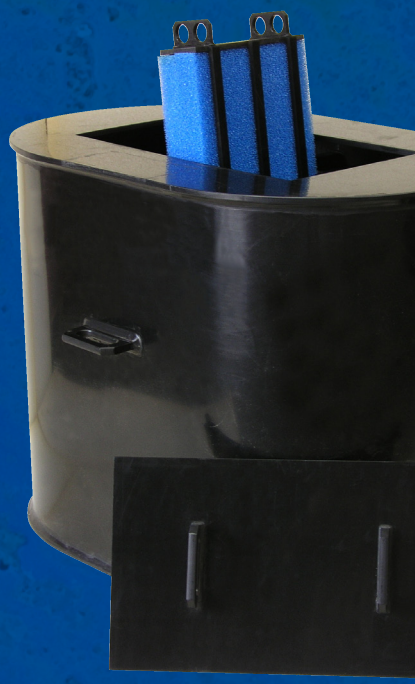
ECOLINE-A

HIGH PERFORMANCE-COST EFFECTIVE ABOVE GROUND OIL WATER SEPARATION

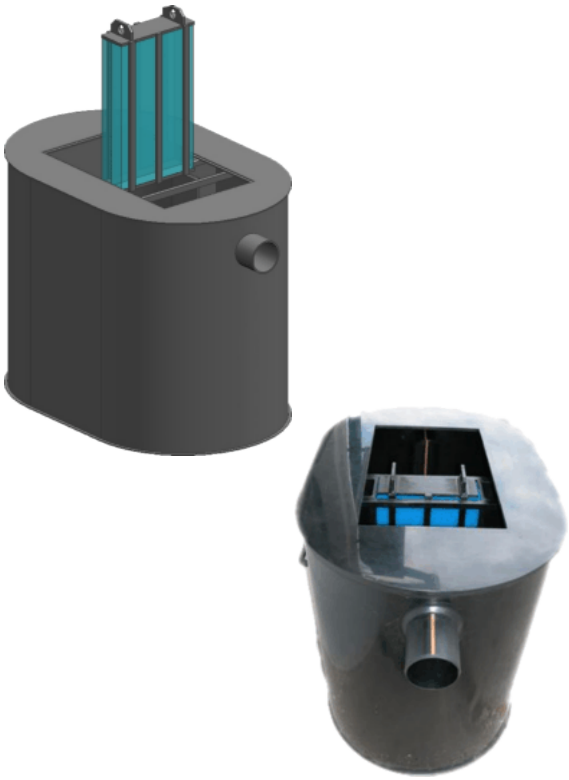
PRODUCT OVERVIEW
INSTALLATION MANUAL
OPERATION & MAINTENANCE



SCHLÜSSELBAUER ECOTECHNIC

ecoLINE

HIGHLY EFFICIENT AND COST SAVING OIL/WATER SEPARATION IS TODAY'S CHALLENGE.



ecoLine-a is our answer

Small facilities are frequently hot spots when it comes to treatment of hydro-carbon laden waste-water. The total amount of wastewater generated per day is sometimes too small to justify construction cost for the installation of a below grade oil/water separator.

For these applications, an above grade unit provides an acceptable solution. The ecoLine-a Oil/Water Separator provides the first substantial cost savings in the form of zero construction site labor.

ecoLine-a is equipped with a removable top panel. This provides full access to all basic elements of the ecoLine-a system. Routine cleaning and maintenance are then efficient and cost effective. Annual maintenance cost savings range from 30% to 50% lower than that of conventional separator systems.

TODAY'S ENVIRONMENTAL LEGISLATION IS HARD ENOUGH TO COMPLY WITH.

ecoLine-a meets tomorrow's standards today

It's not just the ecoLine's long maintenance intervals and low waste-disposal costs that make it such a good investment, but the fact that it is designed with future standards in mind. The ecoLine-a far exceeds the strict European standards (DIN1999 and EN858) for performance (less than 5ppm of free oil). The outstanding independent testing certificates demonstrate that ecoLine-a will provide clean water that exceeds today's environmental standards. ecoLine-a also allows for tighter, future environmental discharge compliance guidelines to be met with little or no modification to the system. ecoLine-a combines high efficiency oil/water separation with mobile flexibility. Specially designed coalescing media panels provide a large specific surface to support the separation of small oil droplets. If your oil separation application is variable with numerous holding tanks in various locations or space is too limited for a below grade unit, consider ecoLine-a as your above grade oil/water separator.

