DEHOUST
ENERGY. HEAT. WATER.

Installation, Operation and Inspection Manual

DEHOUST GWR 300

Greywater treatment plants for greywater reuse

Version 2.0 (January 2026)

Translated from German Origin

www.dehoust.com

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Content

1. Safety Instructions

Read the manual before installing and commissioning the GWR system and keep the manual within reach at the place of use.

This applies to the operative(s), technician(s), or operators.

1.1. General safety instructions

This manual provides basic guidance for transport, handling, installation, commissioning, operation, maintenance, storage and final disposal. When using *GWR* greywater treatment plants, observe the relevant data, limits and operating conditions specified in this manual and in the Technical Data Sheet as revised from time to time.

Also, this manual is valid only in connection with the operation manual as delivered with the equipment or as applicable on the date of a software update. The latest operation manual for your current software version will be given to you each time the controller software runs an update with changed menu navigation.

Important:

- Never exceed the authorized operational thresholds for pressure, temperature, etc. specified in this documentation.
- Observe all safety and work instructions given in this manual.
- Respect all instruction labels or notices placed on the equipment and keep them in a perfectly readable condition. This is especially true for:
  - safety instructions
  - identifiers of ports and connections
  - type label
- Perform all installation and maintenance work always by duly authorized specialist personnel using appropriate tools.
- Have the operator check the technical condition of the *GWR* system at regular intervals.
- Observe the local safety and accident prevention regulations for the operation of the *GWR* system.
- Make sure the plant is installed and operated in accordance with the generally accepted rules of engineering.
- Do not make any modifications to the *GWR* plant, because you would lose all rights under the warranty.
- After a power outage or greywater supply interruption, ensure the process is restarted in a controlled and defined manner.
- The operator is responsible for meeting any additional applicable local regulations not mentioned in the manual.

1.2. Symbols used in this manual

	Passages marked with this symbol indicate **danger.** Death, serious injury, or significant property damage may result if the appropriate precautions are not observed.
	Passages marked with this symbol indicate a **warning to act with caution.** Failure to observe the relevant precautions may result in minor injury or damage to property.
	Passages marked with this symbol provide an **instruction:** Wear personal protective equipment – in this case, protective gloves.
	Passages marked with this symbol provide an **instruction:** Wear personal protective equipment – in this case, a dust mask.
	Passages marked with this symbol provide an **instruction:** Wear personal protective equipment – in this case, safety goggles.
	Passages marked with this symbol provide an **instruction:** Protect yourself by washing your hands and using hand sanitizer.
	Passages marked with this symbol provide a **warning:** Do not connect certain devices, materials, or connections to the drinking water supply!
	Passages marked with this symbol provide **helpful information:** Observing and following this (technical) information and practical tips should help to prevent damage to the plant. This symbol does not indicate a safety instruction.
	Passages marked with this symbol indicate a time specification for **maintenance intervals**: Here: quarterly (every three months)
	Passages marked with this symbol indicate a time specification for **maintenance intervals**: Here: monthly
	Passages marked with this symbol provide an **indication:** Service or maintenance work shall be performed as required or in the event of wear.

1.3. Safety regulations

The following safety regulations apply in addition to the safety instructions and intended use given in this manual:

- Accident prevention, safety and operating regulations
- Safety regulations for handling hazardous substances
- Applicable standards and laws including but not limited to the following technical standards:
  DIN EN 16941-2, DIN EN12056, DIN 1988, DIN 1986, DIN EN 1717, DIN EN 806

Specific national standards and laws must be observed and take precedence where applicable.

1.4. Risks and hazards from non-compliance with the manual

Failure to observe the instructions given in this manual will void any warranty and damage claims.

Non-compliance with the manual may, for example, result in the following hazards:

- danger to persons due to electrical, thermal, mechanical and chemical effects
- loss of key functions of the product
- failure of prescribed servicing and maintenance methods
- environmental hazards due to leaking hazardous substances

1.5. Operator's duty of care

The GWR greywater treatment plant for greywater reuse was designed and built after appropriate risk assessment and careful selection of applicable harmonized standards and other technical specifications. The product complies with the generally accepted rules of engineering and guarantees maximum safety. In practical operation, this level of safety can only be achieved if all necessary measures are taken.

It is the operator's duty of care to plan these measures and supervise their implementation. In particular, the operator must ensure that

- the GWR greywater treatment plant for greywater reuse is used for the intended purpose only
- the GWR greywater treatment plant for greywater reuse is operated in perfect functional condition only
- a full version of the manual in a readable condition is constantly kept within reach at the place of use of the GWR system
- only sufficiently qualified and authorized personnel install, commission, maintain and service the GWR system
- such personnel are instructed at regular intervals in all relevant aspects of safety at work and environmental protection and have read and understood the manual and, more specifically, the safety instructions contained therein
- none of the safety and warning labels on the GWR greywater treatment plant for greywater reuse are removed and that they remain readable
- a risk assessment (in the spirit of Section §5 of the Safety at Work Act) is made to determine the additional risks and exposures resulting from the specific local working conditions at the place of use of the GWR system
- all additional safety and other instructions arising from the risk assessment are grouped together in an operating procedure (in the spirit of Section §6 of the Work Equipment Usage Ordinance)
- sewer discharge is sufficiently dimensioned

1.6. Safety instructions for maintenance, inspection and installation work

- You are not allowed to change or modify the system, unless with the prior consent of the manufacturer.
- Never use any parts other than original parts or spare parts authorized by the manufacturer.
  The use of non-compliant parts can void liability claims for defects arising therefrom.
- Switch off the system during all work on the equipment.
- Let the plant units (filter and pump) cool down to ambient temperature
- Always observe the inspection/maintenance procedure described in the manual.
- Reinstall or reactivate all safety guards and protective devices immediately after the work is done.
  Before restarting operation, follow the steps mentioned in the Commissioning section of the manual.
- Keep unauthorized persons (e.g. children) away from the system.

1.7. Labeling requirement

All pipe connections, taps, and fittings in the greywater system must be clearly marked, usually with “No Drinking Water” or a corresponding symbol.

1.8. Duties of the operatives

The GWR greywater treatment plant for greywater reuse shall be installed, commissioned, repaired, maintained and decommissioned only by persons specifically trained, briefed and authorized for this purpose. The operator can request training sessions from the manufacturer/supplier as needed. Training sessions for the system must always be supervised by specialist personnel. The operator shall maintain an operating procedure containing clear assignment of authorities for every member.

Moreover, in particular, qualifications are required for the following activities:

- work on electrical equipment:
  they shall be carried out by qualified electricians only
- installation, commissioning, servicing, maintenance and repair work:
  they shall be carried out by qualified specialist personnel only.

The fundamental regulations on safety at work, occupational health and accident prevention must be observed.

2. General information

The manual is an integral part of the GWtec greywater treatment system types when delivered. The manual describes the proper and safe use of the system in all operational phases. The type plate contains the model series and size, the most important operating data, and the serial number.

To maintain warranty claims in the event of damage, report damages immediately to the authorized dealer by indicating the installation site and the series number of the greywater treatment system..

