Manual

Dry toilet “Pikkuvihrea”

1. Purpose of the product

Dry toilet is a hygiene accumulating sanitary-engineering installation (hereinafter – the toilet) intended for collection of the human life wastes (feces and urine), as well as toilet tissue (hereinafter – the wastes).

The toilet is used in domestic conditions without any connection to engineering utility lines (water supply and sewage lines) and is designed for installation in residential buildings and garden houses, outdoor toilet cubicles and in other detached closed premises. The toilet is equipped with drain tube for liquid fractions.

2. Toilet operating concept

The toilet is used for temporary storage of received wastes in the accumulating chamber with partial composting of the wastes using peat compound.

Wastes coming to the accumulating chamber of the toilet are covered with the layer of peat compound for odor suppression and facilitation of wastes composting.

Peat compound serves as an odor absorber and a sort of catalyst in the process of wastes composting. As wastes stay in the toilet accumulating chamber for the limited period of time, they are partially composted. The further curing of wastes up to the condition of ecologically-safe humus is done at the special designated locations (compost pit or wash hole).

Depending on the specific conditions (humidity, temperature) the process of the wastes complete curing can take from 6 to 12 months. Fermented humus can be used at the garden plot as a full-value fertilizer.

3. Toilet arrangement

The toilet is a small-footprint unit of the up-to-date design made of high-quality plastic, which meets the sanitary-hygiene and environmental requirements.

Appearance and overall dimensions.

Appearance of the toilet is presented on Figure 1.

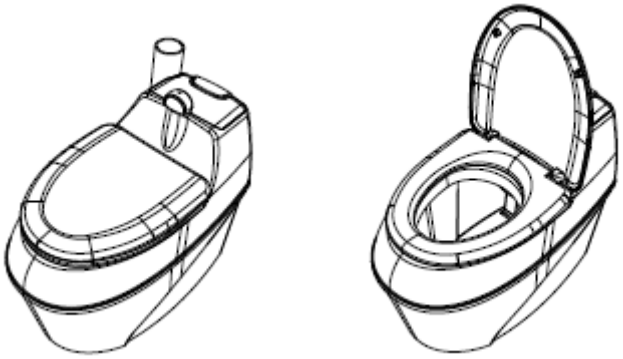


Figure 1.

Overall dimensions of the toilet are presented on Figure 2.

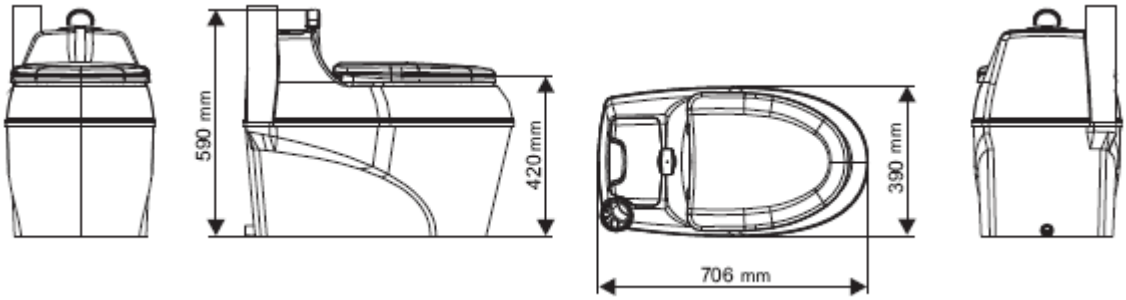


Figure 2.

- Overall dimensions (L x W x H, Fig. 2) – 706 x 390 x 590 mm
- Seat height (Fig. 2) – 420 mm
- Peat compound bin capacity – 11 l
- Accumulating chamber capacity – 44 l
- Peat supply (batching) method: mechanical, manual
- Peat batch per one handle turn – 150-170 ml
- Accumulating chamber ventilation – through direct-flow pipe, diameter 75mm, by means of natural draft or by means of the fan (to be supplied separately)
- Used bioactive material – peat compound “Pikkuvihrea” or similar
- Structural material – polypropylene
- Toilet packed weight, complete set, maximum 20 kg

