

SEPARATING DRY TOILET

Instructions for use

The Biolan Separating Dry Toilet is a toilet unit to be placed either indoors on the floor surface or in a separate toilet building. The Separating Dry Toilet operates by separating solid and liquid waste matter in the seat part of the unit. The toilet requires neither water nor electricity supply.

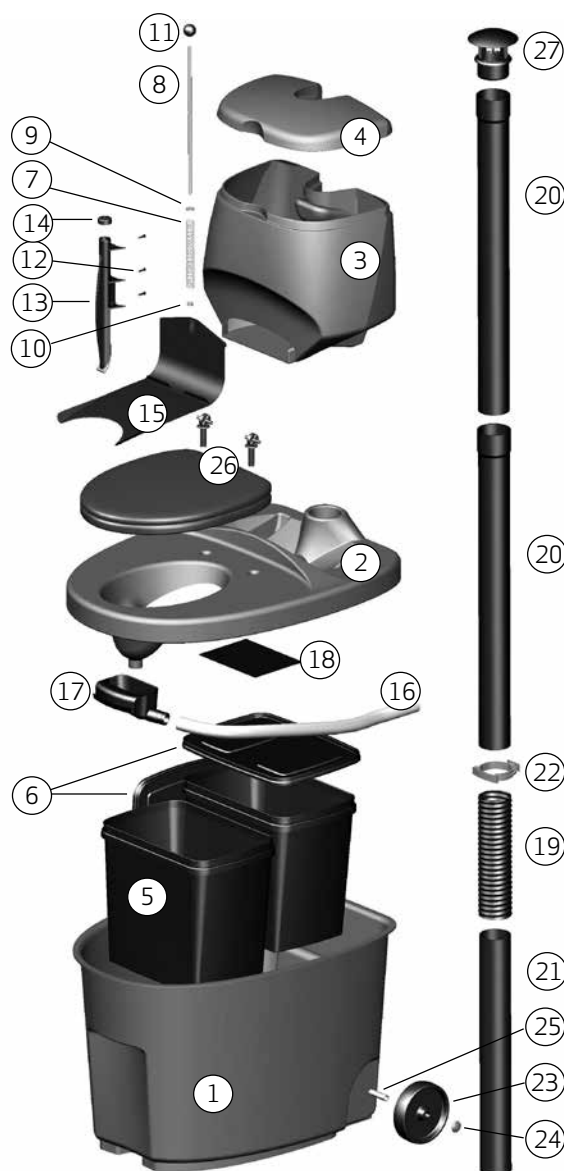
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Component list

Component	Part name	Part No.	Material
1	Toilet tank, dark grey	17703061	PE
2	Lid, dark grey	17703065	PE
3+4	Bulking material container + lid, dark grey	17703063	PE
5	Inner receptacle	18703050	PE
6	Cover for inner receptacle	18703060	PE
*	Batcher assembled	18703900	
7	Batcher spring		Steel
8	Batcher rod		Steel
9	Rod washer		Steel
10	Rod nut		Steel
11	Batcher knob		PE
12	Attachment screw for batcher, 3 pcs.		Steel
13	Batcher frame		PE
14	Batcher plug		PE
15	Batcher sheet		PE
16	Drain pipe	28578001	PE
17	Liquid funnel	18703180	PE
18	Guide plate	18703280	PE
19	Flexible ventilation pipe, black	19704020	PVC + Steel
20	Ventilation pipe 750 mm	28704030	PE
21	Ventilation pipe 600 mm, black	28704040	PE
22	Pipe bracket, black	18704050	PE
23	Wheel	18704060	PE
24	Lock ring	20070003	Steel
25	Rod	21704190	Steel
26	Pehvakka	70578500	PPE
27	Ventilation pipe cap	18710250	PE
In addition to the components illustrated in the components picture, the package includes:			
	User manual	27703175	Paper
* The ready-assembled batcher includes components: 7.8, 9, 10, 11, 12, 13, 14 and 15			



Spare parts sales: Biolanshop.eu

1. PLANNING AND INSTALLATION

When selecting a location for, and then installing, the Biolan Separating Dry Toilet, make sure to allow sufficient space for its use and maintenance, and route the ventilation pipe straight up through the roof above the ridge. Collect the liquid in a closed tank for later use, treat it together with other wastewater from the property, or take it to the wastewater treatment plant. When dimensioning the liquid tank and deciding where to locate it, you need to take into account that the daily amount of liquid from the separating toilet is 1-1,5 litres per user. The method for post-treating the solid waste should also be carefully planned, to enable easier servicing of the unit.