2.1. Warranty and liability

The Standard Terms and Conditions of Sale and Delivery of DEHOUST GmbH apply. No warranty and liability claims can be accepted in case of personal injury or material damage attributable to any of the following causes:

- improper use of GWR
- improper installation, commissioning, operation and maintenance of GWR
- failure to follow the instructions in the manual in terms of transport, handling, storage, installation, commissioning, operation, servicing and maintenance of GWR
- arbitrary structural modifications to GWR
- improper repairs
- disaster events by impact of foreign bodies and force majeure

2.2. Statutory warranty obligation (extract)

The statutory warranty obligation according to Section § 437 of the German Civil Code (BGB) applies.

Within the statutory warranty period, DEHOUST will at no charge remedy functional defects arising from manufacturing or material defects.

This applies to any defects or malfunctions occurring despite correct installation, proper operation and full compliance with the operating and installation instructions.

3. General description

Greywater treatment plants for greywater reuse treat slightly contaminated domestic sewage (so-called “greywater”) from household sources to produce high-quality water for non-potable uses. The greywater undergoes mechanical and biological treatment using sophisticated filter technologies. The GWR 300 grey water recycling system treats domestic grey water from bathtubs, showers, and hand basins to produce high-quality service water for reuse, based on bio-membrane technology (**BMT**).

The treated greywater such obtained meets the hygienic/microbiological quality requirements of the European Standard EN 16941-2 (Systems for the use of treated greywater) and can be reused for non-potable applications in a manner that makes sense both ecologically and economically.

3.1. Functional description

The separately collected grey water is first freed of undissolved water constituents, such as hair, textile fluffing, etc., using an integrated hair net.

Subsequently, wastewater bacteria in combination with injected atmospheric oxygen ensure the biological degradation of the organic water constituents, such as shower gel, shampoo, soap, etc.

At the same time, the submerged BMT membrane filter – the heart of the GWR 300 grey water recycling system – begins to gently filter the prepared grey water through the narrow membrane pores into the service water storage tank. With a physical pore size of just 38 nanometers (2,500 times finer than human hair), the filter safely retains any time all solid particles, germs and absorbed viruses within the system.

The result is absolutely clear, odorless, and germ-free service water. Due to its very low nutrient content (biological purification) and barely detectable residual biomass (ultrafiltration), the purified grey water can be stored long-term and reused without any hygiene concerns.

Should no treated greywater be available temporarily in the service water storage tank, optional accessories can be used to maintain the security of supply with the help of a drinking water supply.

3.2. Basic Plant Layout

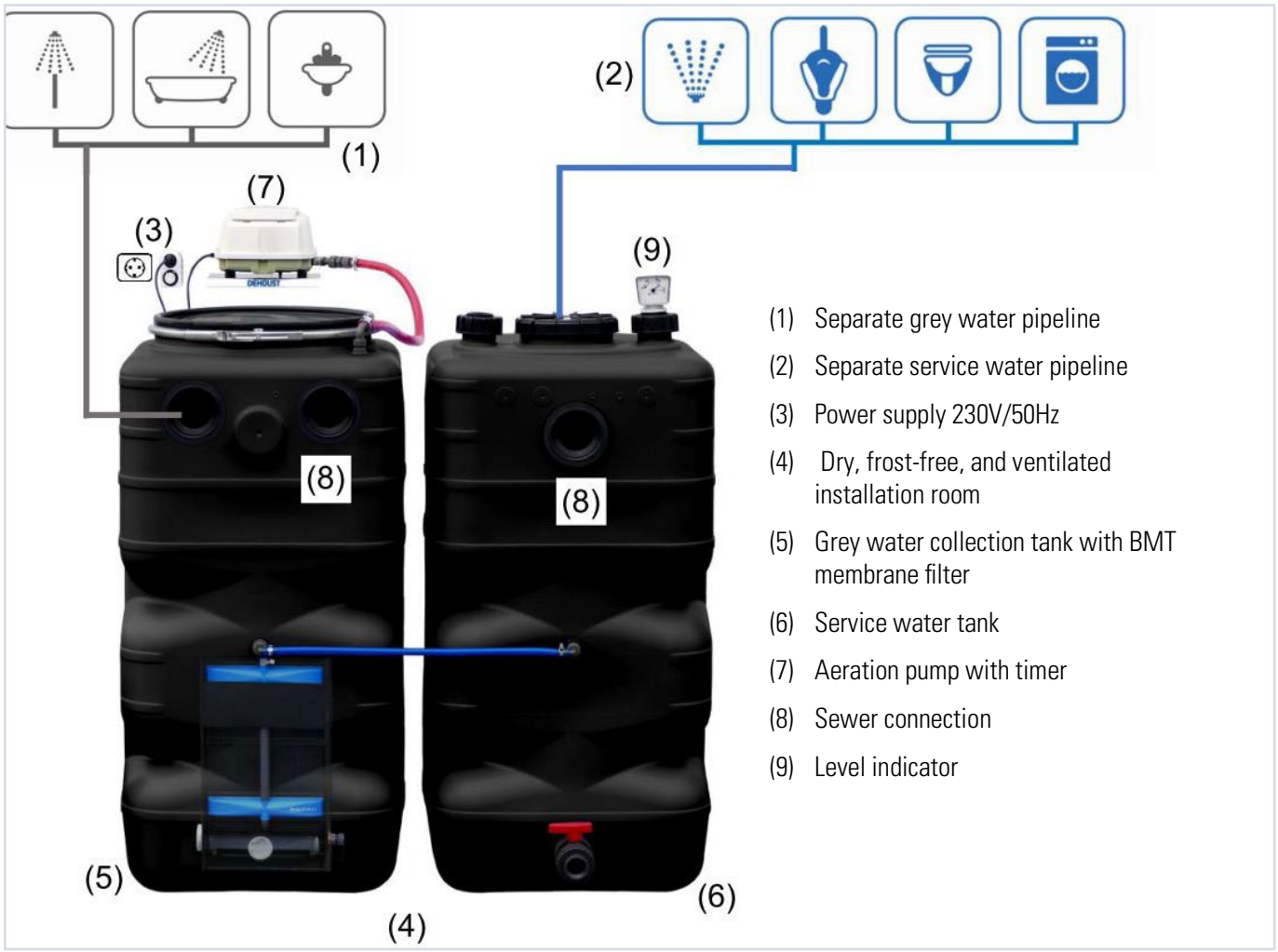


Figure 1: Basic design of the GWR 300 greywater recycling system

The actual system may differ from the basic plant layout. Observe the specific layout diagram!
Observe the specific installation diagram.

3.3. Plant components

Pre-assembled *GWR* greywater treatment plant composed of:

- Greywater tank with BMT membrane filter
- Service water tank
- Timer
- Air compressor
- Container with liquid and dry bacteria cultures for establishing biological purification
- Assembly accessories
- Hose connection accessories
- Documentation folder
  - Installation, commissioning, and operating instructions
  - Safety data sheets
- Optional: Pressure booster system with instructions
- Optional: Drinking water replenishment system with instructions

3.4. Intended use

The *GWR* greywater treatment plant shall be operated only in applications described in this manual. Any use of the *GWR* greywater treatment plant for purposes other than the intended use can cause harm to persons, neighboring plants and the environment.

