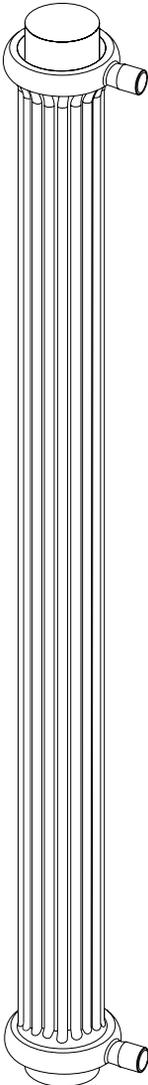


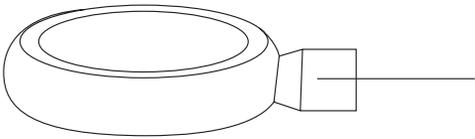
# Ecodrain VT1000

Selection and Installation  
Guide for Residential Applications

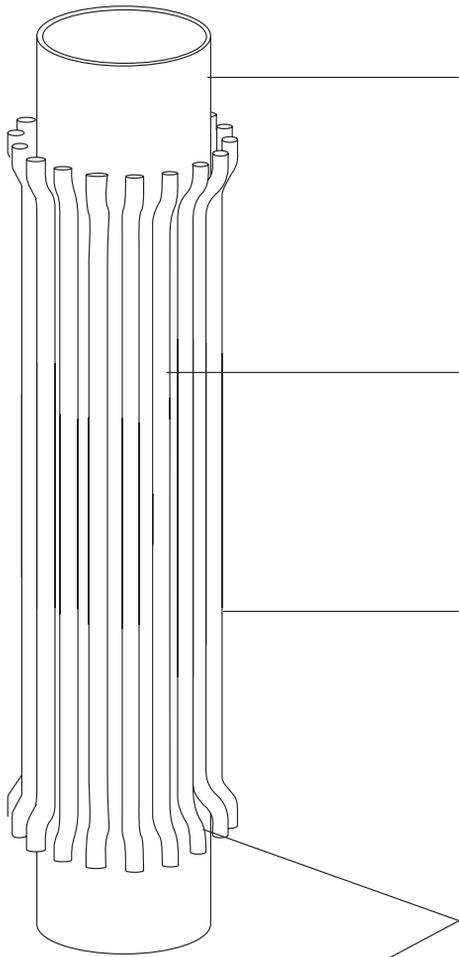




**PRECISION  
ENGINEERING  
LEADS TO HIGH  
PERFORMANCE**



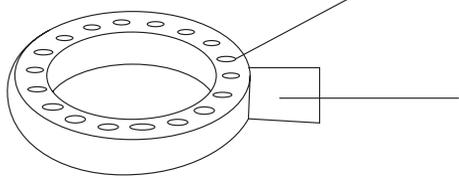
Lead Free Brass Cast Manifold,  
with CNC Machining



Standard Copper Drain Line

Die Formed Heat Transfer Tubes

Patent Pending Engineered  
Die Formed Turbulator Inside



High Quality Brazed Connection

Female 3/4" Solder Connection allows  
for direct connection to 3/4" copper tube  
or 3/4 Male Solder to PEX Fitting

## WHAT'S INCLUDED IN THE BOX

Ecodrain™ VT1000 heat exchanger  
Flexible Coupling for Copper to Plastic Drain x 2

Note: For copper drain lines, do not use the included couplings. Instead use copper to copper flexible couplings (Not Included)

## (NOT INCLUDED)

### Tools

Saw for cutting plastic pipe (for Retrofit)  
Solder torch, wire, flux  
Level  
HEX wrench 5/16" (8mm) for Flexible Coupling

### Parts (optional)

3/4 Cold water fittings

## COMPATIBILITY

The Ecodrain™ VT1000 is compatible with all water heating technologies as well as with all types of plumbing (copper, pex, pvc, other) and drainage systems (ABS, PVC, Copper, Cast Iron)

## HEAT EXCHANGER SUPPORT

The Ecodrain™ must be supported either by the piping system or external supports. The flexible couplings used to connect the heat exchanger to the drain line are not adequate supports and must not be used as such.

