

BIONUT COMPACT FILTER



6054

The BIONUT® range of wastewater treatment systems is designed to treat domestic wastewater from single-family homes or groups of dwellings.

These devices support the intermittent operation of second homes and require no energy supply.

Treatment is based on the compact biological filter technique, which reproduces the natural purification of water through the soil.

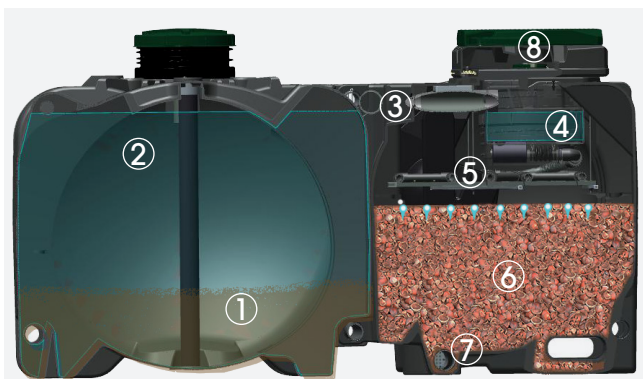
These systems are composed of an all-water tank ensuring the pretreatment of the effluent and a compact filter made of hazelnut shells ensuring the biological treatment.

2 Operation

BIONUT® treatment is a two-stage process:

- pre-treatment, carried out by the all-water tank,
- biological treatment, using a compact filter based on hazelnut shells.

Once the pre-treated water has been discharged from the all-water tank, it enters the tank's integrated trough flush. This flush feeds the distribution ramp to optimize the water distribution over the entire filter surface. The water then percolates through the filter media, made of hazelnut shells on which aerobic bacteria settle to purify the water. The oxygen supply required for bacterial growth is provided by an opening in the rectangular cover, equivalent to a 100mm diameter. The treated water is then discharged via a drain (infiltration into the ground) or into the natural hydraulic surface environment (subject to authorization). Secondary ventilation is provided by the T-piece placed between the all-water tank and the filter (upwardly adjustable for connection with 1 DN100 PVC 45° elbow)



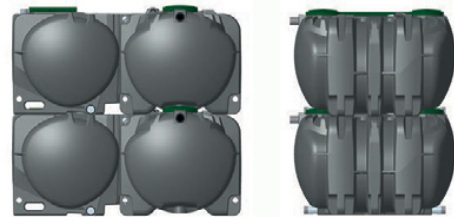
1. Sludge settling
2. Fat flotation
3. Effluent flow into the bucket flush system
4. Feeding the sprayer boom via the bucket flush system
5. Effluent distribution over the filter surface
6. Biological percolation treatment
7. Treated effluent outlet from the compact filter (outlet possible from both sides of the filter)
8. Fresh air intake through opening in rectangular cover.



3 Transport

BIONUT® models (4-5-6 p.e.) are delivered pre-assembled from the factory in stackable packs for easy transport. The circular extensions and the rectangular half-extensions are placed inside the filter. These models are equipped with lifting straps.

BIONUT® models above 6 p.e. are delivered with separate all-water pits (FTE) and compact filter(s) (FC).



4 Materials

- PE tanks
- PE and PP lids
- Stainless steel manifold and trough supports
- Stainless steel anti-rodent grid

BENEFITS

• An economic step:

- low landscape impact
- simplified installation with the pack
- monobloc up to 6 PE
- easier media renewal (single-material bulk filter)



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Characteristics & sizing of filter systems

The BIONUT® range consists of an all-water tank and 1 to 4 compact filters, depending on their capacity.

