



LOG BOOK

ONE2CLEAN TANKS

The drainage system from this property discharges to a wastewater treatment plant (or septic tank, as appropriate). The owner is legally responsible for routine maintenance and to ensure that the system complies with any discharge consent issued by the relevant authority for your area and that it does not present a health and safety hazard or a nuisance.

Graf UK recommend service and maintenance should be carried out at least once a year by a qualified engineer.

For further details contact GRAF UK on 01608 661500.



PERFORMANCE RESULTS

Otto Graf GmbH

Carl-Zeiss-Str. 2 - 6, 79331 Teningen, Germany

EN 12566-3

Small wastewater treatment systems for up to 50 PT

Small wastewater treatment system one2clean

SBR plant in one two-zone polypropylene tank

Test report PIA2014-216B14.01.e

Nominal organic daily load*	0.27	kg/d		
Nominal hydraulic daily load	0.75	m³/d		
Material	polypropylene			
Treatment efficiency (nominal sequences)			Efficiency	Effluent
	COD		94.2 %	43 mg/l
	BOD ₅		98.0 %	7 mg/l
	SS		96.3 %	14 mg/l
	NH ₄ -N**		98.3 %	0.5 mg/l
	N _{tot} **		87.0 %	7.9 mg/l
	P _{tot}		80.2 %	1.6 mg/l
Electrical consumption	0.63	kWh/d		

*at a test influent of ≥ 300 mg/l BOD₅ (mean)

**determined for temperatures $\geq 12^\circ\text{C}$ in the bioreactor

Performance tested by:

PIA – Prüfinstitut für Abwassertechnik GmbH

(PIA GmbH)

Hergenrather Weg 30

52074 Aachen, Germany

This document replaces neither the declaration of performance nor the CE marking.



Notified Body
No.: 1739



Certified according to
ISO 9001:2008



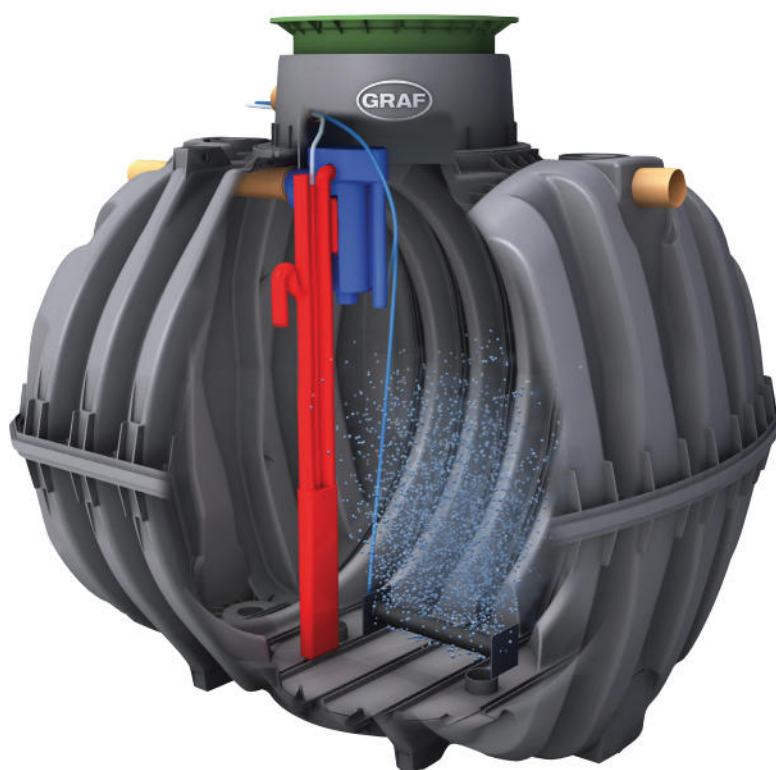
Deutsche
Akkreditierungsstelle
D-PL-17712-01-00

Prüfinstitut für Abwassertechnik GmbH



Elmar Lancé

November 2014



It is essential that you observe the points described in these instructions. Failure to do so will invalidate all warranty claims. For all additional items ordered from GRAF, separate installation instructions will be provided in the transport packaging.

It is essential that you check the components for possible damage before installation.

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1. GENERAL NOTES

Important tips for safe & long-lasting operation of the one2clean:

- The SBR system is designed for the treatment of all household sewage. The introduction of other wastewater, such as the wastewater from restaurants and/or business establishments, etc. is permitted if these were already known at the time of design of the system and were taken into account.
- Biocides, materials with a toxic effect or materials that are not biologically compatible must not enter the system, as these impede bacteria important for wastewater treatment and lead to biological process problems (detailed notes follow on the next pages).