## DRAIN PIPE SUPPORT

If installing an Ecodrain™ VT1000 into a cast iron or copper drain pipe system, install structural supports for the drainpipe above where the ecodrain is to be installed, and below if necessary. Cutting an unsupported cast iron or copper drain pipe may damage the drain system. It is recommended that all drain pipe types be supported near the ceiling level of the room in which the Ecodrain™ is to be installed.

## WATER SOFTENER

If the home has a water softener, install the unit downstream (after) the water softener.

## INSULATION

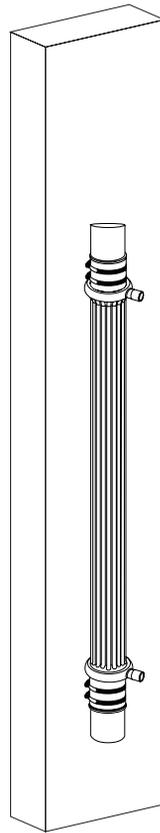
Insulation will not have any meaningful impact on heat transfer. Insulation may be used to limit the impact of condensation on the surface of the cold water pipes. If installed behind a wall, insulation is recommended.

## CLEARANCE REQUIREMENT

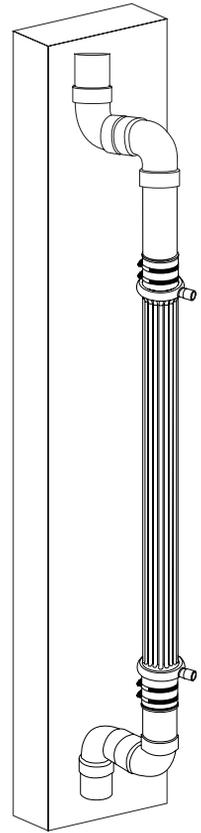
An ecodrain VT1000 requires a clearance between any adjacent structure or wall. The minimum clearance is  $3/4"$ , greater clearance is preferred as this allows for easier alignment. If the clearance is less than  $3/4"$ , the ecodrain VT1000 may not fit and rerouting the drain pipe may be necessary. When rerouting the drain line, it is recommended that space is available for at least  $12"$  of straight vertical pipe after the pipe bends to ensure that a falling film is properly established. This may require a smaller heat exchanger.

At least  $3"$  of pipe is required below the heat exchanger to ensure adequate space to install the mechanical coupling.

The clearance for the heat exchanger between the top pipe and bottom pipe should be approximately  $1/2"$  longer than the total heat exchanger length.



Wall Clearance



Rerouted Drain Line

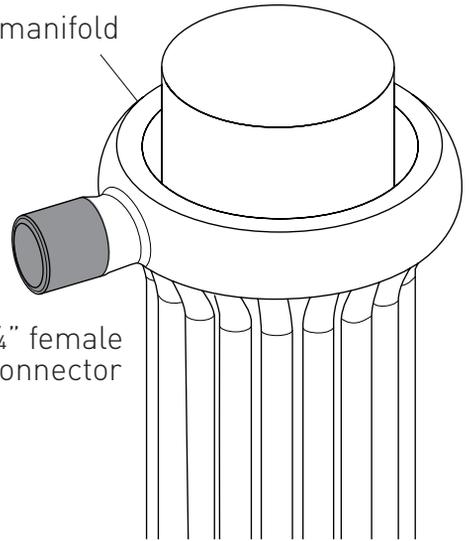
## COLD WATER CONNECTIONS

The Ecodrain™ manifolds have 3/4" female connectors designed for sweat fitting either a copper pipe or a male PEX fitting. The lead free brass material C83470 is 96% copper and solders like pure copper. It is recommended to follow standard soldering procedure. It is important to do a leak test after soldering the sweat fittings. Do not exceed the maximum operating pressure of 100 psi.

