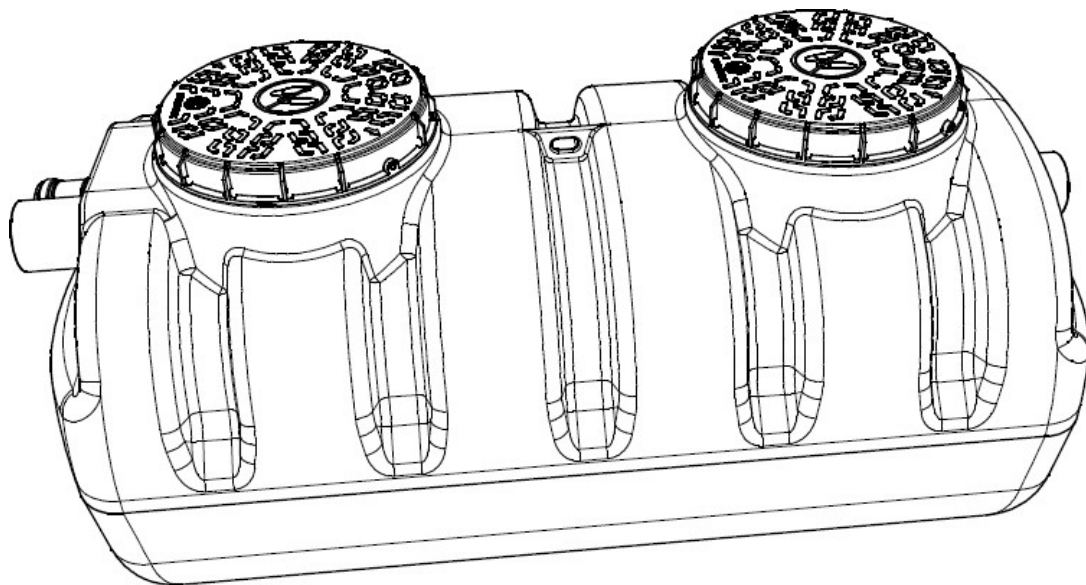


# USER'S MANUAL



## GREASE SEPARATORS

# SL-SG



for domestic

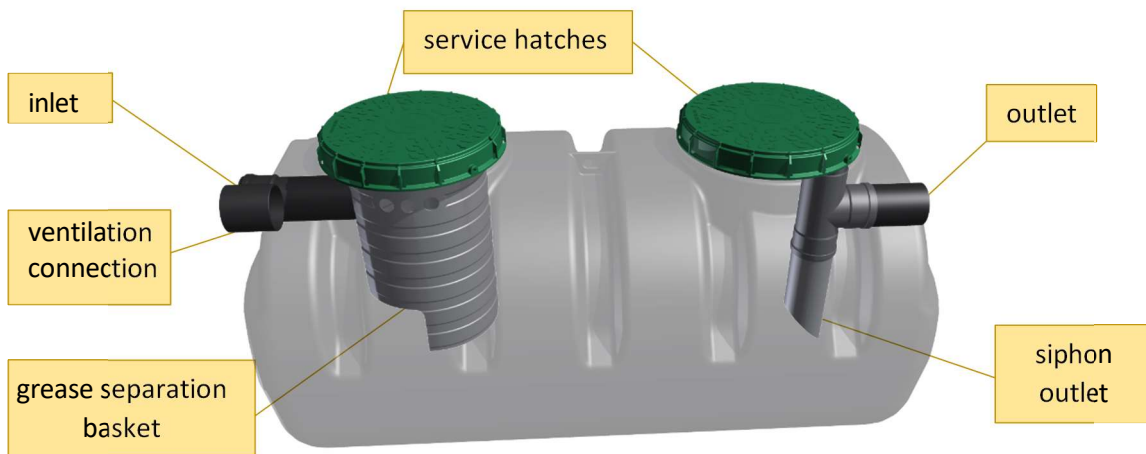
# SEWAGE TREATMENT PLANTS

## **O** Description and design of the device

A grease separator is a device that has to be installed between the kitchen waste water outlet and the domestic sewage treatment plant. The purpose of the grease separator is to separate the grease present in the waste water. The separated grease is retained and stored in the separator basket.