It is imperative that you follow the operating and maintenance instructions for compliance with the regulatory requirements for cleaning. These instructions can be found on the following pages.

Furthermore, we ask that you carefully read and observe the following notes:

- The location of the control system for indoor installation must be a dry, well-ventilated room (basement or garage).
- If an outdoor control cabinet is used, this should be placed in as shaded place as possible to avoid overheating.
- At no time must the cabinet be covered, in particular its air vents, and it must remain freely accessible for maintenance.
- There must be a permanent power supply to the one2clean. Ensure that the control cabinet is adequately fused (13 A) and the power supply is fitted with an isolator switch for repair and maintenance. Additional electrical components and consumers should not be using the same fuse as they can cause power failure and interfere with the one2clean operation.

2. FUNCTION OF THE WASTEWATER TREATMENT SYSTEM

The one2clean small wastewater treatment system is fully biological and works according to the retention process with long-term aeration (sequencing batch reactor). The system primarily consists of an aerobic treatment, which is divided into a rest period and an activation period. The chambers are connected to one another in the bottom section. As a result, all domestic sewage is immediately subjected to aerobic wastewater treatment. The entire system is aerated by compressed air, which activates the sludge that biologically treats the wastewater.

The coarse and floating solids contained in the wastewater are initially retained in the rest area by means of a baffle. The wastewater then passes through an overflow opening in the lower part of the container from the rest area into the activation area.

As the rest area is also aerated, the solids which remain behind are also degraded aerobically over time. The one2clean treats wastewater without pre-treatment, thereby preventing anaerobic digestion.

Operation of the treatment system is carried out via a microprocessor control system which controls the air compressor and air distribution.

The SBR process follows a timed, repeated cycle at least once daily.



Step 1: Aeration

The wastewater is subjected directly to aerobic treatment for a fixed amount of time. On the one hand the microorganisms (activated sludge) are supplied with the oxygen necessary for degradation; on the other hand mixing is achieved as a result of pressure aeration. The air diffuser of the system is supplied with ambient air by a compressor. The aeration is intermittent, so as to allow targeted wastewater treatment. Thus, different environmental conditions can be achieved.



Step 2: Settling

There is no aeration in the second phase. The activated sludge and the remaining settleable solids can now settle by gravity. A clear water zone is created at the top and a layer of solids forms at the bottom. Any floating sludge which might develop is located above the clear water zone.



Step 3: Clear Water Removal

The biologically treated wastewater (clear water) is extracted from the SBR reactor. This is done by pumping compressed air using an air lift pump. The air lift is designed to prevent any floating sludge from being drawn during the clear water discharge. A minimum water level in the system is maintained without additional components.

After step three, the process restarts. Two cycles are run daily with the GRAF one2clean.

3. START-UP OF THE CONTROL SYSTEM

After the system is connected to the power supply, a short system test is run, during which time the LED light is red. The LED then becomes green when the start-up phase is completed.

During the system test, 'SYSTEM TEST ... OK' appears briefly with software version and serial number, then the system status is displayed. Once the system test is complete, the date and current time should be checked and adjusted if necessary (see Section 4.2.3).

After verifying the date/time, a functional check of the system components must be performed. This check can only be conducted if the necessary air hoses are connected. Once date and time are set, run a system check. Make sure air hoses are connected before performing the check. Use 'manual mode' to carry out the check. Test each system component to ensure it's working. After the check, return the system to automatic mode.

CAUTION: The clear water siphon only functions when the containers are filled.
Incorrect date/time settings may result in faulty timestamps.

4. OPERATION OF THE CONTROL SYSTEM

A microprocessor in the control unit runs the system. The microprocessor manages settings, status display, and scheduling by a specialist.

Use arrow keys to adjust numerical values. ▲ ▼ The settings are then confirmed by pressing the **Set** button.

Dialogues end automatically after 2 minutes or manually by pressing **Esc**

The control system has several display pages.

4. Basic level: Status of the cycle sequence with the elapsing remaining time, as well as the display of error messages.

5. Operator level: The operator can access the operator level by pressing **Set** and enter operator specific settings.

6. Service level: A password-protected service level can be accessed from the operator level using an additional code. This level is reserved for trained personnel. Here adjustments or changes can be made and diagnostic data is retrieved.



Figure 2: View of the operating unit

4.1 Control Programme

The control system switches the outputs for air compressors and stepper motors on a timer. The timing is determined by the set sequence tables. A complete cleaning cycle is started for each start time in accordance with the selected sequence table.

You can pause/reduce cleaning cycles during holidays via operator settings. A single reduced holiday cycle runs during this time. No treated water is removed when there is no inflow.