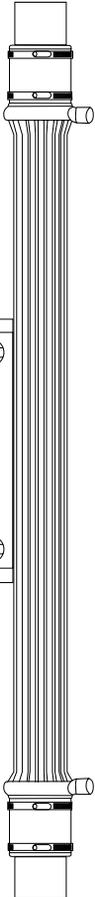
## DRAIN WATER CONNECTIONS

The Ecodrain™ must have the same nominal diameter as the drain stack to which it is being connected. For example, if the drain stack is 3", the Ecodrain™ must also be a 3" model.

manifold



3/4" female connector



## VERTICAL ORIENTATION

The Ecodrain™ VT1000 must be installed in a vertical orientation only. Installing on a slope, even moderate, will reduce the performance significantly. For horizontal or sloped applications, contact Ecodrain™ for products specifically designed for these applications.

Check with your local building or energy codes for the maximum allowable deviation from vertical. Use a level in at least 3 positions along the circumference to ensure that the unit is level.

## THE HEAT EXCHANGER IS SYMMETRICAL

It is recommended to have a section of pipe of at least 12" above the Ecodrain™ to ensure that a proper falling film be established at the beginning of the heat exchanger at that drain water will be evenly spread across the inner surface of the heat exchanger.

Level

# CONFIGURATIONS

## PLUMBING OPTIONS

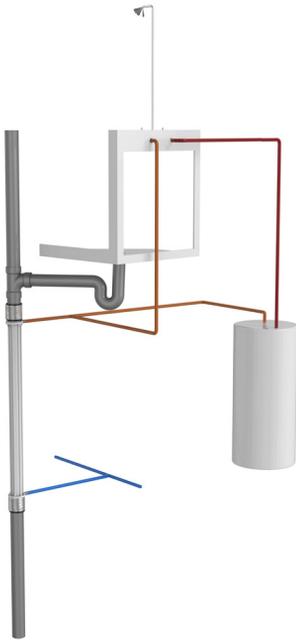
The Ecodrain™ should be installed downstream (after) a water softener or filtration equipment.

Installation must always follow the rules of the plumbing code. When in doubt, check with your plumbing inspector. The Ecodrain VT1000 is certified lead free according to NSF 372. It must only be connected on the cold water line leading to the water heater and/or the cold side of the shower fixtures. Configuration 1, in which water is preheated to both the water heater and the cold side of the shower fixture(s) is called equal flow and provides the greatest savings. Configuration 2 and Configuration 3 are options when Configuration 1 is not possible.

## When installing in a home with two showers connected to separate drain stacks:

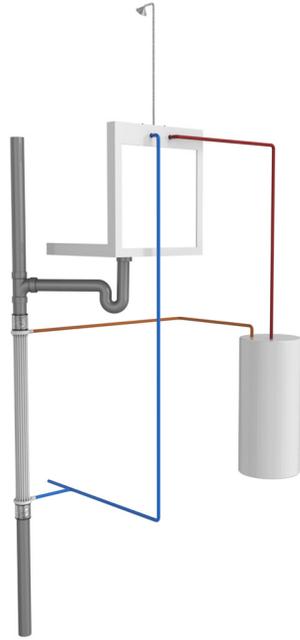
When two or more showers use two separate drain stacks, then an Ecodrain™ can be installed on each drain stack (See configuration 4,5,6). On the cold water side, the two Ecodrain™ units can be connected in parallel such that the preheated outlet of the one unit is connected to the inlet of the second unit and the outlet of the second unit is connected to the water heater.

If the layout of the home makes this difficult, one or both of the cold water outlets can be connected to the cold side of the nearest shower mixing valve as in configuration 2 above.