Important:

- Operate the *GWR* greywater treatment plant in perfect technical condition only!
- Do not operate the *GWR* greywater treatment plant when assembled in part only!
- Only operate the *GWR* greywater treatment plant for the treatment of slightly contaminated domestic sewage from showers, bathtubs and sinks only.
- Operate the *GWR* greywater treatment plant at water temperatures up to a maximum of 40°C only.
- Always take care to avoid any overheating, mechanical seal damage, cavitation damage[1], bearing damage, etc. Observe the specified maximum flows and pressures (Chapter 4).
- Do not restrict the upstream drinking water make-up flow to the *GWR* greywater treatment plant (avoidance of cavitation damage, dry run of pressure booster system).
- Contact the manufacturer for any operating modes other than those mentioned in the documentation.

[1] Cavitation is the spontaneous formation of voids in hydraulic fluids. Such voids occur in the form of bubbles. Since these bubbles have a vacuum inside, they collapse immediately. This might cause damage to the pump.

3.5. Preventing improper use

The *GWR* greywater treatment plant is not designed for outdoor use. The effects of temperature, light and humidity can cause malfunctions and damage to the equipment.

- Do not use the *GWR* greywater treatment plant outdoors.
- Only use the *GWR* greywater treatment plant as intended.
- Do not (!) use the *GWR* greywater treatment plant to treat
  - industrial wastewater
  - highly contaminated sewage from kitchens
  - sewage containing faeces
  - sewage from dishwashers
  - sewage containing paints, dyes or colorants (e.g. residual paint, textile and hair dyes)
  - contaminated wastewater (e.g. concentrated lye and acids, medical mud baths, drugs/medications, highly foaming water additives, silicones, resins, solvents, colorants, flocculants)
- Do not fill any inflammable fluids into the fluid ports of the system
- Do not subject housings and tanks to mechanical loads (e.g. by placing objects on them or using them as a step)
- Do not make external modifications to the housings and tanks. Never paint or varnish housing parts and screws or bolts!
- Do not disassemble the *GWR* greywater treatment plant more than is necessary for installation and maintenance.

- All GWR units must be installed in a dry, frost-free and ventilated technical room.
- The maintenance requirements according to DIN EN 16941-2 must be observed.
- The Country-specific regulations, standards and laws must be observed as a matter of priority!

4. Technical data

4.1. Dimensions, weights and volumes

Greywater recycling plant type	DEHOUST GWR 300
Article No.	**813221**
Treatment capacity Liter/day	300
Number of persons	4
Effective volume of service water tank (Liter)	500
Effective volume of greywater tank (Liter)	280
Dimensions in mm (W/H/D)	1.430 x 1.430 x 720
Required clearance above tank (mm)	Min 500
Noise level (dB)	Max 48 dB (A)
Total weight (kg)	75
Hyperlink to plant configuration:	
Greywater tank prefilter (mm)	Hairnet 3 mm

4.2. Technology

Greywater recycling plant type	DEHOUST GWR 300
Filter material	BioMembrane Technologie (BMT)
Membrane filter pore size (nm)	38
Filtration stage	Ultrafiltration
Free outlet	n/a
Drinking water make-up	optional
Drinking water make-up category	n/a
Rainwater make-up	no
Plant controller	timer

4.3. Electrical Data

Greywater recycling plant type	DEHOUST GWR 300
Voltage supply (fusing)	230 V / 50 Hz / 16 A
Power input (W)	80
Current input (A)	0,39
Energy use/consumption (kWh/m³)	1,1
Floating output	no
Pressure booster	optional (Aspri 15-4)
Pressure booster power input (W)	800
Pressure booster voltage supply (fusing)	230 V / 50 Hz / 16 A
Class of protection:	IP54
Insulation class	n/a

4.4. Connections according to DIN ISO 228-1

Greywater recycling plant type	DEHOUST GWR 300
Connection cable (m)	1.5 with protective contact
Rainwater make-up connection	n/a
Drinking water make-up connection	½ " IG
Inlet/overflow connections	DN 100
Tank drainage connection	1 ½" IG

4.5. Service water quality of the DEHOUST GWR 300 grey water recycling system

Examples of guideline values for bacteriological monitoring acc. to EN 16941-2

Parameters CFU/100 ml	Application by spraying	Application w/o spraying			Test method		System type
	Jetting, garden sprinkler, car wash	Toilet flush	Garden irrigation	Cleaning, i.e. washing machine	Application by spraying	Application w/o spraying	
Escherichia coli	Not detectable	250	250	Not detectable	EN ISO 9308-1	EN ISO 9308-3	Individual sites and residential communities
Intestinal enterococci	Not detectable	100	100	Not detectable	EN ISO 7899-2, or EN ISO 7899-1	EN ISO 7899-1	Individual sites and residential communities
Legionella pneumophila	10	N/A [2]	N/A	N/A	EN ISO 11731	N/A	If analysis required for risk assessment
Total coliforms[3]	10	1000	1000	10	EN ISO 9308-1	EN ISO 9308-3	Individual sites and residential communities

Example values for general system check under EN 16941-2

Parameters [4]	Application by spraying	Application w/o spraying			Test method	System type
	Jetting, garden sprinkler, car wash	Toilet flush	Garden irrigation	Cleaning, i.e. washing machine		
Turbidity (NTU)	< 10.0	< 10.0	N/A	< 10	EN ISO 7027-1	all systems
pH	5 to 9.5	5 to 9.5	5 to 9.5	5 to 9.5	EN ISO 10523	all systems
Residual Chlorine (mg/L)	< 2.0	< 2.0	< 5.0	< 2.0	EN ISO 7393-2	all systems if used
Residual Bromine (mg/L)	0.0	< 5.0	0.0	< 5.0	EN ISO 10304-1	all systems if used

[2] N/A = not applicable

[3] „Total coliforms" is an indicative parameter showing that the plant is ready for operation. The above bacteriological guideline values for the treated greywater indicate the need to test the treated water quality for supply and use.

[4] In addition to the above parameters, all systems should be checked for suspended solids and color. The treated greywater should be visually clear, free of floating residues and basically uncolored for all applications. Color is particularly relevant for reuse in washing machines.

The service water is not of drinking water quality, but it falls well below the hygienic and microbiological requirements of British Standard 8525-1 for grey water use, the EU Bathing Water Directive 2006/7/EC (2006), the requirements of irrigation class 2 (public parks, school sports fields) according to DIN 19650 (1999), and DWA Merkblatt M277. This high-quality service water is absolutely safe to use for all purposes in the area of service water utilization.

5. Handling and storage / installation

The product is delivered on several pallets. Please take care during handling to ensure the components are not bumped or knocked over. Keep all pallets or components in a dry and cool place that is protected from sun and frost.

Inspect every pack for damage upon delivery! Identify, record and report immediately any transport damage in detail in writing to the contract dealer or DEHOUST.

5.1. Requirements for the place of installation

The GWR greywater treatment plant requires a properly ventilated place, frost-free and dry on a level horizontal floor

The load-carrying capacity of the floor must match the total weight of the GWR system in a filled operational condition (750 kg/m²).

The room needs sufficient doorway clearance.

The room must have sufficient ceiling height of at least 500 mm (plant heights see Chapter 4.1/5.2)

For maintenance and repair purposes, sufficient space of at least 1m must be provided in front of all components.