4. OPERATION OF THE CONTROL SYSTEM

4.1.1 Display of Operating Status

LEDs (green/red) and text show the system's status.

In normal operating mode (aeration mode), the display appears as follows:

Aeration
 Rest: 120:10min

In automatic mode, the display shows the current work phase and the remaining time left in this phase.

If a fault occurs, the red LED is turned on. A message indicating which component is faulty appears in the display (e.g. Fault Compressor 0.0A).

4.1.2 The following work phases are displayed

Display	Process performed
Denitrification	Y1 valve (plug X1.1) is actuated intermittently; the activated sludge is briefly mixed with the wastewater. This is followed by long pauses (response times).
Aeration	Y1 valve (plug X1.1) is actuated; the system is aerated in intervals over a long period of time.
Sedimentation phase	No valves are actuated, the activated sludge settles in the system.
Discharge phase	Y2 valve (plug X1.2) is actuated; the clear water is pumped into the drain.
Cycle pause/holiday mode	Y1 valve (plug X1.1) is actuated; the system is aerated in intervals (considerably less than in the aeration phase).
Cycle pause	Display of remaining time.

Symbol	Key assignment	Function
	Enter key	Selection of operating mode, confirmation of entries
 	Scroll	Display of operating modes and queries Programming of the system by entering figures
	Acknowledgement	Acknowledgement of entries without saving Acknowledgement of fault messages

4. OPERATION OF THE CONTROL SYSTEM

4.2 Operating the Control System

You can start different queries from the automatic mode.

You can access the first operating level by pressing . You can now call up the individual queries using the arrow keys   and then pressing :

Display	Meaning
Operating mode Remaining time	Remaining time in current work phase
Operating hours	Display of the operating hours of the valve and compressor
Manual operation	Manual control of the valve
Date Time	Current time, day and date. Can be set using 
Holiday mode	Holiday mode set-up (max. 90 days)
Faults	Operational faults which occur are stored here and can be read. It is possible to switch between the error message and the corresponding date using  and  
Settings	The current settings can be viewed using the arrow keys
Service menu	For qualified personnel

4.2.1 Operating Hours Query

Press the  button. On the screen will appear:

Operating hours
meter reading

By pressing  again, the operating hours for the valves and the compressor can be displayed in sequence using the arrow   keys.

Pressing  once will take you back to the display "display operating hours". You can access the "manual mode" menu by pressing .

➔ **Note:** If you do not press any buttons for a period of 10 minutes, normal operation will begin automatically.

4. OPERATION OF THE CONTROL SYSTEM

4.2.2 Manual Control of the Valve using "Manual Operation"

During checks, each valve should run for at least 5 seconds, as the monitoring the current consumption of the valves takes some time before any faults are detected.

In automatic mode, first press **Set** then the arrow key  until the following is displayed on the screen:

Manual operation

By pressing on the **Set** button again, you will receive the following message:

Aeration OFF

Pressing **Set** allows you to turn the selected programme on and off.

The other programs can be selected using the arrow keys .

Pressing **Esc** once will take you back to the display "manual mode".

4.2.3 Set Date/Time

Press **Set** and then the arrow keys  until the following is displayed on the screen (example):

19-12-2007 Mon
20:15:56

By pressing **Set**, the time and date can then be set using the arrow keys  .

To confirm the correction, you must press **Set** each time.

Pressing  once will take you to the next display in holiday mode.

A correctly set system clock and date display is absolutely mandatory in order to record the hours of operation and so that any faults can be traced. There is no automatic change from summer to winter time.

NOTE: If you do not press any buttons for a period of 10 minutes, normal operation will begin automatically.

4. OPERATION OF THE CONTROL SYSTEM

4.2.4 Setting-up Holiday Mode

NOTE: Holiday mode results in the reduced operation of the wastewater treatment system. It should only be applied when no wastewater is introduced into the wastewater treatment system during the selected time period. Wastewater that passes into the system during the holiday mode period will not be cleaned. Holiday mode is switched on and off automatically for the data you have entered.

Press **Set**, then press the arrow buttons **▲** **▼** until the following appears on the screen:

Vacation oper.

Press **Set** again to release the input of holiday dates:

Start: YYYY-MM-DD
End: YYYY-MM-DD

Start of holiday:

The start of holiday mode is entered in the format YYYY-MM-DD by pressing **▲** **▼**. To switch between the different settings, the **Set** button must be pressed in each case.

End of holiday:

As with for the start of the holiday, the end of holiday mode is entered in the year, month and day format YYYY-MM-DD by pressing **▲** **▼**.

Press the **Set** button to save the input data for holiday mode and to exit this function.