Low outlet unit

Article	BIONUT2 /6054/04	BIONUT 2 /6054/05	BIONUT2 /6054/06	BIONUT2 /6054/08	BIONUT2 /6054/10	BIONUT2 /6054/12	BIONUT2 /6054/16	BIONUT2 /6054/18	BIONUT2 /6054/20	
PE capacity	4	5	6	8	10	12	16	18	20	
Total number tanks	2			3			4	5		
TREATMENT primary (septic tank)	Reference	FTE03000BI		FTE2/6009/04	FTE2/6009/05	INR06000	INR08000	FTE2/6309/10		
	Useful volume (m³)	3		4	5	6	8	10		
	Weight septic tank (kg)	155		190	225	306	404	580		
COMPACT FILTER (FC)	Reference	1 x BIO-NUT2/04	1 x BIO-NUT2/05	1 x BIO-NUT2/06	1 x BIO-NUT2/08	2 x BIO-NUT2/05	2 x BIO-NUT2/06	2 x BIO-NUT2/08	3 x BIO-NUT2/06	4 x BIO-NUT2/05
	Massive useful height (m)	0.75		0.75		0.75	0.75	0.75	0.75	0.75
	Compact filter weight (kg)	208	221	275	596	554	550	831	1 192	
	Total weight shells (kg)	569	662	1 112	1 138	1 324	2 224	1 986	2 276	
Total weight Compact filter + shells (kg)	777	883	1 387	1 554	1 766	2 774	2 649	3 108		
Total die weight (kg)* Septic tank + compact filter + shells (kg)	960		1060	1 572	1 954	2 184	3 178	3 367	4 018	
Maximum backfill height on septic tank (m)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	
Maximum backfill height on compact filter (m)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	

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□ Pack weight * Without bucket flush or distribution manhole

Septic tanks

References	A	B	C	Access Ø D2	Access Ø D1	E	Input / output Ø F	G	H
FTE03000BI	1 639*	1 660	2 299	400	400	1 280	100	1 250	389*
FTE2/6009/04	1 800*	1 810	2 287	200	400	1 365		1 335	384*
FTE2/6009/05	1 950*	1 977	2 390	200	400	1 500		1 470	384*
INR06000	2 295	2 202	2 114	-	600	2 037	160	1 987	308
INR08000	2 295	2 202	2 720	-	600	2 037		1 987	308
FTE2/6309/10	2 540	2 490	3 378	600	600	2 085		2 035	505

Dimensions in mm

* Including 150 mm minimum extension height required.



3 m3 all-water tank
FTE03000BI
(sold only in 4, 5 and 6 PE packs)



All-water tank 4 and 5 m³
FTE2/6009/04
FTE2/6009/05



6 and 8 m3 all-water tanks
INR06000
INR08000



10 m3 all-water tank
FTE2/6309/10

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View of all-water tanks

For models BIONUT2/6054/04, 05 and 06 models		
Side view of the FTE03000BI	Top view of the FTE03000BI	Front view of FTE03000BI
For models BIONUT2/6054/08 and 10		
Side view of FTE2/6009/04 (for BIONUT2/6054/08)	Top view of FTE2/6009/04 (for BIONUT2/6054/08)	
Side view of FTE2/6009/05 (for BIONUT2/6054/10)	Top view of FTE2/6009/05 (for BIONUT2/6054/10)	
For models BIONUT2/6054/12 and 16		
Side view of INR06000 and INR08000	Top view of INR06000 and INR08000	
For models BIONUT2/6054/18 and 20		
Side view of FTE2/6309/10	Top view of FTE2/6309/10	

WASTEWATER TREATMENT

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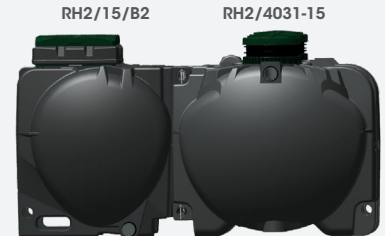
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Features and dimensions of compact filters

- Pack monobloc 4, 5 and 6 PE versions

The packs are supplied with a set of extensions and lifting straps.

