

User Manual for BioLet





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User Manual for BioLet

USA

Congratulations on your purchase of a BioLet toilet!

Your biological toilet is patented and manufactured in Sweden and the brand is BioLet. BioLet means that it produces natural humus in the actual unit, without the use of water or chemicals. Our largest model (BioLet 65a) has been awarded the Nordic ecolabel (the Swan mark)

INTRODUCTION

Please read the instructions before beginning to install your BioLet toilet. Experience has shown that problems that can occur are almost all related to installation and maintenance mistakes. To ensure hassle-free use, take a moment to read through the manual.

THREE IMPORTANT THINGS TO REMEMBER:

- When the toilet is used, room temperature should be at least +18°C (65°F).
- If you are away for more than two days, always turn the power off and put the cover in the seat opening, otherwise the compost will become dry.
- The heating element in the room can also be switched off, the composting toilet will not be damaged by freezing.

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How the BioLet works

BioLet is a self-contained biological toilet that composts waste, toilet paper and evaporates liquid. The composting process takes place using nature's own microorganisms, without the need of any chemicals. Controlled air supply and heat, as well as regular mixing of the compost accelerates the composting process and converts toilet waste into eco-friendly humus. This makes a nutrient rich supplement for your garden.

Your BioLet box and installation kit

The box contains:

The toilet, a bag of humus, a rake and instructions.

The installation kit contains:

Ventilation pipes, white pipes, 5 pcs x 675 mm (27").

Outside pipe, black 2 pcs x 675 mm (27").

Insulation, 2 pcs x 675 mm (27").

Reduction coupling, 55/110 mm (2 1/4"/4 1/2"). Roof flashing. Insect netting.



Wall installation (optional)

The installation package contains: 2 x 45° elbows 55 mm (2 1/4"),

Insulation 675 mm (27"), inside and outside cover, 2 pcs x exterior pipe 45°,

2 pcs x Insulation 55 mm (2 1/4") 675 mm (27"), exterior pipe 110 mm (4 1/2"),

3 pcs x exterior pipe 110 mm (4 1/2") belled, reduction sleeve, insect netting.

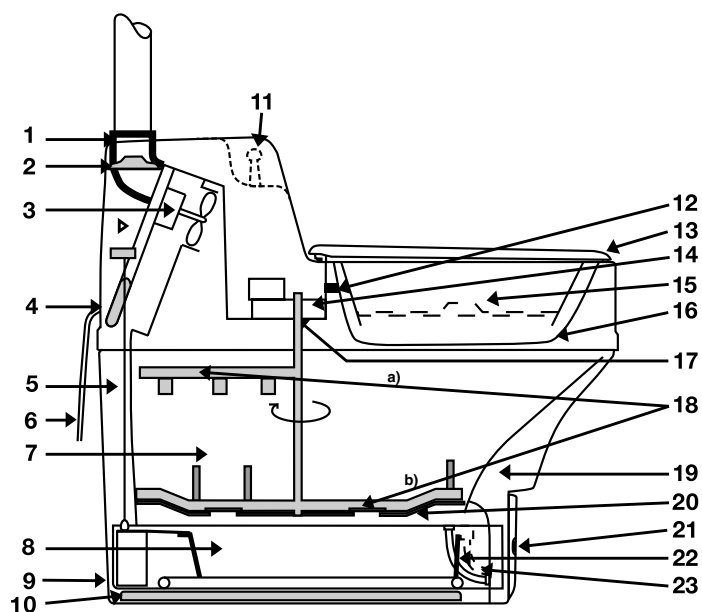


Extra accessories

Optional accessories are available: elbows 30° and 45°, insulation, straight pipes, humus starter, extra tray.