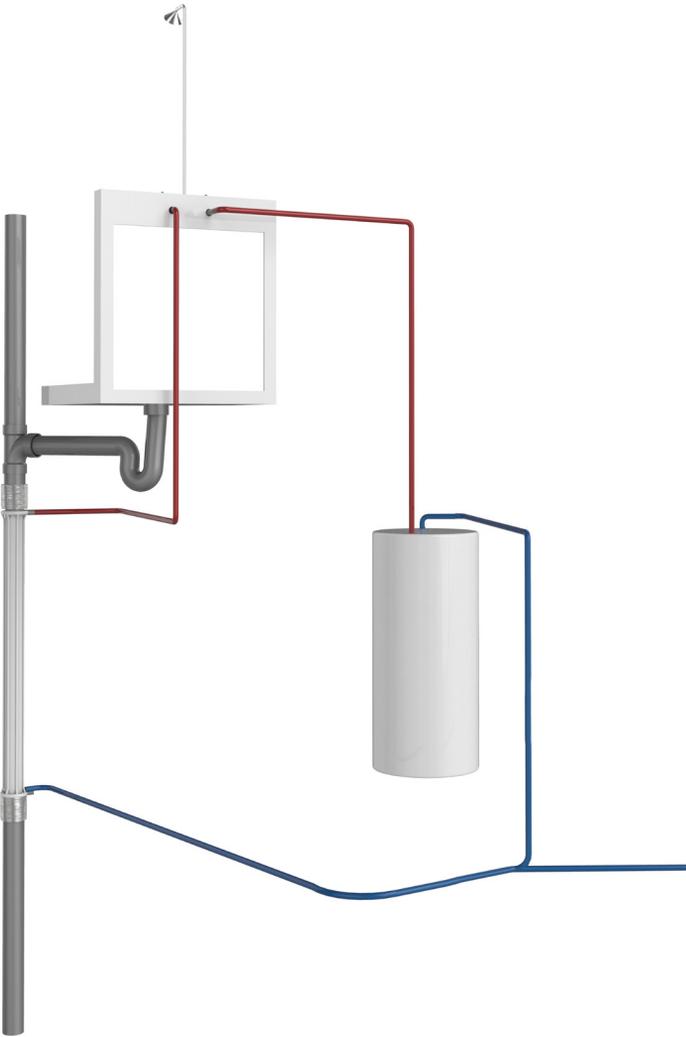
**CONFIGURATION 1**

Split the preheated outlet to both the water heater inlet and the cold side of the shower fixture.



