

BIOLAN®

COMPOSTING TOILET

INSTRUCTIONS FOR INSTALLATION, USE AND MAINTENANCE



Serial No.	
Assembler	Date of manufacture
Stamp of seller, signature and date of purchase	

Contents

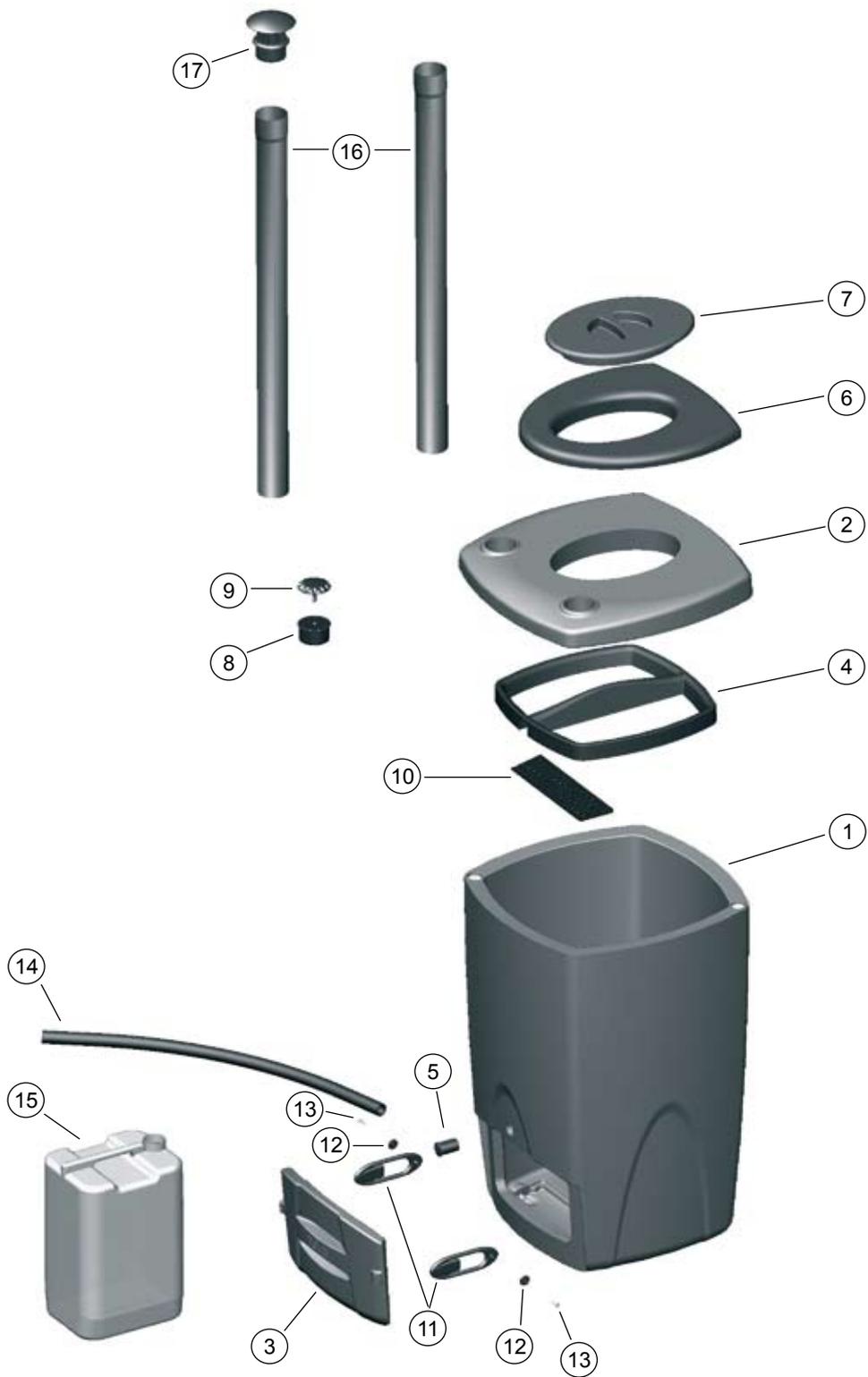
Components of the Biolan Composting Toilet.....	2
1. Planning and installation.....	4
1.1 Technical specifications	4
1.2 Placing the Composting Toilet in the toilet space	4
1.3 Direction of the emptying door.....	4
1.4 Installing the ventilation pipe	4
1.5 Leading off the seep liquid.....	5
2. Use and maintenance of the Biolan Composting Toilet.....	5
2.1 Before use	5
2.2 Adjusting the air valve in the top cover	5
2.3 Air channel in the toilet tank.....	5
2.4 What can be put into the Biolan Composting Toilet	5
2.5 Using Dry Bedding.....	5
2.6 Year-round use of the toilet.....	5
2.7 Emptying the Biolan Composting Toilet	6
2.8 Emptying the seep liquid canister.....	6
2.9 Cleaning the Biolan Composting Toilet.....	6
3. Post-treatment and use of the compost.....	6
3.1 Need for post-composting	6
3.2. Using cover soil	6
3.3. Maturing cover soil to compost soil	6
4. Problems that may occur.....	7
4.1 Odour.....	7
4.2 Flies	7
4.3 Moisture.....	7
4.4 Incomplete composting of waste	7
Biolan accessories.....	8
Matters related to the guarantee	8

