US CENTRIFUGE®
The Liquid-Solid Separation Experts

4011 Championship Drive
Indianapolis, IN 46268
800-899-2040

US Centrifuge Offers Centrifugal Technology for Clarifying Raw and Waste Vegetable Oils for High and Lower Volume Biodiesel Producers

Sedimentation, centrifugation, and filtration are the methods used in the edible oil industry to separate oils and solids. In many instances, the choice of separation method is based more on economics than technical reasons because more than one method of separation accomplishes the desired end result.

Centrifuges are being used in applications formerly reserved only for filters and new processes have been developed that make former batch separation processes continuous. These developments have had the goal of maintaining separating efficiencies while reducing costs and increasing sanitation.

US Centrifuge offers a wide capacity and price range of equipment from horizontal continuous cleaning decanter centrifuges and automatic vertical semi-batch self-cleaning centrifuges as well as smaller manual clean units for centrifugal clarification and solids removal from WVO, used cooking oil, raw vegetable oils, animal fats, and restaurant greases prior to being chemically altered through the transesterification process. The centrifuges can separate solid particulates as small as 2-micron. Maximizing centrifuge capacities and separation potential typically requires processing the oil warm and or heating the oil within a range of 140°F up to 180°F to achieve the best results.

These centrifuges are also ideally suited for the separation and removal Magnesol and magnesium silicates.

US Centrifuge supplied separation equipment can dramatically increase biodiesel production capacity and reduce process time compared to several days generally required for settling. Centrifuges range from 5-gpm to 350-gpm with prices starting from $10,000 for a manual clean unit up to $500,000 per unit for the largest decanter centrifuge.

Actual sludge discharged from above pictured centrifuges

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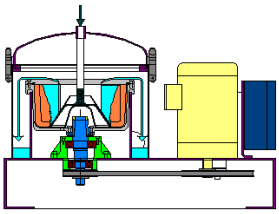
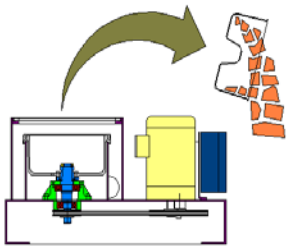
US Centrifuge biodiesel separation equipment and systems will reduce production costs and increase productivity for a rapid return on investment for plants looking to improve production capacities.





Manually Cleaned Liquid/Solid Separating Centrifuge Available:

Liquid Cleaning Process:

- The liquid continuously feeds into the top of the spinning bowl.
- The separated solids deposit on the internal wall of the bowl liner forming a relatively moisture free cake as the liquid overflows the bowl and exits the frame.

The Manual Clean Out Process:

- Once the bowl fills with solids the machine is shut off and coasts to a stop.
- The hinged enclosure cover is unlatched and opened so the bowl-lid can be removed from the bowl-bottom.
- The liner is removed from the bowl-bottom and solids are scrapped out.
- The liner is put back into the unit to resume operation.

Model M212 2hp up to 10-gpm @ 1,500 x "G"

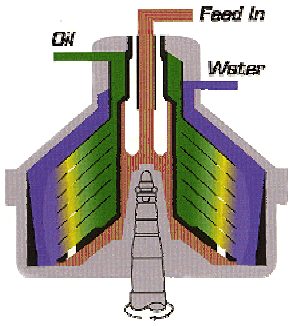
- Up to 1.0 gallon solids holding capacity with aluminum or stainless bowl
- Removable PVC or stainless steel bowl liner
- Carbon or stainless steel frame construction
- Optional portable machine stand, integrated feed pump, motor starter or timer control box

Price Range: $9,500 to $15,000 depending on selected options

Manually Cleaned Liquid/Liquid Separating Centrifuge Available:

High "G" force disc bowl centrifuge provide faster more efficient liquid/liquid separation for:

- Glycerin Separation from bio-diesel
- Water wash Separation from the bio-diesel
- Biodiesel drying and glycerin purification



Model MBD-200 Maximum Rated Capacity: up to 200-GPH

- Drive motor 1HP XP 240/480V 60HZ 3∅ 1,750 RPM
- Centrifuge Bowl High speed disc bowl
- Bowl Speed 8,600 RPM
- Sludge holding Capacity Approximately 0.25-US Gallon
- Feed Pump Built in gear style pump included
- Light Phase Liquid Discharge Gravity discharge
- Heavy Phase Liquid Discharge Gravity discharge

The unit is supplied with all necessary bowl insertion tools, set of gravity disks, supply device with sight glass for priming and wash water, outlet sight glass, revolution counter, standard set of spares, electric motor, vibration isolators, mounting base, and operation manual. Machines can be supplied as skid modules with pumps, heaters, tanks, and other accessories.

Price Range: $12,500 to $19,500 depending on selected options

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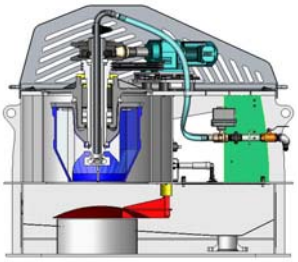
Two Styles of Automatic Self-Cleaning Liquid/Solid Separating Centrifuges Available:

Vertical Semi-Batch Cleaning Centrifuge:

- Liquid flows through the spinning bowl and solids accumulate inside the bowl
- Machine stops processing to periodically clean out accumulated solids
- The residual liquid in bowl drains out during clean process
- Counter-rotation between bowl and plow shaft discharges the solids

Three Models to select from: (Price Range: $30,000 to $75,000 depending on selected options)

Model	Motor	Bowl Size	Max "G"	Flow rate
A400	5HP	20-liter	2,000 "G"	up to 20-gpm
A540	10HP	40-liter	2,500 "G"	up to 40-gpm
A560	15HP	60-liter	1,750 "G"	up to 75-gpm



Horizontal Continuous Cleaning Decanter Centrifuge:

- Liquid flows through the spinning bowl and solids separate against the bowl wall
- Scroll rotates at a differential speed to continuously auger the separated solids from the bowl
- Adjustable differential speed between bowl and scroll controls solids discharge

Five Models to select from: (Price Range: $150,000 to $500,000 depending on selected options)

Model	Motor	Bowl Dimensions		Max "G"	Flow rate
CQ3	25HP	12" x 48"	4:1 L/D	3,375 "G"	up to 50-gpm
CQ4	30HP	16" x 64"	4:1 L/D	2,500 "G"	up to 100-gpm
CQ5	60HP	22" x 88"	4:1 L/D	2,500 "G"	up to 175-gpm
CQ6	75HP	25" x 100"	4:1 L/D	2,500 "G"	up to 250-gpm
CQ7	150HP	30" x 120"	4:1 L/D	2,500 "G"	up to 350-gpm