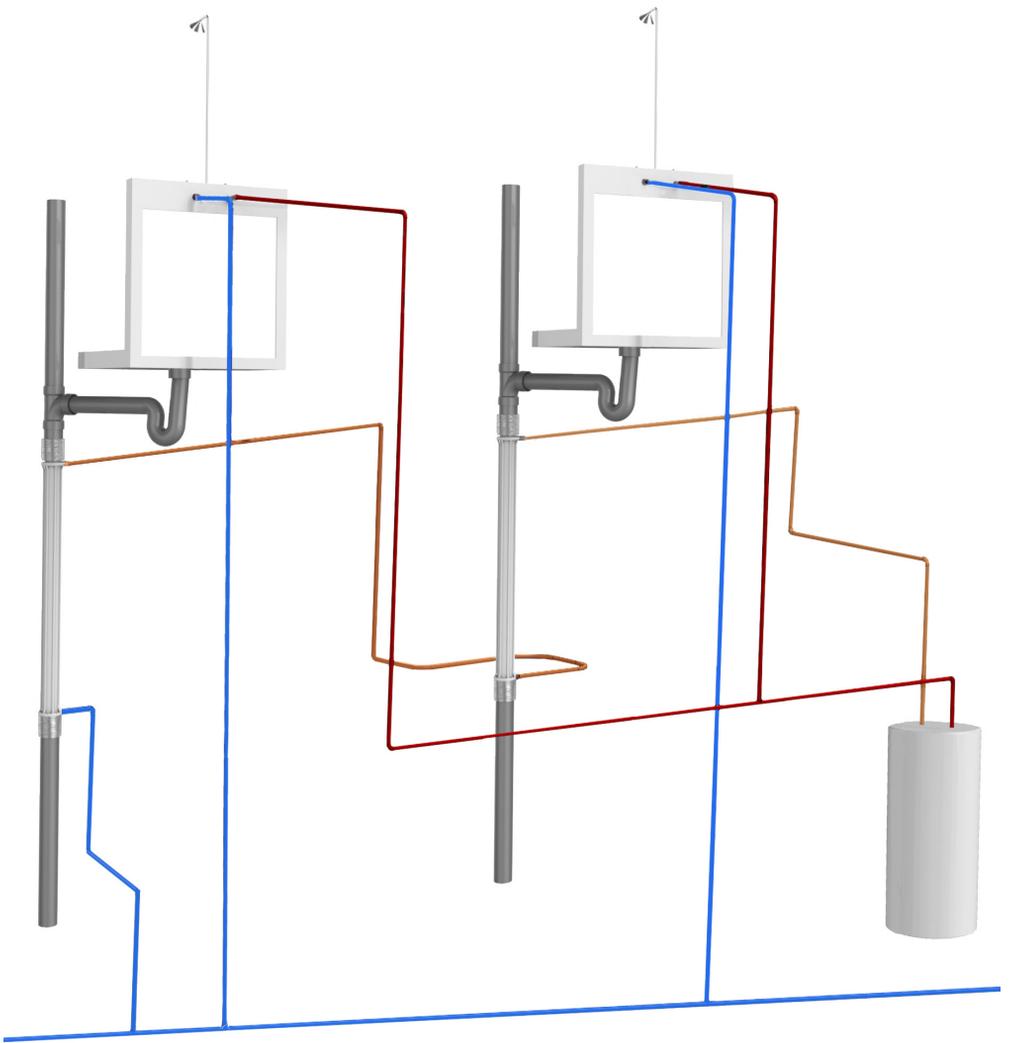
**CONFIGURATION 2**

Connect the preheated outlet of the Ecodrain™ to the inlet of the water heater.



