

## INSTALLATION INSTRUCTIONS BIONUT COMPACT FILTER



**P075-B2**

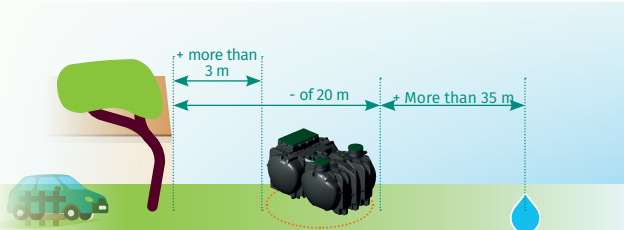
Please read these instructions carefully before installing and connecting the Bionut® system.

PLACE OF INSTALLATION .....	1
UNLOADING .....	1
PACKAGED INSTALLATION (for the 4, 5 and 6 EH) .....	2
INSTRUCTIONS FOR UNPACKING AND INSTALLATION IN LINE AFTER UNPACKING (OR OF A FILTER ALONE DOWNSTREAM OF AN ALL-WATER TANK ALREADY INSTALLED) .....	2
CHOICE OF OUTFLOW .....	2
INSTALLATION INSTRUCTIONS .....	3
INSTALLATION IN DIFFICULT TERRAIN .....	4
INSTALLATION OF SEVERAL UNITS IN PARALLEL(from 10 to 20 EH) .....	4
LAYING OF HIGH OUTLET UNIT .....	5
POSSIBILITY TO INTEGRATE A PUMP .....	5
HYDRAULIC CONNECTIONS .....	5
CONNECTION OF PRIMARY AND SECONDARY VENTILATION .....	6
DOCUMENTATION .....	7
COMMISSIONING .....	7
MAINTENANCE .....	7

### 1 Place of installation

The place of installation of the compact unit must respect the following points:

- less than 20\* m from the house and especially from the kitchen.
- more than 3\*\* m from any founded structure / dwelling.
- at more than 3 m from any rolling load .
- more than 3 m from any neighborhood boundary.
- more than 3 m from any tree or vegetation developing a important root system .
- more than 35 m from any declared water catchment used for the human consumption .
- no static or rolling loads are allowed in the vicinity immediate of the device, i.e. at less than 3 meters .



\* The installation of a grease trap is mandatory if the distance is greater than 10 meters.

\*\* These distances are recommendations. For any derogation, the installation will be done under the full responsibility of the installer, after a specific study on the performance of the works, by a specialized engineering office. These conditions must be verified before backfilling during the execution control (in the sense of the control order). The steps and studies on the plot must be carried out in accordance with the regulations in force in order to evaluate the constraints related to the nature of the soil.

### 2 Unloading

During unloading on site and installation, the tanks must be lifted by a handling device adapted to the dimensional characteristics (see table in chapter 1.6 of the user's guide or data sheet FT6054) .

The lifting straps are supplied and installed on the tanks in the factory (on the 4 to 8 PE filters).

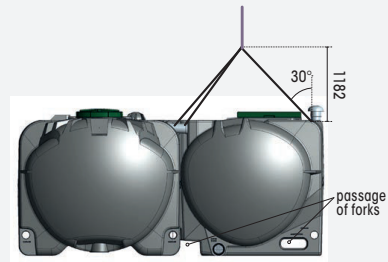
For other units, use the lifting rings provided on each tank .

The strength of each sling must be at least 1 ton .

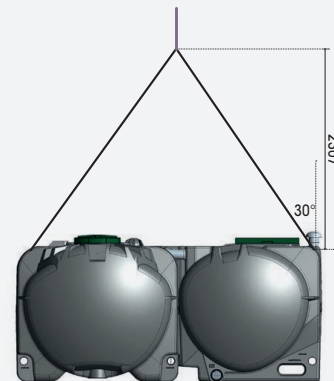
The minimum angle should be less than 30° from the vertical (see diagram below) .

