

BIOLAN®

POPULETT 200 POPULETT 300

INSTRUCTIONS FOR INSTALLATION, USE AND MAINTENANCE

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



Contents

Component list of Biolan Populett 200 and 300	2
1. Planning and installation.....	4
1.1 Technical specifications	4
1.2 Placing in the toilet space	4
1.3 Installing the ventilation pipe	5
1.4 Conducting the liquid	5
<i>Which one of the two optional liquid separating methods would suit us best?</i>	5
<i>What is seep liquid?</i>	5
2. Use and maintenance.....	6
2.1 Before use	6
2.2 Adjusting the air valve in the seat top	6
2.3 What can be put into the Populett	6
2.4 Using dry bedding and compostmixer	6
2.5 Year-round use of the toilet.....	6
2.6 Emptying.....	6
2.7 Emptying the seep liquid canister.....	6
2.8 Cleaning	6
3. Post-treatment and use of the compost.....	7
3.1 Need for post-composting	7
3.2 Using cover soil	7
3.3 Maturing cover soil to compost soil	7
4. Problems that may occur.....	7
4.1 Odour.....	7
4.2 Flies	7
Biolan accessories.....	8
Matters related to the guarantee	8

Component list of Biolan Populett 200 and 300

Component	Component title	Number	Material
1	Pipe cap	578025	PE
2	Thermal seat + hinges*	5756	EPP
3	Disk valve body	571026	PP
4	Disk valve	571506	PE
5	Top (Populett 200 / 300)	578002	PE
6	Separating flap 200 x 220 mm	578009	PVC - soft- 50
7	Separating net 200 x 220 mm	578010	PE
8	Ventilation pipe Ø 110 x 3.4 - 1000 mm	570160	PE
9	Transport wheels	578023	RST/PP
10	Lock cap	20007001	RST
11	Pipe with sleeve Ø 110 x 3.4 - 300 mm	578020	PE
12	Lead-through rubber	578008	EPDM
13	Ventilation pipe Ø 110 x 3.4 - 700 mm	578022	PE
14	Tank 200 (Populett 200)	578001	PE
15	Tank 300 (Populett 300)	578201	PE
16	Locking rubber for the top	572613	EPDM
17	Locking rubber screw 4.5 x 30 mm		ZN
18	Convex sticker Biolan	571306	PVC
19	Liquid pipe Ø 32 mm, length 885 mm	55780001	PP
20	Lead-through rubber 30 / 40	578005	EPDM
21	Compostmixer	5752	PP
22	Wind Fan (Populett 300)	5725	