The installation room must be equipped with an appropriate floor drain / pump sump for the safe discharge of backflows through the emergency overflow slot of the service water tank in a backflow situation.

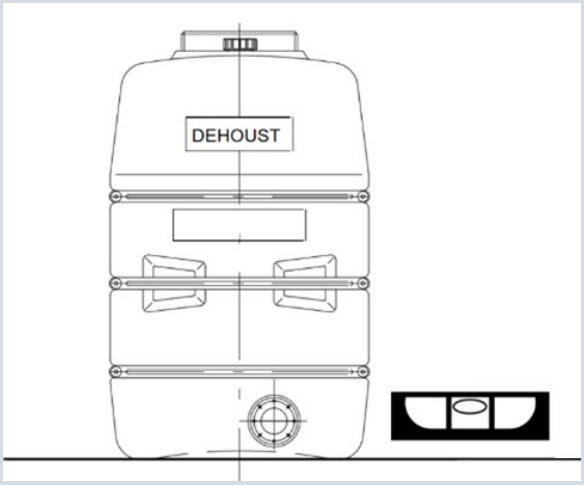
The room temperature must not exceed the maximum permissible temperature in order to minimize hygienic risks in the service water tank (ref. chapter 4)

Do not operate the GWR 300 grey water recycling system near living rooms or bedrooms due to noise from air compressors, pumps and other sources.

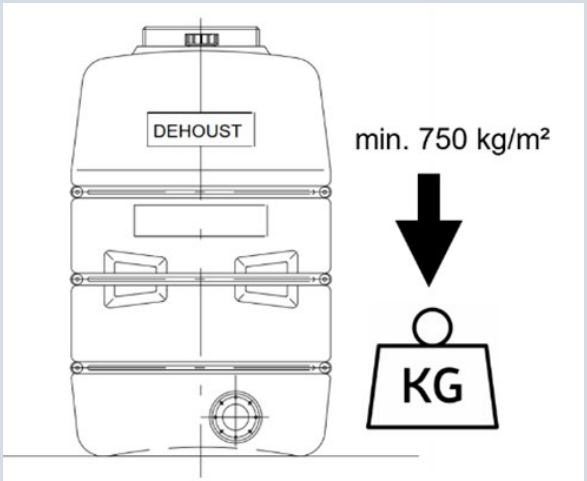
Consider space requirements for operation and maintenance.

5.2. Installation of the tanks

- The installation of the tanks shall be in accordance with the separate installation drawing. Each individual tank is appropriately labelled and marked.
- Ensure that the surface is clean when setting up. Remove any dirt, debris, etc.!
- Do not move the containers on the floor to avoid damaging the surface!



Install horizontally



Observe the floor load capacity

Make sure the tanks are all installed horizontally on the same level to avoid malfunctions during operation.

6. Assembly

6.1. Greywater inlet

The greywater supply pipe is connected to the greywater inlet of the greywater tank using a DN 100 pipe. To do this, insert the DN 100 pipe into one of the two lip seals of the greywater tank.

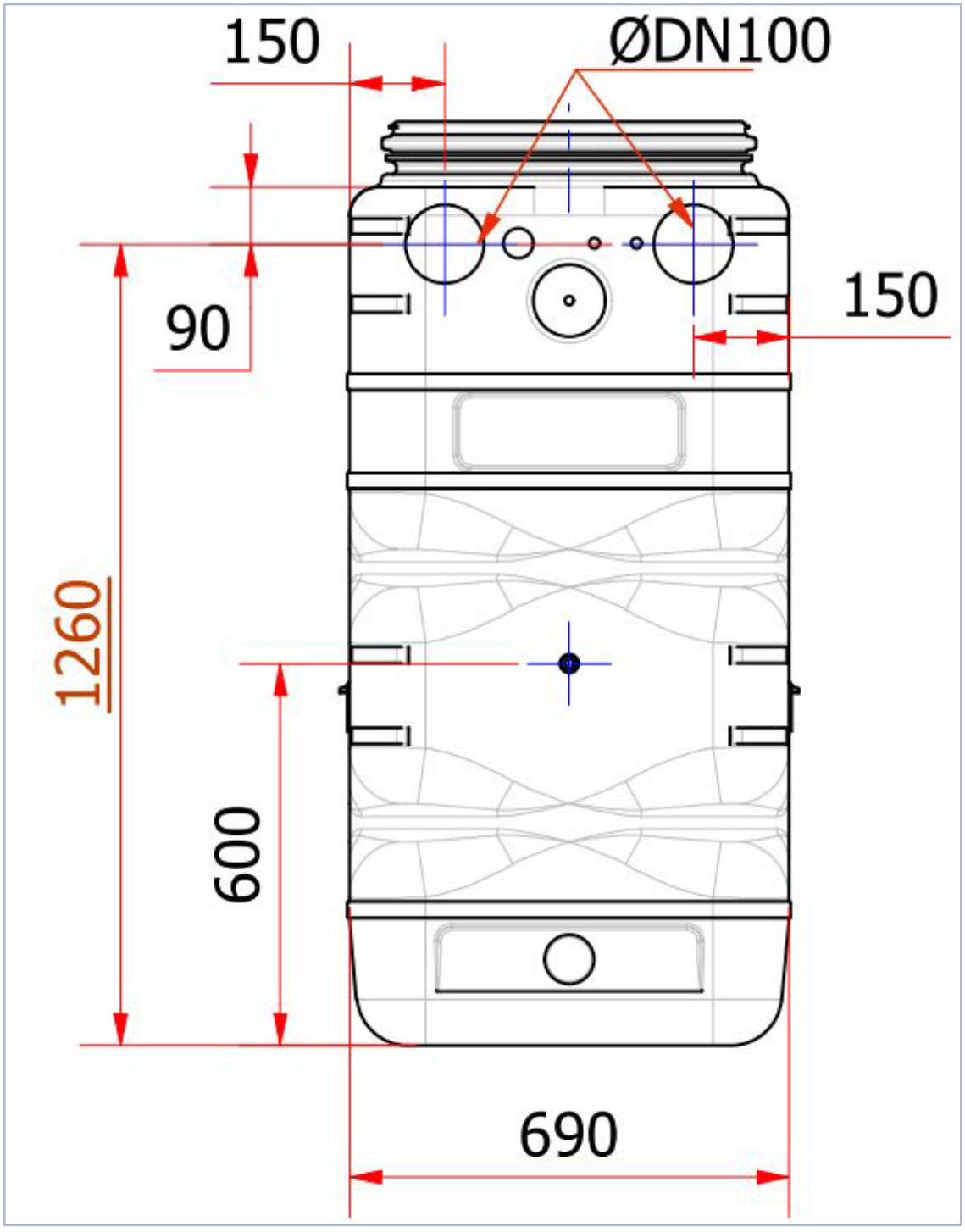


Figure 2: Dimensions of the Greywater Tank

6.2. Emergency overflow of the tanks

The overflow connections of the grey water and service water tanks are designed as lip seals for a DN 100 pipe to be connected to the sewer.

When connecting the overflow connections of the grey water and service water tanks to the sewer, ensure that no grey water can flow into the service water tank.

