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# GREASE SEPARATOR

## ECODEPUR® GORTECH® SELF CLEAN

## ECODEPUR® GORTECH® SELFCLEAN GREASE SEPARATORS

The **ECODEPUR® GORTECH® SELFCLEAN GS 1850-AST** Grease Separator goal is the reception and treatment of fat wastewaters from the handling of food products in a domestic or industrial environment.

The equipment is built from stainless steel, which translates to high mechanical resistance and ease of cleaning, making it suitable for locations that aim to control critical points under the implementation of HACCP (Hazard Analysis Critical Control Point).

The GORTECH SELFCLEAN GS 1850-AST model features innovative technology for automatic cleaning and automatic removal of food waste (solids and fats), representing the Best Available Technique (BAT) for the treatment of greasy wastewater.

The **ECODEPUR® GORTECH® SELFCLEAN GS 1850-AST** Grease Separators have CE marking, in accordance with the legal obligations that stems from the entry into force of the UE Regulation N. ° 305/2011 about Construction Products, fulfilling all the requisites of the European Standard EN 1825- 1.

### ADVANTAGES

- CE Marketing according to the EN1825-1;
- Removal of emulsified animal fat;
- Removal of immiscible liquids - vegetable oils;
- Reduction of operating costs, since the pumping of fat is not required and the clogging of the sewer network is avoided;
- Automatic self-cleaning cycle;
- Automatic removal of solids and grease;
- Easy daily maintenance;
- Significant reduction in BOD5, COD and TSS;
- Best Available Technology (BAT);
- Low energy consumption.



### APPLICATION

The wastewater produced in food processing is full of oils and fats that interfere with drainage systems and sewage treatment systems.

PLUMBING	BIOLOGICAL TREATMENT	SLUDGE TREATMENT
<ul style="list-style-type: none"> <li>• Total or partial obstruction, due to the gradual accumulation of oils and fats;</li> <li>• Plumbing wear and degradation;</li> <li>• High costs associated with plumbing cleaning;</li> <li>• Unpleasant odours arising from the plumbing system.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase of the organic load;</li> <li>• Reduction of effluent's biodegradability;</li> <li>• Enhancing foaming due to the change of the surface tension of residual water;</li> <li>• Increased energy consumption on the treatment systems due to reduced oxygen transfer coefficient;</li> <li>• One of the causes for failure to comply with discharge parameters.</li> </ul>	<ul style="list-style-type: none"> <li>• Operation problems with sludge treatment due to the presence of oils and fats;</li> <li>• Increased energy consumption;</li> <li>• Difficulty in sending the sludge to a suitable final destination;</li> <li>• It can interfere with the operation conditions of the anaerobic digester, if there's any, by inhibiting the growth of microorganisms necessary for its operation.</li> </ul>



The installation of a grease separator can retain oils and fats, avoiding damage to downstream sanitation systems. Its application is recommended for the following establishments:

- Restaurants;
- Hotels;
- Bars;
- Camping Parks;
- Canteens;
- Schools;
- Residential areas;
- Laundries.

