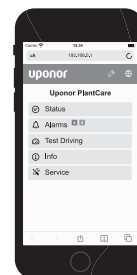
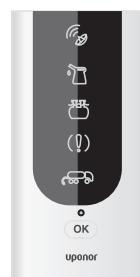


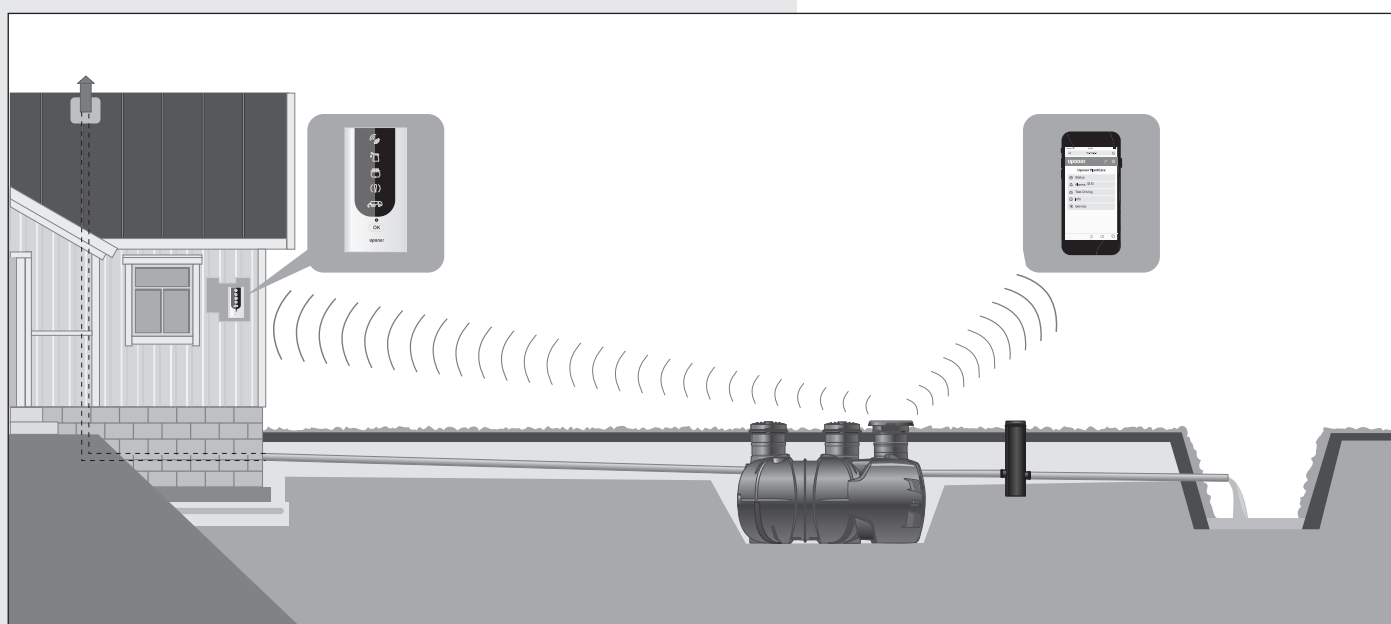
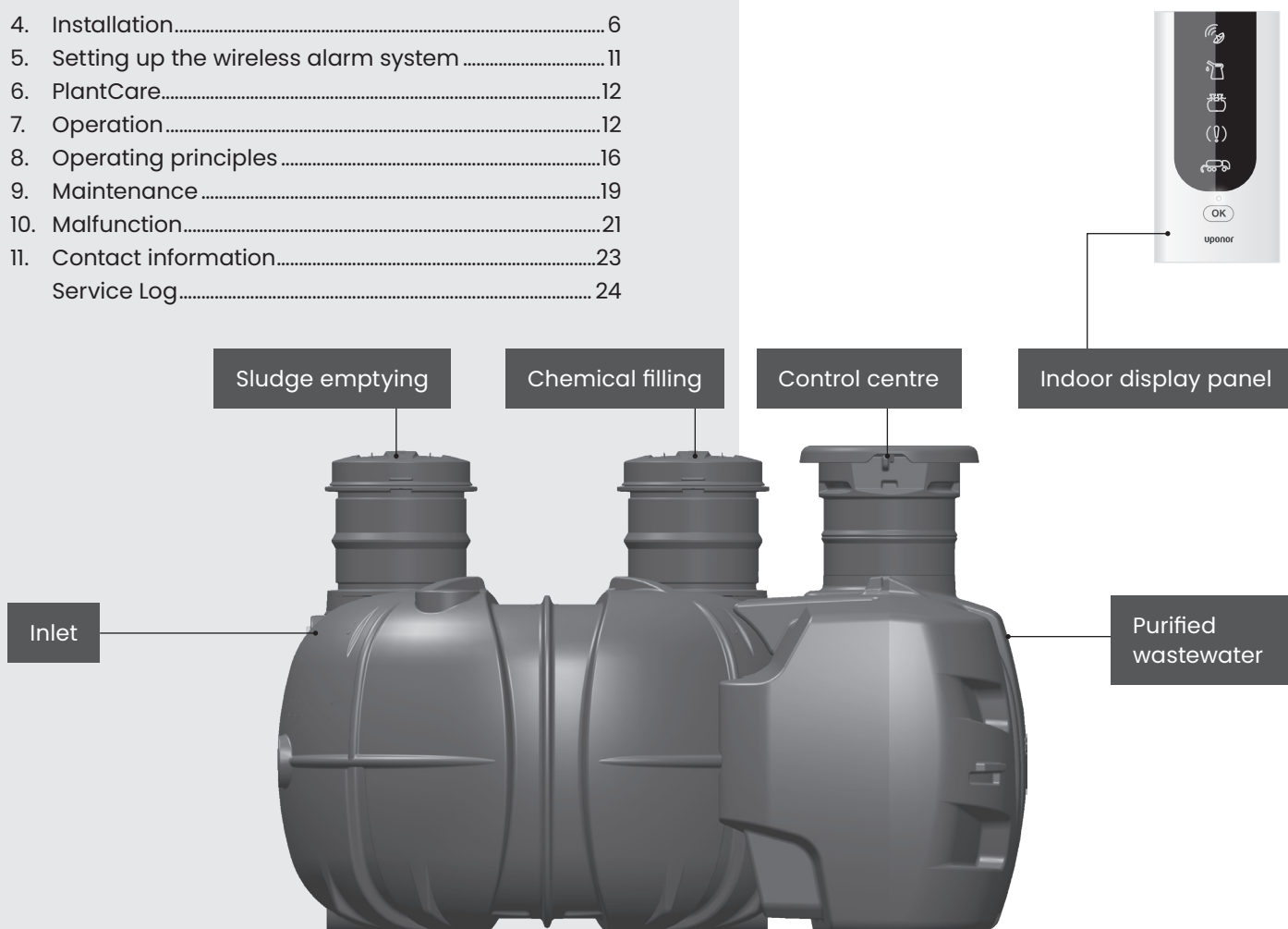
# Uponor Clean II Treatment Plant Operating Manual

**uponor**



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Uponor Clean II treatment plant for wastewater for up to 10 PE.

We reserve the right to make changes.

# 1. Overview

The biochemical Uponor wastewater treatment plant is a domestic wastewater treatment system intended for continuous household use, or for a second home equipped for year-round, regular use. The Uponor treatment plant processes all wastewater in a household (from bathing, dishes, laundry, and toilet flushing). It is suitable for all kinds of building lots, including those that are small or rocky.

Foreign objects and materials must not be washed down into the treatment plant, such as debris for solid waste disposal or materials that are classified as problem waste, which can endanger the biological processing of the treatment plant.

## Operating principle

The Uponor Clean II wastewater treatment plant represents top technology in wastewater treatment. Because of its new design, the treatment plant has compact outer dimensions. After installation of the treatment plant, only three unobtrusive covers are visible in the yard.

The treatment plant is primarily designed for use by two households. With a holiday automation technology, it is also suitable for summer cottages that are used frequently year-round. Thanks to the holiday automation, the treatment plant can withstand breaks, as the active sludge is sustained by continued aeration and recycling. The treatment plant is installed in the ground and the extension pipes can easily be extended.

The treatment plant is a biochemical wastewater system, where all household sewage can be directed. The cleaning process works on a batch principle, with an active sludge process and a chemical flocculation. The wastewater is treated in equal batches, so that each batch is purified to the same extent. Microbes living in the active sludge complete a biological purification, while the phosphorus compounds are removed from the wastewater by chemical precipitation. At the end of the cleaning process, the purified water is pumped out, for example, into an open ditch, drainage well or ditch that serves as a discharge point.

## Cleaning process cycle:

- pre-settling of wastewater, storage of incoming water and storage of the sludge in the septic tank
- filling of the process tank
- aeration
- dosage and mixing of the flocculation chemical
- first settling
- excess sludge is returned to the septic tank
- second settling
- discharge of the purified water

If no water is entering the plant, the process is in a waiting or holiday cycle, in which the wastewater is regularly aerated in the process tank. The aeration keeps the microbes active in the process tank.

The Finnish Environment Institute SYKE has completed standard CE testing on the Uponor wastewater treatment plant. The results of the test are excellent and well above the requirements.