Technical specifications

- length 78 cm, width 59.4 cm
- sitting height 53 cm
- height 85 cm, 98.5 cm to the batcher's knob
- weight about 16 kg - inner receptacle 28 l, 2 pcs. - external diameter of the ventilation pipe 75 mm
- external diameter of the liquid removal pipe 32 mm

1.1 Placing the Separating Dry Toilet in the toilet space

Install the Separating Dry Toilet at a level position on the floor. When deciding where to locate the unit, take into account the space required for its ventilation and liquid removal arrangements, and for its maintenance.

1.2 Installing the ventilation pipe

Route the ventilation pipe from the toilet unit straight up over the roof ridge. Any bends in the pipe will impede natural ventilation, causing odour problems. Join up the ventilation pipe as shown in the detail drawing (page 28), and seal the pipe using a sealant suitable for the roofing material. As required, extend the ventilation pipe with a Ø 75-mm sewer pipe, or with the pipe parts that are sold as spare parts for the toilet. In complicated installations, or if installing the toilet within living quarters, it is recommended that the ventilation be ensured using a separate Biolan Exhaust Ventilator or Biolan Wind Fan. You can obtain the Exhaust Ventilator either as an option, or retro-fit it if it proves necessary.



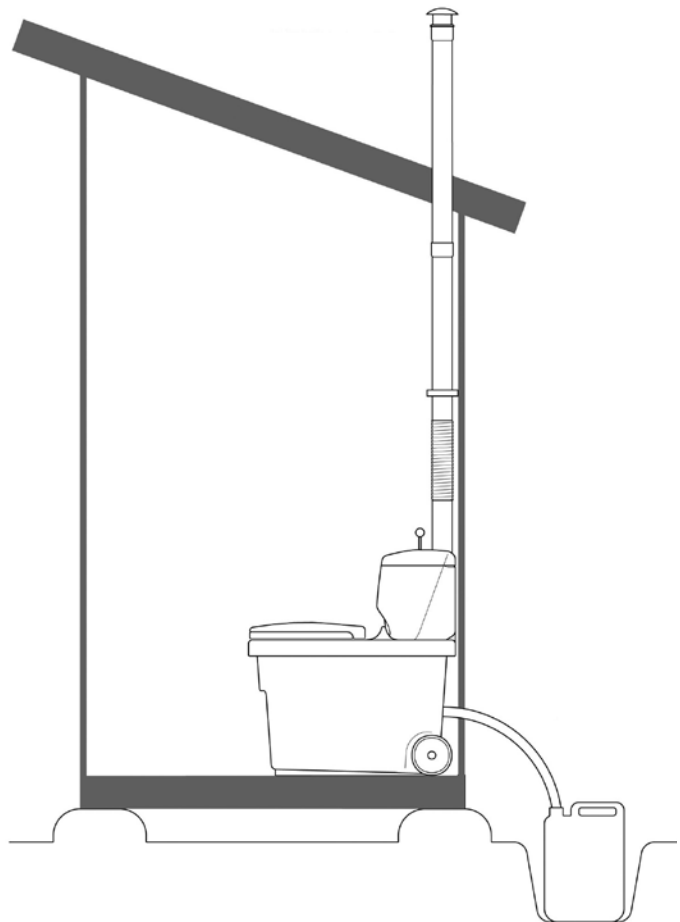
The flexible ventilation pipe (part 19) is easiest to install when warm, using a screwdriver as a stretching aid. As necessary, the surfaces can be made slippery using, for example, dishwashing detergent.