WORKING PRINCIPLE

The ecoLine-a oil/water separator is designed to seperate free non-water-soluble light liquids (as defined in the German Standard DIN 1999 and the European Standard prEN 858-1) with a maximum specific gravity of 0.959 from water (petroleum byproducts such as gasoline, diesel and other mineral oils).

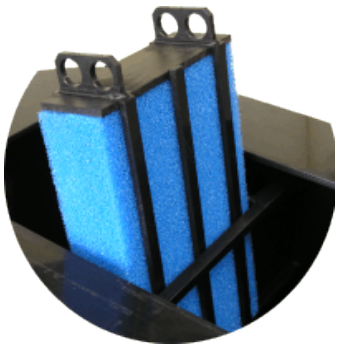
ecoLine-a does not separate
- Mechanically or chemically emulsified oils
- Vegetable oil or animal fat
- Solid Grease

The following kind of influent must NOT be treated with the separator:
- Domestic sewage than what the plant is designed to treat.
- Substances, which could impede proper function (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 containing chlorides

- For pH values not within the range from 6 to 8, detailed water analysis need to be provided.

Purification Step 1: Gravity Separation
The sediment and solids, pre-treated run-off 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.

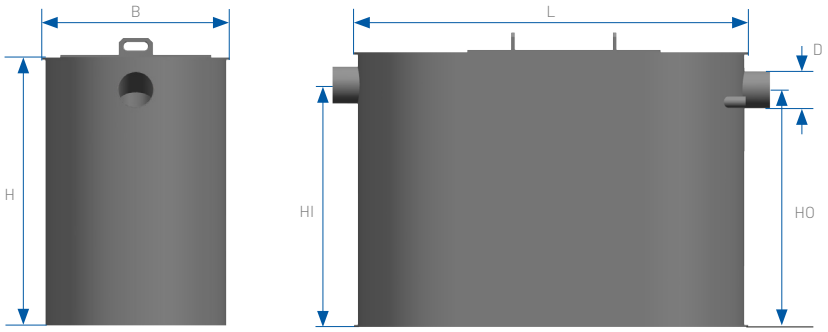
Purification Step 2: Coalescing Media
In the residual oil media, fine droplets, that are too small to be separated by gravity alone are accumulated into bigger drops that rise to the surface. This coalescing media is made of reticular (i.e. „net-like") soft polyurethane foam. The media-cartridge is very easy to lift out and reinstall once it is cleaned/rinsed with a garden hose.



ECOLINE-A MODEL SIZES

ecoLine-a offers a full range of above ground oil water separators from 25gpm (1,5l/s) to 636gpm (40l/s).

Larger models are available upon request. Upstream separate grit chamber (not in our scope of supply) shall be sized depending on the particular application.



Item no.	Item	Flow rate		D		L		B		H		HI		HO		Weight	
		[l/s]	[gpm]	[mm]	[ft]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[kg]	[lb]
101915	ecoLine-a NS1.5	1,5	25	110	4.3	1236	49.4	716	28.6	800	32.0	695	27.8	675	27.0	40	88
101974	ecoLine-a NS03	3	50	110	4.3	1480	59.2	770	30.8	1052	42.1	915	36.6	895	35.8	70	154
101962	ecoLine-a NS06	6	100	160	6.4	1720	68.8	820	32.8	1182	47.3	1040	41.6	1020	40.8	100	220
103301	ecoLine-a NS12	12	200	200	8.0	2400	96.0	1220	48.8	1520	60.8	1130	45.2	1100	44.4	300	660
103002	ecoLine-a NS20	20	318	250	10.0	2740	109.6	1620	64.8	1700	68.0	1360	54.4	1340	53.6	480	1058
102061	ecoLine-a NS40	40	636	315	12.6	3030	121.2	1920	76.8	2030	81.2	1670	66.8	1650	66.0	800	1763

Approximate dimensions. For installation purposes, please refer to our product drawings.