References	A	B	C	D1	Ø D2	E	Ø F	G	H
Bionut2/6054/04		2 917		470 x 920 (inside TH)					
Bionut2/6054/05	1 639*	2 917	2 299	650 x 1100 (lid)	400	1 280	100	18	1 621*
Bionut2/6054/06		3 117							



Dimensions in mm

* Including 150 mm minimum extension height required.

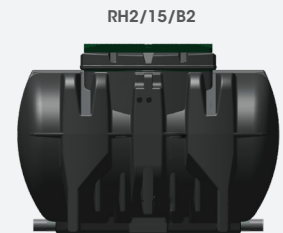
See the corresponding plans on the following page (p. 5).

Compact filter alone 4, 5, 6 and 8 PE

A set of extensions is included in the 4 to 8 EH lines.

Extensions are optional and must be ordered separately (see table p. 7).

References	A	B	C	Ø D	E	Ø F	G	H		
Bionut2/04	Unpacked	1 610*	1 537	2 240	-	1 238	100	18	1 592*	
Bionut2/05		1 610*	1 537	2 240	-			470 x 920 (inside TH)	18	1 592*
Bionut2/06		1 610*	1 737	2 240	-			650 x 1100 (lid)	18	1 592*
Bionut2/08 (2 lids)		1 650*	1 880	2 380	470 x 920			43	1 607*	



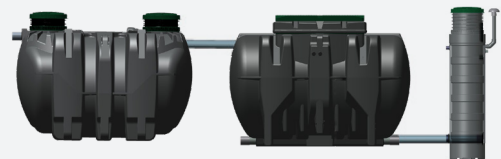
Dimensions in mm

* Including 150 mm minimum extension height required.

See the corresponding plans on the following page (p. 5).

High outlet unit

When the terrain does not allow for a low-level outlet (outlet located higher than the compact filter outlet level), the **RELBIONUT-B2** lifting station is required to lift the effluent.



References of the complete unit	BIONUT2 /6054/04SH	BIONUT2 /6054/05SH	BIONUT2 /6054/06SH	BIONUT2 /6054/08SH	BIONUT2 /6054/10SH	BIONUT2 /6054/12SH	BIONUT2 /6054/16SH	BIONUT2 /6054/18SH	BIONUT2 /6054/20SH
PE capacity	4	5	6	8	10	12	16	18	20
Composition of the unit :									
Basic unit	BIONUT2 /6054/04	BIONUT2 /6054/05	BIONUT2 /6054/06	BIONUT2 /6054/08	BIONUT2 /6054/10	BIONUT2 /6054/12	BIONUT2 /6054/16	BIONUT2 /6054/18	BIONUT2 /6054/20
Lifting station	RELBIONUT-B2								
Technical data sheet	FT 5170								

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View of compact filters (in pack or alone)

Pack views 04, 05, 06	Views of compact filter alone for in-line models 04, 05, 06 and multi-filter models 10, 12, 18 and 20 models	Views of the compact filter alone for the in-line model 08 and multi-filter model 16
<p>Package side view BIONUT2/6054/04 to 06</p>	<p>Filter side view BIONUT2/04 to 06</p>	<p>Filter side view BIONUT2/08</p>
<p>Pack top view BIONUT2/6054/04 to 06</p>	<p>Filter top view BIONUT2/04 to 06</p>	<p>Filter top view BIONUT2/08</p>
<p>Front view of the pack BIONUT2/6054/04 to 06</p>	<p>Front view of filter BIONUT2/04 to 06</p>	<p>Front view of filter BIONUT2/08</p>

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Reference of the different versions

Compact filters filled with hazelnut shells at the factory. Low and high output (SH)