Pressing **Esc** returns you to the automatic mode display.

NOTE: If you do not press any buttons for a period of 2 minutes, normal operation will begin automatically without the date that you have just entered being saved.

4. OPERATION OF THE CONTROL SYSTEM

4.2.5 Old Faults

The control system stores all past fault messages and the operation of the control system via the "manual mode" function. Past fault messages with date and time can be read under the menu item "Old faults". The individual messages can be accessed using the arrow keys. You can exit the menu item by pressing .

Faults are indicated as encoding, in order of their appearance, starting with number 0 (most recent error).

Order: Time: Error code
Date

The faults number 2 (power returned) and 5 (manual operation) are not true faults. They are recorded to help track the timing of possible future faults or to monitor manual actions on the control system.

4.2.6 Display Settings

This menu item allows the current control system settings to be seen. It is not possible to change these settings. This menu item is used to analyse the settings without making changes. The individual settings can be called up using the arrow keys  . You can exit the menu item by pressing .

4.2.7 Service Menu

Operating parameters can be changed in the service menu. This menu is password-protected and should only be accessed by qualified personnel.

Any access to the control system settings by an unauthorised person will invalidate the warranty!

5. INSPECTION AND MAINTENANCE

5.1 Obligations of the Operator

The system must always be turned on. The operator is obliged to ensure the fault-free operation of the system. Almost all operational faults lead to a deterioration of the system's cleaning performance. These should therefore be detected at an early stage and eliminated immediately by you or a qualified service technician.

5.1.1 Daily checks

The system should be checked daily for correct operation. The system is operating correctly when the operating control is lit up green and no warning signal can be heard.

5.1.2 Monthly checks

- Visual inspection for any sludge output, turbidity or discolouration in the flow
- Check inflows and outflows for blockages (visual inspection)
- Read the operating hours counter on the air compressor (total operating hours), the aeration (Y1 valve) and the clear water discharge (Y2 valve) and record in the operating log

5.2 Maintenance by a Specialist Company

Maintenance is carried out by a specialist company (experts) on an annual basis. The time intervals and tasks specified by the local water authority in the consent permit under water laws also apply. For this purpose, the system owner must complete a maintenance contract with a qualified specialist.

The following tasks should be carried out in relation to maintenance:

- Inspection of the log book to confirm regular operation (target-actual comparison)
- Check the air filter of the air compressor
- Maintenance of the air compressor according to the manufacturer's instructions
- Functional check of the air compressor and stepper motors
- Carry out general cleaning work, e.g. removal of deposits
- Check for adequate ventilation

Examination of activation tank:

- Oxygen concentration ($O_2/L > 2 \text{ mg}$), adjust the operating time of the compressor if necessary
- Sludge volume ($< 700 \text{ mL/L}$)

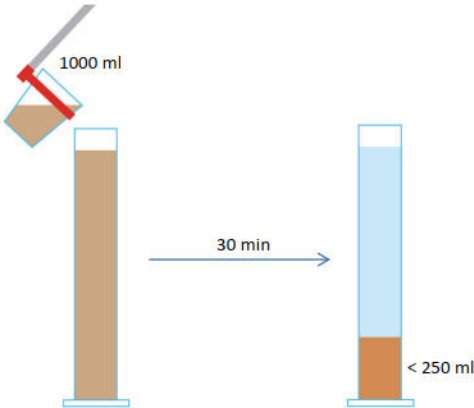
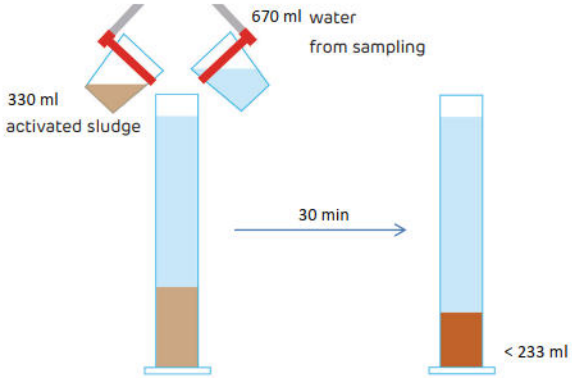
Remove sludge if volume exceeds 700 mL/L.

Maintenance tasks carried out, any damage detected or repairs made as well as other instances should be summarised by the maintenance company in a maintenance report.

5. INSPECTION AND MAINTENANCE

5.3 Determination of Sludge Removal

To determine when sludge removal is needed in the wastewater treatment system, a settling test should be carried out at routine maintenance intervals. This is done using the SV30 test, which measures the volume of settled sludge after 30 minutes. SV30 is defined as the volume (in mL) occupied by 1,000 mL sample after a 30-minute settling period. It provides a practical indication of sludge accumulation within the system. The test can be performed either as a diluted or non-diluted version, depending on how clearly the sludge settles.