4. Set of supply

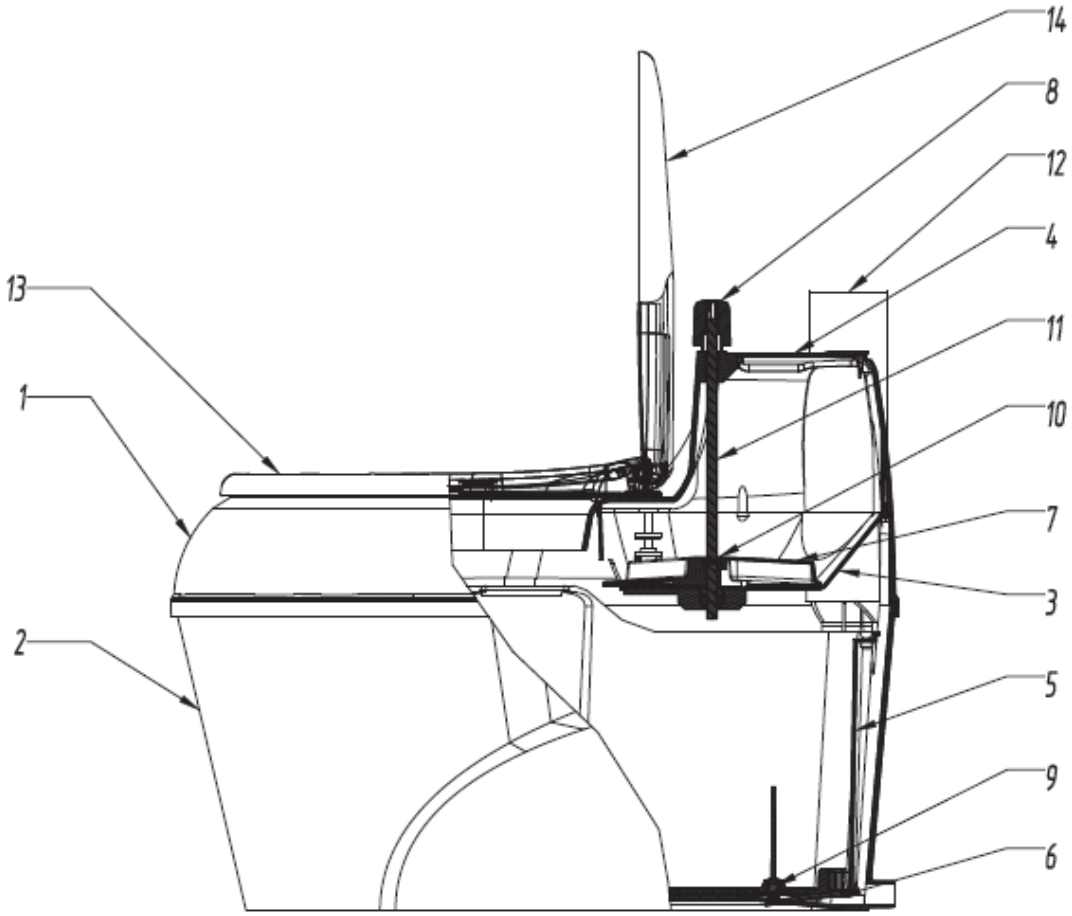
4.1. Standard set of supply. The toilet is supplied fully assembled; the standard set of supply includes:
- toilet itself;
- toilet seat with cover;
- ventilation tubes, outside diameter 75 mm (4 pipes, 500 mm each) with connecting couplings, inner diameter 76 mm (3 couplings, 90 mm each);
- drain hose, inner diameter 27 mm (2,000 mm);
- collar clamp for fixing of the drain hose to the drain hole;
- plastic pan, 1 liter capacity, for putting peat compound to the bin;
- datasheet for the unit with operation manual;
- package box made of double-double face corrugated board.

4.2. Additional options. In order to enhance consumer performance of the toilet an additional option is provided – wheeled transportation of accumulating tank.

The option includes:

- two wheels, diameter 120 mm;
- axis diameter 6 mm;
- 4 nuts M6 with nylon ring;
- Capron cord, 1,000 mm long
- plastic handle, 100 m long.

4.2.1. Coupling fan B-01.
4.2.2. Bioactivator.
4.2.3. Cap of vent tube.



5. Structural features

The toilet consists of two functional parts – the top one and the bottom one, which are detached at the toilet center line.