Components of the Biolan Composting Toilet

Component	Component title		Number	Material
1	Tank	brown blue	576001 570201	PE, insulation PU
2	Top	brown blue	576002 570202	PE, insulation PU
3	Emptying door	brown blue	576003 570203	PE, insulation PU
4	Air channel		57100401	PP
5	Inlet air grid		571040	PP
6	Seat ring (*)		571005	soft foam PP
7	Seat ring lid		571006	soft foam PP
8	Disk valve body		571026	PP
9	Disk valve		571506	PP
10	Liquid separator plate		57101401	PP
11	Rubber latch, 2 pcs.		571037	EPDM-rubber
12	Washer, 2 pcs,		572614	PE
13	Screw, 2 pcs. 4,5 x 30 mm		572615	Zincd steel
14	Seep liquid pipe, diam. 32 mm, length 88,5 cm		55780001	PE
15	Seep liquid canister, 25 l		571023	PE
16	Ventilation pipe 1000 mm, 2 pcs.		57102401	PE
17	Ventilation pipe cap		571025	PE

In addition to the components illustrated in the components picture, the Composting Toilet also includes:				
	Inset plug for urethane, 4 pcs.	brown grey	571020 571524	PE
	Canister cap		5710271	PE
	Sealing rubber for emptying door		572630	EPDM-rubber
	Sealing ring fixation brackets		572617	RST
	Rubber sealing ring for lid		571007	EPDM-rubber
	Name tag		571009	PE
	Logotype tag		571036	PE
	Product authenticity sticker		572609	PE
	Instructions for installation, use and maintenance		57102801	Paper
	Sawing template		571039	Paper
	Biolan Komposti and Huussi Dry Bedding 2 x 40 l		5620	Package PE

*) The seat ring and the seat ring lid are available under the product name Huussikka, see p. 10 Biolan accessories.



BIOLAN COMPOSTING TOILET

The Biolan Composting Toilet is an odourless, tidy and environmentally friendly toilet. The thermo-insulated construction of the composteur produces compost rapidly and also enables the composting of household waste. Its operating principle is natural so it requires neither water nor electricity supply.

1. Planning and installation

While building and selecting the location for the Biolan Composting Toilet, it is essential to provide sufficient space for use and maintenance of the toilet. Ventilation is important to lead through the roof above the ridge without any bends. Also it is good to remember that the place of the seep liquid canister should be planned carefully. The compost tank can be placed directly on sufficiently firm ground. The tank must not be placed on a boarded floor, because of possible seepage from the lower door.