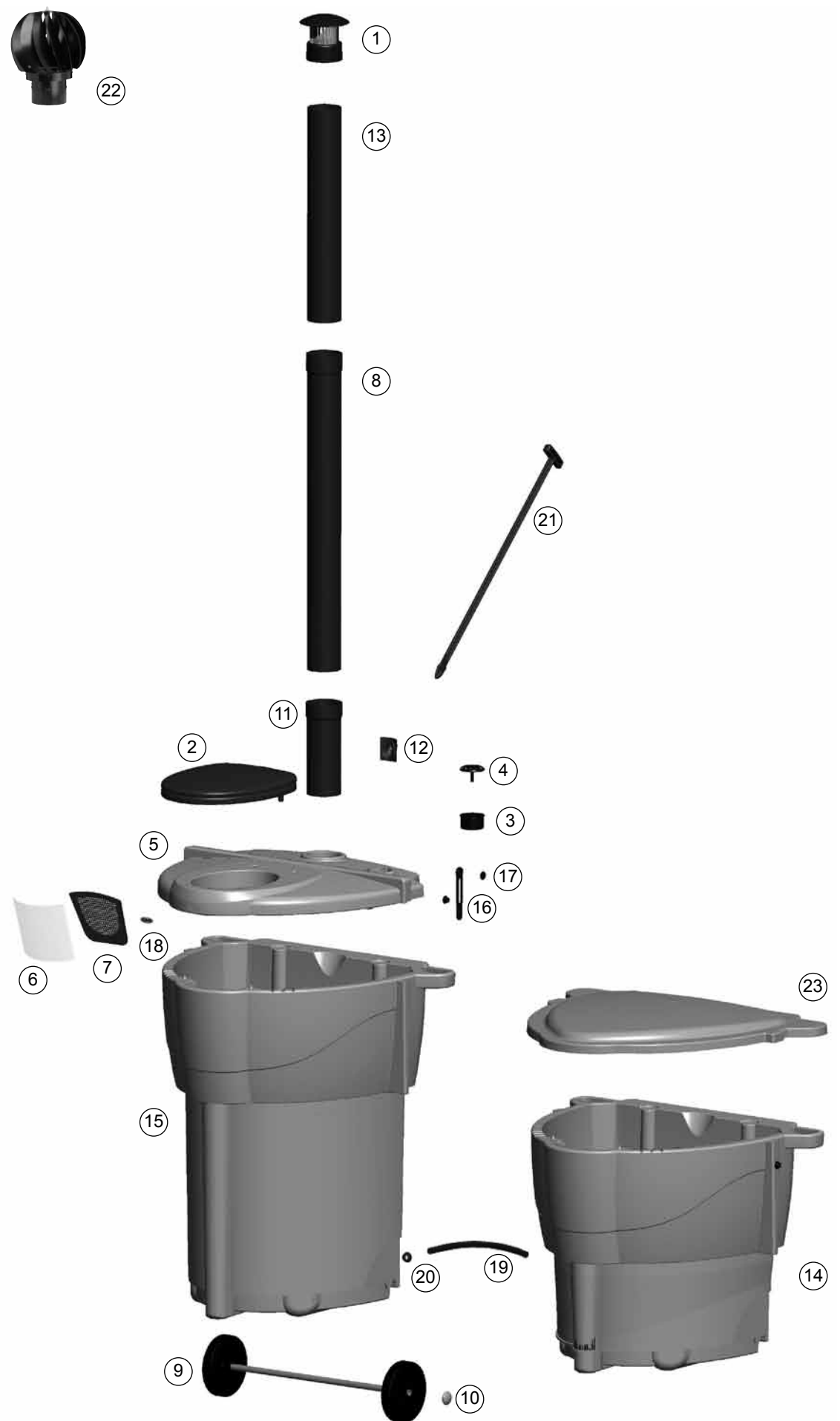
In addition to the components illustrated in the components picture, the Populett 200 and 300 also include:

	Komposti and Huussi Dry Bedding, 40 l	5621	Package PE
	Intermediate bottom plate	578003	PE
	Holder strap for intermediate bottom 700 x 30 mm	578004	Nylon
Populett 200	Separating pipe Ø 75 x 2.7 - 550 mm	578007	PE
Populett 300	Separating pipe Ø 75 x 2.7 - 890 mm	578021	PE
	Holder strap for liquid pipe 200 x 30 mm	578011	Nylon
	Sawing template	578017	paper
	Instructions for use	578018	paper

Accessory

23	Cover for replacement tank	578019	PE
----	----------------------------	--------	----

* Part 2 is available in most gardening and hardware shops under the product name "Biolan Pehvakka".



BIOLAN POPULETT 200 and 300

The Biolan Populett is an odourless, tidy and environmentally friendly toilet. The Populett can be installed in two different ways, so that it separates either the seep liquid or urine. Its operation requires neither water nor electricity supply.

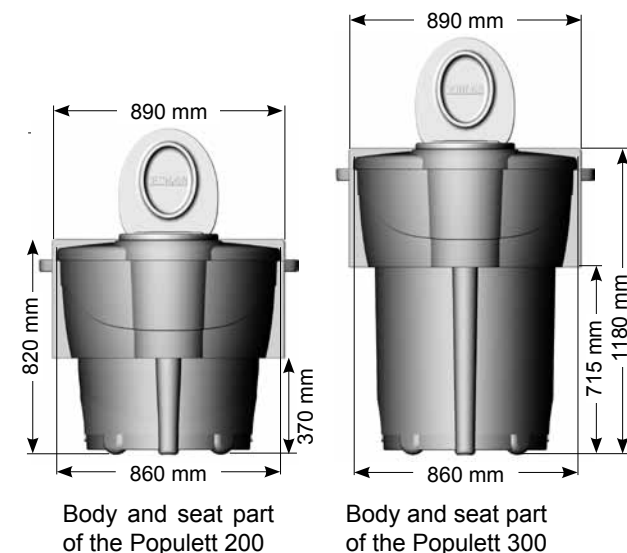
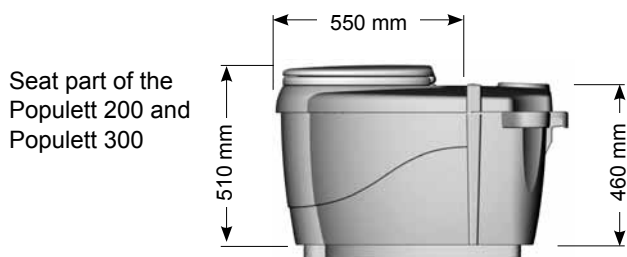
1. Planning and installation