The grease separators are based on monolithic tanks with capacities of 200, 500 and 1,000 litres. The tanks were made using extrusion blow moulding technology with high-density polyethylene.

The tanks have an inlet, outlet and high-level ventilation connection with diameters of  $\varnothing 110$  mm. A basket has been installed on the separator inlet and a special siphon on the outlet. Each separator has inspection service hatches with a diameter of  $\varnothing 400$  mm (a 200-litre tank has one service hatch). Inspection hatches located on the separator provide excellent access to the inside of the separator for servicing or pumping out heavy sludge, as well as removing grease.



**Figure 1:** SL-SG 500 separator - cross-section



**Figure 2:** SL-SG separator types: from left: SL-SG 200, SL-SG 500, SL-SG 1000.

**Table 1: Technical data for SL-SG grease separators**

| Tank type   | Flow rate [l/sec] | Inlet diameter / outlet [mm]. | Length [mm] | Width [mm] | Height [mm] | Height to inlet [mm] | Height to outlet [mm] | Service hatch covers [mm] |
|-------------|-------------------|-------------------------------|-------------|------------|-------------|----------------------|-----------------------|---------------------------|
| <b>200</b>  | <b>1.0</b>        | 110                           | 1,200       | 600        | 650         | 390                  | 320                   | 1x400                     |
| <b>500</b>  | <b>1.5</b>        | 110                           | 1,700       | 770        | 730         | 490                  | 420                   | 2x400                     |
| <b>1000</b> | <b>3.0</b>        | 110                           | 1,700       | 770        | 1,230       | 1,000                | 930                   | 2x400                     |

### **O Operating principle**

Wastewater containing grease discharged directly into the sewer system causes clogging of pipes, as well as an increase in the formation of unpleasant odours. This has a significant impact on the operation of the domestic sewage treatment plant through increased oxygen consumption.

Grease can also settle and lodge in the infiltration plot or bed of biological treatment plants. They have a measurable effect on reducing the service life of the domestic sewage treatment plant system. A grease trap (separator) should be an indispensable accessory for the sewerage system wherever water containing oils and light fats needs to be treated.

Grease separators are built to separate fats lighter than water by gravity. They are flow tanks in which light fats are retained and collected by means of a special design. It is important to remember to completely remove the contents of the separator (grease, sewage, sediment) at regular intervals to ensure proper operation.

### **O Installation conditions**

When selecting a site for the separator, it is important to ensure that none of the pollutants will enter the groundwater or other objects located in its vicinity (for example, wells, rivers, ponds). The location of the separator is determined primarily by its ability to maintain adequate distances from other objects that may be affected. In order to correctly locate the separator, it is necessary to follow the rules of correct installation outlined below.

Location:

- Distance from buildings - minimum 5 metres, maximum 10 metres,
- Distance from plot boundaries - minimum 2 metres,
- Distance from trees and shrubs - minimum 3 metres,
- Distance from water intakes - minimum 30 metres,

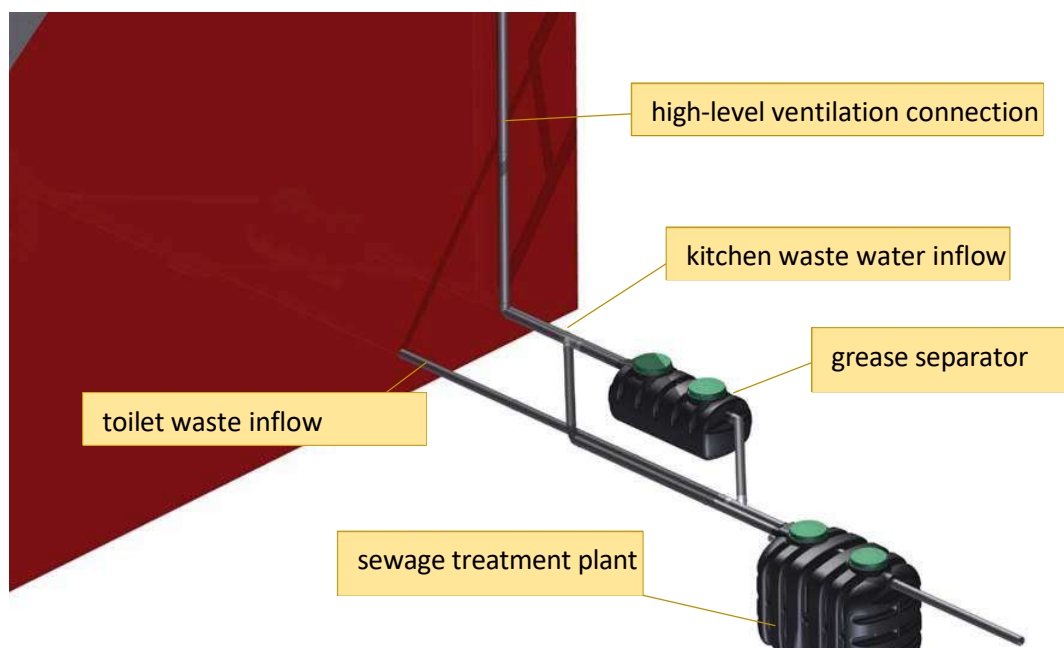
The grease separator should not be founded too deeply. The optimum depth is considered to be around 20-60 cm below ground.