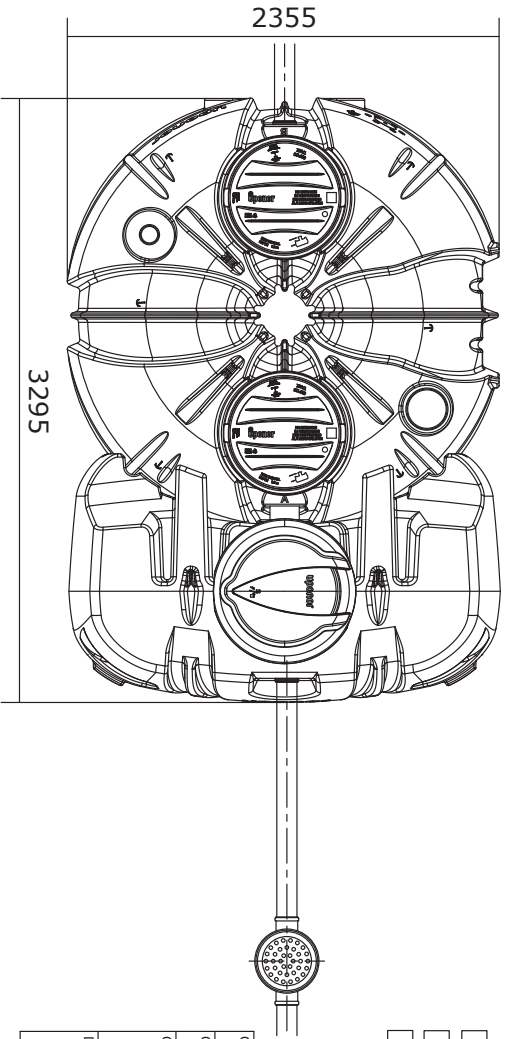
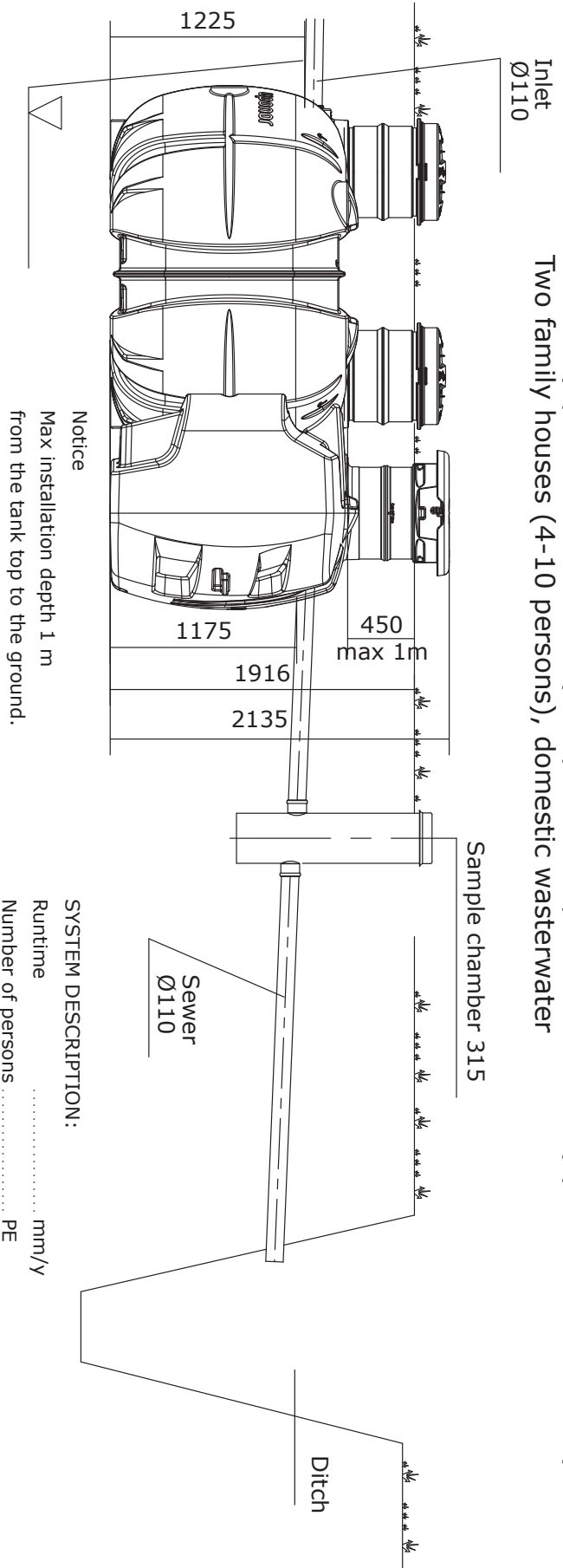
The treatment plant is easy to use. The Clean flocculation chemical is added into the plant a few times a year, and the sludge emptying truck comes to empty the sludge accumulated in the septic tank at least once a year. Electric consumption is low primarily because of the mammoth pumping technique. The wastewater and sludge are transferred without mechanical pumping. The air used in the process is produced by blowers located underneath the second cover of the control panel.

The treatment plant has a wireless alarm system, visible through an Info panel installed inside the house. An indicator light on the Info panel indicates when it is time to fill the chemical vessel, if the water level in the tank is too high, if there is a technical malfunction or when the septic tank must be emptied. A test button can be used to query the state of the plant activity. The activity can also be controlled and followed with a mobile device using a PlantCare mobile bookmark.

**NOTE!** PlantCare program uses treatment plants local network and local web browser. It is not connected to internet.

## 2. Installation and dimensional drawings

Clean II (Uponor code 1133828) + Uponor Sample Chamber 315 (uponor code 1003559).  
Two family houses (4-10 persons), domestic wastewater



### SYSTEM DESCRIPTION:

Runtime ..... mm/y  
 Number of persons ..... PE  
 Dim. water volym ..... ml/d (max 2100 l/d)







- Accessories:
- Frost insulation
  - Anchoring
  - Extension pipes Ø 560 with sealing ring
- Outlet:
- Ditch
  - Soiltreatment.....m<sup>2</sup>
  - Infiltration chamber

We reserve the right to changes.



City/Village	Block/Yard	Lot/Rn.o.	Notes from administrative authority
Construction act			Drawing type
Construction site: name and address			Qualifies
Designer: name, date and signature			Planning, work no. and drawing no.
			Modification

# 3. Technical information

Uponor Clean II treatment plant			Monitoring functions
<b>Product information</b>			<p><b>Display panel indicators</b></p>  <p><b>Connection to the treatment plant</b></p>  <p><b>Chemical running out</b> Fill the chemical vessel (20 l)</p>  <p><b>High water level</b></p>  <p><b>Possible hardware malfunction</b> Call a service technician</p>  <p><b>Septic tank full</b> Order a sludge emptying truck</p>  <p><b>OK indicator light</b> Everything in working order</p>
Uponor number	1133828		
LVI number	3624861		
EAN code	6414900301565		
<b>Measurements</b>			
Width, mm	2355		
Length, mm	3295		
Inlet connection height, mm	1225		
Outlet connection height, mm	1175		
Height with extension pipe, mm	2135		
Transport height, mm	2135		
Weight, kg	450		
Fitting size, mm	110		
Septic tank volume, m <sup>3</sup>	4,6		
Process tank volume, m <sup>3</sup>	2,2		
Total volume, m <sup>3</sup>	6,8		
<b>Electricity</b>			
Electric connection	230V 1~ phase, 10 A fuse		
<b>Flow data</b>			
Standard flow, l/day	1500		
Maximum flow, l/day	2100		
Batch size, l	350		
Pump-out time, min	16		
Occupancy	3–10		
<b>Operating costs</b>			
Chemical consumption per year, l	60–120		
Chemical consumption/batch, dl	1,0		
Electricity consumption per day, kWh	1,6		
Electricity consumption per year, kWh	584		
Sludge removal	At least once a year		
<b>Installation conditions</b>			
Installation depth from inlet sewer to the ground, max.	1,2 m		
Installation depth on top of the tank, max.	1,0 m		
Extension pipe Ø	560 mm		
<b>Accessories</b>			
	<b>Uponor number</b>	<b>LVI number</b>	
Uponor anchoring system	1003563	3625391	4 pcs
Uponor settling chemical (aluminium chloride)	1003575	3624997	15 l
Clean extension pipe 560 x 1 m	1057363	3625015	3 pcs, with installation depth > 0,7 m
Extension pipe seal 560	1003600	2521817	6 pcs
Sampling well	1003559	3625090	

# 4. Installation

## Trench

When measuring the length and width of the trench, allow for a workspace of at least half a metre around the tank. In normal installations, the depth of the trench for treatment plants is approximately 2 metres. For deeper installation, see the text for **“Extending riser pipes”**.

If the treatment plant is installed in dense soil or in an area with high groundwater levels, the treatment plant must be anchored. Allow for a space of at least 60 cm measured from the outermost edge of the treatment plant. Make sure that the trench has underground drainage, so that any water that accumulates there does not put a strain on the tank. This also helps to anchor the tank. Install a cable protection pipe between of the treatment plant and the building’s main distribution board, in which the electrical cable can be installed. Mark according to requirements.

Remember that the distance between the plant control centre and the Info panel inside the house must not be more than 60 metres, but it is advisable to install the display panel as close as possible to the treatment plant. Do not place the display panel in a location where buildings or other obstacles can block the wireless connection.

During the installation, it is recommended to fill the septic and process tank with water. The filled tank stabilises the plant and prevents it from rising in the trench if water is accumulated there.

## Anchoring

The treatment plant must be anchored if it is installed in dense soil, such as clay or silt soil, or if the groundwater level is high. The Uponor anchoring system can be used to anchor the treatment plant (see Uponor anchoring system installation instructions). In a trench dug into clay or cliffy surface, provide drainage to prevent any surface water that enters the trench from collecting and subjecting the tank to pressure.

