ECOLET
Waterless Toilets

Owners Guide

Non Electric Model

Clivus Multrum Australia

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What you get with your Non Electric Ecolet

1 x Ecolet Non Electric

2 x Non Electric Compost Chambers

1 x Ventilation Kit, drain hose

1 x 12v fan and transformer

2 x 15litre bags of Humus starter

4.2 metres vent pipe

1.0 metres vent hose (33mm O.D)

Specifications

The Ecolet NE will process waste faster in hot weather because the micro organisms prefer a warm environment. Therefore, expect rapid decomposition in summer months and a slower rate in winter. Liquid in the drain pipe could also freeze in the winter (in colder areas) so insure that it is below the frost in the soil.

Capacity: 2 persons full time or 4 persons part time (extra chambers required and lids required)

Measurements: **H 63.5 cm x W 40cm x D 74cm**

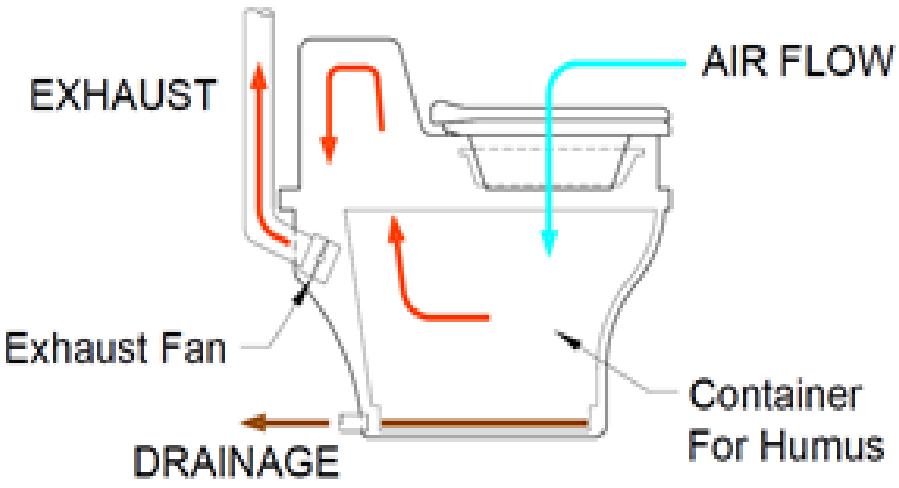
Seat height **50cm (down) 46.5cm (open)**

Maximum Weight for toilet 158kg

Power Consumption for fan

62 watts every 24 hours

2.6 watts per hour



Introduction:

Thank you for your purchase of an Ecolet Composting Toilet, With proper installation and maintenance we are certain it will offer you a convenience and reliability you would expect from the manufacturer of the best selling septic free toilet in the world. **Please, read these instructions carefully,** as they will give you vital information about installing and maintaining your Ecolet

Please remember: State and local regulations always supersede instructions in this manual. Always check with your local health authorities and building inspectors for regulations governing composting toilets prior to installation of your Ecolet.

Description

Your Ecolet is a biological composting toilet that uses the processes of evaporation and aerobic decomposition to transform human faecal waste, urine, and toilet paper to a hygienically safe product (humus) that may be safely utilized if disposed of in a manner described in this manual or by local health authorities.

For correct installation the Installation kit is required: 2 x 1.2m lengths of 55mm pipe, 1 x 1m 110mm cover pipe, 2 x 1m insulation, 1 x roof flashing, 1 x reducing coupling, 1 x insect netting.

Accessories (available separately) : , Starter mulch, Insulation, 55mm pipe

Tools required: Drill - Hole saw 57mm - Saw - Screwdriver- Ruler- 100% adhesive silicon calking - Pencil - Plumb-bob or weighted string

Important

Wherever the ventilation pipe passes through an unheated area (i.e. attic space), it needs to insulated.

Ensure your installation is made with the addition of no more than 2 - 45 ^{o} angles.