When locating the Biolan Populett, it is essential to provide sufficient space for use and maintenance of the toilet, the space required for installing the toilet through the wall of the toilet building, as well as how the ventilation pipe needs to be routed. How the seep liquid or the seep liquid and urine shall be conducted into the tank or relevant treatment facility also needs to be taken into account. The device can be placed directly on a sufficiently firm ground surface. It is a good idea to plan the access route required for maintenance behind the toilet and the post-composting procedure before building the toilet.

It is possible to install the Populett in an existing toilet building taking into account that the structure of the building must be modified in order to enable correct positioning of the toilet unit. When planning a new toilet building, the space requirement of the toilet shall be taken into account.

1.1 Technical specifications

- depth of the seat part inside the toilet building about 55 cm
- width of the seat part inside the toilet building about 89 cm
- height of the seat part 48 cm
- overall height:
 - Populett 200 82 cm
 - Populett 300 118 cm
- volume of the tank:
 - Populett 200 about 200 l
 - Populett 300 about 300 l
- weight:
 - Populett 200 about 27 kg
 - Populett 300 about 30 kg
- outer diameter of the liquid pipe 32 mm
- external diameter of ventilation pipe 110 mm, length 2 x 100 cm



1.2 Placing in the toilet space

The Biolan Populett is installed through the wall and the floor so that the top cover of the tank (part 5) will serve as the seat ring. The body, which serves as a tank for the toilet waste, is supported on the ground and at the same time it supports the seat part.

The distance from the toilet floor to the ground surface must be 37 cm for the Populett 200 and 71,5 cm for the Populett 300. Thus the toilet unit will be supported both by the ground and the edge of the toilet floor.

It pays to make a smooth and durable bed for the toilet, such as for example a gravel bed, covered by film-faced plywood or a concreted bottom structure. While creating the openings and bottom structure of the building, it pays to occasionally put the toilet in place so as to find out where the openings still need to be reworked.

Using the sawing template and the dimensions provided as an aid, a suitable opening for the toilet is sawed in the floor and in the wall. 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. Avoid, however, making the openings too large, because a too-wide chink between the toilet building and the toilet unit is not a good thing.

An easy-to-remove wooden strip (Fig. 1) or a rubber cover (Fig. 2), which gives way as the toilet is removed from the building, can be installed to cover the space between the rear wall of the toilet building and the toilet unit.



Fig. 1



Fig. 2

1.3 Installing the ventilation pipe

The seat top is provided with a Ø 110 mm hole for the ventilation pipe (parts 11, 8, 13). The compostmixer (part 21) is installed between the ventilation pipe and the toilet unit. The ventilation pipe is routed without bends from the toilet unit above the roof ridge along the wall either passing the eaves or through the roof. Seal the lead-through on the roof using a sealant suitable for the roofing material. If you have to make some bends, take note that the curvature of such bends must not exceed 33 degrees. Any bends in the ventilation pipe impede natural ventilation, causing odour and moisture problems.

Populett 200: Press the ventilation pipe cap (part 1) on the end of the pipe to ensure that neither rainwater nor flies can enter the toilet. It is possible to improve the ventilation and the evaporation of moisture using the Biolan Wind Fan (product no. 5725), available as an option.

Populett 300: A Wind Fan is installed at the end of the pipe. Remove the 75 mm reduction sleeve before installation.

Any bends in the ventilation pipe impede natural ventilation, causing odour and moisture problems.

1.4 Conducting the liquid

Separating the urine

The structure of the Biolan Populett's front edge enables partial separation of the urine. For separation the transparent separating flap (part 6) at the front edge is shifted to form a funnel leading to the separating pipe.

During winter use, the separation reduces build-up of mass susceptible to freezing. As urine is directly conducted away, it will not be absorbed by the bedding and freeze.



Fig. 3

Although the Biolan Populett is set to separate urine, seep liquid will also come out of the unit. It is conducted out of the unit together with the urine. If the Populett is set to separate urine, more liquid will be created for collection and treatment. This needs to be taken into account when dimensioning the treatment system. In a toilet which separates urine, the mass remains dryer, which makes emptying the toilet easier.