Uponor anchoring system product number 1003563



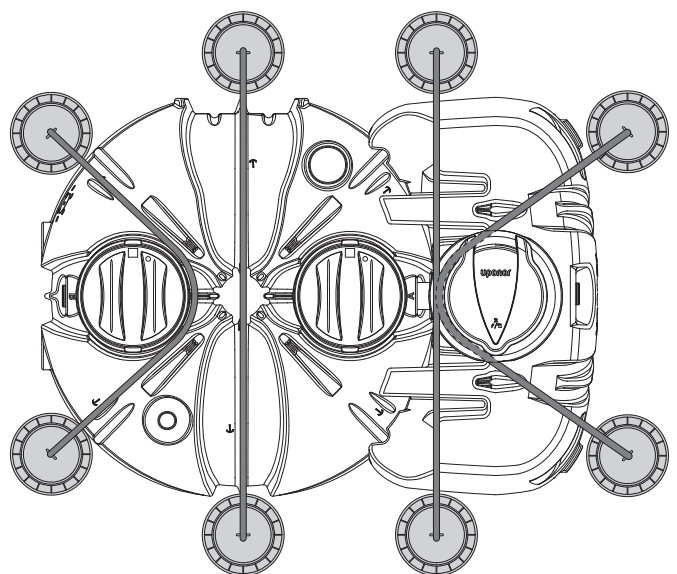
## Contents of the package:

The treatment plant is delivered ready for installation. Parts of the treatment plant are described on page 16.

Inside the treatment plant you will also find an accessory box: 2 fittings, 110 mm inlet pipe, display panel and power supply, owner’s manual, safety goggles and gloves.

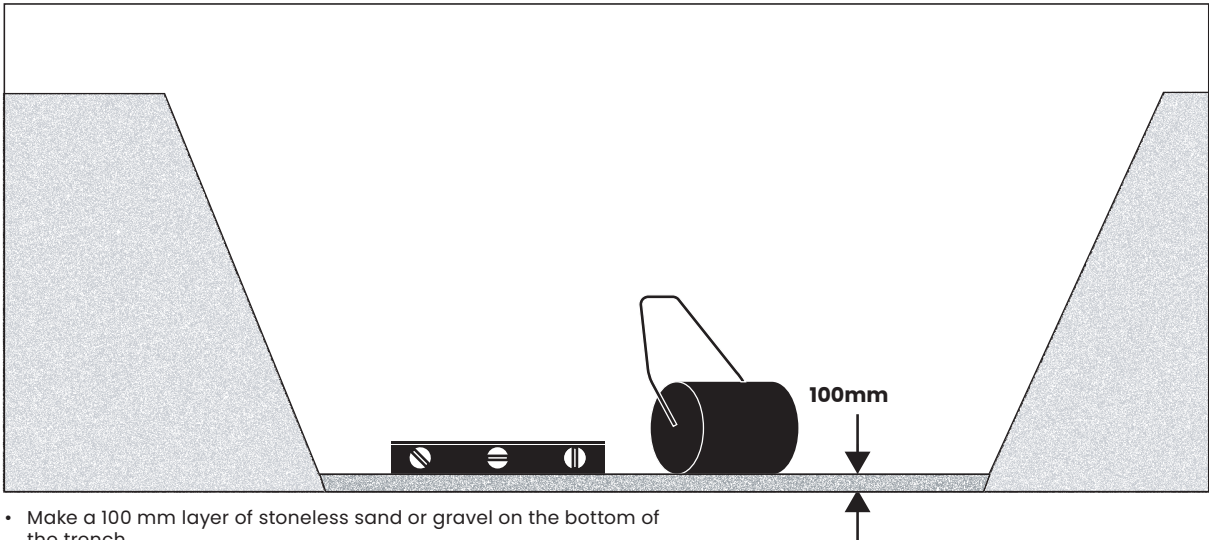
## Please note when installing and positioning the treatment plant:

- Distance to traffic areas
- Drainage of the treatment plant trench
- Install the treatment plant as close to the ground level as possible
- Compress the bottom of the trench and anchor the treatment plant according to the installation instructions, plant type and anchoring instructions
- Protect the treatment plant and sewer pipes from freezing with frost insulation if necessary
- Shape the ground so that surface water is diverted away from the treatment plant
- Follow the wastewater plans made by the local wastewater management



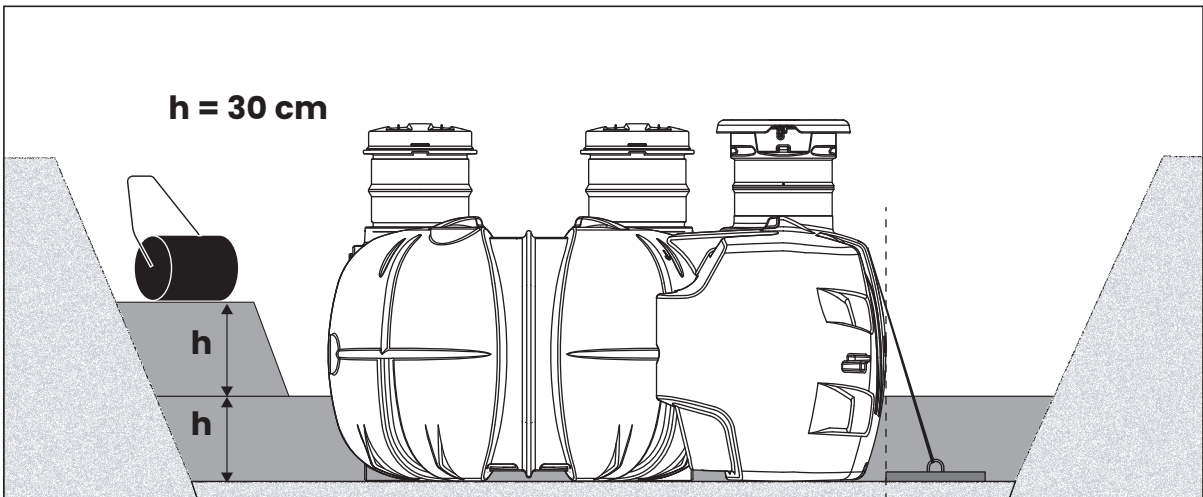
## INSTALLATION

### Trench bottom pre-work



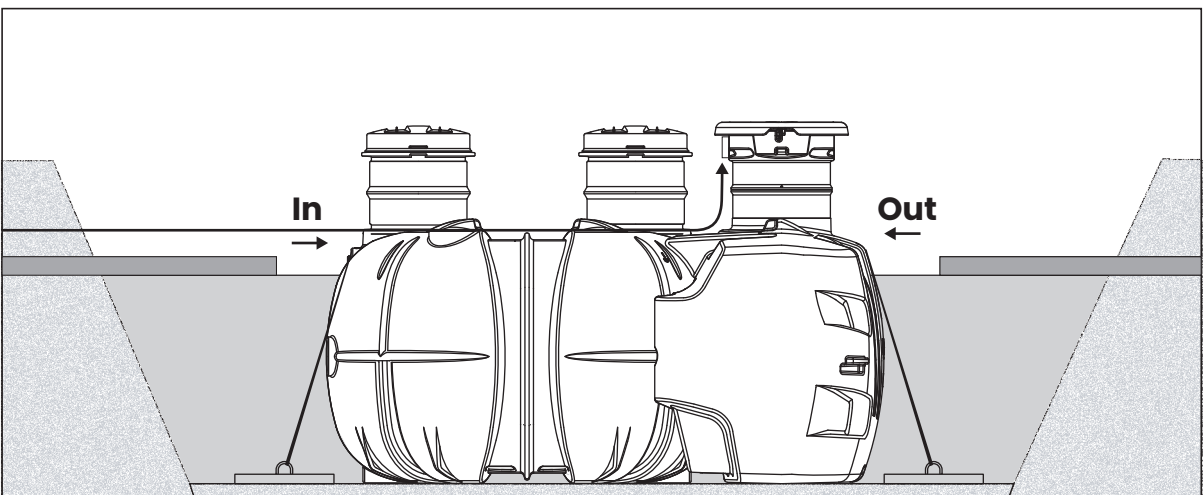
- Make a 100 mm layer of stoneless sand or gravel on the bottom of the trench
- Level and compress it

