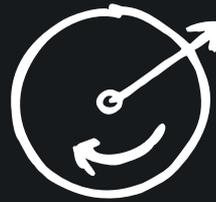




# HILLER

separation & process



The force of inertia appears only in accelerated reference systems and moves outwards from the center. The mass is thus forced into a circular path.  
Galileo Galilei (1564-1642)

## Making use of natural resources



## Centrifuge technology for bio diesel production



$$F_{zf} = m \cdot \omega^2 \cdot r$$

(mathematical formula for centrifugal force)

## Principles of Operation

### The use of alternative fuels is becoming increasingly popular.

As well as the production of bio ethanol, the production of bio diesel has also been growing continuously. This is partly due to rising crude oil prices in the world markets, the development of technologies allowing the generation of new fuels from renewable raw material sources, and the considerable efforts taken by national and international politicians with regard to climate protection.

#### HILLER - DecaOil Decanter for biodiesel and other renewable sources of energy

##### Typical applications:

- Clarification of new and used oils as raw materials for the production of bio diesel
- Separation of glycerine, fatty acids and salts during the glycerine treatment process
- Separation of methanol and washed salts from glycerine treatment
- Yeast separation during the production of bio ethanol
- Dewatering of fermentation mash after the distillation process
- Dewatering of fermented substrates from biogas production
- Solids removal from screw press filtrates during the pressing of seeds

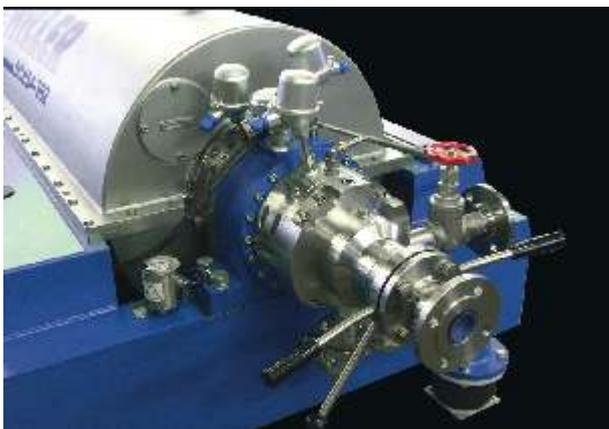
The traditional source of material for bio diesel production has been fresh vegetable oil extracted from plant seeds. However, used edible fats, oils and animal fats are also used. In Northern Europe mainly rapeseed oil is processed. In the USA, it is mainly soya bean oil, while in tropical countries palm oil is the main source of the raw material.

The **HILLER - DecaOil centrifuge** is a solid bowl decanter centrifuge especially designed for highly efficient, continuous sedimentation of solids and separation of one or two (non-mixable) liquid phases. The feed enters the rotating bowl through a stationary feed tube and is thrown radially outwards into the bowl through feed ports in the conveyor hub. By means of centrifugal force, the solids and liquid(s) are separated from each other.



While the solids particles settle to the bowl wall and are discharged by means of a screw conveyor, the cleared liquid phase accumulates above the sedimented solids phase and is discharged at the opposite end of the machine.

Depending on the design of the centrifuge as well as on the number of liquid phases present, the cleared liquids are discharged by means of overflow weirs, adjustable dip tubes by gravity, or via a centripetal pump under pressure.



# You set the task - we provide the solution.



The space-saving concept of the solid-bowl centrifuge, together with high efficiency and optimal process results, make **HILLER - DecaOil Biodiesel centrifuges** the first choice for many oil production applications.