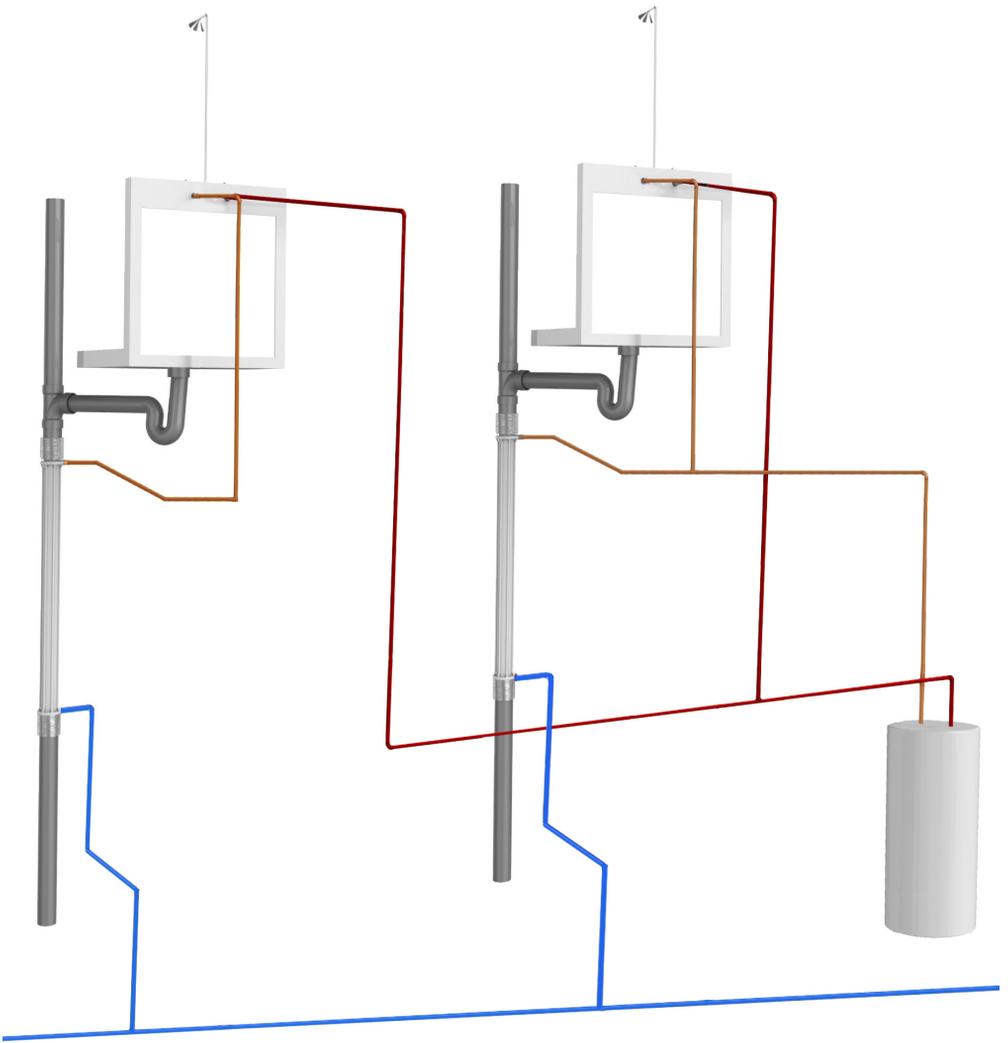
### CONFIGURATION 3

Connect the preheated outlet of the Ecodrain™ to the cold side of the shower mixing valve. Note that in this configuration, as the water to the cold side of the shower is preheated, the overall temperature of the shower will rise and the mixing valve will need to be set at a lower temperature. Caution must be taken to avoid scalding.