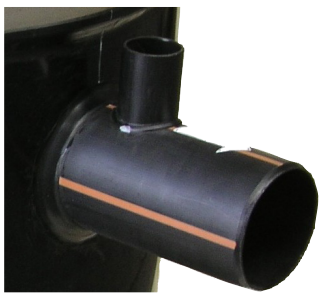
INSTALLATION

General
For gerneral information on the installation of oil water separators please refer to EN858 and DIN 1999 part 2 and part 6.

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 of hydraulic structures that may contribute or increase the amount of mechanically emulified 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 seperator is installed inside a building, ensure proper venting of the system.

Pipe connections
The ecoLine-a system is equipped with polyethylene inlet and outlet pipes, which are prepared for connecting PVC-pipes (DN100: 4", DN150: 6"). Alternate pipe types can be connected, by using standard pipe couplers. The ecoline-a unit is designed with an integral, polyethylene venting pipe (1").
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!

Cleaning
Any material left behind from installation must be removed prior to filling the tanks with fresh water.

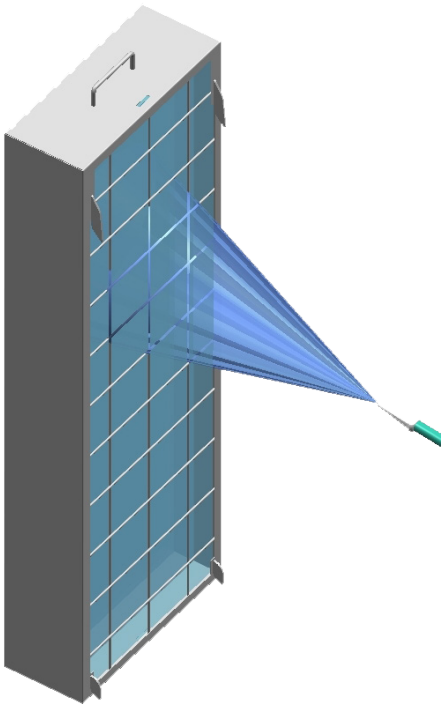


Venting of the separator
The ecoLine-a is vented to avoid accumulation of combustible gases in the inside of the unit. If the system is operated in a closed room, the vent pipe must be extended to outside air.

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.

Smoking and the use of open flames in the proximity of the separator are forbidden (particularly in closed areas)!

OPERATION & MAINTENANCE



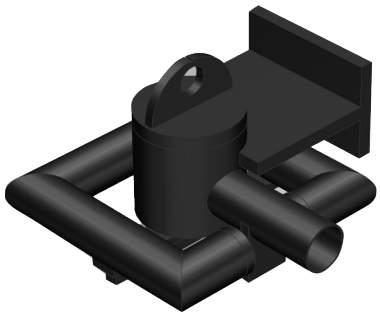
General

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.
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. 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.

Coalescing Media Cartridge

The coalescing media 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. The filter media can be cleaned/rinsed with a garden hose. Recycle the wash-water to the separator.

Over time, UV radiation and sun light will degrade the coalescing media. It is, therefore, strongly recommended that the media inside the cartridges not be left outdoors for extended periods of time after cleaning. Some exposure to UV radiation and sunlight will not harm the system. Remove sludge and oil from the system periodically.



Removal of accumulated oil

Manual Oil Draw-Off Device
The standard version of the ecoLine-a oil/water separator is equipped with an opening (3/4" external thread) to connect a hose and valve. 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).

Automatic Oil Draw-Off Device
As an option the ecoLine-a can be ordered with an automatic oil draw-off device. This built in ADD mechanically removes accumulated light liquids 24/7 from the water surface and stores them in an external oil recipient or oil drum. The collected oil is free of any water (99.7% pure).
For further information about the automatic oil draw-off, please see our O&M manual for the ADD HDPE.

Temperature range of operation
41 to 122°F (5°C to 50°C) - permanent temperature
Systems for higher temperatures available upon request

Material
High grade polyethylene

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