1.1 Technical specifications

- top area 61 x 61 cm
- overall height 100 cm
- volume about 200 l
- weight about 30 kg
- external diameter of liquid removal hose 32 mm
- external diameter of ventilation pipe 75 mm, length 2 x 100 cm

1.2 Placing the Composting Toilet in the toilet space

The Biolan Composting Toilet is installed through the floor so that the top cover of the compost tank (part 2) will serve as the seat ring. The height of the unit is 100 cm and normally the seat height is 45–50 cm. To achieve a comfortable seat height, about half of the unit is left under the floor of the building. As an alternative, it is possible to place a suitable elevation in front of the seat.

Using a keyhole saw or a jig saw, cut a suitable hole for the toilet unit out of the floor using the sawing template as a guide. Depending on the manufacturing technique, the size and shape of the tank may vary slightly. This means you may have to enlarge the hole a bit or the seam of the floor and the tank will not be completely tight. You can make the seam neat, for example, by fixing a thick hemp rope at the seam.

1.3 Direction of the emptying door

The toilet unit can be installed with the emptying door (part 3) at its lower part facing either the rear or sidewall of the building. If the emptying door faces the sidewall, turn the seat ring accordingly to correspond to the sitting position. Leave a fair-sized maintenance hatch (with a minimum width of 86 cm and minimum height of 35 cm) in the lower part of the toilet building for the emptying of toilet waste.

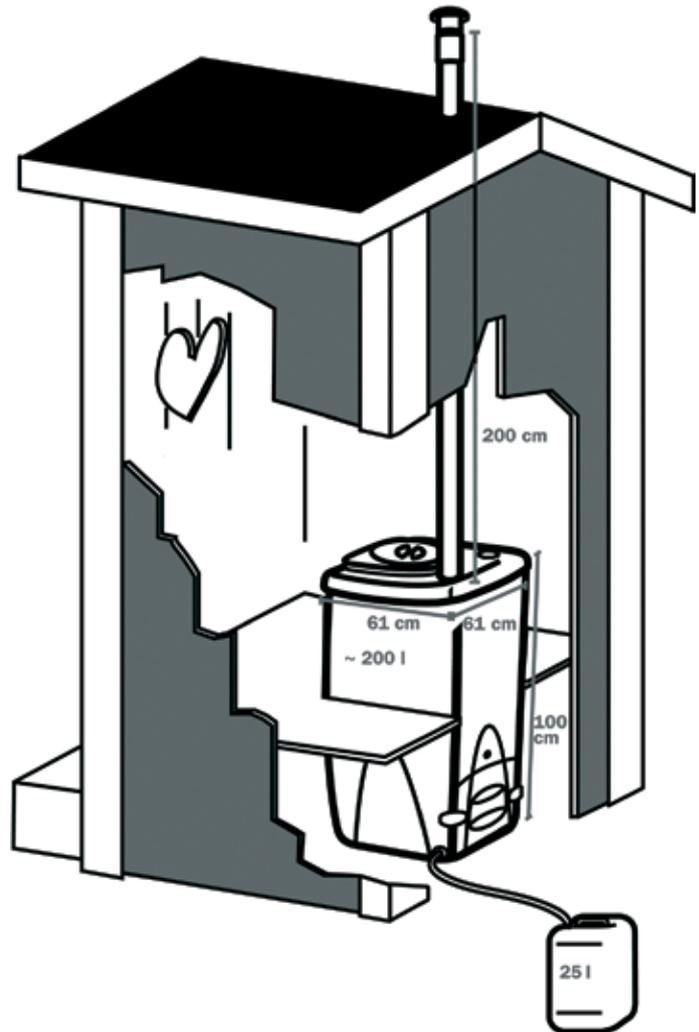
1.4 Installing the ventilation pipe

There are two Ø 75 mm holes in the seat cover – one for the replacement air valve (parts 8 and 9) and the other one for the ventilation pipe (part 16). The holes are identical so the ventilation pipe and replacement air valve can be switched, as required.

The ventilation pipe is led from the toilet unit straight up above the roof ridge. Any bends in the ventilation pipe impede natural ventilation, causing odour and moisture problems. Seal the lead-through on the roof using a sealant suitable for the roofing material. Thermo-insulate the ventilation pipe of a toilet installed indoors where it runs through cold spaces, for example intermediate roof space, to prevent water condensation.