BioLet cross section

1. Pipe connection
2. Adjustable setting
3. Fan motor
4. Heating element
5. Airflow
6. External Cord
7. Composting chamber
8. Tray
9. Overflow connection 65a
10. Lower heating element
11. Mixing handle 15a
12. Sensor magnet
13. Soft-close seat
14. Mixer motor 25a/65a
15. Cover removable
16. Compost cover
17. Shearpin 25a/65a
18. Shaft with mixer arms
 - a. Upper mixing arm
 - b. Lower mixing arm
19. Airflow
20. Grate
21. Front cover
22. Liquid tube, overflow (at the left hand side, seen from the front)
23. Liquid tube, tray (at the right hand side, seen from the front)



INSTALLATION

You will need the following:

- Hole saw 55 mm (2 1/4") or jigsaw
- Saw
- Measuring tape
- Asphalt sealant/adhesives

Also, check the floor space where the toilet should be placed so it is large enough. Required floor space is:
BioLet 15a and 25a width 55 cm (21 1/2") x length 110 cm (43")
BioLet 65a width 65 cm (25 1/2") x length 135 cm (53") (for the toilet and room for removal of the tray)

Pipe installation

The entire pipe, from ceiling and up through cold areas such as attic, must be insulated. This is to prevent condensation in the ventilation pipe and to increase natural draught. Insulation is essential, no matter how much or little the toilet is used, even if the toilet is used only in summer. **Do not use bends more than 45°.**
Do not use any rain cap on top of the ventiation pipe, only use the included netting.

Overflow drain

If you choose to connect the emergency overflow drain, choose one of the connectors (9), depending on the direction of the hose. There is a silicone plug in the connector, push the plug into the toilet and connect the hose.

Temperature

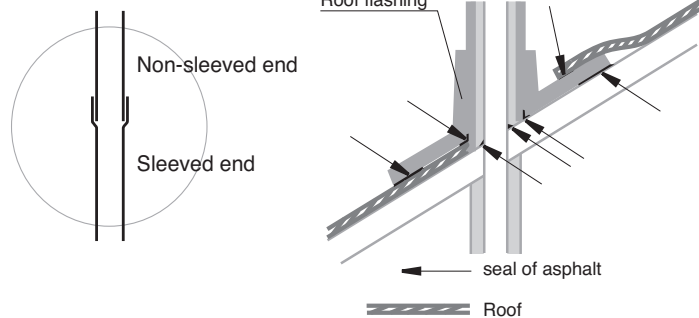
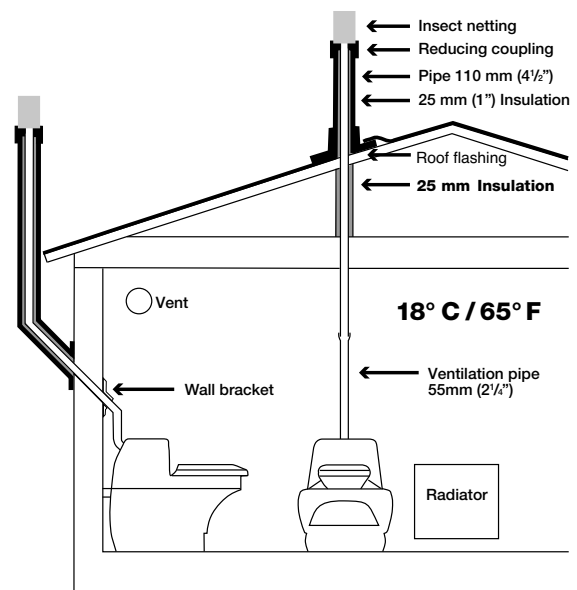
The room in which the toilet is installed must be insulated. When the toilet is in use, room temperature should be at least 18°C (65°F) to ensure proper function. The best thing to do is to install a thermostatically controlled heating element. **During periods when the toilet is not in use the temperature in the room can be low or even freezing without any damage to the unit.**

Air supply

To ensure adequate air supply, a vent through the outer wall should be installed.
(100 mm (4")). No extractor fan in the toilet room to avoid back draught, which can lead to odors in the room.

