

ecoTop™ Above Grade Oil/Water Separator



Operating and Maintenance Instruction

1 Installation and putting into service

1.1 General

For general information on the installation of oil water separators please refer to DIN 1999 part 2 and part 6.

1.2 Location

The separator must be installed above grade and leveled on a solid surface. The chosen location for the system should be as close as possible to the source of waste stream to be treated. When choosing the location, make sure that the separator can easily be accessed for maintenance.

Avoid any pipes or hydraulic structures that may contribute or increase the amount of mechanically emulsified oil, upstream to the separator. When the influent holding vessel requires it to be pumped, only positive displacement, diaphragm or screw type pump should be employed to avoid extreme mechanical emulsification of oil-laden wastewater.

If the separator is installed inside a building, ensure proper venting of the system.

1.3 Adjusting the level of the separator

The separator must be leveled on a solid surface, with the adjustable leveling feet.

1.4 Pipe connections

The ecoTop system is equipped with stainless steel inlet and outlet pipes, which are prepared for connecting SML-pipes (DN100: Ø110, DN150: Ø160). Alternate pipe types can be connected, by using standard pipe couplers.

The ecoTop unit is designed with an integral, stainless steel venting pipe (Ø25mm).

Please note for all pipe connections: Only stainless steel or plastic pipes may be used! Other pipe types (copper, steel, ...) may only be used if electrically isolated to avoid electrochemical corrosion!

1.5 Cleaning

Any material left behind from installation must be removed prior to filling the tanks with fresh water. Especially metal parts need to be removed (electrochemical corrosion)!

1.6 Installation of the manual oil draw-off valve

The ecoTop oil water separator provides an opening for the drainage of accumulated oil. To install the manual oil draw-off, simply introduce the ball valve into the sleeve of the separator wall. Make sure that the slot of the ball valve is equipped with an O-ring gasket.

1.7 Putting into service:

Before the system is put into service, the unit MUST be filled with clean water.

The system is now ready for operation.

2 Technical description

2.1 General

The ecoTop oil/water separator is designed to separate free non-water-soluble light liquids (as defined in the German Standard DIN1999 and the European Standard prEN 858-1) with a maximum specific gravity of 0.950 from water (petroleum byproducts such as gasoline, diesel and other mineral oils).

ecoTop does not separate

- Mechanically or chemically emulsified oils
- Vegetable oil or animal fat
- Solid Grease

The following kind of influent must NOT be treated with the separator:

- Domestic waste other than what the plant has been designed to treat
- Substances, which could impede proper functioning (large quantities of suspended particles etc.)
- Detergents and cleaning agents that form stable emulsion's.
- Wastewater inflows that are still influenced by pump, agitator or vibrator movements.
- Wastewater inflows not having pH-values of between 6.0 and 8.0.
- Wastewater containing chlorides.

Referring to the independent test results from the German LGA institute, the residual hydrocarbon content in the purified effluent does not exceed 5 mg/l.

2.2 Purification Step 1: Gravity Separation

The sediment and solids pre-treated runoff is gravity fed or pumped (typically with a positive displacement or diaphragm type pump) to the gravity separator through a submerged inlet pipe.

The separation process relies on the fact, that light fluids have a lower specific gravity than water and thus float on the water surface.

2.3 Purification Step 2: Coalescing Media

In the residual oil media, fine droplets that are too small to be separated by gravity are accumulated into bigger drops that rise to the surface. This coalescing media is made of reticular (i.e. "net-like") soft polyurethane foam. The media-cartridge is very easy to lift out and reinstall once it is cleaned/rinsed with a garden hose. The separated water that leaves the Ecotop has a residual contamination of free petroleum content to less than 5 ppm.

2.4 Manual oil draw-off

A standard version of the ecoTop oil water separator is equipped with a manual oil draw-off device. This ball valve is located at the oil water interface and can be opened as soon as an oil layer of 30 mm is reached in the separation chamber. The manual oil draw-off can only be operated during non-operational periods (no influent entering the separator). The accumulated oil can be drained into an external oil drum (not provided).

2.5 Automatic Oil Draw-off Device (ADD)

As an option, the patented automatic oil draw-off device (ADD) can be installed. This ADD constantly removes accumulated light fluids from the water surface and stores them in an external oil recipient or oil drum. The collected oil is free of any water. The costly disposal of large quantities of oil and water mixtures is then eliminated.

2.6 Material

- Material: Stainless Steel 1.4301 pickled and anodized after welding
- Gaskets and hoses: NBR (oil resistant).

3 Operation & Maintenance

3.1 General

The separator must be maintained periodically. All parts of the separator have to be inspected monthly, as well as after all non-routine events. Please report all damages to the system to the manufacturer.

To make sure that the separator is maintained properly, a specific person('s) must be designated to this task. Please use the enclosed maintenance sheet to report maintenance work and other events related to the operation of the system.

Due to the danger of explosion, it is strictly forbidden to smoke or light any flames anywhere near the plant, particularly after the cover has been opened.

Before maintaining the plant, remove the cover and make sure that the plant has been well ventilated. If an authorized maintenance company is contracted to carry out the maintenance and emptying of the system, the relevant maintenance and operating manual must be made available to this company.

The substances collected when the plants are emptied may NOT be disposed of to the sanitary sewage system, in standing or flowing water, sewage treatment plants. All collected substances MUST be disposed of by being taken to designated collection and recycling points.

All damage to the plant must be repaired immediately. It is forbidden to make structural changes to the plant, interfere with its mode of action or increase the dimensions of the inlet or designed flow rates.

3.2 Cleaning of the filter cartridge



The filter cartridge has to be cleaned periodically. Since the maintenance intervals strongly depend on the very application, check the condition of the filter element weekly during the first 60 days of operation.

To detach the filter cartridge from the structure, release the quick lock on top of the cartridge and lift the filter on the handle. The filter media can be cleaned/rinsed with a garden hose. Recycle the wash-water to the separator.

Do not expose the filter media to sunlight or UV-radiation!

3.3 Removal of accumulated oil

3.3.1 Manual removal of oil

Accumulated oil can just be removed manually when there is no flow through the separator.

Turn the handle of the valve 90° counterclockwise to open the valve. Drain oil into an external oil recipient and close the valve before water can enter the tank.

During operation of the separator make sure that the manual draw-off is shut.

3.3.2 Automatic oil draw-off device

If your ecoTop separator is equipped with an automatic oil draw-off device, please see our O&M manual for the ADD.

3.4 Liquid level sensors and control/alarm panel

3.4.1 General

The implementation of liquid level sensors and their corresponding control/alarm panel is intended to warn that the system is in immediate need of maintenance.

3.4.2 Design

Each sensor and control panel configuration is specific to the application. Equipment is specified and supplied by a manufacture that produce accurate, dependable components.