Ensure compliance with current safety regulations

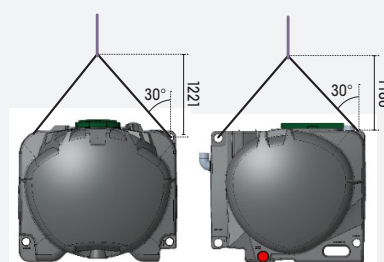
#### 1. Handling the pre-filled media pack



#### 2. Handling the empty media pack

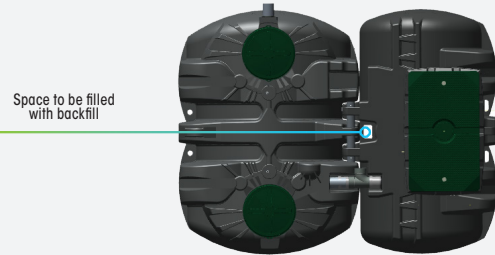


#### 3. Handling of separate tanks (All water tank and compact filter)

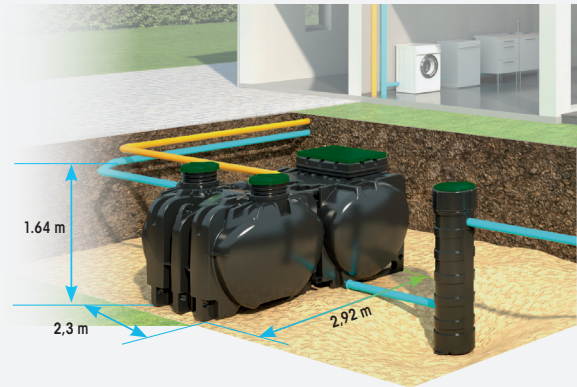


### 3 Installation in pack (for 4, 5 and 6 PE filters)

Since the tanks are assembled in the factory, there is no need to connect the septic tank to the compact filter, just place the pack in a single pit.

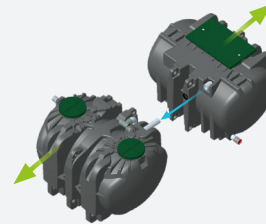
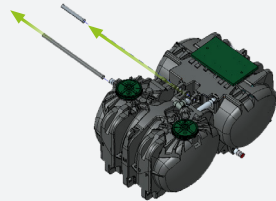
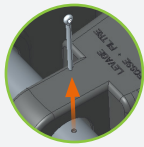
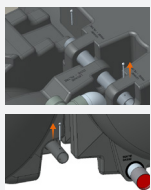


**⚠ Caution** : remember to insert the backfill between the two tanks, in the space provided for this purpose. If the effluent must undergo an angular deviation at the inlet or outlet, use 45° bends.



### 4 Unpacking instructions and inline installation after unpacking (or installation of filter with filter only 6054-FS)

→ in case of field constraints, the two tanks are easy to disassemble: **only 3 steps!**

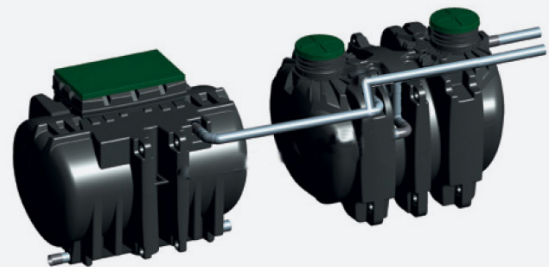


**1** remove the 4 pins from the top and bottom connecting bars

**2** remove the connecting bars top and bottom (use a sledgehammer if necessary)

**3** separate the two tanks, taking care to unbuckle them:  
→ the PVC pipe of the sleeve, 1for the passage of water between the all water tank and the compact filter.

→ for in-line installation of the unpacked tanks : use 45° elbows and Ø100 PVC pipes to connect the water and air inlets and outlets of the two tanks.