### Backfilling and anchoring



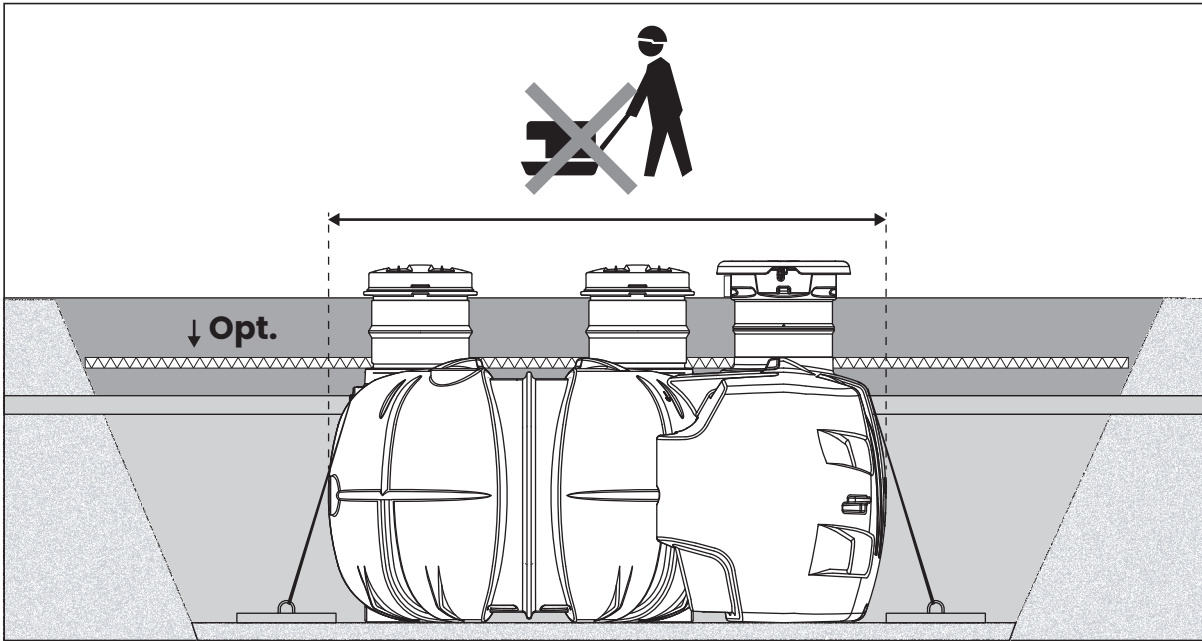
- Lift the tank to the bottom of the trench. Check that the height is right, and the tank is level
- Anchor the tank if there is risk of high groundwater. Use 4 pcs of Uponor anchoring systems (1003563)
- Backfill the cavity with stoneless sand or gravel in 300 mm layers, compress the layers, fill up the tank with water in the same pace with the backfilling

### Connections



- Connect the inlet and outlet 110mm pipes
- Connect power mains to the connection box

## Final backfilling



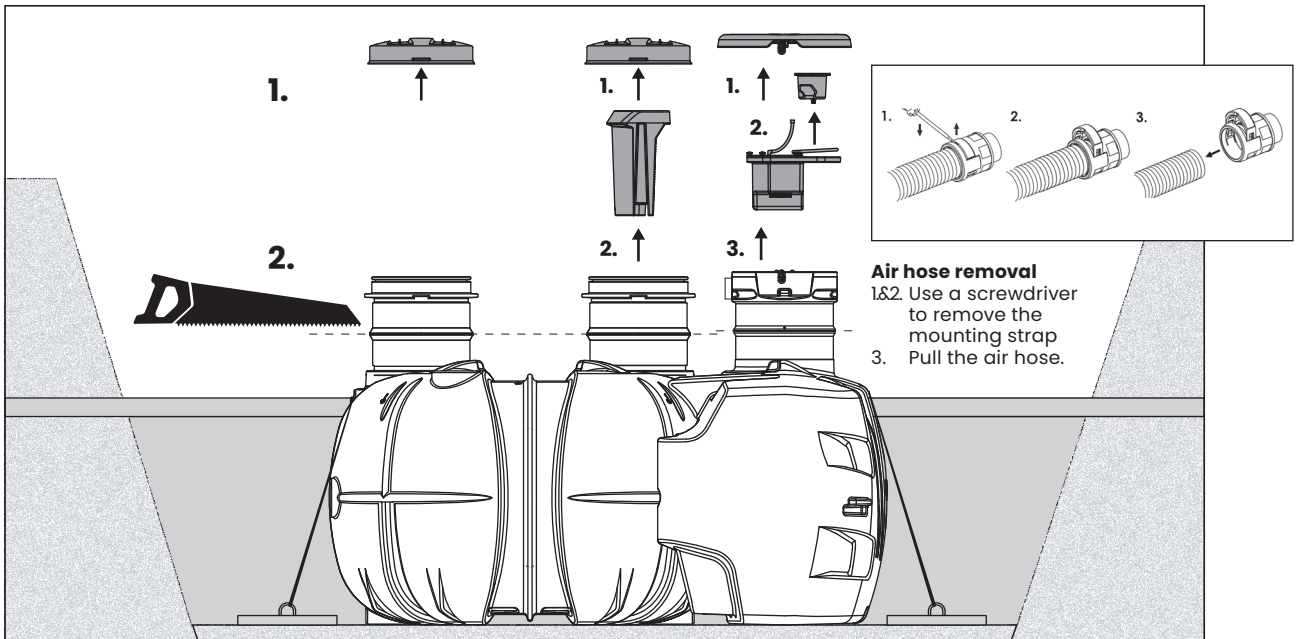
- Backfill the rest of the trench. Do not compress with machine on top of the tank
- Shape the soil surface to guide surface waters away from the tank

If there is reason to assume that the frost penetrates deep into the ground, protect the tanks and other areas prone to freezing with a thermal insulation board (e.g., with a 100 mm thick foam). In the winter, the snow covering the treatment plant and sewer line should not be removed, except for maintenance work. Fill the

trench. Shape the ground so that the surface water is directed away from the tank. Leave a space of about 10 cm between the cover and the ground to ensure the operation of the wireless alarm and the supply of air inside the control centre.

## EXTENDING RISER PIPES

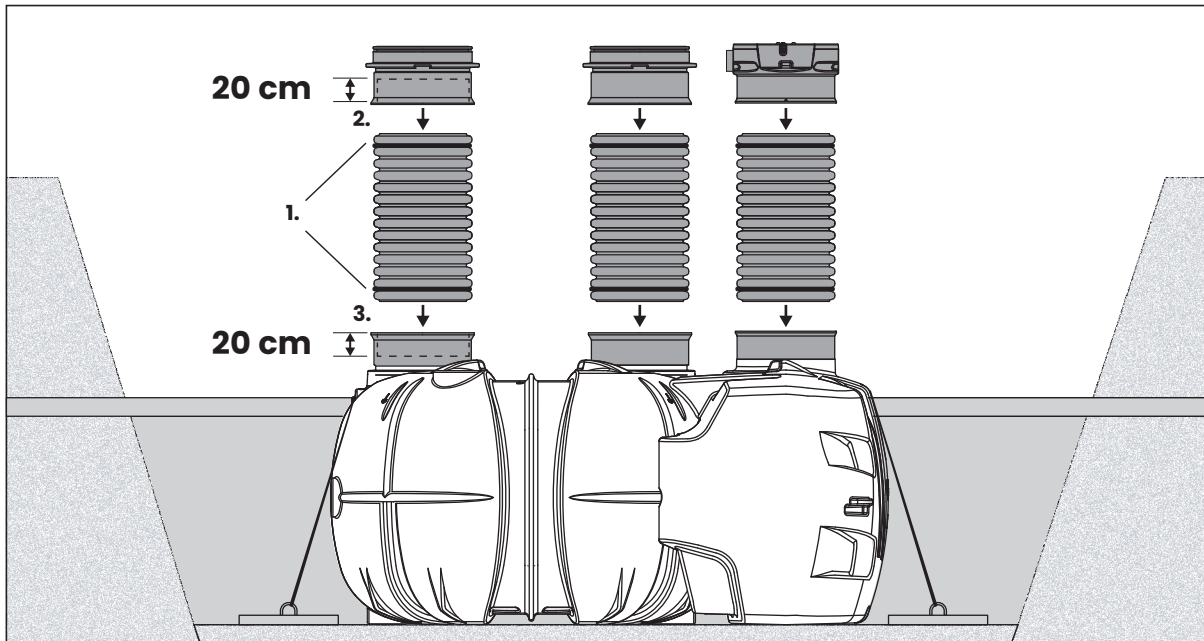
### 1. Emptying and cutting the risers



- Remove the lids
- Disconnect the air-intake hoses from the of the switch cabinet and compressor unit (PIC 1)
- Lift switch cabinet and compressor unit and disconnect the air hoses from their underside and lift them out (PIC 2)
- Disconnect the air hoses from the chemical vessel and lift the vessel out (PIC 3)
- Cut the neck of the shaft with a saw along its middle, marked "offline"