The top housing part (1) of the toilet is freely installed on the bottom housing part (2) and is rigidly mounted by means of contour slots. The bottom housing part consists of two components, one of which is put into the other one. The bottom housing part is an outer component while the inner component is an accumulating chamber (tank) (5). The accumulating chamber is furnished with partition (9) for protection of mechanical filter and drain hole with an automatic valve.

Top housing part has an inlet opening that is closed with the seat (13) cover (14). Peat bin (3) is located at the back side of the top housing part. Peat is fed to accumulating tank by means of handle (8) rotation. The rotation force is transferred by steel rod (11) to the peat spreading disk (7), which is rigidly fixed with nuts (10) at the bottom of the peat bin. Peat bin is covered with cover (4). The toilet is ventilated through the vent tube (12).

6. Toilet installation

6.1. The toilet shall be placed on a flat horizontal floor of the toilet room or any other designated area. Make sure that there is a certain clearance between the door panel of the room and the floor or doorstep (2-3 cm) for the toilet stable ventilation (free air intake).

The place of installation shall ensure installation of vent tube without any bends, as well as outlet of the drain hose outside the room. Bottom housing part may be rigidly fixed on the floor by means of self-tapping screws (four process marks on the inner side of the bottom housing part are provided for this purpose); after the vent tube and drain hose are put outside no additional area for toilet maintenance is required. Holes in fencing structures are required for outlet of vent tube and drain hose (outer diameter of vent tube is 75 mm; outer diameter of drain hose is 33 mm). When the room ventilation system is available the toilet ventilation can be built-in the existing system.

6.2. After the toilet location is determined and the required holes are made it is recommended (for the toilet easy installation) to fix the drain hose to the drain hole at the bottom housing part of the toilet with the collar clamp.

Insert the first portion of the vent tube (having angle-wise bevel) into the vent slot with holders at the bottom housing part of the toilet with the bevel inward the toilet so that the vent tube prevents as little as possible taking out the accumulating tank.

Put on connecting coupling on the vent tube to the half of its height. The next portion of vent tube shall be inserted into the coupling up to jointing with the first one. Keep on doing in the same manner until complete assembling of the vent tube.

Couplings ensure sufficiently tight adjoining and connection of the vent tube. Joints between coupling and tube can be filled-in with acrylic sealant.

Use bitumen hydraulic insulation material or any other materials (depending on the type of the roof coating) for closing the vent stack pass through the roof.

WARNING!

Try to avoid bends and turns when arranging vent stack as the direct-flow vent stack ensures the most effective toilet ventilation. Bends and turns of the vent stack significantly slow down the air movement. If ventilation is poor it is recommended to arrange forced ventilation (installation of coupling fan B-01 or roof deflectors).

Drain hose goes outside the room to the street for discharge of liquid fractions from the toilet. One degree (1 cm per one running meter of length) inclination of the drain hose shall be ensured for liquid fractions drainage. Drain hose outside is discharged to the drain tank embedded in the ground. Tank dimensions are determined depending on the conditions of the used use and can amount from 20 liters to 1 cubic meter. If tank for liquid fractions collection cannot be installed the drainage for liquid fractions collection can be arranged directly in the ground. For this purpose the hole 1,000 mm per 1,000 mm per 1,000 mm can be dug, and filled-in with crushed stone for 4/5 of its volume. Drain hose shall be put above the crushed stone and covered with the soil. The soil layer above the drainage hole shall not be compacted. Obviously the drain tank shall be arranged prior to the toilet installation.

When preparatory operations are done the toilet can be assembled.

7. Toilet assembly

Accumulating tank shall be inserted in the installed bottom housing part, while the drain hole at the back side of the accumulating tank is opened by means of automatic valve.

The seat with cover is attached to the top housing part. For this purpose two plastic bolts with hooks shall be placed on the seat. Rubber gaskets are installed on the bolts' support pads aligning gaskets with the stud on support pads. The seat with plastic bolts shall pass through the holes in the top housing part intended for the seat. The hand shall go through the hole in the peat bin and put the tab washer on the seat plastic bolt with the opening downward. Threaded fastener shall be placed on the plastic bolt. This fastener shall be unclamped as a clothes pin and put as far as possible on the plastic bolt. After several turns the fastener will secure the bolt. Repeat the same procedure for the second bolt. The seat is installed.

