12 January 2024

[redacted]

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[redacted]

FAO Niall Tutton

Ref: 23070Q

## Annex at Spencer Place, Sandy Lane, Waltham Chase, Hants SO32 2LR, 23/01240/FUL PTP management plan

**Accountable for implementation of the plan**.
The following entities are accountable for the implementation of the plan.

- ✓ An individual
- ○ A group of individuals
- ○ A charity, club or similar organisation
- ○ A management company or business

New PTP holiday let

| | |
|---|---|
| Owner | Spencer Place |

**Funding**
By virtue of operation of a PTP the discharge is not being made to the public sewer and the costs of PTP operations are met in lieu of a sewer utility bill levied by a statutory undertaker. The following entities will fund the O&M plan actions:

- ✓ An individual
- ○ A group of individuals
- ○ A charity, club or similar organisation
- ○ A management company or business

New PTP Holiday let

| | | Cost share |
|---|---|---|
| Owner | Spencer Place | 100% |

**Actions required to maintain the performance of the PTP**
Actions for all plants
The operation and management of the wastewater treatment plant will accord with the DEFRA General Binding Rules (GBR) for small sewage discharges (SSDs) with effect from January 2015. The following General Binding Rules apply to all small sewage discharges.

9. All works and equipment used for the treatment of sewage effluent and its discharge must comply with the relevant design and manufacturing standards ie the British Standard that was in force at the time of the installation, and guidance issued by the appropriate authority on the capacity and installation of the equipment.
10. The system must be installed and operated in accordance with the manufacturer's specification.

11. Maintenance must be undertaken by someone who is competent.
12. Waste sludge from the system must be safely disposed of by an authorised person.
13. If a property is sold, the operator must give the new operator a written notice stating that a small sewage discharge is being carried out, and giving a description of the wastewater system and its maintenance requirements.
14. The operator must ensure the system is appropriately decommissioned where it ceases to be in operation so that there is no risk of pollutants or polluting matter entering groundwater, inland fresh waters or coastal waters.

General Binding Rules is a term given to legally binding requirements in regulations that set the minimum standards or conditions which apply. In this case the conditions are set in the Environmental Permitting (England and Wales)(Amendment)(England) Regulations 2014.

*Notes:*

- *GBR 9 is consistent with Building Regulations requirements. In satisfying the Building Regulations GBR 9 is met.*
- *GBR 10 a copy of the manufacturer's specification for the proposed treatment plant is attached.*
- *GBR 11 it is recommended that you source maintenance work specialists through listings on recognised trade bodies or organisations such as British Water. Many manufacturers operate their own maintenance service departments or can direct you towards specialists who are familiar with their plant. Bespoke treatment plants are usually maintained by the suppliers through a maintenance contract.*
- *GBR 12 treatment plant sludge is a controlled waste. Your servicing body (GBR 11) may deal with this as part of their activity or you may need to arrange for a specialist contractor to deal wit the sludge. It is recommended that you source sludge disposal work specialists through listing on recognised trade bodies or organisations. Most manufacturers can direct you towards local companies who undertake this.*

It is recommended that you retain copies of service reports and maintenance work etc to facilitate any verification of compliance by authorised persons.

*If the proposed discharge exceeds GBR thresholds then an Environment Permit will need to be obtained from the Environment Agency to operate the wastewater treatment plant and make discharge from it. In this case the wastewater treatment plant will be operated and maintained in accordance with the associated Environment Permit, refer to permit for details.*

Plant specific actions

Wastewater treatment plant manufacturer's specification including maintenance actions is shown on the following pages.

| | |
|---|---|
| **Plant** | Graf One2Clean |

# 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.

Document No. Graf-0004 Rev. 1

# One2Clean system

## Benefits of the Graf system

- Extremely strong & robust injection moulded underground tank
- No concrete required, just gravel base and backfill
- Completely groundwater stable up to the centre line
- CE Certified system to EN 12566-3
- Market leading effluent quality of 5, 6, 0.4 guaranteed on a 95 percentile basis. SBR Technology
- Integrated sampling chamber at no extra cost
- No moving parts inside the tank, easy to install, easy to maintain.
- Plug in and play system, no wiring required
- 10 year warranty on the tank, 2 years on compressor and parts, German engineered
- Low energy consumption of just 75 kwh
- Silent operation
- Programmable holiday mode

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.