The maximum foundation depth of the separator is approximately 60 cm of the ground. We install the separator using lean concrete (1m<sup>3</sup> sand mixed dry with 200kg of cement). The pipe carrying wastewater from the building to the separator should maintain a 2-3% slope.

#### Separator installation:

- Collect the humus for use on completion of the works,
- Carry out the excavation. The dimensions of the excavation (length, width) should be larger than the dimensions of the tank by approximately 50 cm (25 cm on each side of the tank),
- Spread a minimum 10 cm layer of lean concrete sub-base (1 m<sup>3</sup> sand mixed dry with 200 kg cement) on the bottom of the trench,
- Place the tank on the ballast bed and level it carefully, maintaining the direction of wastewater flow. Around the perimeter of the tank, make an approx. 25 cm thick lean concrete backfill to the level of the upper edge of the service hatches. The backfilling should be compacted by pouring water over it. Perform backfilling of the excavation gradually with simultaneous filling of the tank with water in order to balance the pressure forces. The water level in the tank should be about 10 cm higher than the backfilling level,
- The unit should be installed so that service hatch covers are visible and accessible for servicing. In the case of deeper foundation of the unit, additional superstructures should be used for the tank and service hatch,
- The plant should be connected to a high level ventilation system in order to properly extract the gases from the treatment plant.

**NOTE:** Do not drain the unit in the first month after installation in the ground.



**Figure 3:** SL-SG grease separator installation at a single-family house

**NOTE:** The separator must be equipped with a system for the discharge of gases generated during the digestion of wastewater. The system consists of both high-level ventilation and low-level ventilation.

## **O Operation and maintenance**

The grease separator is an almost maintenance-free appliance. It is important to remove heavy sludge from the tank and grease regularly, at least once a year, and **the manufacturer's recommendation is to adjust the emptying cycle of the separator to suit your needs.**

Malfunctions of the device are indicated by factors such as:

- Grease flow outside the separator,
- Unpleasant odour,
- Tank overfilling.

If any of the above-mentioned factors occur, it is advisable to completely empty the separator, refilling it with clean water.

### **Procedure to be followed in the event of sludge pumping**

The first step is to remove the sewage, i.e. grease and other light substances that form a dross on the sewage. Secondly, heavy sludge at the bottom of the tank must be removed. During the course of the work, the tank should be successively filled with clean water.

It is recommended, for safety reasons, that the slurry tanker be at least 3 metres away from the tank during sludge removal.

### **Pumping out the sludge step by step:**

- Remove the service hatch cover,

**WARNING:** Do it slowly to allow the gases from the fermentation to evacuate slowly; those are a real danger to those carrying out maintenance operations, causing the possibility of poisoning, as well as posing an explosion hazard.

- Feed running water into the separator,
- Insert the end of the suction line into the tank,
- Suck off the film,
- Vacuum off heavy sediment,
- Remove the suction line from the tank,
- Fill the tank with clean water up to the outlet level,

**NOTE:** Leaving the tank empty may cause it to crease.

- Place the covers on the service hatches and secure with screws.

**WARNING:** The grease separator covers must be secured against opening by unauthorised persons, especially children (risk of poisoning or drowning). It is forbidden to stand or walk on the separator lids or to enter the separator.