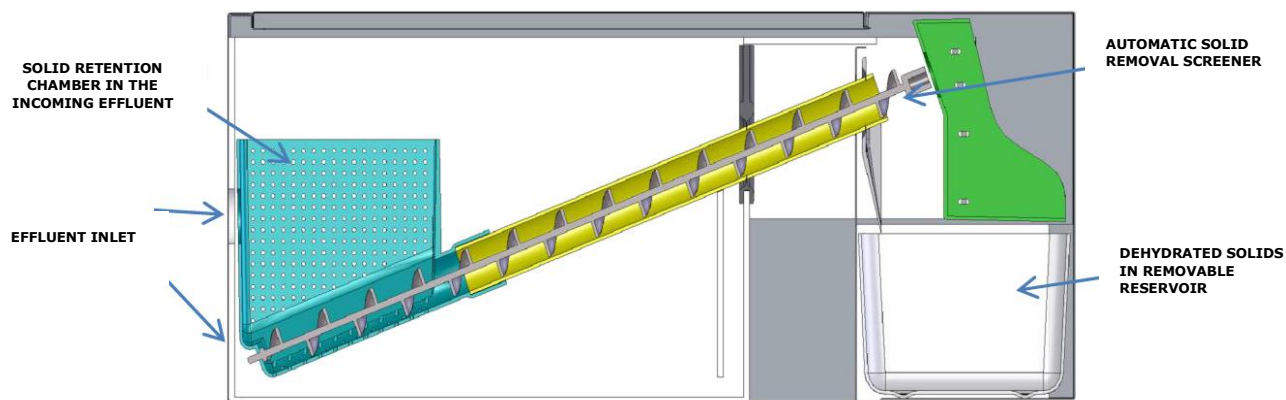
## MAIN CHARACTERISTICS

<b>CONSTRUCTIVE</b>	RESERVOIR MATERIAL	EXTERNAL: Stainless Steel 304; INTERNAL: Polyethylene;
	WEIGHT	EMPTY: 25,6 kg; FULL: 45,5 kg;
<b>TREATMENT</b>	TREATMENT FLOW	MEDIUM: 1,85 l/s; MAXIMUM: 2,29 l/s;
<b>FAT REMOVAL</b>	<ul style="list-style-type: none"> <li>• The equipment allows utilizing the expected temperature of the effluent to trigger the automatic removal of fats liquified (from 07:00 am until 02:30 am standard). The slow rotation of the oleophilic belt causes the fats to adhere to the belt and be extracted by the scraper directly into the fat accumulation reservoir;</li> <li>• Fat Removal Rate: 4 l/h;</li> <li>• Capacity of the Fat Accumulation Reservoir: 6 Liters;</li> </ul>	
<b>SOLID REMOVAL</b>	Solid Accumulation Reservoir Capacity: 7 Liters;	
<b>AUTOMATIC CLEANING</b>	<ul style="list-style-type: none"> <li>• The recirculation of the final effluent allows cleaning cycles to enhance the equipment's efficiency by increasing fat removal effectiveness and eliminates the need for sludge removal and transportation to an appropriate final disposal site by a licensed operator. It also helps mitigate unpleasant odours;</li> <li>• Daily maintenance does not require access to the internal components of the equipment, consisting only of cleaning the grease reservoir and the solid reservoir;</li> </ul>	
<b>GENERAL CHARACTERISTICS</b>	POWER CONSUMPTION: 39,1 watt;	
	PROTECTION: IP56;	
	MOTOR THERMAL PROTECTION;	
	INTERNAL CLEANING CYCLES.	

## OPERATION

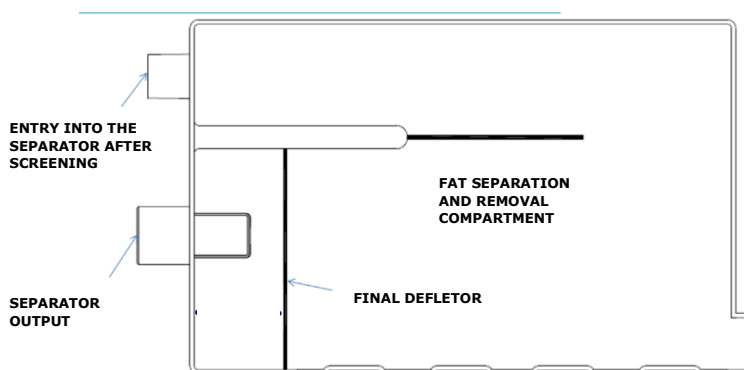
The **ECODEPUR® GORTECH® SEFCLEAN GS 1850-AST** grease separator works to remove and dehydrate the solid organic matter typical of this type of effluent, preventing unpleasant odours.