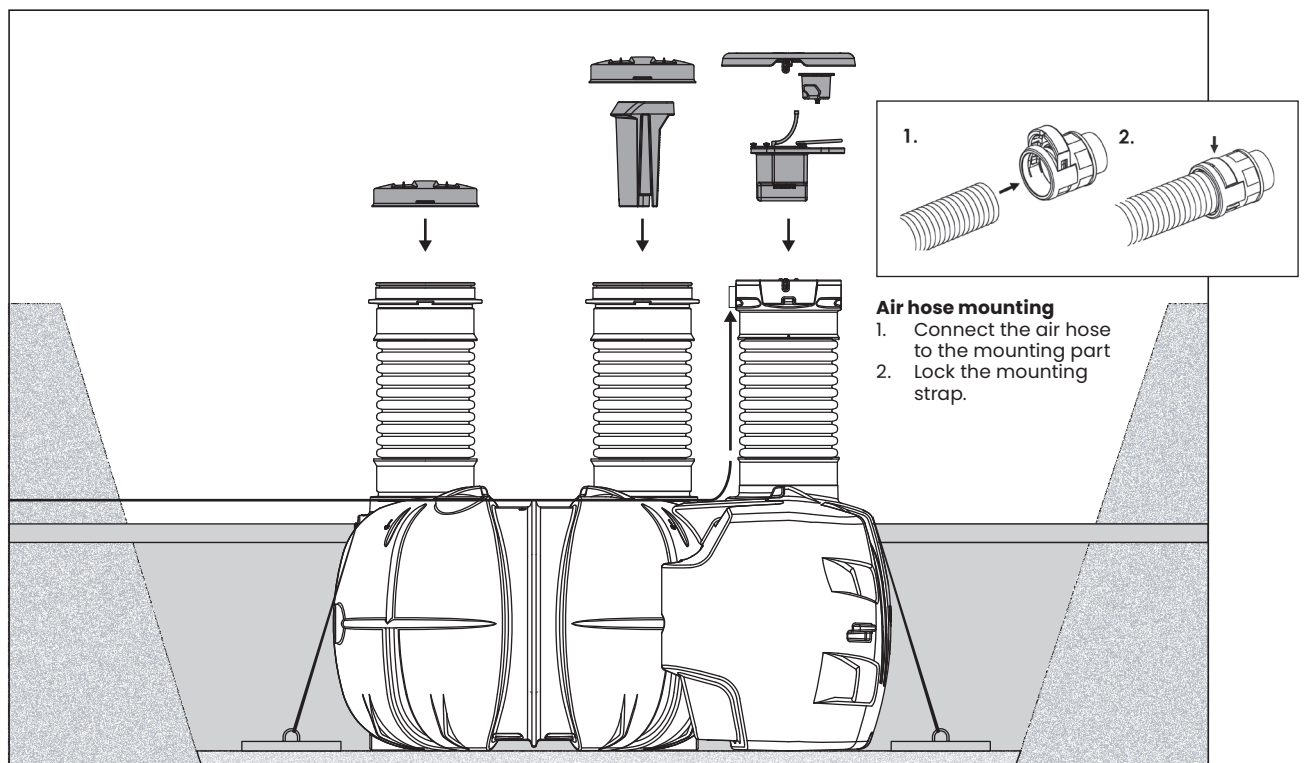


## 2. Installation of extension pipes



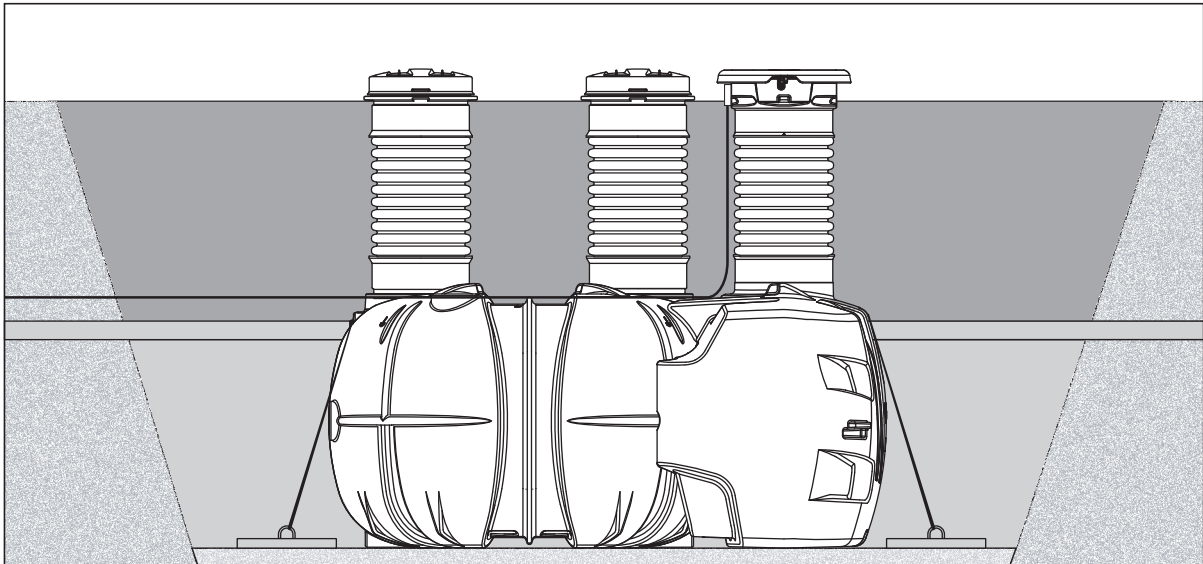
- Place a rubber-sealing ring around each end of the pipe. Lubricate the sealing ring.
- Push one end of the extension pipes into the sawn risers. Push them all the way to the bottom of the sockets
- Push the top part of the riser on the other end of the extension pipe. Push them to the bottom of sockets.

## 3. Mounting chemical vessel, switch cabinet and lids



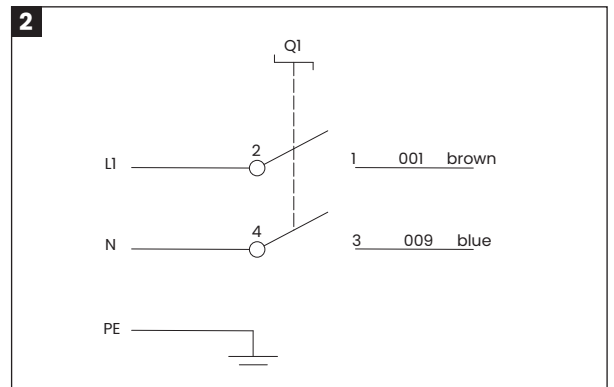
- Connect the air hoses to the chemical vessel and lift the vessel in A
- Connect the air hoses to the bottom of the switch cabinet and compressor unit, and lift them to the riser
- Connect the air-intake hoses to the switch cabinet B and compressor unit C
- Connect the lids

#### 4. Final backfilling



- Backfill the rest of the trench. Do not use compress with machine on top of the tank
- Shape the soil surface to guide surface waters away from the tank

#### Connecting the supply cable



Have an electrician to connect the power cable to the connection box. The cable must have a residual current circuit breaker. Overvoltage protection is recommended in lightning-sensitive areas.

Supply 230 V AC 50 Hz, max. fuse 10 A



Fill the chemical vessel with the Clean Flocculent (30 litres). Wear protective gloves and goggles when handling the chemical. For detailed information on the flocculation chemical, see the enclosed safety data sheet or our website [www.uponor.com/fi-fi](http://www.uponor.com/fi-fi), [www.uponor.com/sv-se](http://www.uponor.com/sv-se).

The treatment plant is ready for use.

# 5. Setting up the wireless alarm system

To ensure a correct cleaning result and trouble-free operation, a few more steps must be taken before starting the treatment plant.

## Info panel placing

Mount the Info panel in a planned nearby location inside the house. Remember that the distance between the control centre and the Info panel should not exceed 50 metres. However, it is advisable to install the display panel as close as possible to the treatment plant.

Do not place the display panel where buildings or similar obstacles can block the wireless connection

## Setting up the wireless connection

**NOTE!** The following steps must be performed without interruption for successful deployment.



Turn on the control centre by plugging the power cable, so that the Info panel is not turned on. The control unit will then start pairing to search for the display panel for up to 5 minutes to establish a wireless connection ("P - -" will appear on the control unit display).



Turn on the Info panel by connecting to the AC adapter. Pairing can be activated during the first 5 min. Start pairing by pressing and holding the OK button for at least 5 seconds.

Connect the AC adapter to the wall outlet and the Info panel. Pairing can be activated during the first 5 min. Start pairing by pressing and holding the OK button for at least 5 seconds.



After 5 seconds, the signal light of the wireless connection starts blinking and the connection is established. This takes 5-10 seconds, after which the signal light turns off and the green OK light turns on.

**NOTE!** If no connection is established, the wireless connection light turns red. In this case, reconnect the wireless connection as described above. If the wireless connection fails after several attempts, try relocating the display panel. Make sure that the distance between the control centre and the display panel is not too long and that buildings, for example, do not obstruct the radio signal.

## Range test

With the help of the radio connection range test, it is possible to find a suitable location for the display panel inside the property. The range test starts automatically after a successful pairing of Control Unit and Info Panel.

1. The range test can be used to verify that the radio reception is good at the display panel installation site. During the test, three colours of LEDs may flash on the display panel:
  - Green = good connection
  - Yellow = connection moderate
  - Red = poor connection or no connection at all
2. The range test ends automatically after 15 minutes. The test can also be interrupted by pressing the OK button on the display panel or the test button on the control centre.

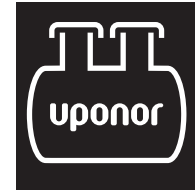
If you want to make a new range test, you have to un-pair the Info panel first. It can be done during 10 min after power-on by pressing and holding the OK button for 10 sec. A new range test can be started by following the steps in **Setting up the wireless connection**.



Lock the treatment plant cover. The sewage treatment system is ready for use.

## 6. PlantCare

The treatment plant activity can be followed with a mobile phone or other mobile device using a PlantCare mobile bookmark. In order to connect the mobile device to the treatment plant you have to be close to the plant, within the range of Wi-Fi net.



**NOTE!** PlantCare program uses treatment plants local network and local web browser. It is not connected to internet.

### Connecting to PlantCare

#### 1. Connect to Wi-Fi

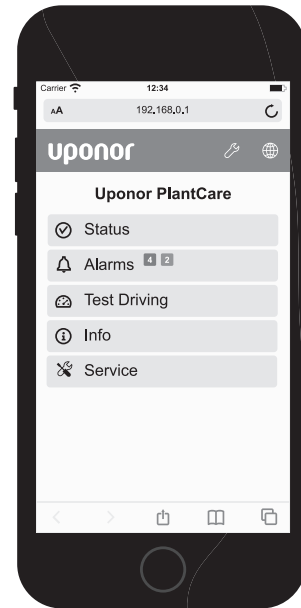
Go near the treatment plant. Search with your mobile device the Wi-Fi of the plant. Select the Wi-Fi which starts with UPONOR.

Wi-Fi password is the network last part of the WLAN id in reverse. E.g., If the ID of the network is **UPONOR\_WWT\_AC617111** –network, the password is **111716CA**.