**NOTE:** If any damage is found, the Manufacturer's Service must be notified immediately (applies to the warranty period).

**NOTE:** The area where the grease separator is located is for pedestrian traffic only.

**Substances which should not be fed into the grease trap:** paints, cat litter, cigarette butts, disinfectants, ashes, condoms, varnishes, medicines, motor oils, pesticides, sanitary pads, upholstery

glue, thinners, cotton buds, nappies, washings from water treatment plants and other substances which affect the correct operation of the sewage treatment plant.

**NOTE:** Each time the grease separator is emptied, it should be documented (e.g.: waste disposal bill).

## **O Accessories**

Grease traps can be retrofitted with optional risers. The risers are used for deeper foundation of the sedimentation tank as well as the infiltration bed. Original AQUABIN accessories are recommended.

### **RISER FOR SL-REHC D400 H200 ONTO THE TANK**

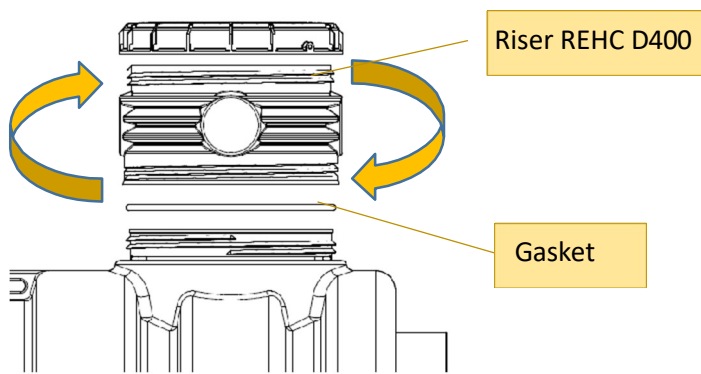
The riser are made of high-density polyethylene. The riser is removable and adapted to the tank service hatch. The riser is fitted with a dedicated gasket. The use of additional risers makes it possible:

- Foundation of the unit deeper in the ground,
- Service access to the unit.



| Name                 | Diameter [mm] | Height [mm] |
|----------------------|---------------|-------------|
| Riser REHC D400 H200 | 400           | 200         |

**Figure 19:** Riser SL-REHC D400 H200 tank with a gasket



**Figure 20:** Installation of Riser REHC D400 H200 on tank

**NOTE:** The use of risers other than the original is tantamount to **voiding the warranty**. The manufacturer recommends a maximum of **two additional risers** per service hatch. The use of more risers and foundation of the tank in the ground deeper than an additional 60 cm will **void the warranty**.

## **O Health and safety rules**

Work associated with the installation of a grease separators is classed as particularly hazardous work due to the risk of accidents. These are mainly activities associated with:

- Work with electrical equipment,
- Work carried out below ground level,

- Contact with hazardous biological agents that may be present in wastewater.

When carrying out this type of work, it is important to bear in mind the safety requirements of yourself and those present during the work. All work, due to its special nature, should be carried out by teams of at least two people. All tools used, as well as construction equipment, should be in good working order and workers should have the necessary qualifications for the work to be carried out.

### **O About the warranty**

The manufacturer provides a **two-year warranty period**, starting from the date of sale, for the device. The **ten-year warranty period is granted by the** manufacturer, exclusively for the tank. If a manufacturing defect is detected in the device, which has been confirmed by the AQUABIN Claims Department, we will repair the device free of charge or the defective components will be replaced with new ones. Repair of the device or replacement of the defective components will be carried out in the shortest possible time - no longer than 20 working days. All notifications to the manufacturer under the Guarantee should be made by letter or e-mail.

#### **The warranty does not cover:**

- Failure by the contractor to observe the rules for the correct installation of the appliance as described in this User's Manual,
- Failure by the user to observe the rules for the correct operation and handling of the device as described in this User's Manual,
- Interference with the design of the device by making arbitrary modifications,
- Mechanical damage resulting from incorrect assembly and transport of the unit,
- Failure to comply with the conditions for selecting the type and size of grease separator for the number of users and the local soil and water conditions,
- Misuse of the device,
- Higher forces, i.e. the triggering of extraordinary phenomena independent of human will (atmospheric, geological).

**We recommend the purchase  
of other **AQUABIN** products**

---



[www.aquabin.pl](http://www.aquabin.pl)