Installation example

indicative picture



If you have to make bends, take note that the curvature of such bends must not exceed 33 degrees. You can improve the ventilation and the evaporation of moisture using the Biolan Wind Fan (product no. 5725), available as an option. In complicated installations or when installing the Composting Toilet in a residential location, it is recommended to use an additional Biolan Exhaust Ventilator (product 5754), which can be installed in the ventilation pipe. The Exhaust Ventilator is available as an option and, as required, it can be retro-fitted (see p. 10 for the required accessories).

The part numbers following the components refer to the parts list, the product no. in turn refers to a specific Biolan product.

1.5 Leading off the seep liquid

The liquid separator plate at the bottom of the Biolan Composting Toilet enables separation of excess liquid, the seep liquid, from the compost mass. The plate is movable, so it can be removed for cleaning, as required. The plate is placed in the recess at the bottom of the Composting Toilet.

Connect the seep liquid pipe (part 14) to the liquid removal outlet on one side of the toilet. Lead the pipe to a canister. Bury the canister in the ground, or place it some other way so that the seep liquid flows by gravitation into the canister. Observe the possible use in the winter when laying the seep liquid pipe and locating and insulating the canister.

If the seep liquid canister is difficult to bury in the ground, you can replace it with a smaller canister or an evaporating pan. Place a rain lid above the evaporating pan - non-fertilized Biolan Peat (product no. 5332) is recommended for neutralisation of odours. Depending on utilisation, the volume of seep liquid coming out of the Biolan Composting Toilet is small, about 20–50 litres per year. The seep liquid, however, is extremely rich in nutrients and must not be allowed to enter soil without being treated first.

Liquids rich in nutrients must not be allowed to enter soil as they cause excessively concentrated nutrient load.

2. Use and maintenance of the Biolan Composting Toilet

The proper use of the Biolan Composting Toilet allows efficient composting of the mass and enables convenient use and emptying of the toilet. Thanks to the thermo-insulation of the Biolan Composting Toilet, composting of the waste is efficient and thus the capacity of the toilet unit is increased as the waste is greatly compressed as a result of decomposition.

The composting starts as soon as the amount of waste in the toilet tank is sufficient, i.e. it is approximately level with the air channel. The amount of seep liquid created is reduced as a result of warming up of the compost mass and evaporation. After start-up the waste reaches the cover soil stage in 6–7 weeks.

2.1 Before use

Make sure that the air channel (part 4) inside the compost tank is still in place after transportation. The channel must rest on the sill on the inside wall of the tank so that the inlet air grate (part 5) above the emptying door will allow unobstructed air flow into the air channel.

Put an approximately 5 cm thick layer (about 20 l) of Biolan Komposti and Huussi Dry Bedding on the bottom of the Biolan Composting Toilet to prevent the liquid separator plate (part 10) from getting blocked.

2.2 Adjusting the air valve in the top cover

Ventilation of the Biolan Composting Toilet is controlled using the replacement air valve (parts 8 and 9) in the top cover. During summer the valve is kept open which makes the ventilation effective and the evaporation of liquids efficient. During winter the air valve is kept almost closed which reduces the temperature loss from the composter. Keep the seat ring lid (part 7) closed while the toilet is not in use to ensure correct operation of the ventilation.

2.3 Air channel in the toilet tank

Operation of the Biolan Composting Toilet is very effective because of the air channel (part 4) inside the toilet unit. The channel brings the air required by the compost to the centre of the compost mass; to the layer where it is most needed. At the same time, the air channel prevents the compost mass from packing on the bottom of the composter and keeps the mass elevated during emptying.

2.4 What can be put into the Biolan Composting Toilet

The Biolan Composting Toilet is intended for composting toilet waste as well as household bio-waste. Kitchen waste intensifies the composting process by balancing and diversifying the nutrition base of the compost. On the other hand, there are risks involved in composting kitchen waste. Pieces of meat and fish, especially when left in the open may attract flies into the compost tank. Be careful while adding Dry Bedding.