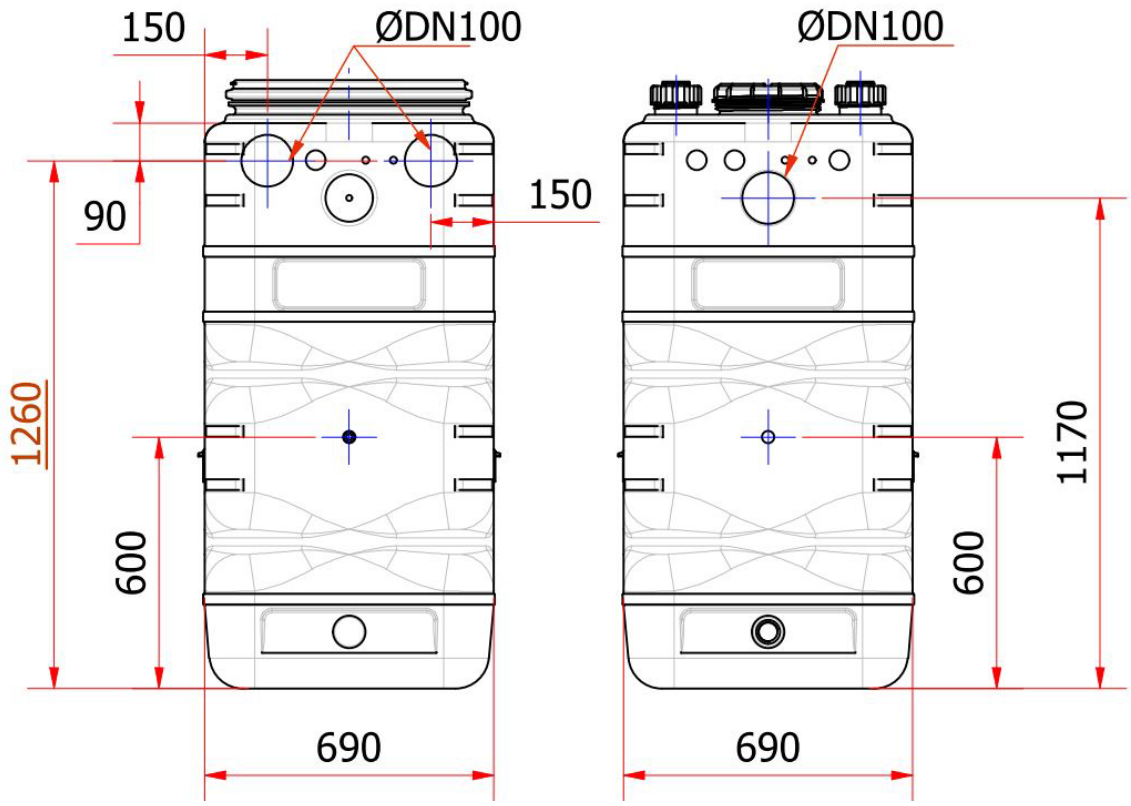


Figure 3: Dimensions Connections Overflow

The sewer connection or lifting system must be capable of safely discharging the maximum drinking water make-up volume (see chapter 4), provided that optional drinking water make-up is available.

Route the overflow pipe to the sewer/lifting system with the same nominal width as the overflow connection (no cross-sectional narrowing!).

Failure to connect the overflow connection to the sewer connection may result in flooding of the installation room.

- We recommend venting the grey water tank via the pipe vent above the roof.
- To prevent unpleasant odors, it is useful to install a siphon in the sewer overflow.

6.3. Air compressor

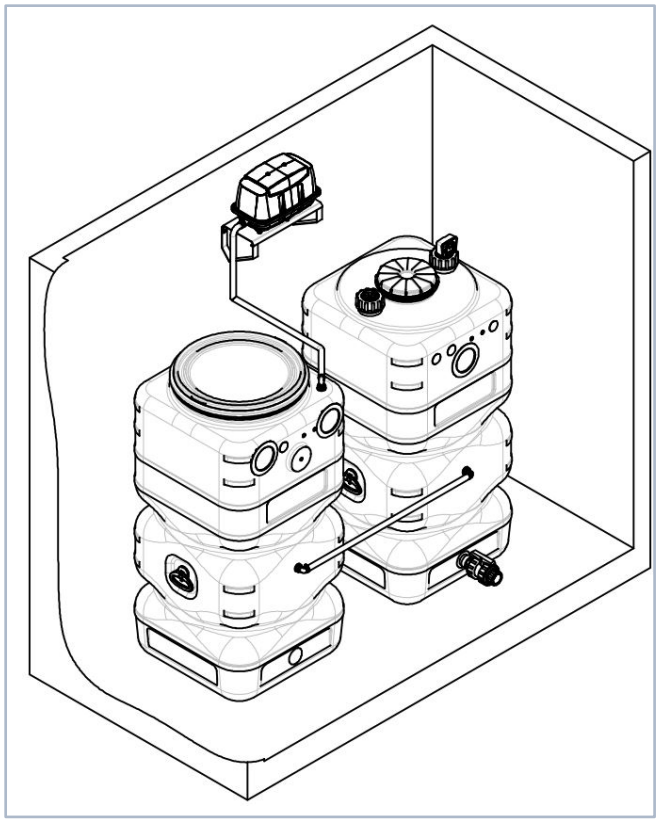


Figure 4: Installation recommendation for the air compressor

Place the air compressor directly on the lid of the grey water tank, or mount it on a load-bearing wall above the tank using suitable mounting accessories.

Figure 5: Connection of hose lines for ventilation

Then connect the air compressor and tank (tank connection is marked) tightly and securely, without tension, using the red PVC hose supplied (PP hose nozzle is pre-assembled).

When laying the PVC hoses, ensure that there are no constrictions/kinks that could prevent the free flow of water and air.

The air compressor must be installed above the BMT unit's maximum water level. Ensure that all four feet of the air compressor are securely positioned on the base.

6.4. Timer

The timer is used to operate the LA 80 aerator pump. It has twenty on/off switching programs and also allows for very short switching periods of up to one minute.

The following time settings are recommended for the aerator pump:

- 10 minutes ON
- 50 minutes OFF.

To operate and program the timer, use the included instructions.

6.5. Filtrate line connection

Connect the filtrate pipe from the gray water tank to the service water tank at the appropriately marked tank connections using the blue PVC hose supplied and the pre-mounted PP hose nozzles, ensuring that the connection is tight, secure, and free of tension.

6.6. Electrical connections

- All electrical components of the GWR 300 grey water recycling system are pre-assembled at the factory and ready to plug in.
- Check the voltage information given on the type-label meets the actual local supply voltage.
- Only connect the timer to the power supply when the system is to be put into operation (see Chapter 7).

The electrical system must comply with the general installation regulations IEC 364 / VDE 0100, i.e., sockets must have grounding terminals. The electrical network to which the device is connected must have a residual current device (RCD) in accordance with DIN EN 60335-2-41 / VDE 0700.

Always connect external electrical loads (for example, a pressure booster system) to a separate power source.

Specific national standards and laws have priority.

7. Commissioning

Only qualified personnel should carry out commissioning (see 1.5).