Assembly

1. Set the toilet in position against the wall.
The floor must be even and **insulated**.
2. Measure and make a hole for the ventilation pipe in the ceiling, 55 mm (2 1/4") diameter. Install the ventilation pipe with the non-sleeved end down inside the rubber coupling on the toilet.
3. Measure and make a hole in the roof, with 55 mm (2 1/4") diameter.
4. Push the pipe up through the hole. Seal it well using asphalt sealant between the pipe and the roof to prevent any leaks.
5. Insulate the pipe from the ceiling up to the top.
All pipework in cold spaces must be insulated.
6. Cut the exterior pipe to fit the angle of the roof.
7. Place the roof flashing on to the exterior pipe. (Use soapy water to make it easier).
If you have a tin roof, the best thing to do is to get a sheet metal worker to make a junction between the roof and the exterior pipe.
8. Pass the exterior pipe over the ventilation pipe's insulation. Put on the reduction coupling.
9. Adjust the roof flashing and seal firmly with asphalt sealant between the roof flashing and the roof.
10. Fit the insect netting against the stop on the reducing coupling.



Starting of empty toilet

1. Put about 2/3 of the bag of the BioLet humus starter into the toilet, except to model 65a where the whole bag should be used. About half of the material falls directly through the grate into humus tray.
2. Connect the plug into a grounded wall socket. Push down and release the seat. The mixer motor will automatically start and make one turn, repeat this a couple of times.
3. Set the heating control to the desired level. It's recommended to start with setting #2.

BioLet 15a, 25a and 65a

Capacity setting

Adjust capacity by turning the knob.



The recommended start setting for 2 people using the toilet is step 2. After 1-2 weeks in operation, you might have to adjust the setting depending on the liquid level in the tube (23).

If the tube is empty, decrease the setting and if the tube is more than half full increase the setting.

TO SET THE HEATER

Set the heat according to usage, check the level tube (16) on the right side (seen from the front).

- Step 1 green light – Fan only
- Step 2 yellow light (one LED) – fan and 30% heat
- Step 3 yellow light (two LEDs) – fan and 60% heat
- Step 4 yellow light (three LEDs) – fan and 100% heat

Operation

LIQUID IN THE LEVEL TUBE

The level tube (on the right hand side, viewed from the front)(23) shows how much liquid there is in the tray. The tube should never be full; this means the tray is full of liquid. Half full of liquid in the tube is ideal.



CORRECT SETTING

At the correct setting, the compost has a porous and moderately moist consistency. If liquid stays on top of the compost and seeps into the tray slowly, then the compost is too wet and can no longer absorb the liquid as intended. Increase the setting and add a few litres of humus starter. On the other hand, if hard lumps form or toilet paper remains on top, so that it doesn't get soaked and mixed in properly during mixing, the compost is too dry. If so, turn the setting down and sprinkle a few litres of water over the compost.

If you have model 15a, make a couple of extra turns with the handle.

EMPTYING FREQUENCY

In a cottage, with four to six weeks use a year, it is usually enough to empty the tray once. More frequent use and you have to empty the tray more often. The general rule is to empty the tray when the compost level reaches the upper mixing arm. It will only take a few days after emptying, before the tray is filled and should stay full for composting until the next emptying of the tray.

ADD EXTRA HUMUS STARTER

To get the best compost, keep the compost porous and of moderately moist texture, add a little humus regularly, approx one quart per person/week

EMPTYING

Where you can get by with one emptying a year, leave the compost in the toilet during the off season. The tray is then emptied next season.

EMPTYING THE TRAY

A few days before emptying, increase the setting to 3 yellow lights. Once the liquid has disappeared from the level tube, do as follows:

1. Make sure there is no liquid in the level tubes on the right (23) or left hand (22) sides.
2. If there is still liquid, wait until the liquid has evaporated.
3. Disconnect the power.
4. Emptying: Remove the front cover (21) and remove the tube from the tray.
5. Empty the tray.
- 6 Before you slide the tray back into place, check that the area where the tray goes is clean.
7. Replace the level tube and the front cover.

Prepare for brief absences

If you are away for more than two days, turn the power off, otherwise the compost will become hard and dry. If there is a lot of liquid, for example, after heavy use, you can leave the toilet running for a limited period (approximately one week). Leave the toilet running on step1. Then only the fan will run, and the contents of the tray will dry slowly.

At the end of the season

When the season is over and it is time to leave your cottage, unplug the toilet and put the cover in the seat opening. You can also turn off the heat in the toilet room, as the BioLet does not freeze or break.