One2clean	
Double determination with 2 measurement cylinders: 1x undiluted, 1x diluted	
	
treated water	Add 330 mL of the sludge sample, then top up with treated water from the sampling pot up to the 1000 mL mark is reached.
Read after 30 min and round off to 10 mL/L.	
< 250 mL/L: Note the value. > 250 mL/L: Discard measurement, use dilution SV30 method.	< 250 mL/L: Multiply value by 3, note the result. > 250 mL/L: Note the result ">750 mL/L".
Measures: < 250 mL/L: None/OK	Measures: < 700 mL/L: None/OK > 700 mL/L: Initiate sludge removal, increase aeration.
Example: Undiluted measurement result: 750 mL/L → Discard 	Example: Diluted measurement result: 190 mL/L → $190 \times 3 = 570$ → Result: 570 mL/L 

6. FAULT MESSAGES AND TROUBLESHOOTING

Technical problems of system operation (failure of a unit) are visually displayed.

6.1 System Behaviour after switching off the Power Supply

If the system is disconnected from the mains (e.g. power failure), the control program and the counted operating hours are retained due to the memory of the control system. The red LED will light up. When the system is supplied with power again, it will self-start.

NOTE: If the system is disconnected from the mains for more than 24 hours, treatment of the existing wastewater is stopped or reduced to anaerobic treatment.

6.2 Fault Message in the Display

Faults are shown as text or as numbered codes on the display. The operating control lamp then lights up red.

The numbered fault codes are explained below:

1. Power failure (system is de-energised)
2. Power returned (system is supplied with power again)
3. Compressor overcurrent
4. Insufficient compressor power supply
5. Manual operation

Fault 2 and 5 do not require action as these messages reflect changes in system status or mode of operation.

Table 2: **Errors and Troubleshooting**

Display	Possible cause	Remedy
Mains failure No display, no light	- Power failure - System turned off - There is no voltage at the control cabinet	- Check the power supply to the system and to the control system - Turn system back on - Check supply to the control cabinet - Wait for resumption of power supply
No display, light is green		Turn system off and back on again after 10 seconds
Mains returned	Power available again	
Set the clock	Internal clock/date not set	Set date and time via menu item
Compressor **overcurrent**	Short-circuit	Check supply to the control cabinet
Compressor **current too low**	Compressor current too low	Check the compressor in manual mode
Compressor 0.0A	Compressor does not receive current	> Check power supply > Check compressor in manual mode
Manual operation	System was activated manually in manual mode	

6. FAULT MESSAGES AND TROUBLESHOOTING

6.3 Fault Causes and Remedies

Observation	Possible cause	Remedy
The water level in the activation tank is unusually high	• System is running in holiday mode • System runs continually in cycle pause • Control system settings are incorrect • The drain siphon is clogged • The air hose to the drain siphon is leaking • System has been flooded from external water source and not allowing water to drain from the system • Control system is defective	• End holiday mode • Have the control system settings checked by the maintenance technician • Allow tank to be pumped out and clean siphons • Seal hose connections • Wait out flooding • Get in touch with maintenance company
The system smells, the treated water is cloudy or discoloured	• Too little air is entering the system • Single-sided aeration due to defective admittance valves • The ventilation is not circulating the air correctly • Poor inflow/sludge quality	• Have service company increase the aeration time • Check the aeration, get in touch with maintenance company • Get in touch with maintenance company • Monitor and review wastewater inflow (influent) into treatment plant.
Aeration is one sided or large air bubbles appear at points	• Membrane unit is defective • Seal leaky air admittance valves	• Get in touch with maintenance company

The system should only receive materials that match the typical characteristics of domestic wastewater.

Biocides, materials with a toxic effect or materials that are not biologically compatible or degradable must not enter the system, as these lead to biological process problems. The following, in particular, should not be introduced into the system:

- Rainwater from roofs and courtyards
- Extraneous water is the same thing as rainwater run off
- Residues from livestock in solid or liquid form
- Industrial or agricultural wastewater, as far as it is not comparable to domestic wastewater
- Chemicals, pharmaceuticals, mineral oils, solvents
- Cooling water
- Coarse materials in the form of food scraps, plastics and hygiene products, face wipes, coffee filter papers, bottle caps and other household items
- Milk and dairy products
- Discharge water from swimming pools
- Large amounts of blood.

In the case of large amounts of fats or vegetable oils, it is recommended that the fatty wastewater is pretreated in one of the grease traps upstream of the wastewater treatment system (Caution: No faeces may be introduced into the grease trap!).