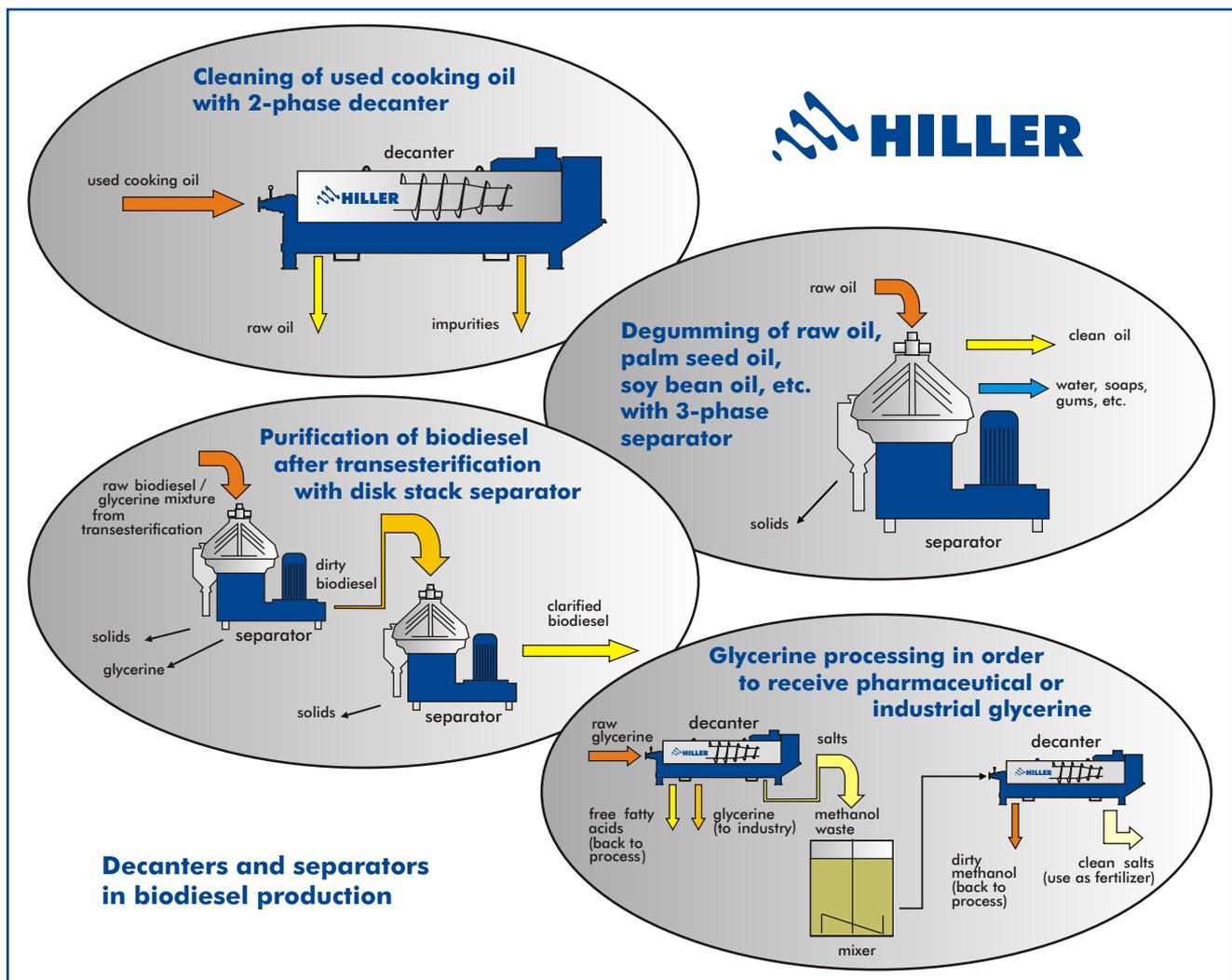
Nitrogen gas panel

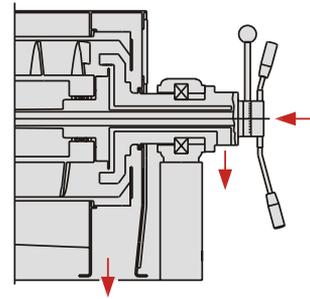
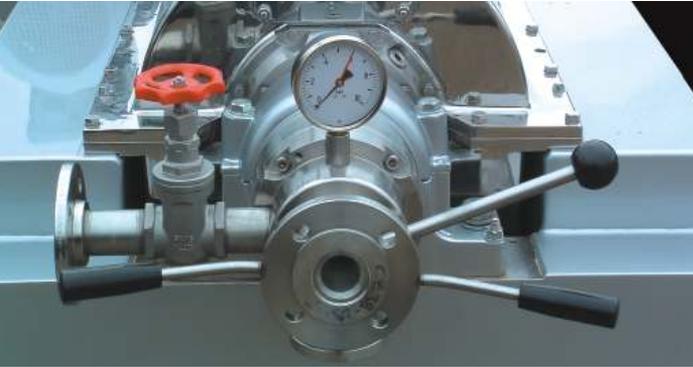


Separator

## Features:

- space-saving concept
- available in either two or three phase design for the separation of the solids phase from one or two liquid phases during a single process step
- fully automated operation with the **HILLER** remote electronic control system
- all modern scroll drive systems available
- corrosion resistant materials, individually selected for the process
- explosion proof designs according to requirements; e.g. nitrogen purged machines
- adjustable centripetal pump for light oil phase discharge
- flexible processes - e.g. a 3-phase machine can also be used für 2-phase processing





## DecaOil bio diesel decanter centrifuges

<b>Type</b>	<b>DO31-363</b>	<b>DO37-363</b>	<b>DO45-363</b>	<b>DO54-363</b>	<b>DO58-363</b>	<b>DO66-363</b>
drive motor (kW)	from 11 kW up to 75/90 kW					

**Hiller can provide competent solutions for these industries and special applications:**

- Foods and beverages / DecaFood / OV
- Mineral oils, gas and regenerative energy / DecaOil
- Chemical, processing and pharmaceutical industry / DecaChem / DecaPharm
- Environmental technology / DecaPress / DecaThick / DecaDrain
- Mining, tunnel construction, mineral raw materials and drilling fluids / DecaDrillingFluid

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