



Digital “tester” uses colored LED lights to tell you when oil needs to be changed. You place drops of engine oil from dipstick into sensor’s cup and then press the test button.

## Digital Tester For Engine Oil

Developers of Lubricheck call it a “digital blood tester” for engine oil. It tells you when oil needs to be changed – not based on mileage or good guesses. At \$40, it’s a gadget everyone can afford, especially since it saves money on oil changes.

The test is simple. Drop several drops of engine oil from the dipstick into the sensor’s cup and then press the test button. A range of green LED lights means the oil is okay, green with amber means it’s fair, and red means it’s time for a change.

Capacitive sensing, similar to using a stud finder, is the science behind Lubricheck, developed by engineers at WaveOn Technologies in Wisconsin. CEO Chad Erickson notes that testing oil is not a new idea. Racecar drivers and diesel truck fleet owners send samples to labs or test their oil with testers that cost \$1,000 or more. Lubricheck’s low cost is what makes it new.

Erickson explains that with today’s oils and engines, oil quality often remains good up to 10,000 and even 15,000 miles. How you drive your vehicle and the conditions it’s driven under are what makes the difference.

“If you check oil regularly, the lights will show how the oil quality is going downhill,” Erickson says.

By monitoring the oil regularly, Lubricheck can help prevent engine issues as it senses increased acidity, metal particles, or soot. As an example, Erickson says one of his coworkers regularly checked his van’s oil and was surprised when the quality dropped

drastically. Two weeks later white “smoke” was coming out of the van, indicating a failing head gasket had been leaking antifreeze into the oil. Adding stop leak to the radiator resolved the problem.

Likewise a truck fleet owner who used Lubricheck had two trucks with high readings and had them checked out. Antifreeze leaks were caught early and treated inexpensively.

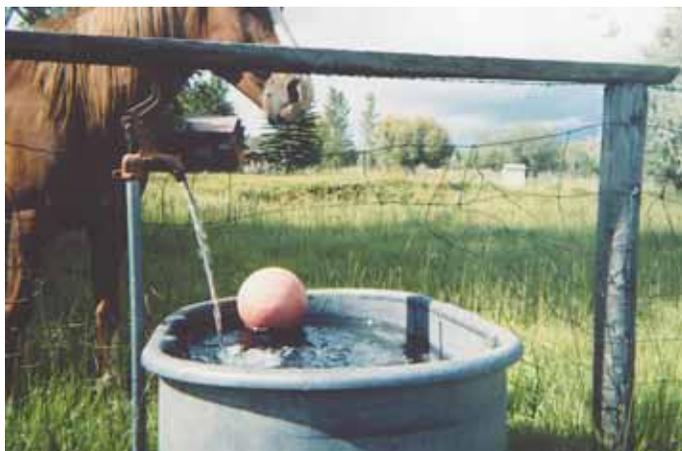
Lubricheck is ideal for truck owners, car rental companies and other large fleet owners. But it’s just as valuable for farmers and consumers who can test all their equipment.

Customers can also sign up for LubriTrack, which records testing data for each vehicle so it’s easier to catch big changes that may indicate engine problems.

“Our free LubriTrack app and online service is designed to warn regular users of impending engine problems by monitoring oil quality trends,” Erickson says. LubriTrack can also send reminder messages when to check oil.

WaveOn Technologies plans to have Lubricheck available for sale on its website by August. Erickson notes that awareness about the device and financial help to bring it to market came through [www.kickstarter.com](http://www.kickstarter.com), which allows people to make contributions to fund new products.

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Plastic ball is tied to a brick and dropped in center of tank. When water level goes down so does the ball. If he can’t see the ball from the road, Lee knows the tank needs water.

## Ball Helps Keep Water Tanks Full

“If I can’t see the ball, I know it’s time to put water in the tank,” says Eugene Lee about his simple method for checking livestock tanks.

The Bigfork, Mont., rancher has to haul water to fill his livestock tanks, some of which are a couple hundred yards off the road. Instead of driving out to them to check water levels, he ties a colorful plastic ball (about 12-in. dia.) to a brick or piece of iron and drops it in the center of his water tank.

Some balls have handles to tie to; he slips others in netting and ties the weight to that.

When the water level goes down, so does the ball. If he can’t see the ball, Lee knows the tank needs water.

“I’ve been using this idea for 10 years. It saves a lot of steps and trips,” Lee says.

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Concrete electric fence posts save Bernie Willis money compared to treated wood posts. Plastic insulators are secured to rebar inside the post.

## Concrete Posts Endure In Alaska

Bernie Willis’s concrete electric fence posts save him money and have held up well through Alaska’s tough winters. So far, the only thing that has ever damaged them was a hungry moose that was caught in the high tensile wire and fought so hard to get free that it broke one off.

Willis got the concrete post idea from his father-in-law, a Washington contractor who made posts instead of wasting leftover cement. Willis also once saw concrete posts on a trip to New Zealand.

About 10 years ago, when he needed to fence paddocks for his horses, treated corner posts cost about \$15 each in Alaska. He purchased Portland cement and made his own posts for about \$5 each.

Willis makes forms out of boards and plywood for 7-ft. long posts, so about 42 in. of the post is out of the ground. He embeds scraps of 3/4-in. square by 4-in. log plastic (UHMW) for insulators. A hole is drilled through both ends of the plastic – to secure

it to rebar inside the cement post. Wire runs through the hole outside the post.

Instead of braces above ground, Willis secures the post with treated boards next to the posts and flat just under the ground for side resistance.

“The cross piece acts as a fulcrum to keep the post from tipping over,” he explains.

He forms each post with a taper, from 6 in. to 4 in. for corner posts and 12 in. to 6 in. for gate posts. To set a cement post, he digs a hole with his backhoe, then chains it to the bucket and drops it in, backfilling the hole by hand.

Willis has made about a dozen posts for his paddocks with plastic electrical conduit as spacers between the high tensile wires.

“With these strong cement posts, I only need a post in the ground about every 100 ft. when the ground is flat,” he notes.

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Ezra Miller chopped up a 30-in., 6-row Deere 7000 planter to come up with this 2-row, horse-drawn planter. Note metal seat mounted behind planter units.

## Horse-Drawn Planter Built From 6-Row Deere 7000

Ezra Miller farms with horses and he wanted a better stand and yield than he was getting from his old-style horse-drawn planter. So he chopped up a 30-in., 6-row Deere 7000.

“I cut the frame in half and replaced the rubber-tired wheels with steel wheels,” says Miller. “Originally, I left the wheels where they were, but this year I moved them ahead on the frame to balance the load better and put less weight on the horses.”

Miller also mounted the seat behind the planter units instead of above, as is more common. “It helps with the weight balance, but also lets me visually check seed drop,”

he explains.

Miller uses a simple lever to raise and lower the planter units. A steel strap from the lever shuts off the planting mechanism when the planter is raised off the ground. Markers are also raised and lowered manually using ropes to either side.

“When I make my next version, I’ll make a lift system like the old plows with a trip lever that lifts the planter,” he says.

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