7. OPERATING NOTES

Bin it don't flush it!

Only substances with the characteristics of domestic wastewater should enter the systems. Substances which are not biocompatible or biodegradable must not enter the system because they can block the pipes, contaminate the wastewater or kill necessary bacteria. **Bleach should never enter the system.**



The following are not permitted:

- Rainwater from roofs and yards
- Infiltration water (e.g. drainage water)
- Liquid or solid residue from keeping animals
- Commercial or agricultural wastewater, unless it is comparable to domestic wastewater
- Chemicals, pharmaceuticals, mineral oils, solvents
- Cooling water
- Solids in the form of food waste, plastics and hygiene articles, coffee filters, bottle tops and other domestic items
- Milk and milk products
- Water discharged from swimming pools
- Large volumes of blood

If discharging larger volumes of grease or plant-based oils, we would recommend pre-cleaning the wastewater containing the greases/oils in a grease separator upstream of the wastewater treatment system (caution: faeces must not be allowed to enter the grease separator!).



Please don't flush or pour

- | | |
|-------------------------|--|
| Ash | Biodegradable wipes |
| Chemicals | Cleaning agents, except chlorine-free products (environmentally sound) |
| Disinfectants | Razor blades |
| Paints | Pipe cleaners |
| Photochemical | Pesticides |
| Chip fat | Panty liners |
| Adhesive plaster | Cooking oil |
| Cat litter | Food waste |
| Cigarette butts | Wallpaper paste |
| Condoms | Textiles (e.g. nylon tights, cleaning cloths, handkerchiefs etc.) |
| Corks | Thinner |
| Varnishes | Bird sane, cat litter |
| Medicines | Cotton buds |
| Engine oil | Toilet blocks |
| Waste containing oil | Nappies |
| Plant protection agents | Cement water |
| Paintbrush cleaners | |
| Baby wipes | |
| Disposable wipes | |

The following is a list of individual substances which must not be disposed of via the wastewater treatment system:

Solid or liquid substances that do not belong in the sink or in the toilet:	What it does:	Where it should go:
Ash	Does not decompose	Dustbin
Chemicals	Contaminates wastewater	District collection point
Disinfectants	Kills bacteria	Do not use
Paints	Contaminates wastewater	District collection point
Frying fat	Accumulates in pipes and leads to blockages	Dustbin
Adhesive plasters	Clogs pipes	Dustbin
Cigarette ends	Accumulates in the system	Dustbin
Condoms	Causes blockages	Dustbin
Corks	Accumulates in the system	Dustbin
Medication	Contaminates wastewater	Pharmacy
Engine oil	Contaminates wastewater	District collection point
Oily waste	Contaminates wastewater	District collection point
Plant protection products	Contaminates wastewater	District collection point
Paintbrush cleaner	Contaminates wastewater	District collection point
Cleaning agents, except those which are chlorine-free (environmentally friendly)	Contaminates wastewater, corrodes pipes and seals	District collection point
Razorblades	Causes risk of injury for workers in sewers and wastewater treatment systems	Dustbin
Drain cleaner	Corrodes pipes and seals, contaminates wastewater	District collection point
Pesticides	Contaminates wastewater	District collection point
Panty liners/Sanitary towels	Cause blockages; non-degradable plastic film pollutes water	Dustbin
Cooking oil	Leads to deposits and pipe blockages	District collection point
Food leftovers	Leads to blockages, attracts rats	Dustbin
Wallpaper paste	Leads to blockages	District collection point
Textiles (eg. nylon tights, cloths, handkerchiefs, etc.)	Clogs pipelines, can cripple a pumping station	Charity shop
Thinner	Contaminates wastewater	District collection point
Bird sand, cat litter	Leads to deposits and pipe blockages	Dustbin
Cotton buds/Face wipes	Clogs the system	Dustbin
Toilet blocks	Contaminates wastewater	Do not use
Nappies	Clog pipes	Dustbin
Cement water	Creates deposits, becomes concrete	Send to a specialist company

8. EC DECLARATION OF CONFORMITY

Manufacturer: Otto Graf GmbH
Carl-Zeiss-Straße 2-6
D-79331 Teningen

hereby declares that the product **one2clean** small sewage treatment system complies with the following Directives:

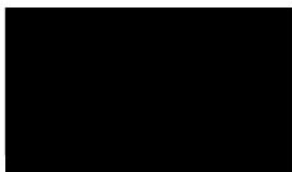
- 2006/42/EC** Directive of the European Parliament and of the Council, dated 17 May 2006, on machinery, and amending Directive 95/16/EC.
- 2006/95/EC** "Directive of the Council relating to electrical equipment designed for use within certain voltage limits"

The following harmonised standards have been applied:

- EN 60204-1** Electrical equipment of machines Part 1: General requirements
- EN ISO 13849-1** Safety of machines - Safety-related parts of control systems - Part 1: General principles for design

This EC declaration of conformity becomes invalid if the product is modified without consent.