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

Otto Graf GmbH, Carl-Zeiss-Str. 2-6, Germany

2014

**EN 12566-3:2013-09**

Packaged domestic wastewater treatment plant
for treatment of domestic wastewater

SBR-treatment one2clean for 3-18 inhabitants
Material: Polypropylene (PP)

**Effectiveness of treatment**

| | | |
|---|---|---|
| Treatment efficiency ratios (at tested organis daily load BOD5=0,48 kg/d) | COD: | 96,2% |
| | BOD5: | 98,6% |
| | SS: | 98,6% |
| Ammonia nitrogen | NH4-N: | 99,0% |
| Total nitrogen | Ntot: | 79,1% |

**Treatment capacity (nominal designation)**

| | | |
|---|---|---|
| Nominal organic daily load (BOD5) | 0,06 | kg/d*PE |
| Nominal hydraulic daily flow (QN) | 0,15 | m3/d*PE |

| | |
|---|---|
| **Watertightness** (water test) | passed |
| **Crushing resistance** (pit test) | passed |
| **Durability** | passed |
| **Reaction to fire** | Class E |
| **Release of dangerous substances** | NPD |


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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## Contents

# 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 that it is freely accessible for maintenance.
- There must be a permanent power supply to the one2clean. Ensure that the control cabinet is adequately fused (16 A) and the power supply is fitted with isolator switch for repair & maintenance. Additional electrical components & consumers should not be using the same fuse as they can could power failure and interfere with 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 is essentially made up of an aerobic stage. This stage is split into a rest area and an activation area. The chambers are connected to one another in the bottom section. During this process, therefore, all domestic sewage is immediately exposed to aerobic wastewater treatment. The entire system is aerated by compressed air being blown in and the sludge activated as a result of this biologically cleans 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. Wastewater treatment is performed in the one2clean without pre-treatment, so that no anaerobic digestion processes can occur.

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

The SBR process is a sequence of different steps that occur at set times in a sequence and takes place at least once a day.

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 mud 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 stage. This is done by pumping compressed air according to the mammoth pump principle (air lift pump). The air lift is designed in such a way that no floating sludge which might develop is drained on the clear water layer. A minimum water level in the system is maintained without additional components.

After execution of the third Step, the cleaning process begins again with step 1.
Two cycles are performed per day. The individual adaptation of switching times is possible on the part of the maintenance company.

# 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, the notification “SYSTEM TEST ... OK”, the program version, and serial number of the control system appear for a short time. Following this, the current operating status of the system is displayed. After the system test is complete, the date and the current time should be checked and adjusted if necessary (see Section 4.2.3).

After checking the date/time, a functional check of the system components must be carried out. This check can only be carried out if the necessary air hoses are connected. The check should be carried out via the menu point “manual mode” in the control system, which is intended for this purpose. The individual parts of the system are tested for functionality. After a successful check, the system is reset to automatic mode.

CAUTION: The clear water siphon only functions when the containers are filled.
If the date and time are not set correctly, operating faults will be stored with the incorrect time information.

# 4 OPERATION OF THE CONTROL SYSTEM

The operation of the system is carried out via a microprocessor in the control unit. The microprocessor allows for the set-up of operating parameters, the display of operating conditions and the query of system parameters as well as the programming of working times through a specialist company.

Adjustments are made by scrolling through numerical values using the two arrow keys ▲ ▼. The settings are then confirmed by pressing the Set button.

The individual dialogues can be terminated ahead of time by pressing Esc or will be terminated automatically after 2 minutes.

The control system is broken down into the following 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 the button 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.

By setting up holiday times in the operator level, the complete sequence of cleaning cycles can be suppressed for the set period of time. Only one holiday cycle with greatly reduced activity takes place at this time. During this time, no treated wastewater will be removed, as there should be no supply.

# 4 OPERATION OF THE CONTROL SYSTEM

### 4.1.1 Display of Operating Status

The operating status is indicated by the LEDs (green = operational / red = fault) and as text on the screen.
In normal operating mode (aeration mode), the display appears as follows:

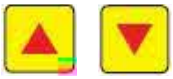
```
Aeration
Rest: 120:10min
```

In automatic mode, the liquid crystal 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 liquid crystal display (e.g. Fault Compressor 0.0A).