Do not put into the compost anything that hampers the composting process or does not compost, such as:

- debris, sanitary towels
- chemicals, lime
- detergents, wash water
- ash, cigarette butts

2.5 Using Dry Bedding

Every time after using the toilet, add app. 2–5 dl of Biolan Komposti and Huussi Dry Bedding over the excrement. Applying suitable dry bedding is essential for proper operation of the toilet. We recommend using Biolan Komposti and Huussi Dry Bedding. It efficiently absorbs odours and keeps the toilet compost airy.

2.6 Year-round use of the toilet

The Composting Toilet remains operational under slightly sub-zero conditions provided that it is used constantly and the build-up of waste is sufficient. In severe frost or if the toilet is rarely used, the compost mass cools down and, in the winter, may even freeze. Freezing damages neither the unit nor the compost mass itself and the composting process continues when the temperature rises. To reduce leakage of the seep liquid, we recommend using a double dosage of Biolan Komposti and Huussi Dry Bedding in the winter. Empty the seep liquid canister in the autumn to prevent it from cracking due to freezing.

2.7 Emptying the Biolan Composting Toilet

Discharge only mature compost or compost that has reached the cover soil stage from the Biolan Composting Toilet. Toilet waste matures to cover soil stage in 5–8 weeks, after which it can be discharged. To enable an efficient uninterrupted composting process, we recommend that no more than half of the mass be discharged from the unit at a time.

We recommend that a toilet used only in the summer be emptied in the spring, before using for the first time. The emptying process is most convenient and easiest at this stage. If the compost mass is still frozen during emptying, thaw it by pouring a bucketful of hot water through the seat ring opening a few hours before emptying.

2.8 Emptying the seep liquid canister

Empty the seep liquid canister as required, however, at least once a year. Seep liquid, rich in nutrients, can be utilized as a source of nitrogen for compost. In particular, this improves the composting process of garden compost that is rich in carbon but poor in nutrients.

Seep liquid can also be used as fertilizer for ornamental plants in the yard and garden. Undiluted seep liquid can also be used, but then the area must be carefully watered after the application to avoid early blight. Fertilizing in the autumn is not recommended so as not to disturb the preparation of perennial plants for winter. Recommended storing time before use as fertilizer is approximately one year.

2.9 Cleaning the Biolan Composting Toilet

The seat ring of the Biolan Composting Toilet can be removed and washed using any common domestic cleaning agents. Check the seep liquid pipe (part 14) and the liquid separator plate (part 10) as well as the seep liquid chute below it once a year and clean them, as required. There is no need to wash the toilet tank when emptying it.



3. Post-treatment and use of the compost

3.1 Need for post-composting

Discharge from the Biolan Composting Toilet only mature compost or compost that has reached the cover soil stage. Because of seep liquid leaching through the compost, the compost is recommended exclusively for ornamental plants. If it is used for a vegetable plot, it should be post-composted for about a year in order to exterminate microbes.

Correctly used, the compost soil is excellent for improving the nutritious qualities of soil. However, used incorrectly it may even be harmful to plants. Compost soil changes and develops constantly. It should be used in a different manner in different stages of its development. Typically compost soil is divided into two different groups based on its maturity: cover soil and compost soil.

3.2. Using cover soil

By cover soil we mean the semi-mature compost mass. At this stage, decomposing has reached a level where toilet waste and possible food waste have already decomposed. Harder wood matter and, for example, eggshells and citrus fruit peels are not yet completely decomposed; thus the cover soil has quite a rough look. In cover soil, the hot stage of the compost has already passed and the seeds of weeds, pathogenic organisms etc. have been destroyed. In the Biolan Composting Toilet, this stage is reached in 5 to 8 weeks. The semi-mature compost soil may still contain substances that prevent growth. This means it must not be used for growing purposes but as cover on top of the soil.