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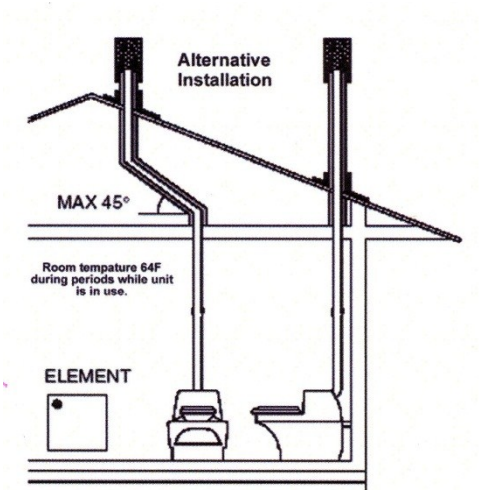
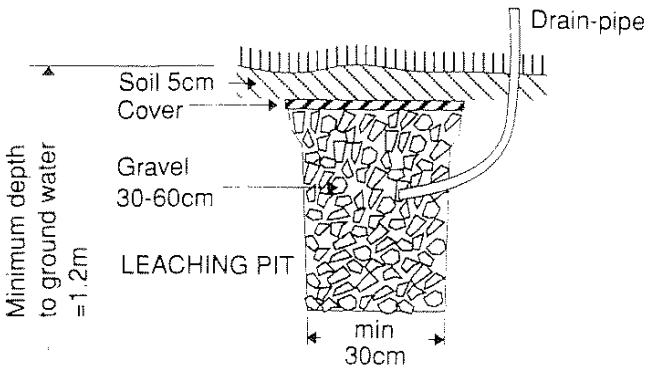
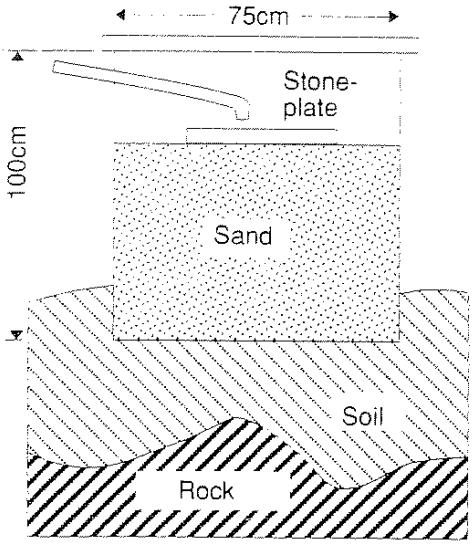


ALTERNATIVE I
(soil with good permeability)



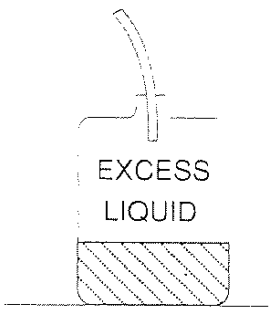
ALTERNATIVE II
(too little soil or with poor permeability)



The drainage system to be chosen depends entirely on the soil condition, ground water level and local regulations.

ALTERNATIVE III
(rocks, too little soil, high ground water level).

When filled, remove and dilute 1 to 4 with water and use as a fertilizer.



25 litre translucent container

Aeration

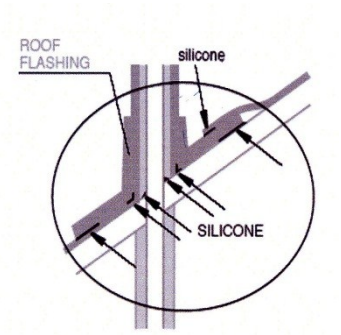
The aerobic organisms responsible for the composting process require free air to survive. Without air, they will die and be replaced by anaerobic micro organisms that will slow the composting process and generate odour. For composting toilets to work most effectively, the material being composted should be unsaturated with liquids, and have loose texture to allow air to circulate freely within the pile.