Separating the seep liquid

It is possible to operate the Populett in a mode in which it only separates seep liquid. The separating flap (part 6) at the front edge is left in front of the separating pipe so that it will direct the urine into the toilet waste. The excess fluid which is not absorbed by the bedding or the toilet mass, is separated by means of the intermediate structure of the bottom. Thus less liquid but more mass will be created in the toilet, especially in winter, compared with working in urine-separating mode.

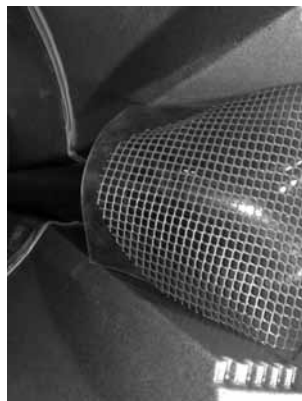


Fig. 4

The liquid pipe (part 19) is connected to the liquid removal hole in the rear wall of the toilet. The pipe is conducted to the collecting tank or the liquid shall otherwise be treated in a due manner. Bury the collecting tank in the ground, or position it in such other way that the liquid flows under gravitation into the tank. If using the Populett in urine-separating mode, conduct the liquid pipe to the bottom of the canister so that the surface of the liquid will form a drain trap. Take into account possible use in winter when laying the liquid pipe and locating and insulating the tank.

If it is difficult to bury the collecting tank in the ground, it can be replaced with an evaporating pan. To reduce the liquid volume, the Populett is set to work in the mode in which it separates seep liquid. Place a rain lid above the evaporating pan - non-fertilized Biolan Peat (product no. 5332) is recommended for neutralisation of odours.

The Populett is put in place without the wheels and shaft. The wheel shaft shall be put in place before transferring the tank.

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

Which one of the two optional liquid separating methods would suit us best?

Separation of seep liquid = only a small amount of liquid is created

- a summer cottage
- neither a big garden, nor objects of application for the liquid
- no place for a large liquid-collecting tank

Separation of urine = large amount of liquid created

- a cottage used also in winter or, for example, frequent public use
- a garden where liquid rich in nutrients can be utilized
- possibility to accommodate a large tank for collecting urine

What is seep liquid?

The excess liquid separated on the bottom of the dry toilet which is not absorbed by the toilet waste is called seep liquid. The liquid is rich in nutrients, but it contains microbes. Therefore it is recommended that it be kept in storage for about a year before it is used as fertilizer. Seep liquid is also an excellent starter for garden compost.

The part numbers following the components refer to the parts list on page 2. The product number in turn refers to a specific Biolan product presented on page 8.

2. Use and maintenance

2.1 Before use

Place a layer about 5 cm thick (about 20 l) of Biolan Komposti and Huussi Dry Bedding onto the intermediate bottom of the Biolan Populett in order to prevent the liquid separation system from getting clogged.

If the toilet is to be used in urine-separating mode, the separating flap (part 6) shall be set to direct into the separating pipe. If the unit is to be used in seep-liquid-separating mode, the flap shall be left on the separating pipe (Figs. 3 and 4).

2.2 Adjusting the air valve in the seat top

Ventilation of the Biolan Populett is controlled using the replacement air valve (parts 3 and 4) in the seat top. 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 temperature loss from the composting mass. Keep the lid of the thermal seat (part 2) closed when the toilet is not in use, to ensure correct operation of the ventilation.

2.3 What can be put into the Populett

The Populett is intended for composting toilet waste. Do not put into the toilet anything that hampers the composting process or does not compost, such as:

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

2.4 Using dry bedding and compostmixer

Every time after using the toilet, add approximately 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 as bedding Biolan Komposti and Huussi Dry Bedding. It efficiently absorbs odours and keeps the toilet compost airy.

To extend the emptying interval of the toilet, use the compostmixer to loosen the toilet mass and to smoothen any uneven filling. Move the compostmixer inside the mass to and fro several times in all directions. Use the compostmixer as required, however at least after every 10–15 times of use. After use, leave the compostmixer in its lower position in the ventilation pipe.

2.5 Year-round use of the toilet

The toilet waste freezes in frost. Freezing damages neither the unit nor the compost mass. Decomposing of the compost mass will continue when the air temperature rises. The capacity of the toilet can be increased by utilizing the urine-separating functionality of the Populett. The liquid tank shall be emptied in the autumn. Its filling grade shall be observed to prevent it from breaking due to freezing.

