

Home-built portable topsoil screener mounts on a 4-wheeled frame and is operated by a 1 hp electric motor.



Portable Topsoil Screener

"It does a great job of pulverizing soil and saves a lot of labor as well. As far as I know there's nothing like it on the market," says John Rutherford, Elmira, Ontario, about his home-built, portable topsoil screener.

"We use it to break down chunks of topsoil to a fine powder soil for our flower beds and our lawn, as well as some landscaping work. It works fast and pulverizes the soil so that it's much easier to work with," says Rutherford.

"I got the idea after we had a 10-yard truckload of topsoil delivered in the fall but didn't have enough time to spread it. It sat there over the winter and by the following spring had settled to a hard packed, lumpy heap of soil."

The screener mounts on a 4-wheeled frame made from 1 1/2-in. steel sq. tubing and is operated by a 1 hp electric motor. Soil is dumped into an open top drum made from 3/16-in. thick mild steel. A 12-in. wide, perforated screen made from 1/4-in. thick metal is located at the bottom of the drum. Dirt is broken up and forced through the screen's 1/2-in. dia. holes by a revolving shaft with 1/2-in. thick steel blades welded onto it.

"The blades are set at an angle to create a sweeping action as they rotate. They're also offset from each other so they don't miss any soil as they rotate," says Rutherford. "The shaft is coupled to a 60:1 ratio worm-type gear reducer operated by the electric motor. If I need to get rid of any stones that might be in the soil I can easily rotate the drum by hand."



Dirt is broken up and forced through screen at bottom of drum by a revolving shaft with 1/2-in. thick steel blades welded onto it.



Rutherford says that if the soil is very damp, it might not fall through the screen's small holes. "If that happens, I can unbolt the screen and replace it with one with larger holes. I think it would still do a good job," says Rutherford.

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Over-The-Tire "Studded" Steel Tracks

Over-the-tire steel tracks for skid loaders aren't new, but this prototype model is fitted with welded-on steel lugs that make it perform more aggressively on snow and ice and on tree stumps in the woods.

A single 2-in. long, 1-in. dia. spiraled steel lug is welded onto each of the track's steel pads, at one side of the pad and the other in alternating fashion.

"It has a more aggressive design than conventional over-the-tire steel tracks, which we think will help with traction on snow and ice," says Wendy Wilkey, Tracks Plus, Columbus, Wis. "We designed them especially for logging work where tree stumps can often cause damage to conventional over-the-tire steel tracks. The studs should help the pads climb over the stumps instead of skidding sideways and getting bent up.

"We have 3 customers testing the tracks now to see how well they work. Our studded tracks would be great for clearing out tree lines on farms."



A single 2-in. long, 1-in. dia. steel lug is welded onto each of the track's steel pads.

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John Drew built a 6 by 14-ft., 2-wheeled flatbed trailer out of a used boat trailer. He spaced four 3-in. angle irons across the frame and welded them in place.



Boat Trailer Converted To Flatbed Trailer For \$850

"I couldn't find a good, heavy 2-wheeled trailer on the market that I liked, so I built a 6 by 14-ft. flatbed trailer out of a used boat trailer," says John Drew, Great Bend, Kansas.

Drew bought the trailer, designed to haul a 16-ft. boat, for just \$225.

"My total cost to convert the trailer, including new tires, was only about \$850," he says. "A comparable commercial trailer sells for \$3,500 to \$4,000. I pull it with my 1/2-ton pickup."

He spaced out four 3 by 3 by 3/8-in. thick angle irons and welded them across the boat's frame, attaching them to cross pieces at the middle of the trailer and to the side rails. He bolted 4 by 4's on top of the angle irons and then screwed 2 by 8's lengthwise onto the 4 by 4's to form the floor. He also bolted a big plastic storage box onto the tongue.

"The trailer was originally equipped with a square-nosed ball hitch, but I didn't trust it so I welded a standard ball hitch over the



He also bolted a big plastic storage box onto boat's tongue.

top of it," says Drew. "I also kept a couple of boat roller brackets on back of the trailer that work great to tie down ratchet straps when hauling equipment."

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SeeHorse wearable device transmits information such as temperature, pulse and respiratory rate to a cell phone.

Remote Monitor Keeps Tabs On Horse

Horse owners and breeders now have a new way to remotely monitor horses by cell phone. Similar to fitness straps for humans, the SeeHorse wearable device is more than just a step or calorie counter. It transmits information such as temperature, pulse and respiratory rate to a cell phone or other electronic device. It also has the ability to send the owner alarms and notifications when settings are exceeded, for example, if the horse goes above or below a certain temperature range.

A former researcher and developer for Blackberry, Peter Mankowski, founder/CEO of SeeHorse, based in Kitchener, Ont., paired up with co-founder and avid equestrian Jessica Roberts to create SeeHorse.

"We knew there was a need for a product like this, as there is nothing else like it on the market yet, and people invest a lot in their horses, financially and emotionally," says Roberts.

Unlike other devices, SeeHorse is designed specifically for equines.

"Horses have such unique characteristics — their way of moving, and vitals — meaning you can't attach any human heart monitor to them and expect accurate results. SeeHorse works with features that are the most accurate

and relevant for horses," says Mankowski.

Changes in a horse's vitals are some of the early signs that the horse is experiencing illness or distress, or foaling in pregnant mares. By setting up alerts and access by other parties such as a vet or barn manager, SeeHorse can help with early detection of many illnesses such as colic which could be potentially lifesaving.

SeeHorse is currently preselling the devices through its website (www.seehorse.ca) with delivery expected before February 2016. Customers range from horse breeders to serious competitors to urban horse owners who want to keep tabs on their boarded horses.

The waterproof device attaches to a horse's halter, bridle or chest strap and can be worn during training, transportation or whenever you wish to monitor your horse outside or in a stall.

Three versions, ranging from \$149 to \$599, plus a \$9.95 monthly subscription for the software, will be available, Mankowski notes.

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