Vestelli
JÄTEVESILIIKE

Bio-3 Reactor

Greywater Reactor Installation,

Operation & Service Instructions

CONTENTS

01 Bio - 3 Reactor properties

02 Safety

03 Operating principle

04 Installation requirements

05 Installation

06 Commissioning, operation, service, warranty & contact information

Bio-3 Reactor

Capacity
1–5 people

Greywater capacity
600 l/day

Temporary capacity
900 l/day

Oxidation – 1 air pump
45 W

Material
Concrete/Plastic

Weight
approx. 1,200 kg

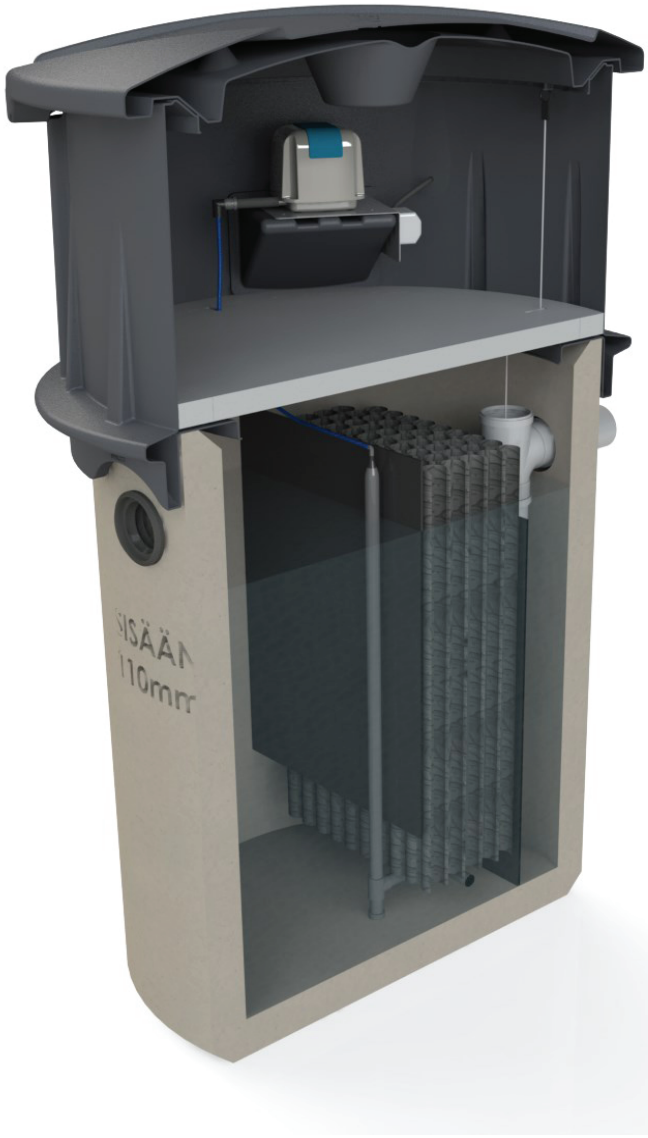
Height
2,200 mm

Diameter
1,200 mm

Sewer inlet (bottom)
1,215 mm (Ø 110 mm)

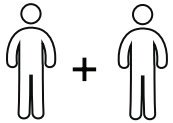
Sewer outlet (bottom)
1,165 mm (Ø 110 mm)

Risers
Ø 1,000 mm inner diam

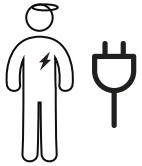


Safety

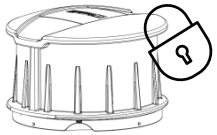
FOLLOW THE INSTALLATION INSTRUCTIONS **CAREFULLY**!



Lifting the cover and riser section requires two people. Be careful not to drop the blower unit, which is attached to the riser section.



The electrical installation must be carried out by a professional electrician with the necessary permits.



The cover must be locked with a padlock.



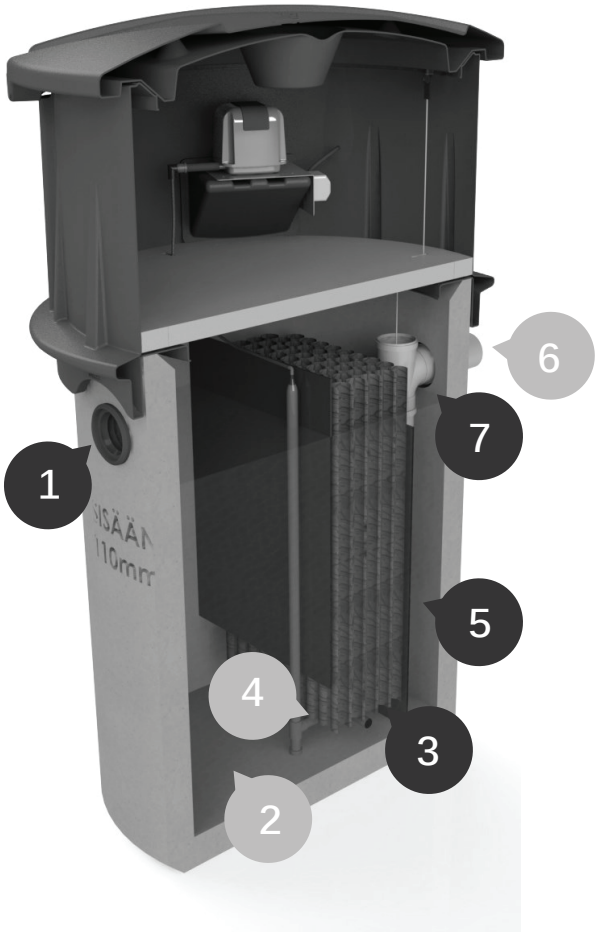
Please take the weight of the tank into consideration when lifting it. Always maintain a sufficient safety distance when lifting the tank. Only lift the tank using hoist grippers that are suited to concrete rings.