3.3. Maturing cover soil to compost soil

If the cover soil is post-composted, it will mature into proper compost soil. Post-composting can be done for example using a pile or a composter that is not insulated, because the compost soil will not heat up any longer. It is advisable to use a composter with cover, such as e.g. the Biolan Garden Composter (product no. 5720) or the Biolan Stone Composter (product nos. 5731 and 5732) to avoid rainwater flushing away the water-soluble nutrients. In a couple of months, the compost matures into compost soil of a dark brown colour and aggregate structure, from which source substances, except for bigger wood splinters, can no longer be distinguished.

Please consult your local waste advisor for regulations on composting.

4. Problems that may occur

4.1 Odour

If installed, used and maintained correctly, the room space where the Biolan Composting Toilet is located, remains odourless. Odour occurs only for a short while after the seat ring lid is lifted up. This is normal with natural ventilation. If continuous odour problems persist, check that:

- the ventilation pipe (part 16) leading from the cover to the roof, is straight and extends above the roof ridge. If the ventilation pipe is not straight or does not extend above the roof ridge, you should improve the ventilation by installing the Biolan Wind Fan (product no. 5725) or the Biolan Exhaust Ventilator (5754). The ventilation can also be improved by extending the ventilation pipe (sewage pipe Ø 75 mm).
- the seep liquid removal system is operational. The excessive liquid is led to the canister and will not spill out from the emptying door to a large extent. As required, clean the liquid separator plate (part 10), the seep liquid chute and the seep liquid pipe (part 14).
- the bedding used is the Biolan Komposti and Huussi Dry Bedding (product nos. 5621 and 5620), specifically developed for the Biolan Composting Toilet. If a mixture of peat and wood shavings or other beddings of fine texture is used, the compost mass may be packed too tightly.
- a sufficient amount of Biolan Komposti and Huussi Dry Bedding, about 2–5 dl has been applied after each use.

4.2 Flies

The most common flies in the composting toilets are small fungus gnats, fruit flies etc. Using a fly net does not prevent these tiny flies from entering the compost. If flies appear in the compost:

- make sure that you have used the Biolan Komposti and Huussi Dry Bedding (product nos. 5621 and 5620) as bedding. Some beddings (e.g. fresh chips of deciduous trees) attract flies to the compost. The pine bark used in the Biolan Komposti and Huussi Dry Bedding, however, acts as a repellent.
- add a thick layer of bedding on top of the compost.
- do away with the flying flies using a pyrethrin-based insecticide. Repeat the spraying three to four times at intervals of two days to exterminate the new generations of flies emerging from eggs and maggots. In addition, you can use for termination of fly maggots a substance commonly available at agricultural stores based on fly bacteria (e.g. DeLaval Larvicide Bio). A bacterial treatment is long lasting and safe. This bacterium, living in the ground, can in most cases survive in the compost throughout the summer.

4.3 Moisture

When the composting process is at its most effective, it is normal that the bottom surface of the seat ring lid is moist. However, if there is a lot of moisture on the seat ring lid and on the sides of the seat ring, something is wrong. Normally the problem occurs in the air ventilation system or the liquid separator system. Check that:

- the replacement air valve (part 9) in the top cover is open.
- the ventilation pipe (part 16) leading from the cover to the roof, is straight and extends above the roof ridge. If the ventilation pipe is not straight or does not extend above the roof ridge, you should improve the ventilation by installing the Biolan Wind Fan (product no. 5725) or the Biolan Exhaust Ventilator (5754). The ventilation can also be improved by extending the ventilation pipe (sewage pipe Ø 75 mm).
- the seep liquid removal system is operational. The excessive liquid is led to the canister and will not spill out from the emptying door to a large extent. As required, clean the liquid separator plate (part 10), the seep liquid chute and the seep liquid pipe (part 14).
- the bedding used is the Biolan Komposti and Huussi Dry Bedding (product nos. 5621 and 5620), specifically developed for the Biolan Composting Toilet. If a mixture of peat and wood shavings or other beddings of fine texture is used, the compost mass may be packed too tightly.
- a sufficient amount of Biolan Komposti and Huussi Dry Bedding, about 2–5 dl has been applied after each use.