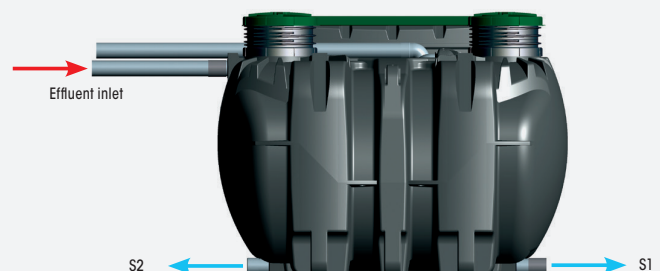


### 5 Choice of outflow

Choice of **2 possible outflows for treated water** :

- **Choice S1** the S2 outflow is closed at the factory, so you only need to connect the S1 outflow.
- **Choice S2** : Cut S2 upstream of the plug and proceed with the connection.

**⚠ be careful to close the S1 outlet.**



## 6 Installation instructions according to the ground

### → On land without water table :

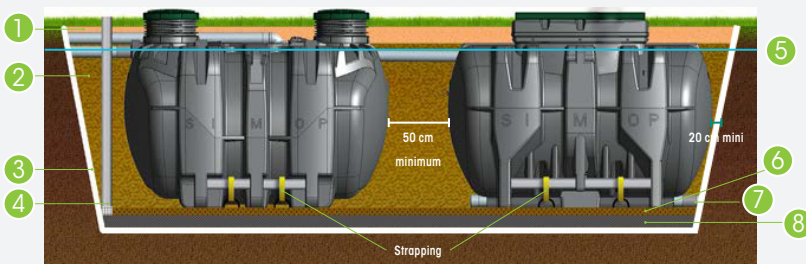


1. Topsoil
2. Backfill washed sand or gravel 2/4 or 4/6 mm (stabilized sand possible)
3. Bedding: 10 cm of sand or gravel 2/4 or 4/6 mm
4. Bottom of the excavation

1. make the excavation: the walls must be at least 20 cm around the tanks.
2. cover the excavation with a bed of sand or gravel (if possible rolled) 2/4 or 4/6 mm, perfectly level and compacted.
3. install the tanks which must be spaced at least 50 cm apart, if the tanks are unpacked or for systems with a capacity of more than 8 PE.
4. simultaneously fill the tank with clear water and backfill with washed sand or gravel up to the inlet water line. Proceed in 50 cm increments with hydraulic compaction for the sand.

5. finish backfilling with soil up to the level of the lids **Maximum backfill of 60 cm** to the level of the lids, for all the systems, except for the 18 and 20 PE all-water tank (30 cm). With several extensions, backfill with washed sand or 2/4 gravel, then with topsoil to a maximum height of 20 cm.
6. leave the lids on top of the tanks accessible to allow access to the interior of the tank.

### → In ground with water table and/or clay soil:



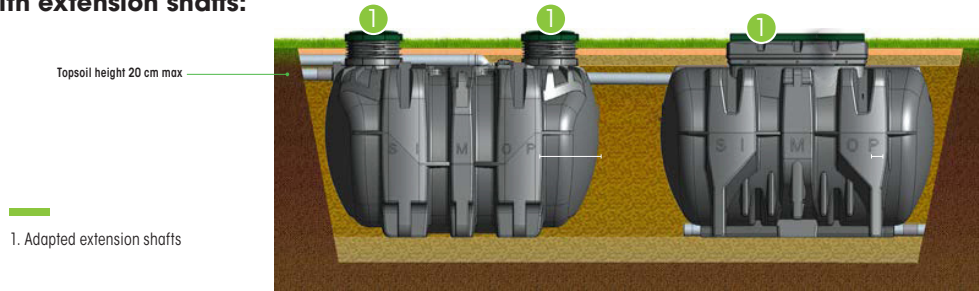
1. Topsoil
2. Backfill washed sand or gravel 2/4 or 4/6 mm (stabilized sand possible)
3. Geotextile
4. Piezometer
5. Maximum water table level
6. Bedding: 10 cm of sand or gravel 2/4 or 4/6 mm
7. Outlet to lift station or dewatered outfall
8. Concrete slab