1.3 Liquid removal

Route the liquid after separation from the toilet unit into either the liquid tank or the sewer system. During installation, provide sufficient gradient to enable the liquid to flow without obstruction all the way to the drain. Depending on the installation location, accomplish the lead-through either as a sewer or as a pipe leading through the wall or the floor. The diameter of the toilet unit liquid hose is 32 mm. Sewer pipe parts or a hose 32 mm in diameter are suitable for conducting the liquid away. We recommend using a coupling sleeve at the pipe or hose joint. The toilet unit has no drain trap. If the liquid is routed into a tank, the hose must extend all the way to the bottom, in which case the surface of the liquid in the tank makes a drain trap in the hose. Thus the air cannot flow from the liquid tank back to the toilet unit. The tank must be provided with either a pressure relief valve or some other way for the replacement air. If you intend to route the liquid to the sewer system, your plan should explicitly take into account the ventilation of the sewer system and the toilet space.

Installation example

The picture is indicative only



2. USE AND MAINTENANCE OF THE BIOLAN SEPARATING DRY TOILET

Using and maintaining the Separating Dry Toilet in accordance with these instructions makes for a much more pleasant experience.

Separation of the liquid and the solid waste requires that the Separating Dry Toilet always be used in the seated position. When using the unit for the first few times, verify that your own seating distance and habits are suitable for it. Also instruct your guests on how the toilet should be used.

The Separating Dry Toilet is intended for composting toilet waste, including toilet paper. But do not put into it anything that could hamper the treatment of the waste, such as:

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

2.1 Before use

Put a layer of Biolan Compost and Toilet Bulking Material a couple of centimetres thick on the bottom of the foremost inner receptacle (part 5). Fill the bulking material container (part 3) with bulking material.

2.2 Using bulking material

There is a bulking material batcher in the bulking material container at the rear of the toilet unit. To use the batcher, press the batcher knob (Fig. 1) briskly. The more briskly you press this knob, the farther the bulking material will be thrown. The bulking material does not need to be added every time the toilet is used; adding it only after defecation is sufficient. Applying suitable bulking material is essential for proper operation of the toilet. For bedding we recommend Biolan Compost and Toilet Bulking Material.

2.3 Year-round use of the toilet

The toilet may be used all year round, if installed in a warm space. Thermal insulation of the ventilation and liquid removal systems in cold areas must then, however, be taken into account. Also provide a sufficient gradient to prevent the liquid from freezing in the pipe.

Installed in a cold space, the toilet can freeze during winter. The toilet unit is manufactured of frost-proof polyethylene, so freezing does not damage it. A toilet located in a cold space can be used occasionally during winter. Empty the liquid tank before the liquid in it freezes.

If the liquid is collected in a canister, empty the canister in the autumn in order to avoid damage caused by freezing of the liquid. If the bulking material in the container is moist, it may freeze during winter. Then the bulking material batcher does not work and you must apply the bulking material manually.

2.4 Emptying the inner receptacle

There are two separate inner receptacles inside the tank of the Separating Dry Toilet (Fig. 2). Use only one receptacle at a time. When a receptacle fills up, move it to the back of the unit and put the other receptacle into use. As required, level the surface of the waste, for example, with a stick.

The covers for the inner receptacles are intended for use while transporting the receptacles for emptying. Leave the lid ajar for storing. Once both receptacles have filled up, empty the one that filled up first into the compost. Disconnect the ventilation pipe (Part 21) from the lid of the toilet for emptying (Fig. 3). The flexible ventilation pipe will flex at this stage so that you will be able to lift the pipe. Tilt the lid of the toilet unit to the side or lift it off, so that you can lift the receptacles out of the unit. There is no need to wash the inner receptacles when emptying them.

When replacing the receptacles, make sure to position the receptacle in use correctly against the separating bowl. Put a layer of

Biolan Compost and Toilet Bulking Material a couple of centimetres thick onto the bottom of the receptacle. Refer to page 31 for instructions for composting the solid waste from the Separating Dry Toilet.



1. Batcher knob



2. Inner receptacles



3. Disconnecting the ventilation pipe.

2.5 Emptying the liquid tank

Empty the liquid tank, if necessary. The emptying intervals are determined by the size of the liquid tank and by how often the toilet is being used. One person produces 1-1,5 litres of liquid daily. Utilise the liquid that is rich in nutrients, in particular nitrogen, as fertiliser in the yard and garden. Although urine is sterile, it is recommended to keep it in storage for about three months before using it in the garden.

You can use a small amount of undiluted liquid as a source of nitrogen for the garden compost and for the compost of separated toilet waste. Optionally, you can take the liquid to the wastewater treatment plant. More about the utilisation of urine on page 31.