### 4.1.2 The following work phases are displayed

| Display | Process performed |
|---|---|
| Denitrification | Y3 valve (plug X1.1) is actuated intermittently; the activated sludge is brieflymixed with the wastewater. This is followed by long pauses (response times). |
| Ventilation | Y3 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. |
| Activity phase | Y4 valve (plug X1.2) is actuated; the clear water is pumped into the drain. |
| Cycle pause/holiday mode | Y3 valve (plug X1.1) is actuated; the system is aerated in intervals (considerably less than in the aeration phase). |
| Rest: XXX:XXmin | 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<br>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 Set. You can now call up the individual queries using the arrow keys ▲ ▼ and then pressing Set:

| Display | Meaning |
|---|---|
| Operating mode<br>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<br>Time | Current time, day and date. Can be set using Set |
| 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 Set 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 Set button. On the screen will appear:

| Operting hours<br>meter reading |
|---|

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

Pressing Esc once will take you back to the display “display operting hours”. You can access the “manual mode” menu by pressing ▲.

k 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<br>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.

### 4.2.4 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<br>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 controll 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 Esc.

Faults are indicated as encoding, in order of their appearance, starting with number 0 (latest signal).

| Coding | Meaning |
|---|---|
| 1 | Power failure (system is currentless) |
| 2 | Net is back (system regains power) |
| 3 | Compressor has over-current |
| 4 | Compressor current supply too low |
| 5 | Manual operation |

The faults number 2 (net is back) and number 5 (manual operation) are no faults. They will be registered for a better temporal localization of possibly occurring faults or rather monitoring of manual activities 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 Esc.

### 4.2.7 Service Menu

Operating parameters can be changed in the service menu. Access is protected with a code. This second maintenance level is reserved exclusively for qualified specialist personnel only!

Any access to the control system settings by unauthorised persons will cause the warranty to expire!

# 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 discoloration in the flow
- Check inflows and outflows for blockages (visual inspection)
- Read the operating hours counter on the air compressor (total operating hours), the ventilation (Y3 valve) and the clear water run-off (Y4 valve) and record in the operating log

## 5.2 Maintenance by a Specialist Company

Maintenance is carried out by a specialist company (experts) at least twice a year (approximately every 6 months). 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 with determination of the 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 (O2/l > 2 mg), adjust the operating time of the compressor if necessary,
  - –Sludge volume ( < 900 ml/l),

If the sludge volume is greater than 900 ml/l, the sludge must be removed.