1. make the excavation: the walls must be at least 20 cm around the tanks.
2. during construction, draw down the water table if necessary.
3. place a geotextile around the entire periphery of the excavation.
4. make a concrete slab of about 350kg/m<sup>3</sup> reinforced with a rigid welded mesh sufficiently resistant (according to the recommendations of the design office) to meet the constraints for which it is intended
5. create a steel anchoring system on which the straps will be fastened without excessive tension. The characteristics of the concrete slab (dimensions, thickness, reinforcement, etc.) must be determined by a design office in order to meet the constraints for which it is intended
6. install a piezometer (diameter 315 mm) to measure the level of the water table and to lower it if necessary during emptying.

7. make the bed of installation with sand or gravel rolled 2/4mm on a thickness of 10cm minimum perfectly level and compacted.
8. place and strap the tank on the anchor bars (optional) or in the open inserts on the concrete slab. It is also possible to pour concrete up to the anchor bars.
9. finish backfilling up to the level of the covers with washed sand and topsoil. Maximum backfill without the load bearing slab: 60 cm. With several extensions, backfill with sand or 2/4 gravel, then with topsoil to a maximum height of 20 cm.
10. leave the lids on top of the tank accessible to allow access to the interior of the tank.



→ **With extension shafts:**



1. refer to the two previous points, be careful when using extensions, the backfilling will be done with washed sand or gravel 2/4, then with topsoil on a maximum height of 20 cm .

**Note 1** note 1: The height of the extension of the all-water pits can go up to 300 mm. It is then necessary to cut the extension to 150 mm if there is only a 150 mm extension on the compact filter.

**Note 2** in case of need of a backfill height higher than 60 cm

and if the ground is horizontal:

- create a load-bearing slab supported on the undisturbed ground,
- to make extensions with concrete forms up to the natural ground.

## 7 Installation in difficult terrain

→ **Waterproof ground:**

Consult a specialized engineering office that will define the type of evacuation to be implemented (infiltration if possible, otherwise discharge to the surface water environment with authorization).

→ **In silty and/or unstable and/or clayey soil and/ or in the presence of groundwater :**

1. Lay the bed with sand stabilized with cement 200kg/m<sup>3</sup> on a thickness of 20cm minimum, perfectly level and compacted, by integrating a reinforced welded mesh.
  2. Place and strap the tank, then fill it with 10 to 15cm of clear water to stabilize it .
  3. At the same time, fill the tank with clear water and backfill with cement stabilized sand 200kg/m<sup>3</sup> up to the outlet water line.
  4. Finish backfilling to the level of the covers with sand and topsoil (within 20 cm of topsoil).
  5. Make sure that the covers on top of the tanks are accessible so that the tanks can be accessed during maintenance operations.
- Note: In this type of configuration, an embankment support structure may be necessary around the structures. These recommendations will be defined by a design office .



→ **Flood zone:** The Bionut range is not designed to be installed in flood zones .

→ **Sloping ground (>5%):**

It is necessary to avoid an installation in a low point of the ground, or if necessary to envisage the installation of a drainage upstream of the tank in order to evacuate the runoff water. Moreover, it will be necessary to take care to pose the tank perfectly level. According to the nature of the ground, it can be necessary to carry out a retaining wall.

## 8 Installation of several units in parallel (from 10 to 20 EH )

Make two independent excavations: one for the pit and one for the beds.

- for the 10 and 12 p.e. systems a REP2/04/04 distribution box must be used to divide the flow into 2 identical flows .
- for the 15, 18 and 20 p.e. systems, a REP2/04/04 distribution box preceded by an AF2/6016/055 trough must be used to distribute the flow into 3 or 4 identical flows depending on the number of beds to be installed a REP2/04/04 distribution box preceded by an AF2/6016/055 trough should be used to distribute the flow into 3 or 4 identical flows depending on the number of beds to be installed. To facilitate sampling at the outlet of the filter, we recommend that a collection chamber (REC2/02/13) be installed to bring together the outlets of the various beds .