Capacity	Standard filling low outlet	Standard filling High outlet (lifting station)
4 EH	BIONUT2/6054/04	BIONUT2/6054/04SH
5 EH	BIONUT2/6054/05	BIONUT2/6054/05SH
6 EH	BIONUT2/6054/06	BIONUT2/6054/06SH
8 EH	BIONUT2/6054/08	BIONUT2/6054/08SH
10 EH	BIONUT2/6054/10	BIONUT2/6054/10SH
12 EH	BIONUT2/6054/12	BIONUT2/6054/12SH
16 EH	BIONUT2/6054/16	BIONUT2/6054/16SH
18 EH	BIONUT2/6054/18	BIONUT2/6054/18SH
20 EH	BIONUT2/6054/20	BIONUT2/6054/20SH

Empty compact hazelnut shell filters Low output (SN) and high output (SN SH)

Capacity	Complete filter with compact empty hazelnut filter, low outlet	Complete filter with compact empty hazelnut filter, High outlet with lifting station	Weight of shells delivered in big bags up to 800kg (kg)
4 EH	BIONUT2/6054/04SN	BIONUT2/6054/04SNSH	580
5 EH	BIONUT2/6054/05SN	BIONUT2/6054/05SNSH	580
6 EH	BIONUT2/6054/06SN	BIONUT2/6054/06SNSH	680
8 EH	BIONUT2/6054/08SN	BIONUT2/6054/08SNSH	1120
10 EH	BIONUT2/6054/10SN	BIONUT2/6054/10SNSH	1140
12 EH	BIONUT2/6054/12SN	BIONUT2/6054/12SNSH	1340
16 EH	BIONUT2/6054/16SN	BIONUT2/6054/16SNSH	2240
18 EH	BIONUT2/6054/18SN	BIONUT2/6054/18SNSH	2000
20 EH	BIONUT2/6054/20SN	BIONUT2/6054/20SNSH	2280

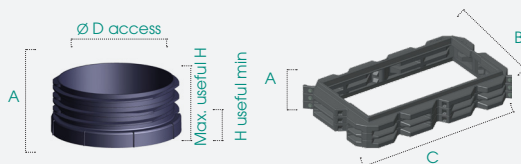
Optional:

Description	Reference
Lifting kit	RELBIONUT-B2 (external station) or RELINTB2 (for installation in sampling port see FT 6063)
Anchoring accessories	KANCRB2 = 1 AD254 anchor bar + 2 BV170-8-100 pins CA3/10/3T/2 (set of 2 for one tank, without winch) CA3/10/3T/3 (set of 3 for FTE2/6309/10, without winch) CA3/6394/10T (individually, suitable for all tanks, with winch)
Lifting straps	SANGL/BIONUT (included and mounted on filters from 4 to 8 PE, straps are optional for filters above 8 PE)
Pack of risers	RHV/BIONUT2/456 to 20/SB OR SH - See FT-6062 for details

Accessories and additional equipment

Extensions

The all-water pit and compact filter extensions are supplied as standard for 4 to 8 PE sectors. They are optional for sectors greater than 8 PE.



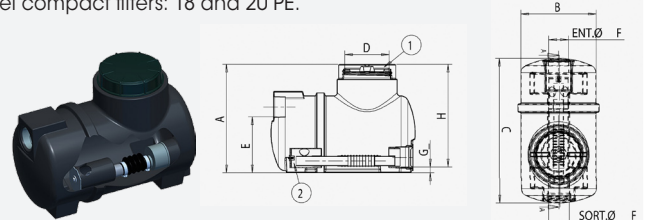
Reference	Designation	A	Ø D	H useful mini	H useful max
RH2/4031-15	Manhole extension to be screwed on, cuttable every 5 cm	207	400	50	150

References	Designation	A	B	C
RH2/15/B2	BIONUT 150 mm extension	150	740	1 170

Dimensions in mm

Bucket flush

Bucket flush is required and supplied as standard for 2 or more parallel compact filters: 18 and 20 PE.