A powerful bacterial culture develops in the GWR 300 Greywater Recycling System through the addition of the supplied liquid and dry bacteria (see sections 3.3 and 7.2) and a sufficient daily supply of greywater.

The system is only ready for operation once effective biological treatment of the grey water has been established.

7.1. System status until commissioning

It is recommended not to permanently connect the grey water inlet to the system while construction work is still being carried out in the building. During this period, it is better to install a bypass for the grey water pipe directly into the sewer. The greywater supply line should only be permanently connected to the system when it is finally put into operation.

Before commissioning the GWR 300 gray water recycling system, the following points must be ensured:

- The GWR 300 grey water recycling system is connected to the power supply in accordance with regulations and with all protective devices.
- The relevant VDE and country-specific regulations are observed and complied with.
- The emergency overflow of the tanks is connected.
- The drinking water supply is connected to the drinking water network, if optional accessories are available for this purpose.
- The service water connection is connected to the service water pipe.
- Hoses for ventilation and filtration are connected.
- Drain taps on tanks are closed.
- The system is connected to the power supply in accordance with regulations.

Operating the ventilation system without water in the gray water tank with the BMT unit will cause irreparable damage to the air compressor(s).

Once the BMT membrane filter is wetted with water for the first time, it must remain permanently and completely submerged in water. Contact with air will cause the membrane plates to dry out and become irreparably damaged.

7.2. Building up biological cleaning

The required biological cleaning for greywater treatment is done by microorganisms designed to break down contaminants. The necessary individual components for the various tank sizes as well as a dosing schedule for your plant will be obtained from DEHOUST. It is important to observe the correct dosage, mixture and temperature and to give the microorganisms enough time for development. At the same time, special care is required when handling living organisms.

The following passages provide you with guidance on how to properly handle these microorganisms, which are delivered in the form of dry bacteria, considering all relevant occupational health and safety precautions, and how to prepare them for subsequent filling in the greywater collection and filtration tanks.

7.2.1. Personal protective measures

Handling contaminant-adapted microorganisms requires personal protective equipment and afterwards appropriate disinfection with a commercially available skin-friendly disinfectant.

Take care to always wear a dust mask (P1), a pair of safety goggles, and disposable gloves when filling in the microorganism preparations (in their dry form, e.g. when mixing them into the buffer solution). These precautions serve to prevent the intake of bacterial dusts or microorganism aerosols in the upper airways, avoid skin contact and prevent the spreading of germs.

7.2.2. Preparing the bacteria culture

To activate the contaminant-adapted microorganisms, proceed as follows:

- Observe the dosing schedule closely.
- Place ready the required number of microorganisms / the mixing ratio with water is 1:10.
- Fill ten times more hand-warm water (max. 30° C) in a container of suitable size,
  e.g. 30 L of water for 3 kg of microorganisms
- Per Liter of water, add to the container and dissolve 2.8 g of the buffer salt included in the package,
  e.g. 30 L of water x 2.8 g of buffer salt = 84 g of buffer salt
- Stir in the appropriate calculated and prepared number of microorganisms.
- Allow the mixture to rest for about one hour up to a maximum of two hours while stirring occasionally.
- After said rest period, fill the then activated (rehydrated) microorganisms directly into the greywater tank and filtration tank according to the instructions.

Wear a P1 dust mask to prevent the intake of bacterial dust or microorganism aerosols in the upper airways during mixing.

Wear safety goggles when filling in the dry material and when removing the bacteria suspension.

Wear disposable gloves to prevent spreading germs.

After handling microorganisms, wash and disinfect your hands, e.g. with a commercially available skin-friendly disinfectant.

7.3. Extended rest periods

A regular inflow of fresh greywater keeps up the continuous biological greywater treatment by microorganisms that are typical for wastewater. If no grey water is supplied for a longer period of time (e.g., vacation, seasonal operation), the number of microorganisms will decrease. After grey water is supplied again, the microorganisms need some time to achieve maximum biological performance. During this period, the biological cleaning effectiveness of the treatment process may be reduced. Slight residual odors from shampoo, soap, etc. may be subjectively perceived in the treated greywater (service water).

If the rest period of the plant exceeds 4 weeks, it is recommended to support the biological cleaning process with dry bacteria when treatment operations are resumed. (See section 7.2).

To maintain the microorganisms in the grey water tank with the BMT unit, the control system must not be disconnected from the power supply during extended rest periods! Please contact your contractual partner or DEHOUST before any longer periods of inactivity.

8. Trouble shooting / alarms

8.1. Malfunctions

Fault description	Possible causes (▸) measures (▸)	Responsibility
Strong **odor** emission in the installation room / at the taps	▸ The oxygen supply from the air compressor for biological treatment is too low or may be interrupted ▸ Check the function of the air compressor ▸ Check the ventilation hose connections for leaks or kinks. ▸ Check the operating parameters for the air compressor and filtration and adjust/increase them if necessary. ▸ Check the bubble pattern in the BMT unit(s). If the bubble pattern is too poor, the membrane aeration pipes must be replaced.	Operator /Service
Aeration pump runs permanently	▸ Check the timer setting (→section 6.4)	Operator /Service

8.2. Pressure surges in drinking water line (optional)

The solenoid valve of the drinking water make-up opens gently through a servo-controlled membrane. This normally prevents pressure surges in the drinking water line. Pressure surges (water hammer) occur when there are pressure differences greater than 2 bar between the static pressure and the flow pressure.

If the building owner installs a shut-off valve in the drinking water line upstream of the drinking water make-up connection, the flow can be restricted so far as to ensure that there is no pressure surge when the solenoid valve opens. The disadvantage of this method is a reduced make-up flow.

Check whether the flow rate of the pressure booster system is sufficient for normal service water consumption. The liquid level in the service water storage tank should not be allowed to fall below a level triggering the dry-run protection mode of the pressure booster system. If the pressure booster system changes over to the dry-run protection mode, it is necessary to restrict the flow rate also at the discharge end.

8.3. Presence of odors in the installation room

The regular oxygen inflow from the aeration unit for the biological cleaning stage is too low or might even be interrupted. Please check hose connections and operating parameters of the aeration unit and adjust/increase the flow rate where necessary.

- A slight smell of greywater cannot always be fully avoided in the installation room or in the treated water. This is not considered an odor nuisance of the product.
- We recommend installing a separate (rooftop) vent line for the greywater collection tank and the greywater filtration tank.

9. Inspection / Servicing

The **DEHOUST**GWR system includes components that require inspection and servicing.

- Inspections should be carried out by the operator of the plant.
- Servicing and repairs shall be performed by qualified personnel only (see 1.8).

If faults/defects are found during an inspection of the DEHOUST *GWR* plant, please contact your contract dealer or DEHOUST.

Always avoid direct skin and eye contact with greywater and residues (wear rubber gloves) during work.

For the sake of the operator, observe the specified inspection and servicing intervals and the described working steps.

9.1. Hose and water connections

3M

Check all hose connections (greywater batch pump, aeration unit, filtrate outlet, backwash line), drinking water and service water connections for damage, leaks and porous or worn sections. Replace hoses/pipes as required and reseal the connections.