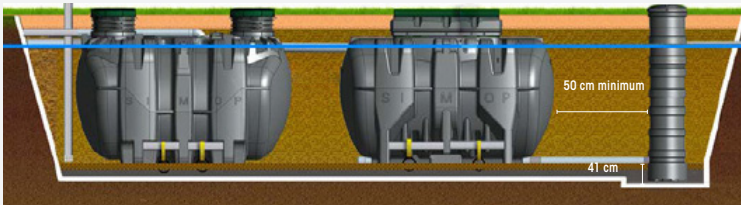
**⚠ caution :** The distribution box and the trough must be laid perfectly leveled on a bed of stabilized sand (200kg/m<sup>3</sup>) of at least 20 cm. Only the outlets perpendicular to the entrance of the distribution box must be used. For the laying of the beds, refer to the steps described for the laying instructions (paragraph 6)



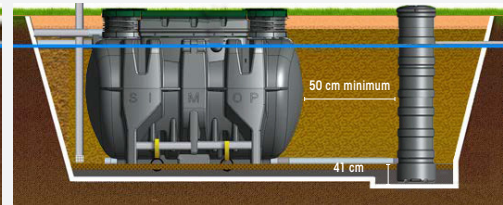
## 9 Laying of high outflow units

→ **On land without water table :**

1. In-line installation



1. Packaged installation



1. proceed with the same backfilling steps as for a low outflow installation.
2. position the lifting station as close as possible to the outlet of the compact filter, respecting a minimum distance of 50 cm.

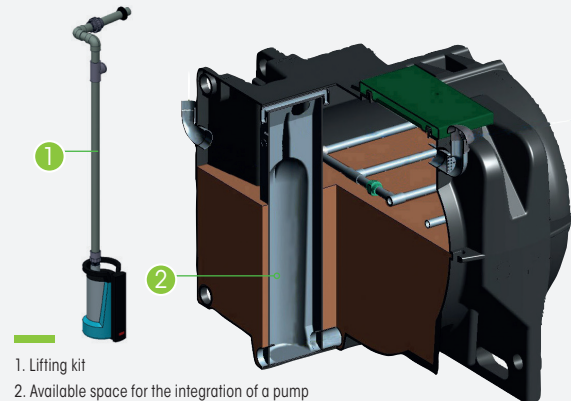
**For the RELBIONUT lifting station,** a 41 cm high reservation must be made in the excavation or in the concrete slab (depending on the soil). When installing in a ground with a water table, the backfilling of the lifting station must be done with stabilized sand. Please refer to the PRELPE installation instructions, available on our website [www.simop.fr](http://www.simop.fr).



## 10 Possibility to integrate a pump

The sampling manhole can be used as a lifting device\* by being equipped with a pump with integrated level detector .  
Effluent pipe connections will be made in a watertight manner .  
An authorization from your local authority will be necessary for this type of configuration of lifting. An assembly notice will be provided with the lifting kit.

\* Out of approval



1. Lifting kit
2. Available space for the integration of a pump

## 11 Hydraulic connections

The compact filter is delivered "ready to install", with all the equipment installed in our factories. The tanks are delivered ready to be connected with DN100 PVC pipe (except DN160 at the entrance of the INR08000 (16 PE) and FTE2/6309/10 (18-20 PE) all-water tanks) .

These connections are made by the company responsible for the installation following the instructions described in the user's

guide. The effluent inlet and outlet pipe must have a minimum slope of 2% and the treated effluent outlet pipe a minimum slope of 0.5% (attention: take into account the settlement of the land) .  
It is important to check that the effluent distribution ramps above the media are perfectly horizontal.

**⚠ caution :** Before backfilling, check that the prefilter (at the outlet of the all-water tank) is in a vertical position. If necessary, put it back in a vertical position by turning the outlet pipe of the all-water tank towards the compact filter.

### 12 Connection of primary and secondary ventilation

1. Remove the lead placed around the trough to access, in addition to the documentation, the secondary ventilation connection elbow (45° elbow DN 100) to be used for the pack or in line.  
The elbow must be glued on the T, located at the outlet of the septic tank .