Operating principle

The bio reactor is a continuous greywater treatment plant. The bio reactor can be installed as a greywater treatment solution for detached houses or holiday homes. It meets the strictest requirements of the Government Decree on Treating Domestic Wastewater in Areas Outside Sewer Networks (209/2011) under all circumstances. Interruptions in use or overloads do not disrupt the system's operation.

The operating principle of the Bio-3 Reactor is simple. It is based on the oxidation and biological treatment of wastewater so that the biological layer that accumulates on the surface of the biomodules enhances the treatment of the nutrients contained by the wastewater.

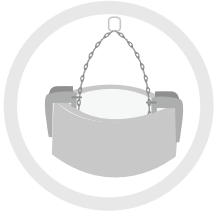
1. The greywater is conveyed into the tank's first compartment through an inclined sewer.
2. In the first compartment, fats and solids are removed from the greywater.
3. The greywater is moved by gravity from the bottom of the second compartment to the biomodules.
4. In the biomodules, the greywater is aerated with small oxygen bubbles.
5. In the third compartment, the greywater settles and the separation of solids is ensured.
6. The wastewater is conveyed from the bottom of the third compartment to its discharge location.
7. The coarse filter in the outlet sewer completes perfect separation
   - The oxidation blower operates continuously.
   - From the bio reactor, the wastewater is conveyed to an approved discharge location.



Installation requirements



Excavator



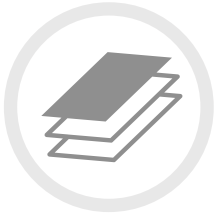
Well ring hoist grippers



Soil compactor



Sand bedding



Frost insulation



Sewers & sewer components 110 mm



Lubricant



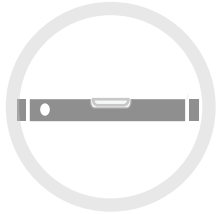
Padlock



Hammer



Shovel



Spirit level



Tape measure



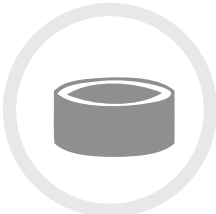
Professional electrician



Installer



* Concretedrill + 8-mm drill bit

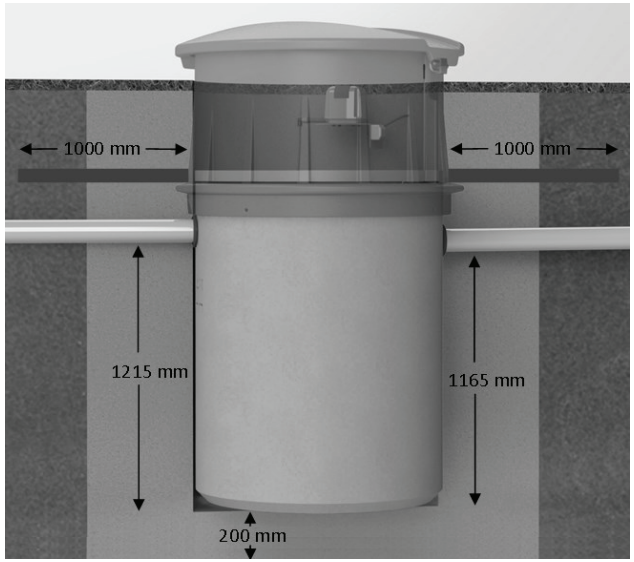


* 1,000-mm well ring for riser ring + seal

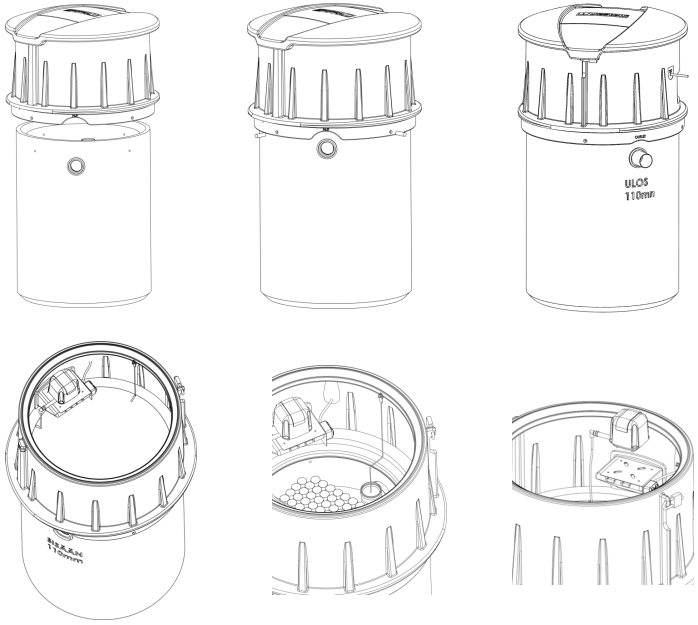
* **If the sewer is at a depth exceeding 70 cm.**