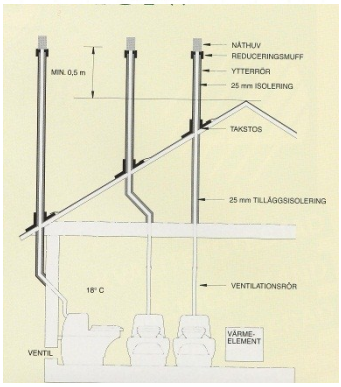
Maintaining aeration

Although the fan in your Ecolet does help the flow of air through the unit., maximum aeration can be achieved by: 1) Keeping the product inside the composting chamber in a loamy consistency 2) Proper installation of the ventilation pipe. Keep in mind that the addition of any angles in the vent pipe will reduce the airflow. 3) Ensure a good flow of air to the bathroom from the outside chamber

Installation

- Unit will sit out 60mm from wall due to vent pipe exit from rear
- Mark for vent pipes and drain outlets. 55mm holesaw required for vent pipe. 33mm holesaw required for drain outlet.
- Drill 33mm hole through fall / wall, connect drain hose to toilet drain outlet—use clamp supplied to affix hose to drain outlet.
- Use 55mm holesaw to cut hole for vent pipe, install vent pipe insulate pipe in uninsulated areas.
- Cut exterior pipe to fit angle of roof, slide roof flashing over black external pipe
- Adjust flashing and use roof sealant (silicone) to seal roof and flashing.
- Once all exterior piping is covered fit reducer coupling and insect mesh.





Installation tips

4.2 m 55 mm supplied.

Vent pipe installed inside insulated room needs no insulation.

Pipes installed outside insulated area eg. Roof need insulation.

To prevent condensation vent must be at least 1 metre above roof and braced against wind (bracing material not supplied)

Roof flashing provides some support.

Fit insect mesh on top of reducer coupling and use screws provided to fix to coupling.

Maximum number of elbows = 2 x 45 or 30 degree (not supplied) to be used for install.

Starting the toilet

1. Remove top of toilet
2. Add 5 litres humus starter into the container inside the toilet.

Insects

If insects have gotten into your compost you should sprinkle a insect control powder or any other long lasting pyrethrum based product over the compost and also in the compost tray.

Cleaning

Use mild detergents on your Ecolet. Never use scouring powder or other strong detergent that could that could

Warning!

Never put cigarettes or other burning materials, tampons or sanitary napkins into your toilet !

Theory of composting toilets

Moisture
In optimum conditions, the compost material has consistency of a well-wrung sponge - about 45% to 70% moisture. When below 45%, there is not sufficient moisture for the micro organisms to function, and above 70%, saturated conditions begin to develop, and oxygen depletion becomes a limiting factor.

Temperature
The typical temperature range for most composting toilets is 18^{o}C to 45^{o}C. Lower temperatures result in a mouldering process that takes a significantly longer period of time to compost and therefore requires a much larger composting chamber.

Aeration
The aerobic organisms responsible for the composting process require air to survive. Without air, they will die and be replaced by anaerobic micro organisms that will slow the composting process and generate odour. For composting toilets to work most effectively, the material being composted should be unsaturated with liquids, and have a loose texture to allow air to circulate freely within the pile

Adding Humus Starter

It is important to add humus starter to your toilet, we suggest 2 cups per week directly into the toilet bowl. This amount is based on two people using the system full time.

In time of heavy use, or if the liquid is not draining well through the compost, or if compost appears too dry we suggest you mix the additional humus mixture through the compost pile. By mixing the solid waste, paper and humus starter the compost will be kept porous and moist, the supply of oxygen will increase, which substantially speeds up the transformation of waste materials into humus.

When and how do I empty ?

When the container inside the chamber is 2/3 filled it is time to move it out of the chamber & placed outside, with the lid provided on it, for secondary composting. Put the other container, that has been composting outside, in the chamber ready for use. Follow the steps below for easy service of the unit:

To minimise odour, pour humus starter through the seat onto the top of the compost pile, to add about 100mm of cover before taking the top off for removal of chamber.

Remove the top of the unit.

When do I empty the secondary container ?

As a general rule, you should keep the composting container as long as possible—but a least 60 days inside the container prior to disposing.

You should dispose of the composted waste in accordance with any and all local authority regulations.

If more than 2 people are using the unit on a regular basis, the container may fill quicker, thereby not allowing the minimum 60 days retention inside the unit prior to emptying. In order to handle this situation, you need to purchase one or more additional composting containers. As the retention time is now less, once you remove the container from the unit you will need to put it aside with a lid on it for further biological processing.

After 60 days dispose of the compost by mixing it with soil or other compost and trench it around ornamental trees and plants, cover with about 100mm of topsoil, or dispose of in any other manner approved by your local environmental health officer.