Centrifuge Makes DIY Oil Cleaning Easy

You can strip water and contaminates from used oil with a Simple Centrifuge from Numeric Control. Available as a turnkey operation or as components for building it yourself, the direct-drive Simple Centrifuge is safe and easy to maintain and inexpensive to run. It can be used to clean waste vegetable oil, bio diesel, lube oils and hydraulic oils.

"Our original philosophy was to be as simple as possible. However, over time the design has become a little more complex," says Randy Smith, Numeric Controls co-founder along with Mike Nielsen. "The changes have been driven by customer needs. Other changes are a result of us being end users ourselves."

"It works so well that other companies have tried to copy our design," says Nielsen.

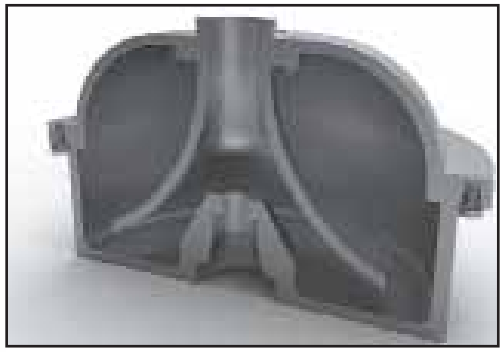
Smith uses a machine to clean waste oil for heating the machine shop where the components are made. Nielsen, who manages multiple businesses, uses half a dozen machines to recycle waste oil for heating.

"I have mine set up with gravity feed," explains Nielsen. "Oil comes out of settling towers above into a small (2 1/2-gal.) heater and then into the machine. From there the oil goes into a storage tank, then into burners for heat."

Nielsen notes that he can usually pick up waste oil for under 15¢/gal. He also gets more heat per gallon. Centrifuged oil has 130,000 to 140,000 btu's per gal. versus 70,000 to 90,000 btu's per gal. of propane.

Heating the oil increases the processing rate to more than 20 gal. per hour. However, the slower the processing rate, the finer the particulates removed. Nielsen and Smith are confident the centrifuge captures particles down to 1 micron in size.

"If Mike or his employees aren't happy with maintenance or operation, I hear about it," says Smith. "Personally, I don't like having to take apart machines and clean them, so we come up with solutions."



Numeric Control centrifuge is designed to strip water and contaminates from used oil. Photo below shows cutaway of unit.

Customer suggestions come in from a wide array of users, including those who use recovered oil for heating like Smith and Nielsen do. Many customers, including most foreign buyers, use centrifuged waste oil to fuel their diesel-powered vehicles or generators.

"We have one customer with about 800,000 miles on a diesel-powered truck who uses waste oil at a 20 to 30 percent mix with diesel fuel in the winter and 40 percent in the summer," says Nielsen. "He tried other centrifuges in the past, but they required too much labor."

Reducing labor has been key since developing the first design. One of the first improvements was to go from an open to closed bowl design. That eliminated splatter and reduced cleanup, as did making the unit self-draining. Other upgrades have increased G-force and increased the amount of oil subjected to the G-force. Recent improvements include a 2-part rotor with a feed cone, all of which can be removed intact for bench-top cleaning.

"What we have now is a machine where the waste oil comes through the top of the rotor, down a tube to the bottom, and then works its way in with no splashing," says Nielsen. "It's easier to clean, we don't have to clean it as often, and it holds more product. It's a much better design."

The Turnkey Simple Centrifuge with motor starts at $1,500. The 2-part rotor with feed cone is available for $650 and ships with detailed construction and assembly notes for building your own. Other components include industrial single and triple phase motors and upgrade rotors to fit earlier turnkey machines.

Check out a video of the Simple Centrifuge in use at FARMSHOW.COM.

Contact: FARM SHOW Followup, Numeric Control, LLC, P.O. Box 916, Morton, Wash. 98356 (ph 360 269-1497; www.simplecentrifuge.com).

Reader Inquiry No. 157

Open-Pollinated Corn Market Growing

Since the Borries family and their open-pollinated seed corn business first appeared in FARM SHOW 20 years ago, sales have doubled from 1,000 to 2,000 bushels/year.

Gerald Borries, who runs the business with his brother, Leonard, and emphasizes that the varieties are most suitable for silage, fed as livestock grain or grown for wildlife and also grazing corn.

The Borries raise their seed corn on 50 to 60 acres (yellow varieties Henry Moore, Reid's Yellow Dent, and Krug; and one white variety, Boone County White). Boone County can grow up to 16 ft. tall and the others grow 12 ft. tall.

The Borries handpick the best ears for seed to sell. They use the same equipment they've used for years; Deere 60 and Farmall 400 tractors and two-row corn pickers. They run ears of corn through a motorized sheller, and size the kernels on a grader before sacking up the seed.

They have maintained the open-pollinated traits since the late 60's. At that time, Joseph purchased corn from an elderly gentleman who had received seed corn as a wedding gift around 1920 and saved seed to plant every year.

When corn blight hit hybrid varieties in 1970, farmers took a renewed interest in old-fashioned, open-pollinated varieties, which weren't affected by the blight.

We get lots of compliments on our high yeilding silage, which has higher protein, lysine and trace elements.

Contact: FARM SHOW Followup, Borries Farm, 16293 E. 1400th Ave., Teutopolis, Ill. 62467 (ph 217 857-3377).