The effluent enters an inlet chamber where solids are retained until subsequent screening. At this stage, the screened solids are removed through a screener that automatically (standard from 7:00 AM to 2:30 AM) dehydrates and transports the solids to a removable reservoir. This screening occurs at the effluent entrance, before entering the grease separator. This filter has the following characteristics:



**Illustration 1** – Filtration system and automatic solid removal

Typically, the effluent contaminated with fats from kitchens enters the grease separator at a temperature between 40-85°C. The arrangement of deflectors and the reversal of flow direction allow the fats to accumulate at the surface due to differences in gravity, enabling automatic removal by the equipment. The operating direction ensures that the effluent travels a distance equal to twice the length of the equipment, thereby increasing retention time and maximizing the equipment's efficiency.



**Illustration 2** - Internal distribution of the Separator constituents.

The effluent also undergoes magnetic treatment to prevent calcium accumulation or metal deposition. The effluent passes through an existing bacterial environment for magnetic treatment, creating an effect that reduces deposit accumulation in the pipes.

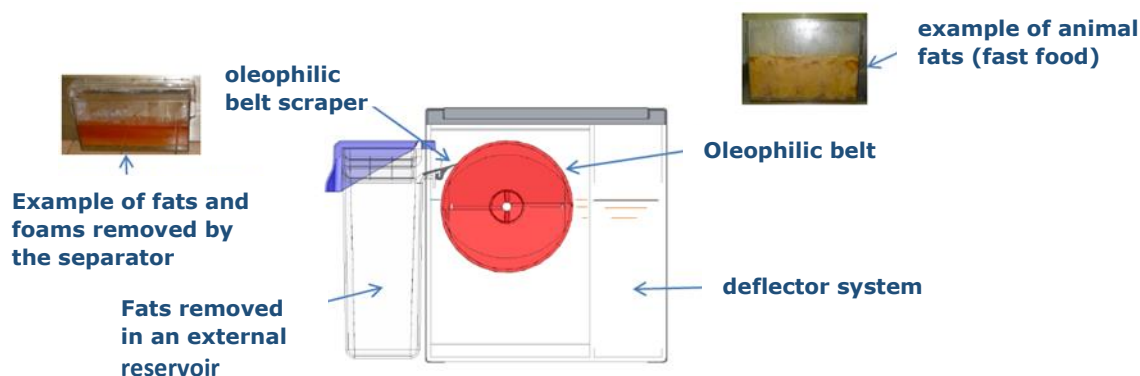
It is a proactive device that takes advantage of the expected temperature of the effluent to optimize the automatic removal of fats (standard from 7:00 AM to 2:30 AM) when these are in liquid form, eliminating excessive and costly energy consumption.



**Illustration 3** - Left: Oleophilic belt; Right: Fat accumulation reservoir.

This removal is carried out by a broad belt with oleophilic and hydrophobic characteristics, which is in contact with the effluent for about 50% of its surface area, with an automatic rotation that captures the fats.

As this belt rotates, it comes into contact with a scraper that removes the retained fats to a fat accumulation reservoir.



