Centrifuge System

How does it work?

A centrifuge works by rotational force in order to increase gravitational force on the product being separated. In the case of our machine it generates 1200 times the force of gravity.

Specifications

Dimensions:	18” in diameter, 20” tall
Weight:	60 lbs
Process rate:	3-10 gallons an hour
Power:	690 watts per hour
Bowl Capacity:	750ml
HP:	0.33
Volts:	115/230
Amps:	6/3
RPM:	3450
Frame:	56J : H2:60 : PH:1
Rating:	40C AMB-CONT
CC:	Usable at 208v
ENCL:	TEFC
SFA:	7.4/3.7

Do I need to heat my oils before running them through the centrifuge?

Yes. We have had great results running heated oil. Heated oils release the captured dirt quicker than cold oils. In the summer your oils may be light enough to skip the heat. Vegetable oils may load up the machine with shortening if unheated.

How do I clean it?

We generally stop our machine every 24 hours for cleaning. We suck out any liquid using a syringe and then wipe the crude or cake from the bowl walls. Once wiped down it's ready to go again.

How well does it clean the product?

Easily down to 1 micron. Unlike filters it can capture smaller particulate based on its weight, not size, so not only does it capture small carbons but it can capture water.

How is the captured debris kept from contaminating the clean oil output?

The debris remain captured in the centrifuge bowl and are held in place by gravitational force. Also, there is an inner wall that prevents contamination upon draining

Can the centrifuge go faster?

Maybe. Centrifugal separation is based on two factors, force (g force) and time. The material being cleaned plays a huge part on the time factor. Thicker oils take longer than thinner oils and cold oils take longer than hot oils. The more time your oil spends in the machine, the finer material it will remove. A higher g machine will cut the time required. It doesn't improve the effectiveness. For example, oil running at a rate of 5 gallons per hour through a 1200 g centrifuge would be the same as 8.3 gallons per hour through a 2000 g machine. Even at a conservative 5 gallons per hour, our machine could handle over 43,000 gallons annually.

Do I need to make more than one pass through the machine?

No. We run our oils slow enough that we get the results we want in a single pass.

Can I run cold oil through the machine?

We started out running cold oils. Typically, cold oils can be run at about one gallon per hour, maybe two. The biggest problem we had was cleaning, about every 5 gallons, due to the bowl filling with shortening. You can actually remove the "creamy" from creamy shortening and recover liquid oil... it's actually very cool but time consuming.

What temperature do you recommend running the oil at?

We run our oil at about 120 degrees.

Won't the lye in biodiesel corrode the aluminum bowl?

Lye will eat aluminum at an alarming rate. You should never attempt to run unwashed biodiesel through any aluminum parts, including your vehicle. You should always drain off your excess glycerin, wash your biodiesel to obtain a neutral pH and then run though the centrifuge to finish.

Can the machine spin biodiesel to remove glycerin and/or contaminants?

The machine isn't a separator. We use it to de-water and remove any trace particles from the biodiesel after washing. The biodiesel in this state isn't (or shouldn't be) any more caustic then when you put it in the tank. It simple saves you the week or two of settling.