2.6 Cleaning the Separating Dry Toilet

Wash and clean the Separating Dry Toilet, as necessary. Any commonly available domestic cleaning agents may be used. You can disassemble the parts of the toilet to enable proper cleaning of the unit. Wash the liquid bowl in the top, the liquid funnel (part 17) and the drain pipe (part 16) with warm water and mild detergent or crystallised sodium at least once a year to remove any precipitate that the urine may have formed.

3. PROBLEMS THAT MAY OCCUR

3.1 Odours and moisture

No odour problems occur in the Separating Dry Toilet provided that it is installed and used in the correct manner. If odour problems occur, check that:

- there is no liquid on the bottom of the toilet tank (part 1). If liquid exists, check the removal hose connection for tightness and wash the tank to eliminate the odour. Make sure that the foremost inner receptacle is correctly positioned against the rim of the separating bowl.
- make sure that the ventilation pipe leading from the toilet unit 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 can repair the installation or improve the ventilation by installing a separate Biolan Exhaust Ventilator or a Biolan Wind Fan.
- the hose leading to the liquid canister extends to the bottom of the canister. This ensures that the surface of the liquid in the canister forms a drain trap in the hose, preventing air-flow from the canister towards the liquid bowl.
- the waste in the inner receptacles is always covered with Biolan Compost and Toilet Bulking Material.

3.2 Insects

Insects do not normally exist in the Separating Dry Toilet. But if flies, for example, appear in the toilet unit, empty both receptacles into a compost and then wash them. Do away with any flying insects in the toilet space, using pyrethrin-based spray. Consult your local garden centre to select a suitable product.

Also check that:

- the waste in the inner receptacles is always covered with Biolan Compost and Toilet Bulking Material.
- the ventilation pipe leading from the toilet unit to the roof, goes straight up and extends above the roof ridge. If the ventilation pipe does not go straight up or does not extend above the roof ridge, repair the installation or improve the ventilation by installing a separate Biolan Exhaust Ventilator or a Biolan Wind Fan.

4. POST-COMPOSTING AND USE

Dry toilet waste should be composted for at least one year before being used as a soil conditioner. Composting can take place inside the unit if usage is light enough for the material to fully compost within a year inside the device. The safest method is to carry out post-composting in a separate compost bin. For post-composting, a closed container should be used, such as a lidded composter, to prevent rainwater from washing away water-soluble nutrients. Over about a year, the compost matures into dark brown, crumbly compost soil, where the original materials are no longer distinguishable except for larger wood chips. The compost is used on the property as a soil conditioner, for example for ornamental plants and shrubs. When used for edible plants, it is recommended to extend post-composting to more than two years to ensure any potential pathogens are eliminated.

5. UTILISATION OF LIQUID

Separated liquid can be utilised as nitrogen fertiliser or diluted with water, for example, for lawns, ornamental bushes and perennial plants. In the spring, in connection with the initial fertilisation, it can also be used for a vegetable plot but during the growing season it must not be applied to green vegetables. The recommended storage time for urine is about three months before it should be used in the garden. Do not apply urine to plants in the autumn, in order to avoid disturbing the perennials' preparation for winter.

A safe dilution ratio for urine is 1:5, which means one litre is diluted with five litres of water. You can also use undiluted urine, but then you must water the area carefully after the application to avoid early blight. Carry out the application when it is cloudy, either early in the morning or late in the evening, when evaporation of nitrogen and the odour-related problems are at a minimum. During the growing season you can apply 1-1,5 l/m² of undiluted urine in your home garden.

Please consult your local waste advisor for regulations on composting. Visit www.biolan.com for more information on composting and the utilisation of urine.



Do not allow liquids that are rich in nutrients to enter the soil, as these cause an excessively concentrated nutrient load.

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6. DISPOSAL OF THE PRODUCT

The raw materials used are presented in the list (see page 28) Dispose of each part as prescribed. Always follow the regional and collecting-point-specific instructions.



PE-LD

PE = polyethylene
to energy-from-waste process or
recycling of plastic



PE-HD

PP = polypropylene
to energy-from-waste process or
recycling of plastic



PP

RST = stainless steel
to recycling of metal



PVC

Paper
to recycling of paper

About the guarantee

The Biolan Separating Dry Toilet is guaranteed for two years.

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

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



BIOLAN

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