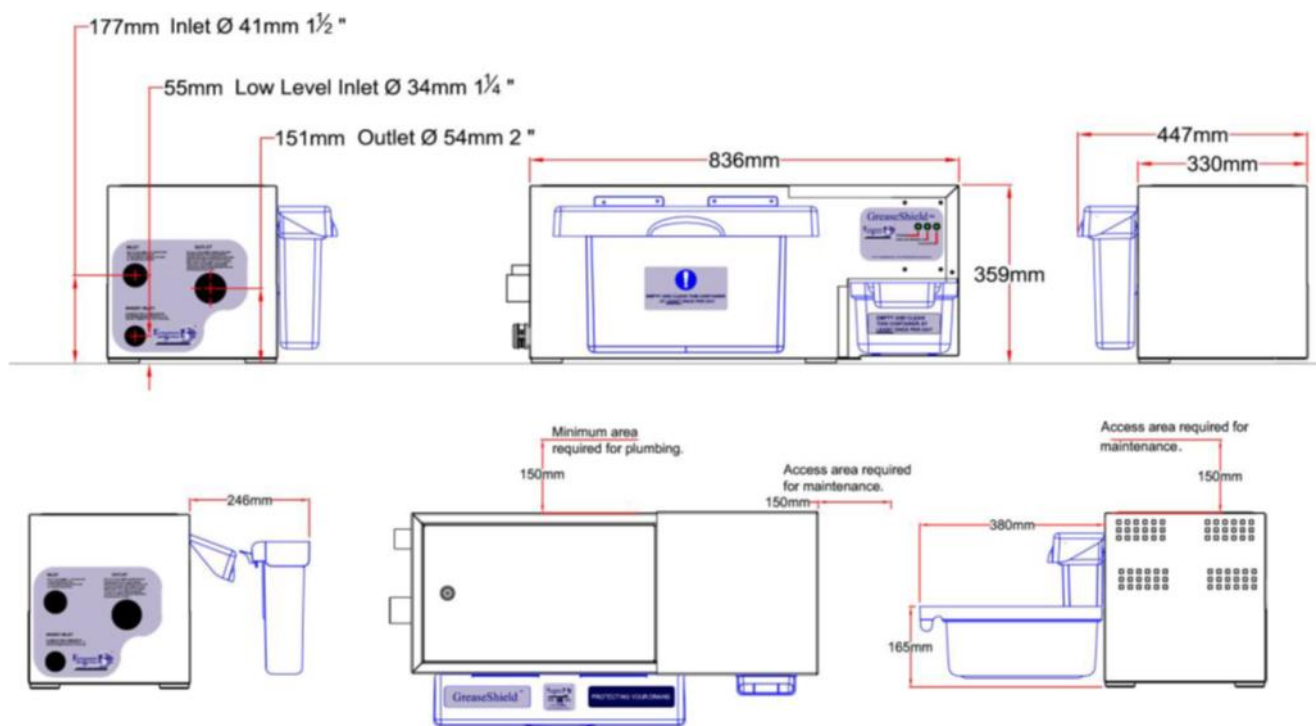
**Illustration 4** - Side view of the equipment and examples

The **ECODEPUR® GORTECH SELF CLEAN GS 1850 AST** grease separator features automatic cleaning through the recirculation of the final effluent (three times for every five minutes of grease removal duration). This recirculation creates agitation and cleans the tank, preventing the deposition of settled fine particles. It also ensures that the fats are directed to the surface of the equipment for easier collection/disposal and that the foams accumulate at the bottom, preventing the formation of unpleasant odours.

This cleaning process eliminates the need for manual cleaning through the extraction of effluent from the separator (cleaning by pumping) and the subsequent refilling with clean water, thus avoiding the costs associated with enzymatic solutions or the use of other chemicals. The operation of the Grease Separators does not release odours, due to the daily removal of solids and fats, which prevents the biological degradation of organic matter and eliminates the potential for creating anaerobic conditions.

Kitchen staff do not need to access the interior of the Grease Separator for operation/maintenance.

## DIMENSIONS



**Table 1** - Dimensions of GORTECH SELFCLEAN 1850-AST Grease Separator.

TYPE	NS (l/s)	Width (mm)	Length (mm)	Height (mm)	Entry quota (mm)	Exit quota (mm)	Entry quota 2 (mm)	Ø Exit piping (mm)	Ø Entry piping (mm)	Ø Cleaning piping
<b>GORTECH® SELFCLEAN GS 1850-AST</b>	<b>1,85</b>	<b>447</b>	<b>836</b>	<b>359</b>	<b>177</b>	<b>151</b>	<b>55</b>	<b>1' ' 1/2</b>	<b>2''</b>	<b>1' ' 1/4</b>

*The images and dimensions presented may be subject to change without prior notice.*