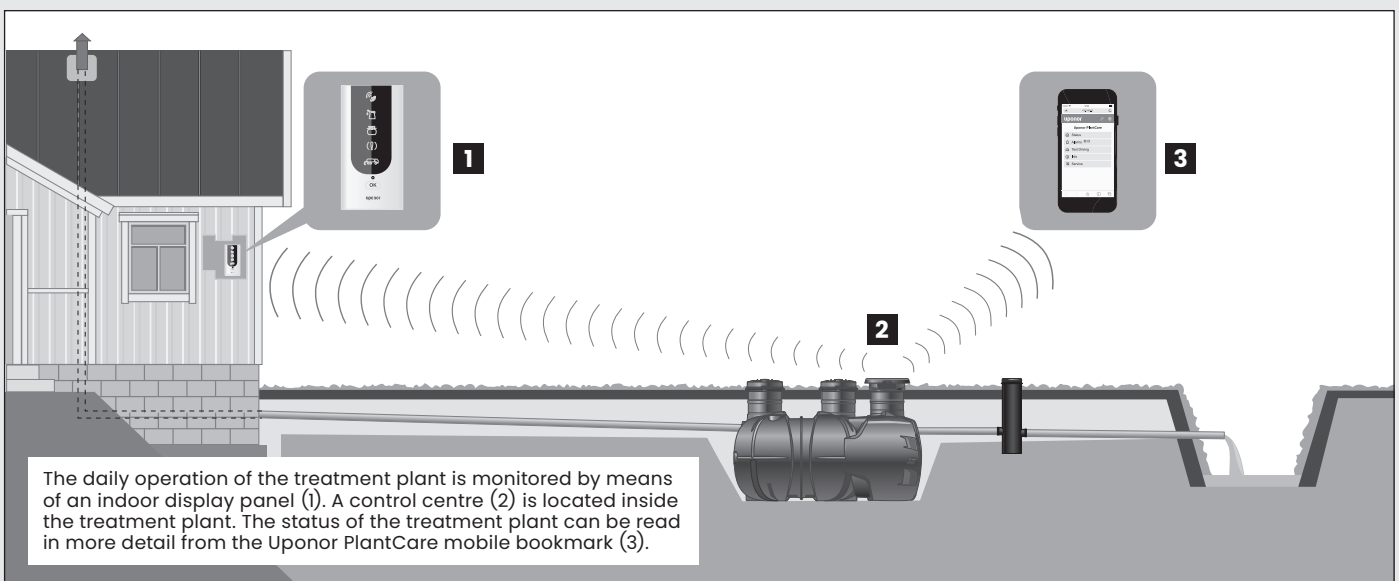
If there are problems in joining, close all browser pages.

#### 2. Open PlantCare

Open the browser and select address [uponor.plantcare.net](http://uponor.plantcare.net)

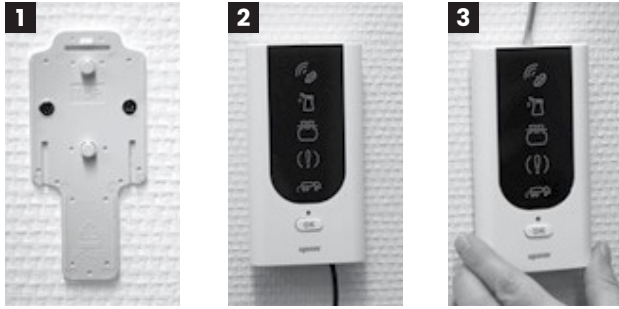


## 7. Operation



## Info panel

The Info panel and the treatment plant control centre are connected wirelessly. The range of the wireless connection is 60 metres.



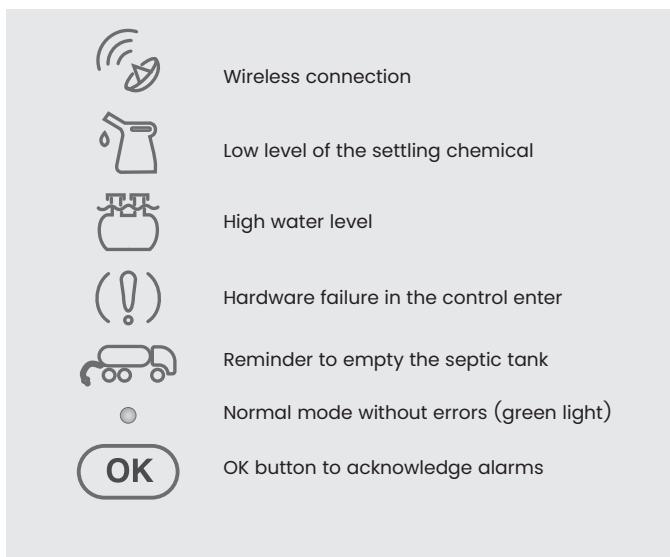
1 Screw the Info panel wall bracket to a wall inside the property.

2 Plug the Info panel into an electrical outlet through the included AC adapter and mount it in a wall mount.

3 To detach the Info panel from the wall bracket, press on the top, for instance, with a screwdriver tip.

The Info panel has the following functions:

- Four alarm symbols
- Green OK light
- One reminder symbol
- OK/reset button



Info panel indicators.

## The alarm function of the info panel

The display panel has four alarm functions that are activated in the event of a fault. With an activated alarm, the info panel works as follows:

1. The green OK light turns off.
2. The red fault indicator light will start flashing and the alarm will sound (the beeper will sound for 30 seconds per hour).
3. Press the OK button to acknowledge the alarm. The alarm light stops blinking and stays on. The signal beeping goes off.
4. When the fault has been rectified, the indicator light goes out and the green OK light comes on.

## The reminder function of the Info panel

Clean II has two kinds of reminder functions; service reminders and a sludge emptying reminder.

The Info panel indicates when it is time to make periodical service (1-year, 3-year or 6-year-service) and when it is time to empty the septic tank of the sludge. It is recommended to make service within 3 months of the reminder. Sludge emptying must be completed within one month of the reminder.

1. Sludge emptying reminder works as follows:
2. The yellow sludge truck light will start to flash and the alarm signal will sound (the beeper will sound for 30 seconds per hour). The green OK light is on.
3. To clear the sludge emptying reminder, press the OK button, at which point the reminder light will stop flashing and remain on. The alarm sound goes off. When the septic has been emptied, reset the reminder function by pressing the test button on the control centre. Press the test button for more than 10 seconds, and E000 is displayed on the control panel. The sludge truck light on the display panel goes off.

## Service reminder works as follows:

1. The exclamation mark light starts to flash in yellow and the alarm signal will sound (the beeper will sound for 30 seconds per hour). Same time on the control unit display appears the error code E401, E402 or E403 depending on the reminder type.
2. To acknowledge the service reminder, press the OK button, at which point the reminder light will stop flashing and remain on. The alarm sound goes off.
3. After the service has been carried out, reset the reminder function by pressing the test button on the control centre when there is the error code of the reminder on the display. Press the test button for more than 5 seconds, and the error code flashes on the display and then disappears. The exclamation mark light on the Info panel goes off.

## Info panel settings

There are three switches on the back of the info panel that can be used to set the following functions:

### Switch 1. Alarm on/off

The upper toggle switch is used to select whether the signal sound is on or off in the event of an alarm.

### Switch 2.

Not in use with Clean II.

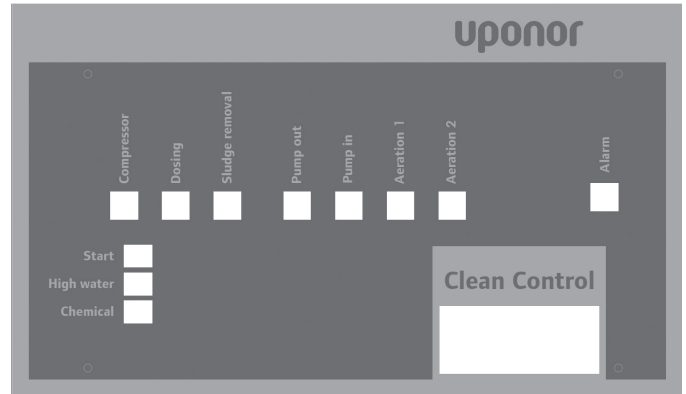
### Switch 3. Sludge emptying reminder

The lower dip switch is used to activate or deactivate the sludge emptying reminder. If the treatment plant is covered by regular municipal septic emptying, for example, the reminder function can be switched off.



## Control unit

The control unit is in the treatment plant under the cover of the process tank. The control unit has a display from which the batch counter value can be read, the status of the treatment plant can be checked and a possible error code can be read. Outside the control centre, there is a test button that can be used to activate the treatment plant status display, start a test program and reset the sludge emptying reminder



### Normal operation

In a normal situation, the display shows the batch counter value.

### Malfunction

The display alternates between the batch counter value and the error code. See page 21 for operation during a malfunction. If several faults are active at the same time, their error codes are displayed in sequence.

### Treatment plant status

The display shows the stage of the cleaning cycle in the treatment plant. The status display is initiated by briefly pressing the test button (for less than 5 seconds). The display shows S and a series of numbers. The code indicating the status of the treatment plant is displayed for 30 seconds, after which the display returns to the batch counter value.

### Test cycle

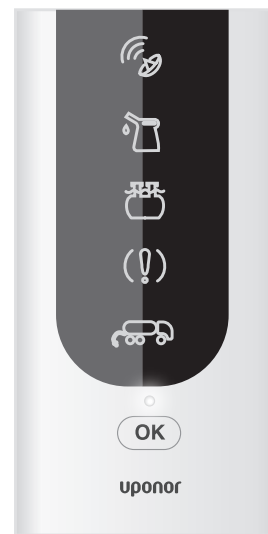
The treatment plant has a test cycle that can be used to check the operation of the various units in the treatment plant. In order to see in the tank before starting the test cycle, lift up switch cabinet and compressor unit out of their place. Be careful not to kink the air hoses below them.