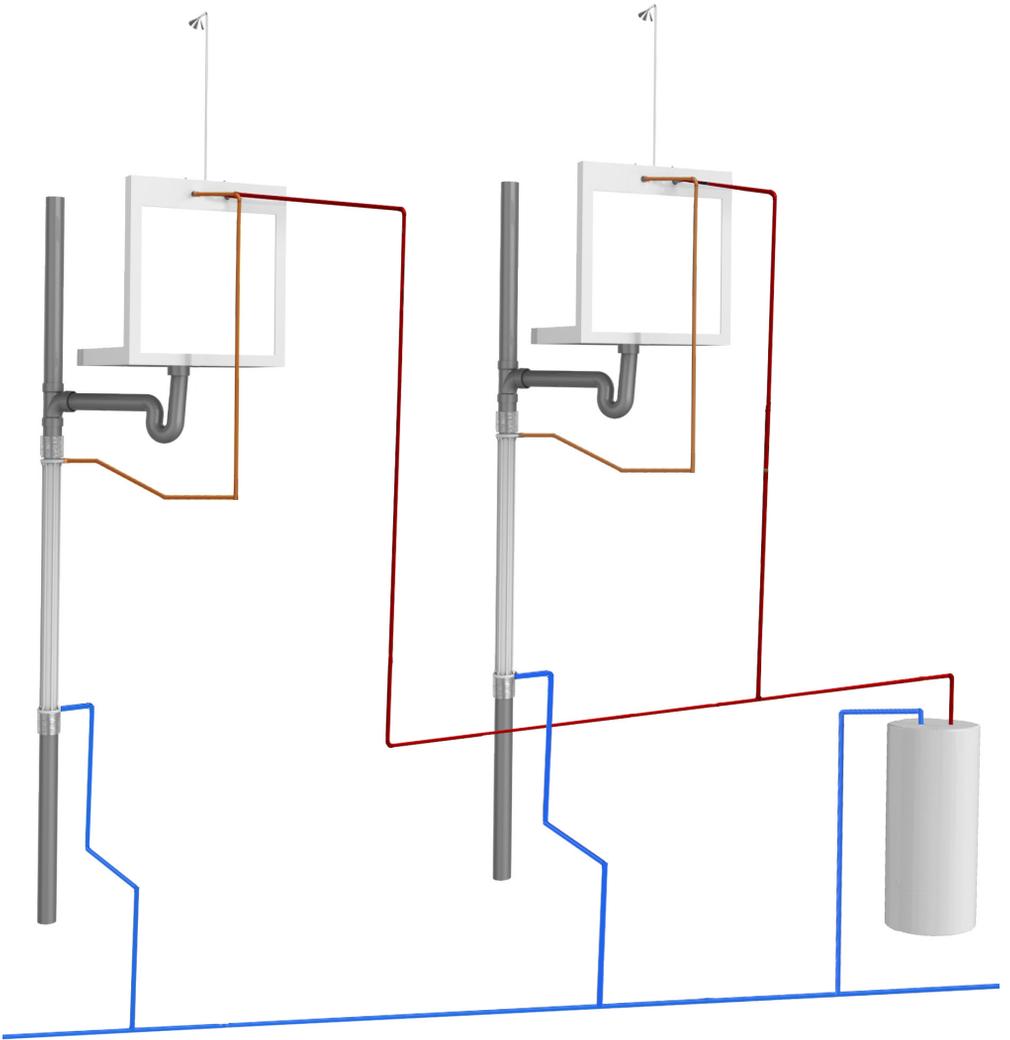
**CONFIGURATION 4**

Two showers with cold water connected in series.



**CONFIGURATION 5**

Two showers with one preheating to the water heater only.



**CONFIGURATION 6**

Two showers, shower preheat only.

# STEPS FOR INSTALLATION

Please read these instructions before installing any Ecodrain™ unit. The Ecodrain™ may be installed on any level where there is access to a sufficiently tall section of vertical drainpipe that carries drain water. It is usually best to install at the lowest point possible.

If using PEX tubing, it may be advantageous to solder the PEX fittings to the heat exchanger before starting step 1.

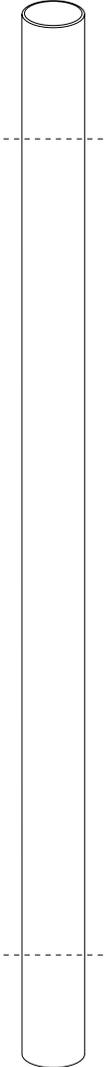
**Note: Only a qualified person should install an Ecodrain™**

**1**  
Measure Drain

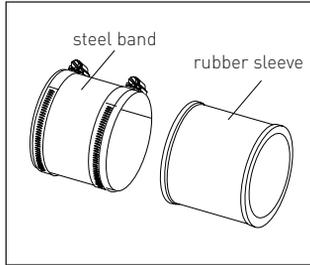
**2**  
Cut and  
de-burr drain

**3**  
Remove Steel bands  
from Flexible Couplings

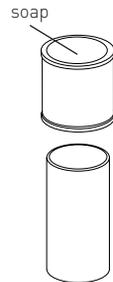
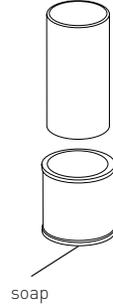
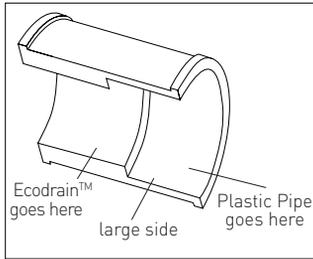
**4**  
Place the rubber sleeves of  
the flexible couplings onto the  
drain pipe and add soap to  
the inner surface



