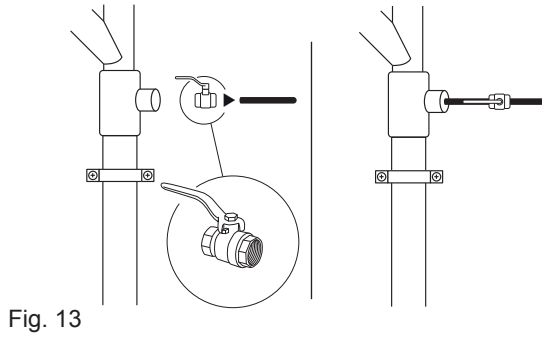
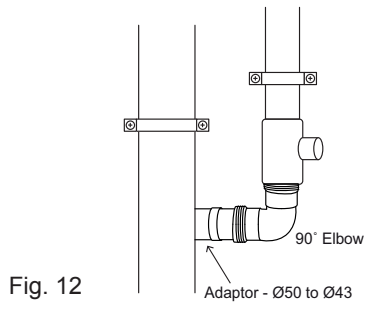
Fig. 11



#### 4.1 Installing (cont.)

6. Using the second the  $\text{Ø}50$  to  $\text{Ø}43$  adaptor connect the waste water outlet to the waste system of the property (Fig. 12).

7. Connect the pre-heated cold outlet (Fig. 13) & mains cold water inlet (Fig. 14) pipework. It is strongly recommended that this pipework incorporates suitable isolation valves as shown.



## **5.0 Routine Inspection & Maintenance**

1. To avoid a lower efficiency in the longer term, it is recommended to clean the Assure Vertical SHRU. Over a period of time it is likely that the Assure Vertical SHRU will start to gather residue, to avoid this it is advised that it is flushed with a household drain cleaner. Periodically, it is recommended to check the installation for leaks etc.

## **6.0 Warranty**

1. The Assure Vertical SHRU warranty is valid for 2 years after installation date.

2. During the warranty period if the product has a defect in design, material or workmanship it must be returned to the place of purchase.

3. The warranty will be invalidated if product failures are caused by the following:-

- Installed with cold inlet pressure above 10 bar.
- Use of the system without a waste trap.
- Inadequate cleaning of the waste trap.
- Installation of the Assure Vertical SHRU not in accordance with these instructions.
- Unauthorized repairs and modifications.



## **Baxi Customer Support**



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