The top housing part shall be installed on the bottom housing part by aligning the guiding slots in the top housing part with the upper contour of the bottom housing part. Peat bin cover shall be placed by aligning curves in the cover outline and the holes of the bin. Studs – clamps are arranged on the cover for its tight adjoining.

The stud – clamps shall come into the counterparts located on the walls of the peat bin.

The toilet is assembled and ready to work.

Toilet operation

7.1. Peat compound shall be placed in the peat bin, minimum 2/3 of the bin volume, prior to the toilet use.

Turn the handle (once or twice) to cover the bottom of the accumulating tank with peat compound.

7.2. After using the toilet turn the handle once or twice (or when required) to cover the content of accumulating chamber with the peat compound in order to dissipate unpleasant odor and facilitate the process of the chamber content composting.

7.3. When accumulating chamber is filled-up for more than a half of its volume it is recommended to discharge the chamber.

For this purpose remove the top housing part of the toilet. Neither vent tube not drain hose shall be disconnected. The accumulating tank shall be raised with slight inclination to the bottom of the back side (to go round the projection of the vent tube) and removed up from the bottom housing part. At the beginning of the accumulating tank removal the drain hole at the bottom of the accumulating tank will be closed by the valve, which will minimize discharge of liquid fraction. When accumulating tank is raised above the bottom housing part its front part shall be slightly tilted down so that the drain hole is above the front part of the accumulating tank (to avoid leaking of liquid fraction). If accumulating tank has to be put on the floor the drain hole valve structure will permit this: it won't open on the floor.

Accumulating tank is furnished with three handles for removal: two side handles and one back handle.

WARNING!

Automatic valve is not a locking device like cock or faucet in the pressure systems and is provided for keeping liquid fraction at the time of accumulation tank removal and transportation for the place of discharge by means of the above described method. To prevent valve clogging with peat dust and urine deposits it is recommended to wash it with water every time after the accumulating tank discharge. Insignificant leakage of automatic valve is permitted: several drops of liquid in the process of removal and transportation.

Accumulating tank is discharged to the compost pit (wash hole). After discharging the accumulating tank shall be installed back to the bottom housing part, closed with the top housing part and ready for further use. Drain hole valve shall be opened automatically.

After using the toilet the seat cover closes the toilet intake hole to avoid spreading of unpleasant odors. When the seat cover is closed ventilation of the accumulating tank is done by drawing the air directly below the toilet seat through the gaps available between

the seat and bottom housing part of the toilet on the entire seat outline with further air exhaust through the vent stack to atmosphere.

Toilet content in the accumulating tank is converted to the immature compost (due to the short period of staying in the toilet accumulating tank). Further curing of the toilet content is done in the compost pit (wash hole). Depending on the conditions in the compost pit (temperature, humidity) the full process of compost curing can take from 6 to 12 months. After complete curing of compost it can be used as the full-value fertilizer at the garden plot.

WARNING!

Food wastes, liquids containing chlorine or detergents shall not be thrown to the toilet to provide for stable operation of peat compound composting the toiler content and further curing of the full-value compost. This can result in termination of the composting process and in unpleasant odors in the toilet. Do not put any liquids containing chlorine or detergents in the compost pit. This will terminate the process of compost curing. Use standard toilet tissue – it is easier for composting.

8. Warranty liabilities

Manufacturer guarantees operability of the unit provided that the requirements to storage, transportation and operation are met.

The warranty period of the unit operation amounts to 2 years from the date of purchase provided that the warranty ticket indicating the date of sale is available.

If the date of sale is not stated in the unit datasheet certified with the seal the warranty period is estimated from the date of the unit manufacture.

Manufacturer does not assume any liabilities in the following cases:

- when user does not follow the rules of assembling and operation stated in the datasheet;
- negligent storage and transportation of the unit;
- repair of the unit by the own means of the user.

Pikkuvihreä - Meripalo Oy

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FINLAND

www.pikkuvihrea.fi

9. Warranty ticket

Date of sale: _____

Place of Seal of the trade company Signature _____