Teningen, 22.02.14



Arne Schröder
(Product Management Team Leader)

Declaration of performance one2clean

Nr. 104/Translation



1. Unique identification code of the product-type	one2clean
2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4)	one2clean 3-18 Inhabitants Type size and serial number on control cabinet type plate
3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer	EN 12566-3:2005+A2:2013: Prefabricated and/ on-site installations for the treatment of domestic waste water
4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5)	Otto Graf GmbH Kunststoffzeugnisse Carl-Zeiss-Str. 2-6 79331 Teningen Germany
5. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V	System 3
6. Name and identification number of the notified body	PIA - Prüfinstitut für Abwassertechnik GmbH - NB 1739

7. Declared performance (with regard to the harmonised standard EN 12566-3:2005+A2:2013)

	Performance	Test report No.
Cleaning capacity	Nominal organic daily dirt cargo BOD ₅) = 0.06 kg/d per PE. Nominal daily inflow (Q _N) = 150 l per PE.	
Treatment efficiency	COD: 94,2 % 43 mg/l BOD ₅ : 98,0 % 7 mg/l NH ₄ -N: 98,3 % 0.5 mg/l N _{tot} : 87,0 % 8 mg/l P _{tot} : 80,2 % 1.6 mg/l SS: 96,3 % 14 mg/l	PIA2014-216B14.01
Watertightness	Passed	PIA2016-WD-1509-1050.02/ PIA2021-WD-2101-1002.03 (Carat S)
Stability	Passed	PIA2016-ST-PIT-1509-1050.02 (Carat S)
Durability	Passed	PIA2016-DH-1509-1050.02 (Carat S)
Reaction to fire	Class E	PIA2016-RF-1509-1050.02 (Carat S)
Release of dangerous substances	NPD	

8. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 7. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Manufacturer by:

i.V. Ralf Oestreicher
Head of Product Division
- DIY / garden / waste water treatment -
Teningen, 22.03.2024

10. TECHNICAL DATA OF THE CONTROL SYSTEM

- Programmable logic microcontroller
- T3,15A fuse (internal)
- Wide-range 100-240 VAC/50-60 Hz power supply
- Real-time clock with ± 5 min/year deviation, battery back-up
- Logbook, non-volatile
- Cable break monitoring for compressors by measuring output currents
- Operating/error message display with LED (green/red)
- Operating temperature range: 0°C to +55°C
- Permissible temperature range outside of operation: -20°C to +85°C
- Relative humidity: 10% to 95%, no condensation
- Degree of protection: IP54 (front side, with properly applied front foil)
- 4-key control panel
- Display: 2 lines of 16 characters with backlighting (blue)
- Outputs:
 - 230 VAC 50Hz compressor (standard),
 - 2x 24 VDC step motors/solenoid valves for compressed air flow

Protect your investment Protect the environment...



