



Compost sifter uses a barrel-shaped screen that rotates inside an angled framework. Sifted compost falls into a low cart. Inset shows articulated drag bar inside screen.



Spreader is equipped with an 18-in. dia. barrel made from expanded aluminum mesh. Inset shows toggle latches on screen's hinged loading door.

## Compost Tools Sift And Spread

Spreading compost is easier when it's sifted first, and Farragut Farm's compost tools do both jobs quickly and easily. The tools were designed and built by Marja Smets and Bo Varsano to more easily apply compost to their extensive garden beds.

"Because of our wet climate our compost is always wetter than is ideal, but with our sifter we can sift a bushel in about 5 to 10 min. with minimal effort," says Varsano. "Before we built our new sifter, we made do with a flat screen over a wheelbarrow. It was too slow and way too much effort."

The couple are market gardeners in southeast Alaska, where the sifted compost plays a key role in production. Farming on the edge of an inlet to Farragut Bay, they average 109 in. of rain a year. The location, which is off-grid and accessible by water only, is handy for gathering seaweed to use on their garden beds.

"Our 30-in. wide beds are often too wet for opening and closing seed furrows," says Varsano. "Instead, our seeder drops seeds on the surface of the beds, and we cover them with the fine, sifted compost. The compost is easy for the seedlings to penetrate, allowing passage through it and into the light."

The sifter is a standard barrel-shaped

screen that rotates in an angled framework, but Varsano notes that it is the details that make it effective. They include a good-sized loading chute, a lip to hold the compost in at the entrance, and an articulated drag bar. Also important is an outflow chute that directs the larger pieces into a collection bin. Grip handles front and rear make it easy to move it around. They also make it easy to lift up the front end to adjust the leg height to increase or decrease the angle of the barrel.

The 45-in. long by 26-in. wide frame is a combination of scrap angle iron and rebar. Varsano made the 36-in. long, 22 1/5-in. dia. barrel out of 1/4-in. rock screen. He wrapped it around hoops also made out of rebar. Spokes made from straight lengths of rebar attached to the hoops hold the revolving barrel to a central axle. The first hoop and spokes are inset a few inches to allow the loading chute to extend into the barrel. The axle is a 1 1/4-in. shaft salvaged from a Dodge Power Wagon winch pto shaft with its original bearings.

At the outflow end of the barrel a small, reversible, electric gear motor runs at about 20 rpm's. The chain drive to the axle reduces the speed to rotate the drum at about 7 rpm's. An articulated drag bar hangs from short

lengths of pipe on the axle. As the barrel rotates, the drag bar gets carried a short distance, sweeping compost ahead of it up the screen. The constant movement keeps the screen from clogging.

"It's handy to be able to reverse directions if you start to get some screen clogging or debris tangled up in the drag bar," says Varsano.

Material too large to fall through the 1/4-in. screen eventually reaches the overflow. What doesn't fall through is used on perennials like raspberries and rhubarb.

Sifted compost falls into a low cart that can be rolled under the sifter and is large enough to catch any screened material.

When a bed is ready for spreading, the appropriate amount of compost is measured out and loaded into the spreader at the bed. The spreader was designed by Varsano and Smets. Drawings and plans were then provided to a local fabricator.

"Normally we build all our own tools, but time constraints and experience welding aluminum made it a project to hire out," says Varsano.

They went with all aluminum construction for weight and corrosion resistance. It has 3-in. wide wheels for easy rolling. Push bar, frame, axle and wheel spokes are 1-in. dia. tubing. The 18-in. dia. barrel is made with expanded aluminum mesh with 3/4-

in. diamond-shaped holes. Thin 2-in. wide aluminum strips wrap the barrel, with the exception of the loading door with its 1-in. border. Barrel ends are solid circles of 1/4-in. thick aluminum plate.

The 11 by 18-in. hinged loading door is held in place by toggle latches. If needed, flow rate can be adjusted by using different sized mesh liners.

Smets emphasizes the importance of loading the constantly turning spreader with only enough material for the job. They use about 2 cu. ft. of compost to spread a 1/4-in. layer over their 30-in. wide, 30-ft. long beds.

"We considered making the drum free-wheeling, but it would have been more complex, difficult to build and expensive," says Smets. "Even a free-wheeling drum will drop a not insignificant amount of compost on the ground as you wheel it around. We thought it was a better alternative to figure out how full the drum needed to be to get the desired compost for a specific bed size. So far, it has worked out great."

For more details on Farragut Farm, see a recent article by Josh Volk in *Growing for Market*.

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## Spray Boom Mounted On Front Of Zero-Turn Mower

"I got tired of pulling a trailing sprayer behind my Cub Cadet zero-turn riding mower, so I removed the boom and mounted it on front of the mower," says Herman Gander, Kellogg, Minn.

He used scrap steel to build a couple of mounting brackets for the 8-ft. boom, then used existing holes in the mower's 50-in. deck to bolt it on. He kept the 15-gal. spray tank and pump in their original location on back of the mower, and ran a longer hose from the tank under the seat and up to the front boom. A toggle switch is used to turn the sprayer on or off.

"I use it every fall to control Creeping Charlie weeds, which is the best time to control them because they're dormant," says Gander. "It works better than a tow-behind sprayer because I can see what I'm doing without having to turn around. The boom has two nozzles, one at each end, and on a quiet day I can spray right up to my wife's flower beds.

"The toggle switch makes it easy to shut the sprayer on and off at the end of the lawn.



A long hose runs from trailing sprayer's tank and under mower seat up to relocated front boom.

My only cost was for the hose, which runs from the tank and under the seat to the front boom."

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## 3-Wheeler Repowered With 12-Hp. Briggs & Stratton

Mark Rahn of Ellis Grove, Ill. recently sent FARM SHOW photos of an old Honda 125 3-wheeler he repowered with a Briggs & Stratton 12-hp. vertical shaft, electric start engine.

"It's a tar-eating machine that doesn't go very fast, but has a lot of power. Adding the Briggs & Stratton engine was like installing a V-8 engine on a motorcycle," says Rahn. "When my kids were little they used to ride the heck out of this machine, and had a lot of fun spinning it around on snow and ice. We mounted a straight pipe on the new engine that makes it sound a lot like a Harley Davidson motorcycle."

To make the engine fit they had to turn it on its side at a 45-degree angle, and redesign the "oil slinger" in order to distribute oil throughout the engine. They also had to make custom intake and exhaust manifolds.

"At first we chain-drove the engine straight to the rear axle, but the driver had to be going about 40 mph before the centrifugal clutch would engage. That was dangerous," says Rahn. "So we decided to chain-drive the 3-wheeler's rear axle through a series of



Briggs & Stratton engine chain-drives 3-wheeler's rear axle. Note homemade exhaust pipe and dummy cover on side of engine.

sprockets and an add-on shaft, which gears the machine down. However, the machine then had so much torque that after about a month of riding and doing doughnuts, we managed to break the frame in half - twice. That was the only problem we had. So we reinforced the frame and have had no problems since then."

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