4.4 Incomplete composting of waste

- The most common reason is dryness. If a lot of decomposed toilet paper is detected while emptying the compost, the amount of liquid has been too small in relation to the volume of dry matter.
- If the removed compost mass is wet and reeking, check that the seep liquid separator system is operational. The excessive liquid is led to the canister and will not spill out from the emptying door to a large extent. Clean the liquid separator plate (part 10), the seep liquid chute and the seep liquid pipe (part 14), as required. If the liquid separator system is operational, the reason is too small amount of bedding added, or too finely textured bedding. If a mixture of peat and wood shavings or other beddings of fine texture is used, the compost mass may be packed too tightly. The Biolan Komposti and Huussi Dry Bedding (product nos. 5621 and 5620) is the right type of bedding for the Biolan Composting Toilet.

Biolan accessories

Biolan Komposti and Huussi Dry Bedding

Biolan Komposti and Huussi Dry Bedding is a blend made of pure, dried and ground conifer bark and peat for composting and dry closets. Komposti and Huussi Dry Bedding gives the compost an airy structure, which ensures effective and odourless composting.

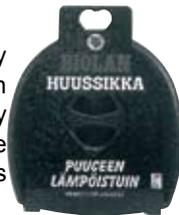
Packing size 40 litres. Product no. 5621
Packing size 135 litres. Product no. 5620



Biolan Huussikka

The Huussikka thermal seat is a thermal lavatory seat made of polypropylene plastic. You can clean the Huussikka thermal seat using any common domestic cleaning agents. The flexible foam material neither cracks in use nor absorbs moisture.

Product no. 5756. HVAC number 3663108



Biolan Wind Fan

The Biolan Wind Fan is a wind-powered exhaust fan. It is ideal for improving the ventilation of dry toilets and other locations that require good ventilation. Only a slight breeze is needed to improve ventilation significantly. The fan fits directly to a pipe either 75 mm or 110 mm in diameter. Operation of the Wind Fan does not depend on wind direction.

Product no. 5725. HVAC number 3663109



Biolan Exhaust Ventilator

The Biolan Exhaust Ventilator improves ventilation of dry closets in complicated installations. Use of the ventilator is recommended especially if you need to bend and curve the air outlet pipe, which impairs natural ventilation. The ventilator fits to a pipe of 75 mm in diameter. The electric power requirement of the ventilator is about 10 W. Voltage 12 V. The speed of rotation can be adjusted using a converter.

Product no. 5754. HVAC number 3663110



Biolan Compostmixer

The Compostmixer is an excellent tool for managing the compost. Using the Compostmixer, the compost can be mixed up easily and without straining the back. The Biolan Compostmixer is made of resilient glass fibre-reinforced polypropylene, so it neither corrodes nor oxidizes even over time.

Product no. 5752



Biolan Stone Composter

The Biolan Stone Composter is an insulated composter, for garden, domestic and toilet waste. The Stone Composter is extremely robust and weatherproof. Its hinged cover makes daily use easier. Volume about 450 litres. Dimensions 95 x 114 x 95 cm (d x w x h).

Product number
red granit 5731
grey granit 5732



Biolan Garden Composter

The Biolan Garden Composter is intended for composting of garden and toilet waste. Its volume is about 900 litres. A bottom basket of aluminium, to prevent rodents from entering the composter, is available as an option. Colour green. Dimensions 106 x 154 x 92 cm (d x w x h). Dimensions of the bottom basket 107 x 154 x 4 cm (d x w x h).

Product no. 5720



Matters related to the guarantee

The Biolan Composting Toilet has a guarantee of one year.

1. The guarantee is valid from the date of purchase and covers possible defects in material and workmanship. The guarantee does not cover possible indirect damages.
2. Biolan Oy retains the right to decide about repairing or replacing the damaged part at its discretion.
3. Any damages resulting from careless or forcible handling of the device, failure to observe the Operating Instructions, or normal wear are not covered by this guarantee.

For matters related to the guarantee, please consult Biolan Oy directly.

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BIOLAN®

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