with **FREE** professional commissioning
of your wastewater treatment system

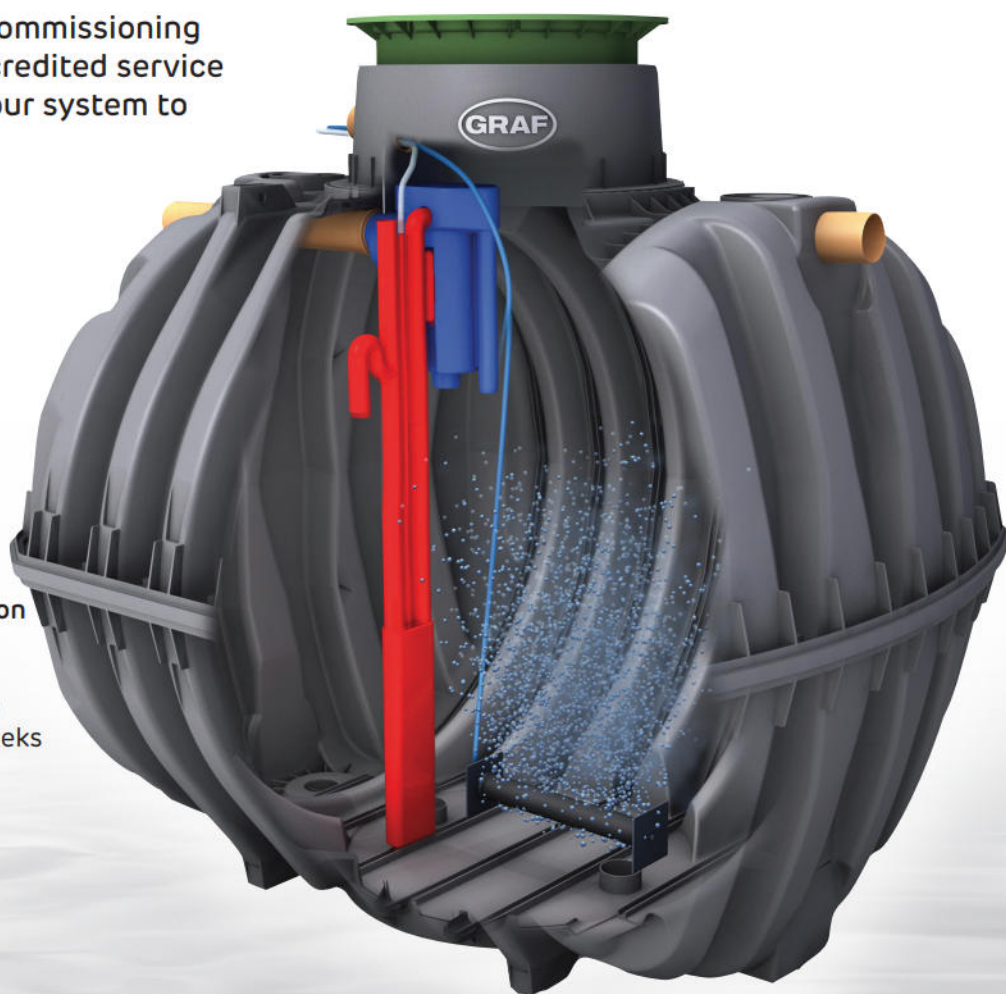
It's so important not only to have your wastewater treatment system professionally installed but also commissioned, giving you peace of mind that your investment will operate cost-effectively and correctly, both for yourself and the environment.

Graf UK will arrange **FREE** commissioning of your system by a Graf accredited service provider who will register your system to activate your warranty.



For more information go to
<https://bit.ly/GRAFFreeCommission>
or scan the QR code

Book for your free commissioning
early as we generally need 2-3 weeks
to plan in a commissioning date.



WASTEWATER TREATMENT WITH GERMAN ENGINEERING

For quality, efficiency and reliability, put your trust in a Graf UK system.



Terms & conditions apply

Graf UK Limited | Regen House | Beaumont Road | Banbury | OX16 1RH
T: 01608 661500 | F: 01295 211333 | E: info@grafuk.co.uk | www.grafuk.co.uk



Wastewater Treatment

11. WARRANTY CERTIFICATE



Confirmation

Dear Sir or Madam,
Congratulations on the purchase of a quality product from Otto Graf GmbH.
Herewith we confirm a 15 years' warranty on the underground tank (excluding drinking water)



Warranty clause

Above mentioned 15 years' warranty only refers to the underground tanks and not to individual parts or accessories, even if included in the package price.

Within the warranty period we offer free material replacement, further indemnifications are excluded. In order to grant warranty services we require correct handling, assembly and installation according to the installation manual. The warranty is only valid with the proof of purchase. Please also refer to our general business conditions.

Teningen, September 2024

Otto GRAF GmbH
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Carl-Zeiss-Str. 2-6
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Germany

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www.graf.info



ELECTRICAL COMPONENTS WARRANTY TERMS

1 Year - Standard Warranty

3 Year - Extended Warranty

(subject to below T's & C's)*



*TERMS AND CONDITIONS:



Eligibility

To activate the 1st year of warranty, your Wastewater Treatment System must be commissioned by a GRAF Accredited Service Provider.

For the warranty to extend to 3 years, annual servicing by a GRAF Accredited Service Provider is required.

Any maintenance on the Wastewater Treatment System must be carried out in accordance with the logbook and to a standard approved by GRAF UK.

In the case of warranty claims, all commissioning and maintenance reports must be provided to GRAF UK.

Liability

If it is determined that faults or damage are due to; improper installation, misuse of the plant, lack of regular maintenance, alterations made without GRAF UK's approval or by personnel not approved by GRAF UK, the claim will not be covered by the warranty. Should the warranty claim be honoured, only the cost of the part(s) is covered; labour and additional site costs are excluded.

Warranty valid from date of commissioning.



RAINWATER HARVESTING



STORMWATER MANAGEMENT



WATER BUTTS & COMPOSTERS



MULTIPURPOSE CONTAINERS



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