References	Volume	A	Ø B	C	Ø D	E	Ø F	G	H
AF2/6018/45	45 L	540	415	740	200	285	100	30	510

OPTIONS	
RH2/03/15	Polyethylene extension 150 mm high
AF2/KFLOT/045-080	Float kit for trough 45L-80L

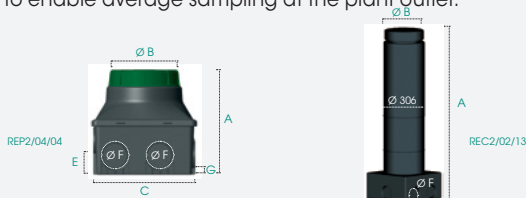
Dimensions in mm

WASTEWATER TREATMENT

Accessories and additional equipment (continued)

Distribution boxes

The REP2/04/04 distribution manhole is included in all multi-filter systems (from 10 PE.). The REC2/02/13 collection manhole is available as an option, and is strongly recommended for multi-filter systems (> 8 PE) to enable average sampling at the plant outlet.



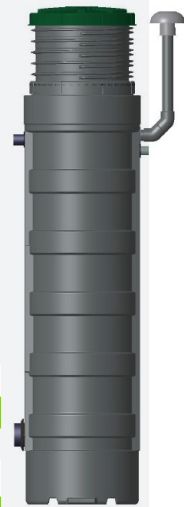
References	A	Ø B	C	E	Ø F	G
REP2/04/04	400	235	400 x 400	75	100	20
REC2/02/13	1 300	220	400 x 400	-	100	10

Dimensions in mm

OPTIONS	
RH2/03/15	Screw-on extension Ø 235, height 150 mm

Lifting station

The lifting station is used to raise water at the upper outlet of the Bionut® sector.



OPTIONS	
RH2/4031	Polyethylene extension, height 300 mm
AE141	Connection kit for cable extension
AE1613	Very high level audible alarm box

Reference	A	ØB	ØC	ØD	E	ØF	G
RELBIONUT-B2	1855	579	470	400	1445	100	225

H	I	J	Pump	Power kW	Ampere intensity	Voltage volts
410	205	225	PLIFT5180/01	0.75	3.6	220

4 Performance

The BIONUT® unit has obtained ministerial approval n° 2019-001 ext01 to 13, and complies with the following regulatory requirements:

Parameters	Regulatory thresholds of the modified September 7, 2009 order
BOD ₅	35 mg/l
TSS	30 mg/l

These performances are achieved under normal conditions of use, care and maintenance, in accordance with the user guide and after a 6-week start-up period. SIMOP can only guarantee the correct operation of its system if all its components have been supplied by SIMOP, in particular the lifting stations and bucket flushers at the compact filter outlet.

5 Installation and commissioning

• **Installation** : refer to P075 installation instructions and user guide.

• **Commissioning:**

commissioning is an important operation to validate the correct operation of the system. Send us the letter T (included in the documentation) to benefit from free commissioning.

It can also be carried out by the user and/or a qualified professional, in full compliance with the recommendations described in the user's guide, and must be the subject of a commissioning report to be returned to SIMOP. SIMOP offers free on-site assistance during commissioning, to ensure that your system operates at optimum efficiency.

ASSISTEAUX has been approved by SIMOP to provide assistance with commissioning and subsequent maintenance.



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6 Maintenance

• **All-water tank** : usual maintenance, drain the tank when the sludge level reaches 50% of the total volume, see the corresponding tank data sheet.

• **BIONUT® filter** : quick and easy maintenance, refer to user's guide.

• SIMOP-approved **ASSISTEAUX** offers a maintenance contract based on a visit every 2 years for the BIONUT New Generation range.

7 Guarantee

SIMOP guarantees that the devices in the BIONUT® range can treat domestic wastewater in compliance with regulatory requirements.

The tank is guaranteed for 10 years, provided that the installation conditions have been respected.

The warranty period begins on the day we receive the T letter.

Each die is identified by a serial number located on the manhole of the compact filter.