See where each unit is located in the process tank. The test cycle is started by pressing the test button for longer than 5 seconds but less than 10 seconds. When the test button is fully pressed, the display will show the seconds: \_ \_ \_1, \_ \_ \_2, \_ \_ \_3, \_ \_ \_4, S\_ \_5, S\_ \_6, S\_ \_7 etc. The test button is released when the display has reached a reading of S\_ \_5.

When the test cycle has started, the display will show S400. The treatment plant then performs all pumping operations in sequence.

Function	Time	Display
1. Pump in	20s	S401
2. Sludge removal	20s	S402
3. Pump out	5s	S403
4. Chemical filling	90s	S404
5. Chemical dosing	10s	S405
6. Sedimentation (None of the components are on).	10s	S406
7. Aeration I	30s	S407
8. Aeration II	30s	S408

After the test period, the display returns to show the batch counter value. The cleaning process returns to normal.



# 8. Operating principles

## Treatment plant parts

The treatment plant main parts:

1. Septic tank
2. Process tank
3. Control centre and compressor II
4. Chemical vessel and dosing pump

### 1. Septic tank

The solids are separated by settling in a septic tank. Sludge accumulates in the septic tank and is removed by a sludge emptying truck. The treatment plant has an emptying reminder that indicates the need for emptying. The sludge is only emptied from the septic tank. Do not empty the process tank.

### 2. Process tank

The volume of the process tank is 2.2m<sup>3</sup>. All functional units for different uses are located in the tank. Each unit is connected to the control centre with air hoses of different colours.

### 3. Control centre

The main components of the control centre are:

5. Control unit
6. Test button
7. Valve package
8. Two compressors (other is located in a separate compressor unit)
9. Measurement unit of the water level

#### Control unit

The control unit controls the operation of the treatment plant. The cleaning process starts over from the beginning if it is started after stopping. The same thing happens after a power failure. The control unit has a display from which the status of the treatment plant and the error codes can be seen.

#### Compressors

Clean II has two 50-watt compressors. One provides pressure air for the various functions. Both compressors are used during aeration

#### Starting level

The cleaning process starts when the water level in the process tank has risen to the starting level.

#### Alarm level

An overflow alarm is sent to the display panel if the water



level in the septic tank rises to the alarm level or if the water level in the process tank does not drop during emptying.

### 4. Flocculation chemical storage vessel and dosing pump

There is a chemical storage vessel in the riser pipe of the settling tank. The vessel must be filled regularly. The filling cycle depends on the amount of wastewater entering the treatment plant.

The dosing pump is located on the bottom of the chemical vessel. The amount of one chemical dose is approximately 0.8dl/batch. On delivery, the dosing pump is set to this value. The Clean Flocculation chemical, an aluminium chloride solution, is the only approved chemical.

Before use, read the safety data sheet for the chemical. The flocculation chemical is an irritant, so it must be handled with protective gloves. If the chemical splashes on the skin, it should be rinsed off with clean water.

For more information on the Clean Flocculation chemical, see the safety data sheet. The data sheet is delivered with the treatment plant, and you can also find it on our website

[www.uponor.com/fi-fi](http://www.uponor.com/fi-fi)

[www.uponor.com/sv-se](http://www.uponor.com/sv-se)

[www.uponor.com/nb-no](http://www.uponor.com/nb-no)



## Functional units

### 1. Filling unit

With the air lead into the filling unit, the clarified wastewater is pumped from the septic tank into the process tank. The air hose of the filling unit is blue.

### 2. Aeration unit

The function of the aeration unit is to aerate the wastewater and mix the wastewater to provide good contact with microbes and the wastewater. The microbes necessary for the biodegradation of organic matter needs oxygen. Aeration unit is also used to mix the chemical. The addition of a flocculation chemical to the system guarantees a high treatment result and the precipitation of phosphorus from the wastewater. The color of the air hoses of the aeration units is grey.

### 3. Chemical dosage

The flocculation chemical dosing pump is located in the chemical storage vessel, which is in the riser pipe of the septic tank. The chemical is dosed into the treatment plant using compressed air. The air hose of the chemical dosing pump is yellow and the dosing hose is grey.

### 4. Sludge removal unit

After the first settling, the excess active sludge is pumped into the septic tank. The air hose of the sludge removal unit is brown.

### 5. Emptying unit

After the second settling, the purified water is pumped out of the treatment plant. The air hose of the pump-out unit is red.

### 6. Start level unit

The starting level is the level that the water in the process tank has to reach for the cleaning process to start. The air hose of the start level unit is green.

### 7. Alarm level unit

The alarm level unit gives an alarm if the water level in the septic tank exceeds the maximum level. The air hose of the alarm level unit is black.

## Operation of the cleaning process

The wastewater is pre-treated in the septic tank, where solids that are heavier and lighter than water are separated from the wastewater. The solids are stored in the septic tank.

The biochemical treatment of the wastewater takes place in the process tank.

### Steps in the cleaning process

#### 1. Filling of the process tank

The process tank is filled by pumping the pre-treated wastewater from the septic tank until the start level in the process tank is reached and the cleaning cycle starts.

#### 2. Aeration

Aeration keeps the active sludge in motion and ensures that the oxygen needed for microbial activity is available.

#### 3. Dosage and mixing of the chemical

The flocculation chemical is used to remove phosphorus from the wastewater. The flocculation chemical is mixed with the wastewater by a short aeration.

#### 4. Flocculation, sludge removal and settling

The solids are allowed to settle for about an hour. During settling, the flow of water in the process tank is stopped and the sludge settles to the bottom. The excess sludge is pumped into the septic tank between settling cycles. The level of active sludge in the process tank is kept constant, for it ensures the efficient operation of the biological process.

#### 5. Removal of purified water

After settling, the purified water is pumped out of the treatment plant.

#### 6. Waiting and holiday cycle

If the start level in the process tank is not reached during pumping, the treatment plant enters the waiting cycle.

The waiting cycle keeps biological activity alive.

The Uponor Clean II treatment plant has a holiday automation function. If the start level is not reached for three days, the treatment plant will move into the holiday cycle. During the holiday maintenance cycle, the active sludge is kept alive even for a long break (max. 3 months).

When the start limit is reached during the waiting or holiday cycle, a new cleaning cycle will start.



# 9. Maintenance

## Maintenance performed by the property owner

To ensure trouble-free operation, the treatment plant must undergo a few maintenance and inspection measures at regular intervals. Wear protective gloves and follow instructions when performing maintenance. After the procedure, lock the lids of the septic tank and the control centre and wash the hands thoroughly.

## Key maintenance procedures

The need for chemical refilling may vary, in normal use the chemical should be added 2–3 times a year. The consumption of the chemical depends on the amount of wastewater entering the treatment plant.

The septic tank must be emptied after a sludge emptying reminder or at least once a year.

The operation of the treatment plant is monitored from an Info panel inside the house. In addition, the formation of batches from the batch counter, the odour of the process tank and the quality of the exiting water must be monitored.

Activity can be tracked using the PlantCare mobile application.

The chemical vessel tank is located in the septic tank under the second cover. Do not lift the chemical vessel to the ground when filling it with the chemical. The

capacity of the chemical vessel is 35 litres. Protective gloves and goggles must be worn when handling the flocculation chemical. Before handling the chemical, read the safety data sheet at the end of the manual at [www.uponor.com/fi-fi](http://www.uponor.com/fi-fi)

Only **the Clean Flocculation chemical** is used in the treatment plant. When the chemical is depleted, an alarm will appear on the Info panel and on the control centre.

The sludge is only emptied from the septic tank under the first cover, the process tank is not emptied. Check the functional units of the process tank for dirt regularly, for example twice a year. If necessary, flush the units with a garden hose.

Record all maintenance operations, such as inspections, chemical vessel fillings, sludge emptying, repairs and alterations, in the service log.

## Service agreement

It is recommended to sign a service agreement with an Uponor authorized service provider.

**NOTE!** Regular inspections and emptying ensure the operation and longevity of the treatment plant.

## Useful information

Biological purification is particularly sensitive to various toxic substances, such as oils, strong acids and bases. Do not flush into the drain the following:

- household and other waste (potato or fruit peels, food scraps, coffee grounds, cigarette butts)
- wrapping or newsprint, paper towels
- textiles, e.g., tights
- diapers, tampons, cotton swabs, bandages or condoms
- outdated or unused medicines
- sand or construction waste
- grease, oil or substances that form toxic gases
- petrol, solvents, paints or other flammable or explosive substances

## Hardware failure situations

There is no immediate emergency in the event of an error: the water drains from the treatment plant as an overflow and receives at least a septic tank treatment.

If the Info panel gives an alarm, check the following before calling for service:

- Error codes displayed on the control centre or error code reported by the PlantCare monitoring system.
- Water levels in the septic tank and process tank
- Whether water can escape freely from the treatment plant (e.g., the discharge point is not frozen or blocked) and no water is flowing from the discharge point towards the treatment plant.

## Instructions for sludge emptying

The Info panel reminds you to empty the sludge. If necessary, the sludge can be emptied earlier.