2.6 Emptying

The Biolan Populett shall be emptied when it fills up. The unit shall be emptied completely. The emptying shall be carried out either by shovelling, by turning the body of the toilet upside down, or by tipping it over using the tail lift of a waste truck. The Populett toilet is fitted with a bracket for the waste bin lift of the truck.

Emptying:

1. Remove the sealing strip or cover from between the wall and the unit.
2. Take out the liquid hose from the canister/tank and turn it to the hose bracket.
3. Pull the compostmixer to its rear position.
4. Disconnect the air pipe from the toilet unit by lifting.
5. Pull the unit out of the building.
6. Tilt the unit so that you will be able to put the shaft with wheels in place.
7. Transfer the unit to the emptying location or leave the mass inside the tank for composting and replace it by a new tank.

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.

2.7 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.

2.8 Cleaning

The thermal seat of the Populett can be cleaned using any common domestic cleaning agents. The liquid pipe (part 19) and the liquid trough under the intermediate bottom shall be checked once a year and cleaned as necessary. There is no need to wash the toilet tank in connection with emptying it.

3. Post-treatment and use of the compost

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.

3.1 Need for post-composting

The grade of maturity of the compost mass emptied from the Biolan Populett depends on how frequently the toilet is being used, i.e. how long the waste lay in the unit before emptying. Recommended composting time for toilet waste is one year prior to application to ornamental plants and two years before use in kitchen gardens.

During ordinary use the compost waste does not have enough time to compost sufficiently in the Populett, which is why post-composting is necessary. A replacement tank, which makes composting of the waste neat and easy, is available for the Populett as an option (product no. 5781 for Populett 200 and product no. 5783 for Populett 300). Toilet waste can also be composted together with garden waste.

3.2 Using cover soil

By cover soil we mean the semi-mature compost mass. At this stage, the toilet waste has already decomposed. Harder wood matter still remains undercomposed: thus the semi-mature compost soil has a rough texture and look. The cover soil may still contain substances that prevent growth. This means it must not be used as growing medium but as cover on top of the soil.

3.3 Maturing cover soil to compost soil

If composting of the cover soil is continued, it will mature into proper compost soil. For post-composting it is advisable to use the replacement tank, available for the Populett as an option, or 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.

4. Problems that may occur

4.1 Odour

If installed, used and maintained correctly, the room where the Biolan Populett is located will remain 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 conducted from the top 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 of the Populett 200 model by installing the Biolan Wind Fan (product no. 5725). The ventilation can also be improved by extending the ventilation pipe with a sewage pipe Ø 110 mm.
- The replacement air valve (part 5) in the top cover is open.
- The liquid removal system is operating. The liquid coming out of the toilet is conducted to the collecting tank. As required, check the fall of pipe and clean up the liquid pipe (part 19).
- The bedding used is Biolan Komposti and Huussi Dry Bedding (product number 5621). If, for example, a mixture of peat and wood shavings or other beddings of fine texture is used, the 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 appearing in dry toilets are small fungus gnats, fruit flies etc. Using a fly net does not prevent these tiny flies from entering the toilet unit. If flies appear in the Populett:

- Make sure that you have the Biolan Komposti and Huussi Dry Bedding (product no. 5621) as bedding. Some beddings, for example fresh chips of deciduous trees, attract flies. The pine bark used in the Biolan Komposti and Huussi Dry Bedding, however, acts as a repellent.
- Apply a thick layer of bedding on top of the toilet waste.
- Do away with the flies using a pyrethrin-based insecticide (e.g. Bioruiskute S, Raid). 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, for extermination of fly maggots you can use a substance commonly available in agricultural stores and 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.

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 toilets. Komposti and Huussi Dry Bedding gives the compost an airy structure, which ensures effective and odourless composting.

Packing size 40 litres
Product no. 5621



Biolan Populett replacement tanks

Replacement tank for the Populett Enables composting of toilet waste neatly in tank.

Product no. Populett 200 – replacement tank 5781

Product no. Populett 300 – replacement tank 5783

Biolan Stone Composter

The Biolan Stone Composter is a thermally insulated Finnish 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 Pehvakka

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

Product no. 5785



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 code 3663109



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



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



Matters related to the guarantee

The Biolan Populett 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.

Biolan Oy
P.O.Box 2, FIN-27501 KAUTTUA
Tel. +358 2 5491 600
Fax +358 2 5491 660
www.biolan.fi

BIOLAN®

Biolan Oy, 06/2009