9.2. Check and replace the air filter of the air compressor

3M

Check and, if necessary, replace the air filter of the air compressor according to the following instructions

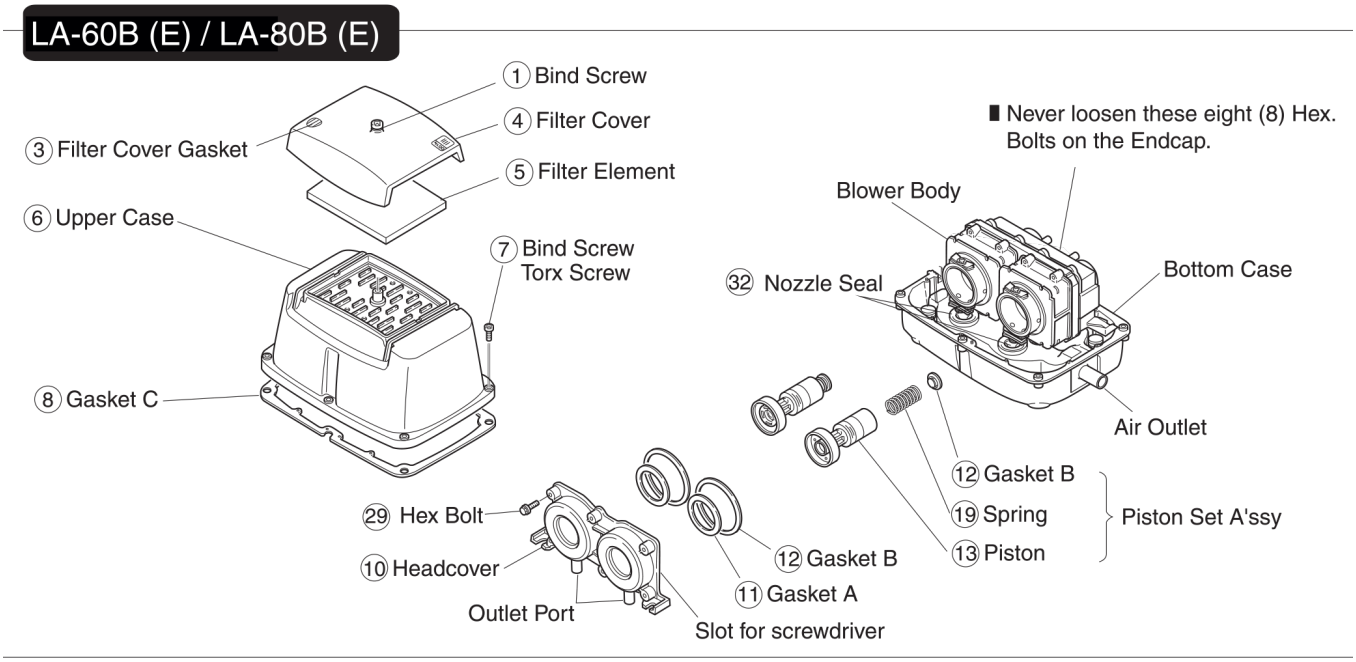


Figure 6: Exploded view of air compressor

- Ensure that the air compressor is switched off and disconnected from the power supply before starting the replacement work.
- Unscrew the filter cover screw(s) (1) and remove the housing cover (4)
- Remove filter insert (5) from housing (6), then insert a new filter
- At the same time, clean the air inlet on housing cover (4) and the upper part of housing (6)
- Assemble the housing cover (4) with the filter cover gasket (3) so that it fits precisely
- Mount the housing cover (4) with the upper part of the housing 6 and tighten the filter cover screw(s) (1)

9.3. Replacing the aerator pump

24M

Replace the entire aerator pump according to the following instructions.

1. 1. Unplug the aerator pump from the power outlet.

Before proceeding, make sure that the aerator pump is disconnected from the power supply!

2. Disconnect the PP hose nozzle from the aerator pump connector and remove the red PVC aerator hose.
3. Replace the aerator pump and screw the aerator hose onto the new aerator pump. Make sure that the rubber seal is correctly positioned in the PP hose nozzle.
4. Insert the plug of the new aerator pump into the timer.

Ensure that the seal is correctly installed in the PP hose nozzle.

9.3. Pressure booster system

Follow the detailed inspection recommendations in the operation manual of the pressure booster system.

9.4. Drinking water make-up function

Follow the detailed inspection recommendations in the operation manual of the Drinking water make-up system.

10. Maintenance / Repairs

Maintenance and repairs may only be carried out by qualified personnel (see 1.8).

10.1. Air compressor

The operating hours of the air compressor determine the maintenance interval. Maintenance must be carried out after 16,000 operating hours (~20 months of recycling operation).

Maintenance is carried out in accordance with the separately supplied instructions for the air compressor (operating instructions LA 80A, Chapter 5).

10.2. BMT-Membrane filter

The filtration capacity of the BMT membrane filter is highly dependent on the composition of the greywater, the amount of greywater to be treated, and real-time water consumption.

Depending on operating conditions, the filtration capacity of the BMT membrane filter may no longer be sufficient, even if the maintenance interval of the air compressor has not yet been reached.

In this case, replacement of the BMT membrane filter is unavoidable. This may only be carried out by qualified personnel (see 1.8).

Disconnect the *GWR 300* grey water recycling system from the electrical network during maintenance and repair work!