Installation

1. Dig a sufficiently wide and safe hole that is 1,415 m deep at the sewer's lower edge.
2. Pipe the sewer from the building as close to the tank's location as possible.
3. Use a soil compactor to compact a 20-cm level layer of sand bedding at the bottom of the hole.
4. Carefully attach three-claw hoist grippers to the tank and use them to lift the bio reactor into the hole. Use a spirit level to ensure that the bottom is level.
5. Fill the hole with sand, compacting the sand bedding every 20 cm or so until mid-way up the bottom section. NB! Have the cover in place during the installation to prevent sand getting in the tank.
6. Insert the sewer from the building through the seal in the tank's side so that at least 5 cm of the sewer pipe is visible inside the tank. Pipe the sewer outlet from the tank to the discharge location.
7. Lift the riser on top of the tank well and attach it using the spikerpluggs provided. Ensure that the riser's seal stays in place during the installation.
8. NB! If the sewer is at a depth exceeding 700 mm, install a sufficient number of concrete well rings between the bottom section and the riser. Seal the joint of the well ring and bottom section using sealing strip. Drill new fastening holes for the riser with a 8-mm concrete drill bit.
9. Connect the power cord to the socket. NB! Only a professional electrician may carry out the connection. The riser has a ready-made penetration for the electric cord.
10. Fill the hole with sand and install insulation panels on top of the sewers and at the sides of the tank at a width of approximately 1 m. NB! The riser is equipped with an installation level for the insulation plates.
11. Fill in the final soil, such as sand or earth, on top of the frost insulation.
12. Insert the air hose from the well into the blower's connector.
13. Install the coarse filter to hang on the provided hook.



NB! Install the sewer's ventilation above the roof using the building's internal ventilating pipe. Do not use an inward relief valve. If ventilation above the roof is not possible, please contact customer service before installation.



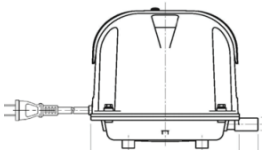
Installation

- Fill the tank with water.
- Carefully check that the air pump is firmly attached to its stand and the air hose is connected.
- Connect the electric plug in the socket and check that oxygen bubbles start rising in the biomodules.
- Put the insulated cover in place.
- Lock the cover with a separate padlock.

Operation & service

- Do not run any other water into the sewer except water from bathing, laundering or dishwashing
- The air pump can be switched off during long interruptions in use.
- If the bio reactor is not used during the winter months and the blower is switched off, it must be unplugged and brought indoors.

- Empty the tank when necessary and at least once annually. Fill the tank after emptying it.
- When the tank is emptied, remove the coarse filter and rinse it.
- Clean the air pump's filter annually when the tank is emptied. Unscrew the screw on top of the blower using a screwdriver. Remove the filter cover and clean or change the filter. Put the clean filters back in place and fasten the screw.
- Check that the air pump is firmly closed and functioning.



If you detect any disruptions in operation, contact Jätevesiliike Vestelli Oy's customer service on +358 10 232 7220.

Warranty

- The Bio-3 Reactor has a 2 year warranty against defects in materials and workmanship. All warranty claims have to be made under the time of warranty.
- The warranty is considered to start on the day of purchase, and the warranty period does not restart with service or repairs.
- The warranty does not cover errors in installation, planning or operation.

Vestelli JÄTEVESILIIKE

Contact information

Jätevesiliike Vestelli Oy

Aleksanterinkatu 29 A, 2nd floor, FI-33100 Tampere
Production: Kauhakorvenkatu 43, FI-33720 Tampere

+358 10 232 7220

jatevesiliike@vestelli.fi

www.vestelli.fi

Business ID: 2364009-4

Maintenance Operations Notes

DATE	MAINTENANCE OPERATION	PERFORMER

Useful Contact Informations

Water & Sewage Consultant/Planning:

Name/Surname _____

Address _____

Telephone _____

@ E-mail _____

Installer/Contractor:

Name/Surname _____

Address _____

Telephone _____

@ E-mail _____

Place of Purchase/Supplier:

Name/Surname _____

Address _____

Telephone _____

@ E-mail _____

Service:

Name/Surname _____

Address _____

Telephone _____

@ E-mail _____

Sludge Removal:

Name/Surname _____

Address _____

Telephone _____

@ E-mail _____

Local Authority Enviroment & Health Protection Department:

Name/Surname _____

Address _____

Telephone _____

@ E-mail _____