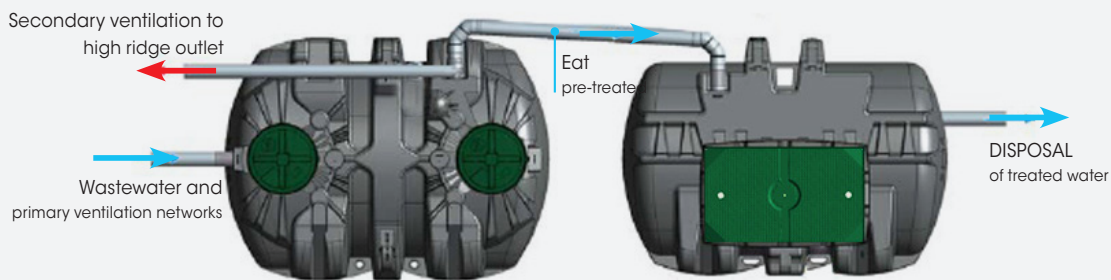
2. Connect the vents according to the following diagrams :



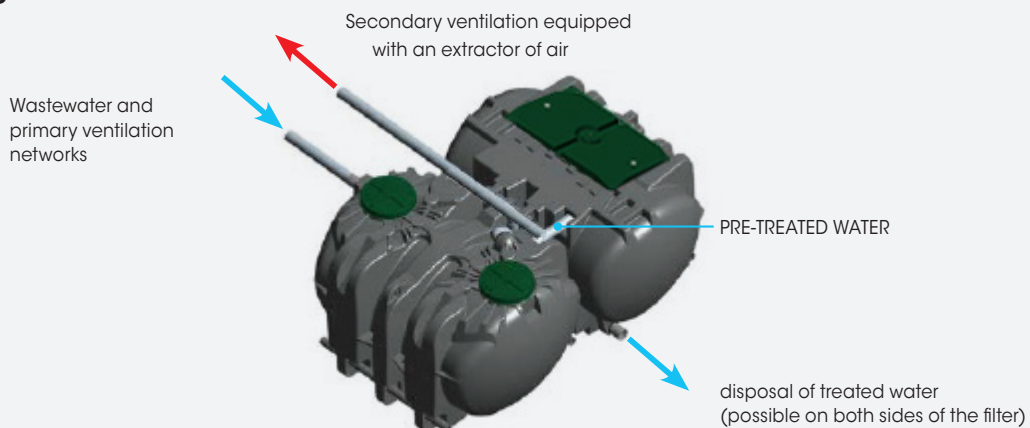
**⚠ caution :** The ventilation system is essential for the correct operation of the entire effluent treatment system. It is therefore necessary to ensure that primary and secondary ventilation systems are in place and that there are no slopes in the pipes.

In case of installation of a lifting station upstream of the system, it is necessary to ensure the presence of a ventilation on this station or to install a ventilation between the lifting station and the all water tank.

#### → Aligned installation



#### → Packaged installation



## 13 Documentation

In the compact filter, you will find a folder containing the documentation necessary for the proper implementation of your Bionut<sup>®</sup> self-contained wastewater treatment system:

- user's Guide
- installation instructions
- T letter
- maintenance contract proposal

You can also download all the documentation on our website [www.simop.fr](http://www.simop.fr)



## 14 Commissioning

The commissioning of the system is possible after the following steps:

- vessels installed and partially backfilled (ventilation pipes visible),
- connected ventilations,
- hydraulic connection made,
- watering of the all water tank realized,
- installation of the sockets and covers carried out.



**\* Important:**

SIMOP offers, with each BIONUT system from 4 to 20 PE, assistance with commissioning on site, in order to guarantee the user optimal operation of the system.

During this intervention, different points will be checked, such as:

- hydraulic connections,
- the connection of the ventilations,
- the horizontality of the distribution ramps in the compact filter,
- the proper functioning of the flush valve and the entire system (see user's guide).