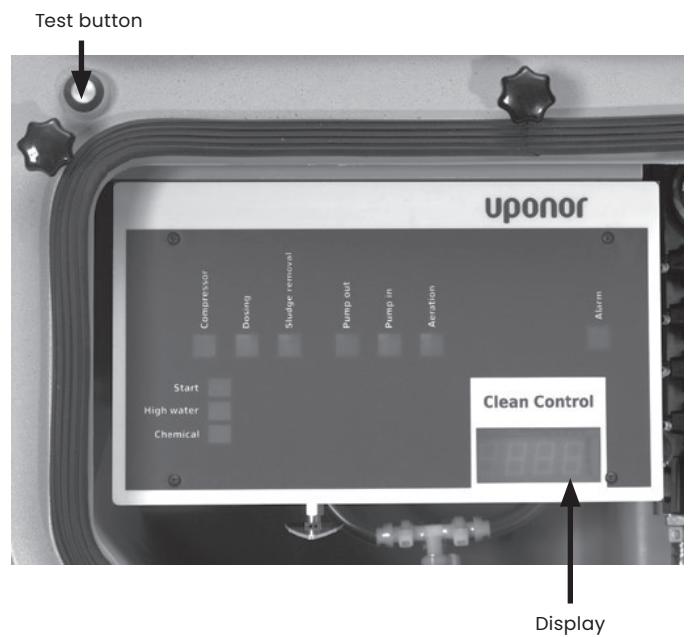
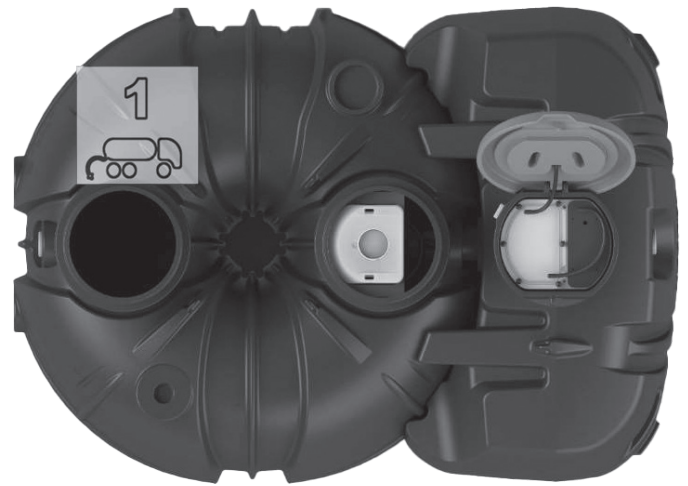
Only the septic tank is emptied in the Uponor Clean II treatment plant.

Empty the septic tank completely. After emptying, it is recommended to fill the septic tank with clean water. Finish the work by locking the cover. Record the emptying event and the batch counter value in the service logbook. Reset the sludge emptying reminder counter.

### Resetting the sludge emptying reminder

The sludge emptying reminder is reset by holding down the green test button on the control centre for more than 10 seconds. When the button is pressed to the bottom, the display reads the seconds. Release the button after 10 seconds when the display shows E000.







The sludge emptying reminder can also be reset with PlantCare.



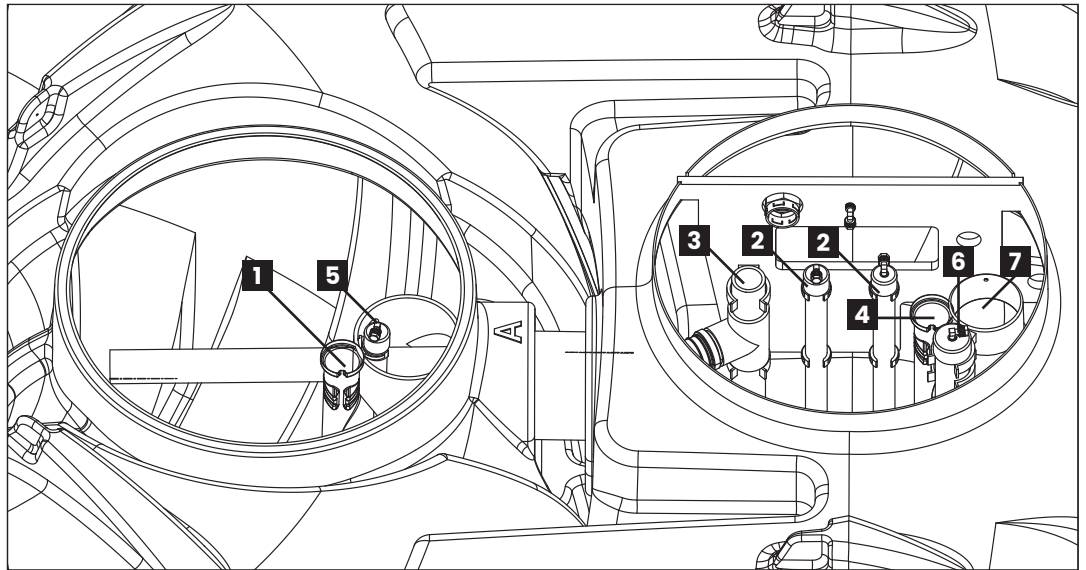
# 10. Malfunction

The Info panel alerts you to a malfunction in the treatment plant by switching off the green OK light. In addition, the display panel sounds an alarm with a 30-second beep once an hour and indicates an active alarm with a flashing red light.

To acknowledge the alarm, press the OK button, after which the active alarm light stays on and the signal beep turns off. In the event of an alarm, follow the instructions in the table. After the procedure, the alarm light goes out and the OK light comes on. The error code is read from the display on the control centre.

Alarm	Error code	Reason	Consequences	Measures
<b>Wireless connection</b> 	E011	Power failure on the display panel	The display panel does not work	Check the AC adapter
		No connection	The display panel does not work	Activate the connection
		Recurring connection issues	The display panel does not work	Change the location of the display panel
		Power failure in the control centre	The treatment plant is not working	Check the electrical connection
<b>Small amount of the flocculation chemical</b> 	E021	The amount of flocculation chemical in the vessel is small	Phosphorus removal is deteriorating	Fill the vessel with the flocculation chemical
<b>High water level</b> 	E031	Pump-in module blockage	High water level, sludge accumulation	Clean the blockage in the pump-in module
		Excessive water use	Temporary overload	Monitor water usage
	E032	Unloading site/pipe blockage	The treatment plant cannot remove water	Open/defrost the discharge point
		Pump-out blockage	Decreased cleaning power	Clear the pump-out module
<b>Hardware failure in the control cabinet</b> 	E040	Fault in the compressor	The treatment plant is not working	Contact Service for repair
	E041	Fault in the solenoid valve for chemical addition	Phosphorus removal is deteriorating	Contact Service for repair
	E042	Fault in the solenoid valve of the sludge removal	Sludge recovery does not work	Contact Service for repair
	E043	Fault in the solenoid valve of the pump-out	Pump-out does not work, alarm E032 is activated	Contact Service for repair
	E044	Fault in the solenoid valve of the pump-in	The pump-in does not work, alarm E031 is activated	Contact Service for repair
	E045	Fault in the solenoid valve for aeration	Disturbance in the cleaning process	Contact Service for repair
	E046	Fault in the blower 2 (Clean II)	Disturbance in the cleaning process	Contact Service for repair
	E047	Software error	The treatment plant is not working	Contact Service for repair
	E048	Dip switch error	The treatment plant is not working	Contact Service for repair
<b>Service reminder</b> 	E401	1-year-service reminder		Order service
	E402	3-year-service reminder		Order service
	E403	6-year-service reminder		Order service
<b>Sludge emptying reminder</b> 	E051	Septic tank filling with sludge	Disturbance in the cleaning process	Empty the septic tank and reset the counter, see instructions on page 15. Press the multifunction button for more than 10 seconds to acknowledge the reminder

## Opening blockages in functional units



### Filling, sludge removal or emptying unit

If one of the functional units of the treatment plant becomes clogged, the blockage is opened by rinsing with water or compressed air. The flushing hose is inserted into the flushing opening of the clogged functional unit. In the event of a blockage, it should also be checked that no flow obstructions have formed in the discharge pipe or discharge point.

When flushing with compressed air, disconnect the air hose of the flushing unit from the bottom of the control centre. Blow compressed air (max. 4 bar) into the air hose using a separate compressor.

The same method can also be used to test the operation of the unit. Finally, secure the hose in place.

### Alarm and start level unit

If the alarm or start level unit becomes clogged, the blockage can be opened by blowing compressed air into the unit's air hose. Start the test cycle after the procedure.

### The functional units of the Uponor Clean II treatment plant

	Functional unit	Air hose colour
1.	The flushing opening of the pump-in unit	Blue
2.	Aeration unit	Gray
3.	Sludge removal unit	Brown
4.	The flushing opening of the pump-out unit	Red
5.	Alarm level unit	Black
6.	Start level unit	Green
7.	The flushing opening of the outlet pipe	-

# 11. Contact information

System Owner	
Name	System installation date
Address	
	System activation date

System Designer	
Name	Phone
Address	
	E-mail

System Vendor	
Name	Phone
Address	
	E-mail

System Installer	
Name	Phone
Address	
	E-mail

Service Company	
Name	Phone
Address	
	E-mail

Building Authority	
Name	Phone
Address	
	E-mail

Environmental Authority	
Name	Phone
Address	
	E-mail

# Service Log

Date	Performer	Counter	Service/Notes







Date	Performer	Counter	Service/Notes

# Uponor

**Uponor Infra Oy**

[www.uponor.com/fi-fi](http://www.uponor.com/fi-fi)

[www.uponor.com/sv-se](http://www.uponor.com/sv-se)

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We reserve the right to make changes

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