New season approaching

When the season is approaching, and it is time to open up your cottage, it is also time for the BioLet to be used again after a long break. Check if the compost has become hard. If so, break it up with the rake. Then empty the tray. If there is less than 10 cm (4") of compost on the grate, add some more humus starter.

FAQ

– What to do if the compost becomes too dry?

Use the setting to reduce the heat to a lower level and spray a couple of litres of water on the compost, at the same time it may be useful to break up the compost through the seat opening using the rake. If the compost is consistently too dry, despite the setting being at step 1, then you can also install a timer that turns the power off at night.

The forming of hard lumps or that toilet paper remains on top instead of becoming wet and getting mixed in to the compost indicates that it is too dry.

– What to do if the compost becomes too wet?

First check that power is connected to the toilet, so that the fan and heater works. The fan motor is working if you are able to hear it and the heating you can check by holding your hand on the back of the toilet. Then check:

When the compost is no longer able to absorb liquid, and it stays on top of the compost.

- The ventilation pipe has been installed according to the instructions.
- The room temperature should be at least 18°C (65°F) when toilet is being used..
- The toilet has been overloaded. Reduce the load.
- There is enough airflow through the wall vent.

Getting the compost drier

1. Mix a few quarts of BioLet Special Humus into the moist compost until all the liquid has been absorbed.
2. If there is liquid in the level tube. Do not turn it down to a lower setting until the liquid regains its normal level.
3. If there is liquid in the level tube on the left side as viewed from the front, the tray has overflowed. Increase the setting and wait a couple of days before emptying.
4. If the compost does not become drier, the excess liquid will need to be emptied. Loosen the level tube (23) at the top and connect a garden hose. Note: Do not open the front cover.
5. If the toilet is full, empty the tray. It might be necessary to repeat this until the volume is back to normal.

– What to do if the tray is stuck

If the tray is stuck in place, due to compost between the tray and the grate having dried, release the tray by pulling the humus rake back and forth between the tray and the grate.

– Emptying

For more frequent use, for example in the event of permanent use, the more often the tray has to be emptied. If the toilet has not been used for the last 2 months, the contents in the tray can be used as fertilizer immediately. But, when emptying the tray in the middle of the season, the contents needs to compost further for about 2 months. Remove the full tray and replace it with an additional tray (which can be bought from us). Put the full tray in a plastic bag.

– What should not be put in to the toilet?

The disposal of items such as sanitary towels, tampons, cigarette butts, burning or glowing objects should not be put into the toilet.

– What to do if there is a bad odor in the toilet room?

A properly installed and maintained BioLet is completely odor-free. If you do experience a bad odor in the toilet room. Make sure you have followed the installation and maintenance instructions (using the quick-guide below) and you will probably be able to determine the cause of the problem.

– Check

1. That the BioLet is **getting enough air through a vent in the outer wall.**
2. Make sure the front cover is put on properly.
3. Avoid draughts by not having both windows and vents open at once, or bathroom fan running.
4. That the pipes fit the toilet properly and pipe joints are sealed.
5. That any pipe bends are not more than 45° or more than two bends.

– What do I do if the mixer motor does not work?

The mixer motor is protected in two different ways in order to prevent damage on mechanical parts.

–The motor runs normally, but the mixing arms do not move!

There is a shear pin on the motor shaft. When the resistance is too high, the shear pin breaks and must be replaced.

–The motor starts and stops and after a while it starts again by itself, but the mixing arms are still not moving!

The electrical motor has an overheating protection, which activates if the resistance is too high. It will turn itself off. But it will try again after a while and it will repeat this until the high resistance in the compost has been resolved. It is usually enough by mixing the compost, using the rake and adding a few litres of water. See “What do I do if the compost becomes too dry” page 8

– What do I do if the shear-pin breaks?

The shear pin can easily be replaced. The shear pin is not covered by warranty. An extra shear-pin is fixed next to the mixer motor.

– When do I need to call a qualified electrician?

BioLet is approved for installation in bathrooms. If the main cord is damaged it must be replaced by the manufacturer or its service people, or another qualified person, to prevent injury. This manual should be placed near the toilet.

– Where do I get parts?

Contact your national dealer. Always have the serial number and model ready and what year it was bought. This information can be found on a sticker on the back of the toilet.



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