**FLEXIBLE COUPLING**

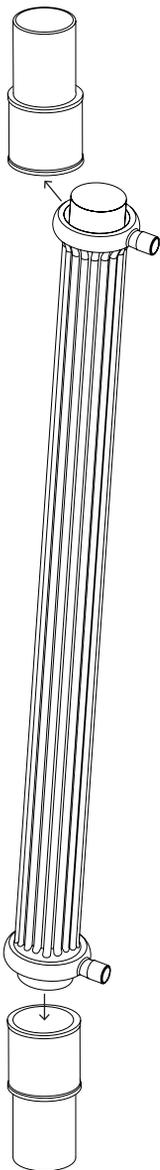


**DETAIL: RUBBER SLEEVE  
OF FLEXIBLE COUPLING**



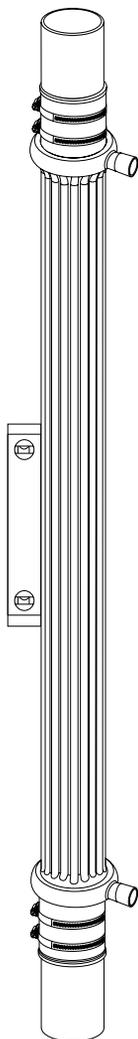
5

Insert the heat exchanger into the flexible couplings



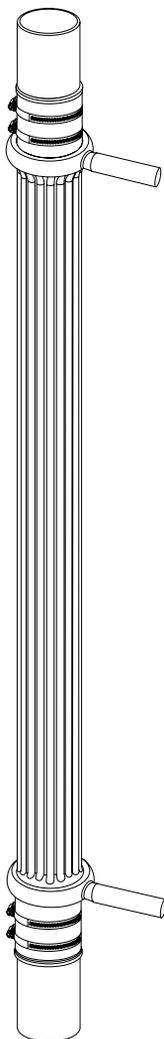
6

Put the steel bands over the rubber sleeves, level the heat exchanger and then tighten the HEX nuts on the steel bands

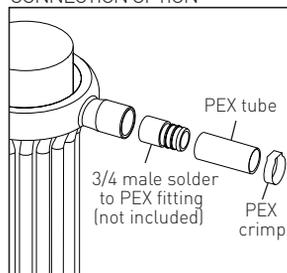


7

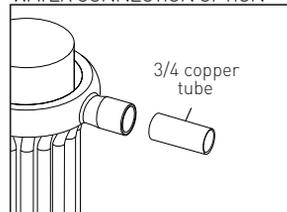
Connect the cold water lines



**DETAIL: PEX COLD WATER CONNECTION OPTION**



**DETAIL: COPPER TUBE COLD WATER CONNECTION OPTION**



**NOTE: COLD WATER INLET MUST BE AT BOTTOM**



## LIMITED WARRANTY

When the product is used for its intended purpose (standard residential or commercial plumbing system and operating temperature and pressure, the use of non-caustic or corrosive of high mineral content drain water) the manufacturer offers a limited non-transferable warranty of ten years on all products against manufacture defects from the date of purchase. The accessories manufactured by a third party and supplied with the Ecodrain™ are covered by their respective manufacturer warranties and are not covered by the above warranty.

If, during the warranty period, a defect due to manufacturing or workmanship occurs that is covered by the warranty, Ecodrain™ will proceed, entirely at its discretion, with the repair or replacement of the defective unit. Since the installation and use of the product is outside the control of Ecodrain™ Inc., no warranty is offered by the manufacturer for problems resulting from installation. It is the responsibility of the purchaser to properly select the product and ensure that the product and installation procedures conform to local laws and codes in effect.

In no case is Ecodrain™ Inc responsible for prejudice to material, direct or indirect or as an accessory to other damages and/or expenses accrued, even if foreseeable, and even where resulting from the confirmed failure or the apparent defect known by the purchaser. In no case is Ecodrain™ Inc responsible for the premature wear of its products due to the properties of the products used in conjunction with its products. It is the purchaser's responsibility to ensure that the products used in conjunction with the Ecodrain™ are compatible with its specified and intended use. The warranty in this document is non-transferable. The warranty will not be honored if the original serial number assigned by Ecodrain™ Inc. is not legible or has been removed or has worn away with time.

This warranty does not cover defects caused by damage in transit, abuse, accident, negligence or repairs made by others. In the case of a defective product, contact the reseller in your area where you originally purchased the unit. All repairs or modifications made without the specific written authorization of Ecodrain™ Inc will render this warranty void without prejudice against Ecodrain™ Inc.