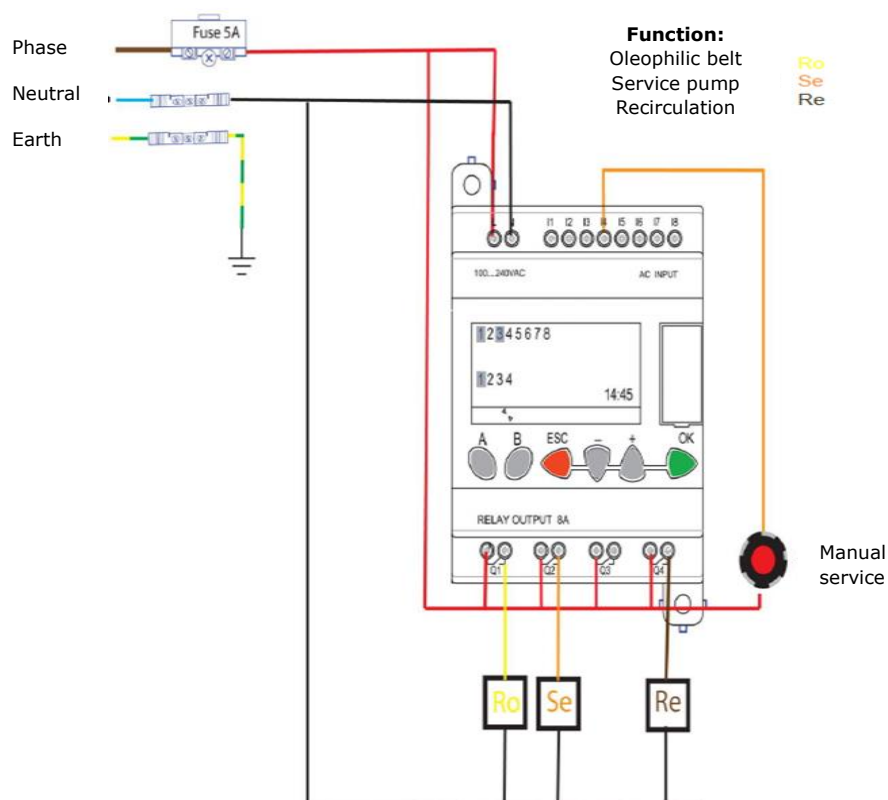
**The entry quota 2** is typically buffered and will only be used in the event of a specific need for the installation layout.



## INSTALLATION

The installation of the **ECODEPUR® GORTECH SELFCLEAN GS 1850-AST** grease separators should follow these recommendations:

- The Grease Separators should be placed as close as possible to the grease production area (no more than 6 meters away). The equipment should not be buried and is not designed to support loads, so it should not be used as a shelf;
- For electrical supply, 240VAC, 10A, IP56 current will be required;
- Place the equipment in a location that allows proper maintenance operations to be carried out (see the diagram presented in the dimensions section);
- Then, make the hydraulic and electrical connections (as per the diagram below) and initiate the operation of the equipment:



## MAINTENANCE

The Grease Separators, type ECODEPUR®, model GORTECH SELFCLEAN GS 1850-AST require the following maintenance:

- Daily emptying and cleaning of the oil and grease collector. This waste must be sent to an authorized company for disposal;
- Daily emptying and cleaning of the solid waste accumulation tank. The solid waste can be used for composting;
- Annually, or whenever necessary, a complete cleaning of the equipment should be performed. For this, there is a button on the back of the equipment that allows you to empty the unit (manual service).

## WASTE MANAGEMENT



Properly clean the plates, pots, and utensils before washing them (and place the waste in the bin);



Place used oils in a sealed container. Dispose of these waste items with a licensed operator for waste management;



Use filters in the sink drain (and place the waste in the bin);



Perform proper maintenance of the Grease Separator.

## WARRANTY

The equipment sold comes with a two (2) year warranty against any manufacturing defects.

**ECODEPUR® – Environmental Protection Technologies, Lda.** does not assume any responsibility in the event of clear signs of improper installation and/or use.

## CONTACTS

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## WATER AND WASTEWATER TECHNOLOGIES

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