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

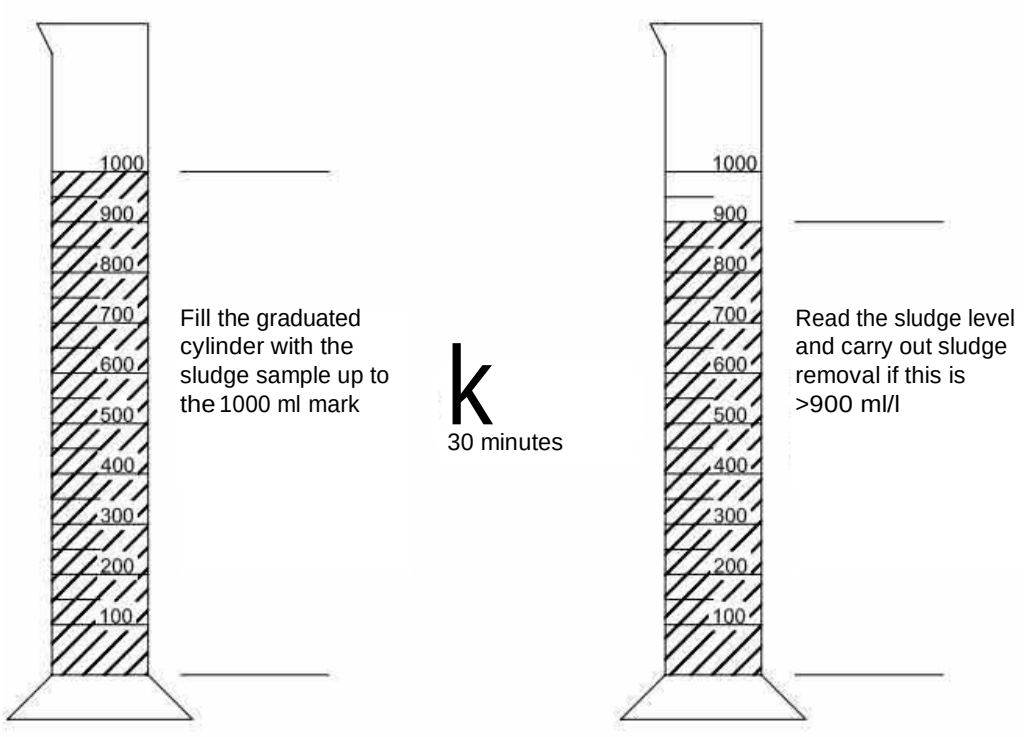
## 5.3 Determination of Sludge Removal

In order to determine the need for sludge removal in the wastewater treatment system, a settling test should be carried out at maintenance intervals. For this settling test, the SV30 is measured. The SV30 is the sludge volume occupied by 1000 ml of activated sludge after a settling period of 30 minutes. It is a measure of the amount of sludge present in the wastewater treatment system.

Measurement of the SV30 is carried out in a 1000 ml graduated cylinder.

The following points must be observed during this measurement:

A. Turn ventilation on - if not active - and allow to mix for a short time
B. Submerge the scoop into the tank and remove sludge sample
C. Fill the graduated cylinder with the sludge sample up to the 1000 ml mark
D. Let the cylinder containing the sample stand in a place free from vibrations for 30 minutes
E. Read the sludge level and carry out sludge removal if this is > 900 ml/l
F. After emptying the tank have to be filled up with fresh water again




## 5.4 Sludge Removal

Removing sludge from the wastewater treatment system should be carried out according to the following points:

G. Remove the cover
H. Remove the deposits on the water surface and on all visible surfaces (baffle, sample container, siphon)
I. Wash down the visible surfaces
J. Insert the suction hose into the wastewater treatment tank until it reaches the floor (CAUTION: air admittance valves on the ground must not be damaged!)
K. Aspirate until about 30 cm of wastewater and sludge remain in the wastewater treatment system

# 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, cleaning of the existing wastewater is not or is only possible to a very limited extent.

## 6.2 Fault Message in the Display

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

The numbered fault codes are explained below:

A. Power failure (system is de-energised)
B. Power returned (system is supplied with power again)
C. Compressor has overcurrent
D. Compressor power supply too low
E. Manual operation

The displays no. 2 (power returned) and no. 5 (manual mode) are not faults in the proper sense. These are only registered as fault messages for better time limitations of any faults that occur and for monitoring manual activities on the control system.

Table 2: Fault Causes and Troubleshooting

| Display | Possible cause | Remedy |
|---|---|---|
| Mains failure<br>No display, no light | • Power failure<br>• System turned off<br>• There is no voltage at the control cabinet | • Check the power supply to the system and to the control system<br>• Turn system back on<br>• Check supply to the control cabinet<br>• 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<br>**overcurrent** | • Short-circuit | • Check supply to the control cabinet |
| Compressor **current too low** | • Compressor does not work / is not receiving power | • Check the compressor in manual mode |
| Manual operation | • System was activated manually in manual mode | |

# 6 FAULT MESSAGES AND TROUBLESHOOTING

## 6.3 Unusual Water Levels - Fixing a Fault

| Observation | Possible cause | Remedy |
|---|---|---|
| The water level in the activation tank is unusually high | • System is running in holiday mode<br>• System runs continually in cycle pause<br>• Control system settings are incorrect<br>• The drain siphon is clogged<br>• The air hose to the drain siphon is leaking<br>• System has been flooded from external water source and not allowing water to drain from the system<br>• Control system is defective | • End holiday mode<br>• Have the control system settings checked by the maintenance technician<br>• Allow tank to be pumped out and clean siphons<br>• Seal hose connections<br>• Wait out flooding<br>• Get in touch with maintenance company |
| The system smells, the treated water is cloudy or discoloured | • Too little air is entering the system<br>• Single-sided ventilation due to defective air admittance valves | • Have service company increase ventilation time<br>• Check the ventilation, get in touch with maintenance company |
| Ventilation is onesided or large air bubbles appear at points | • Membrane unit is defective<br>• Seal leaky air admittance valves | • Get in touch with maintenance company<br>• Get in touch with maintenance company |

# 7 OPERATING NOTES

Essentially, the system should only be supplied with materials that correspond to domestic wastewater in their characteristics.