11. Disposal considerations

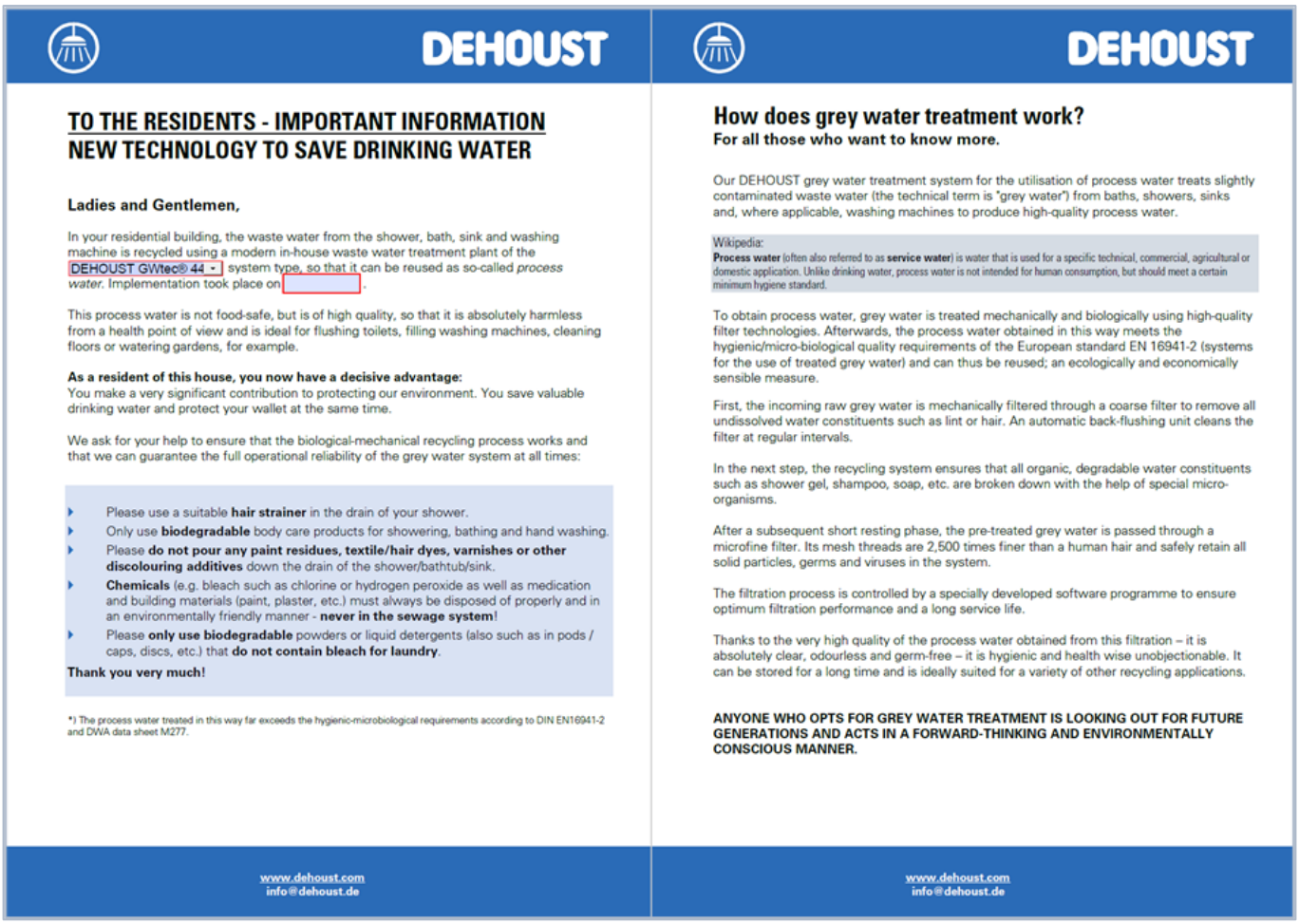
The operator of the system must recycle the packaging material in accordance with the local waste management regulations.

At the end-of-life cycle, the equipment shall be shipped, free of freight charge for the manufacturer, to DEHOUST GmbH for disposal. All further dismantling/recycling actions will be taken by the manufacturer.

12. Customer service

12.1. Notice for the residents of a building with a greywater reuse system (fill-in form)

DEHOUST is happy to provide a pre-formulated letter to inform the residents of a building with a greywater reuse system. The form as a PDF can be filled out on a PC.



DEHOUST

TO THE RESIDENTS - IMPORTANT INFORMATION
NEW TECHNOLOGY TO SAVE DRINKING WATER

Ladies and Gentlemen,

In your residential building, the waste water from the shower, bath, sink and washing machine is recycled using a modern in-house waste water treatment plant of the DEHOUST GWtec® 44 system type, so that it can be reused as so-called *process water*. Implementation took place on .

This process water is not food-safe, but is of high quality, so that it is absolutely harmless from a health point of view and is ideal for flushing toilets, filling washing machines, cleaning floors or watering gardens, for example.

As a resident of this house, you now have a decisive advantage:
You make a very significant contribution to protecting our environment. You save valuable drinking water and protect your wallet at the same time.

We ask for your help to ensure that the biological-mechanical recycling process works and that we can guarantee the full operational reliability of the grey water system at all times:

- Please use a suitable **hair strainer** in the drain of your shower.
- Only use **biodegradable** body care products for showering, bathing and hand washing.
- Please **do not pour any paint residues, textile/hair dyes, varnishes or other discolouring additives** down the drain of the shower/bathtub/sink.
- **Chemicals** (e.g. bleach such as chlorine or hydrogen peroxide as well as medication and building materials (paint, plaster, etc.) must always be disposed of properly and in an environmentally friendly manner - **never in the sewage system**!
- Please **only use biodegradable** powders or liquid detergents (also such as in pods / caps, discs, etc.) that **do not contain bleach for laundry**.

Thank you very much!

*) The process water treated in this way far exceeds the hygienic-microbiological requirements according to DIN EN16941-2 and DWA data sheet M277.

www.dehoust.com
info@dehoust.de

DEHOUST

How does grey water treatment work?
For all those who want to know more.

Our DEHOUST grey water treatment system for the utilisation of process water treats slightly contaminated waste water (the technical term is "grey water") from baths, showers, sinks and, where applicable, washing machines to produce high-quality process water.

Wikipedia:
Process water (often also referred to as **service water**) is water that is used for a specific technical, commercial, agricultural or domestic application. Unlike drinking water, process water is not intended for human consumption, but should meet a certain minimum hygiene standard.

To obtain process water, grey water is treated mechanically and biologically using high-quality filter technologies. Afterwards, the process water obtained in this way meets the hygienic/micro-biological quality requirements of the European standard EN 16941-2 (systems for the use of treated grey water) and can thus be reused; an ecologically and economically sensible measure.

First, the incoming raw grey water is mechanically filtered through a coarse filter to remove all undissolved water constituents such as lint or hair. An automatic back-flushing unit cleans the filter at regular intervals.

In the next step, the recycling system ensures that all organic, degradable water constituents such as shower gel, shampoo, soap, etc. are broken down with the help of special micro-organisms.

After a subsequent short resting phase, the pre-treated grey water is passed through a microfine filter. Its mesh threads are 2,500 times finer than a human hair and safely retain all solid particles, germs and viruses in the system.

The filtration process is controlled by a specially developed software programme to ensure optimum filtration performance and a long service life.

Thanks to the very high quality of the process water obtained from this filtration – it is absolutely clear, odourless and germ-free – it is hygienic and health wise unobjectionable. It can be stored for a long time and is ideally suited for a variety of other recycling applications.

ANYONE WHO OPTS FOR GREY WATER TREATMENT IS LOOKING OUT FOR FUTURE GENERATIONS AND ACTS IN A FORWARD-THINKING AND ENVIRONMENTALLY CONSCIOUS MANNER.

www.dehoust.com
info@dehoust.de

13. Declaration of Conformity

DEHOUST CE

EU declaration of conformity
No. 2026-02

We confirm the conformity to the essential requirements of the European directive(s):

- 2006/42/EG Machine Directive
- 2011/65/EU RoHS Directive
- 2014/30/EU Directive Electromagnetic Compatibility

The EU declaration of conformity applies to the following units and products designations:

Product group	Greywater recycling system DEHOUST GWR
Model numbers, article numbers	DEHOUST GWR 300, 813221
Manufacturer	Dehoust GmbH Gutenbergstr. 5-7 69181 Leimen, Germany

The following standards were mainly applied:

- EN ISO 12100:2010 Safety of machinery – General principles for design – Risk assessment and risk reduction
- EN 60204-1:2018, ISO IEC 60204-1:2016 Safety of machinery – Electrical equipment of machines – Part 1: General requirements
- DIN EN 1717:2023 Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow
- DIN EN 16941-1:2022 Rainwater harvesting systems for non-potable uses – Part 1: Design, performance and testing

Leimen, 19th of January 2026
Place and date of issue

Andreas Bichler
CEO

Signed on Behalf of: **DEHOUST GmbH**

DEHOUST

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