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 (e.g. drain water)
- 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
- Drain 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

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 | Leads to blockages, non-degradable plastic film spoil 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

[redacted]

Arne Schröder
(Product Management Team Leader)

# Declaration of performance one2clean

**Nr. 008/Translation**

| | |
|---|---|
| 1. Unique identification code of the product-type | **EN 12566-3: Small wastewater treatment system** |
| 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**<br>**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 | **Cleaning domestic wastewater in a volume of up to 150 l per inhabitant and day with a maximum pollution load of 0.06 kg/$BOD_5$ per inhabitant and day** |
| 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 Kunststofferzeugnisse**<br>**Carl-Zeiss-Str. 2-6**<br>**79331 Teningen**<br>**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. **The notifying authority PIA (Prüfinstitut für Abwassertechnik GmbH) - NB 1739 - tested the cleaning performance of the wastewater treatment system. The Carat tank were tested for stability, leaks, durability and fire behaviour, see number 7. The fire behaviour of the Carat XL tank was tested by the Hoch test institute - NB 1508.** | |

7. Declared performance

| | Performance | Test report No. |
|---|---|---|
| **Treatment efficiency** | CSB: 96,2 % 26 mg/l<br>$BSB_5$: 98,6 % 5 mg/l<br>$NH_4$-N: 99,0 % 0,4 mg/l<br>$N_{ges}$: 79,1 % 13 mg/<br>AFS: 98,6 % 6 mg/l | PIA2013-181B14 |
| **Watertightness** | Passed | PIA2008-WD-AT0805-1027b |
| **Crushing resistance** | Passed | PIA2008-ST-AT0804-1019 |
| **Durability** | Passed | PIA2008-ST-AT0710-1020+DH |
| **Reaction to fire** | Class E | PIA2013-FR-1306-1039 |

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.**

Signed for and on behalf of the manufacturer by:

[redacted]

i.V. Arne Schröder
Team leader, product management

Teningen, 22.01.2014

# 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/a 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 glued 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

# WARRANTY CERTIFICATE

Otto Graf GmbH
Kunststofferzeugnisse

Dear Sir or Madam,

Congratulations on the purchase of a quality product from Otto Graf GmbH. Herewith we confirm a 10 years' warranty on the underground rainwater tank

## CARAT RS

10 years warranty

## Warranty clause

Above mentioned 10 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, March 2016

Otto GRAF GmbH
Carl-Zeiss-Str. 2-6
79331 Teningen
Germany
www.graf.info

# WARRANTY CERTIFICATE

Otto Graf GmbH
Kunststofferzeugnisse

Dear Sir or Madam,

Congratulations on purchasing a quality product from Otto Graf GmbH. Herewith we confirm a

**2-YEAR WARRANTY**

on the small wastewater treatment system one2clean you have purchased.

The warranty applies to the purifying technology only. Accessories and optional add-ons are not covered by the warranty. During the warranty period, Otto Graf GmbH provides free material replacement; but services extended beyond this are not covered.

## Warranty conditions

The warranty applies under the following conditions:

1. The waste water treatment system must be installed and commissioned by a specialist firm. Companies trained by Graf UK are recognised as Accredited Service Providers. If a recognised Accredited Service Provider signs off and services the system, 1 extra year of warranty will be added.
2. Maintenance must be carried out in accordance with the logbook and approved by a specialist. In the case of warranty claims, all maintenance reports must be submitted on request.
3. Worn parts and any defects or damage resulting from improper operation of the system, maintenance not being carried out, faults caused by the customer and unauthorised changes to the system are not covered by the guarantee.
4. Costs incurred by installing or replacing parts, shutting down the system etc. are not included in the warranty.

Graf UK Limited
Regen House
Beaumont Road
Banbury
OX16 1RH

Teningen, March 2016

# 12 NOTES

# 12 NOTES

RAINWATER HARVESTING

STORMWATER MANAGEMENT

WATER BUTTS & COMPOSTERS

MULTIPURPOSE CONTAINERS


Graf UK Ltd

[redacted]

Graf UK Ltd (Scotland)

[redacted]