Splitter Repowered With Pto Drive

After the Tecumseh gas engine failed on his old wood splitter, Larry St. Germain switched to a pto drive. Salvaged parts and a local machine shop made the job relatively easy and low cost.

"It's a lot easier to start my V1600 Kubota when I want to split wood than it was with the old air-cooled Tecumseh," notes St. Germain.

To make the pto drive, he used a 15 1/2-in. pulley off an old air compressor.

He salvaged the pulley, as well as a stub shaft from a pto-driven gearbox. He had a machine shop make a tapered shaft for the large pulley and weld the stub shaft to it.

The Tecumseh was connected to the splitter's hydraulic pump via a coupler. St. Germain connected a shaft with a small double groove pulley to the pump.

He used a straight edge to line up the pulleys and their shafts. He used pillow block bearings to mount the shafts to an angle iron and square tubing frame he welded to the splitter. He simply backs up to the splitter and hooks up.

"A mechanic advised me to line up the shafts with a little angle, making the bearings work," says St. Germain. "If they are straight with no movement, they tend to wear in one spot."

Using the smaller pulley allows him to run the tractor at a lower rpm. "The Tecumseh ran at 3,500 rpm's," says St. Germain. "If I run the Kubota at 1,000 rpm's, the small pulley runs at 3,800. This way I can run the tractor at half throttle, and it works great."

Larry St. Germain converted his wood splitter to pto drive using the stub shaft from a pto-driven gearbox and the pulley off an old air compressor.

Contact: FARM SHOW Followup, Larry St. Germain, 165 Potato Hill Rd., Enosburg Falls, Vt. 05450 (ph 802 782-3556).

Jacob stripped grain drill down to make a tow-behind caddy, then added a 3-pt. hitch that attaches to drill's mechanical lift. He pulls a trip rope to raise or lower planter.

Mechanical 3-Pt. Lift Tows Behind ATV's

Terry Jacob turned a ground-drive mechanical lift from an old drill into a 3-pt. caddy for ATV's.

"I had a customer who wanted to pull food plot implements with his ATV," says Jacob. "A mechanical lift meant no need for electrical or hydraulic components. I can even pull it with my golf cart."

Jacob started with an 8-ft. Minneapolis Moline drill with a ground drive, mechanical lift. He removed the boxes and cut it down to match the wheel tracks of a 2-row planter he had restored.

"I made a rock shaft with a piece of pipe and welded two 3-pt. lift arms from an old Ford tractor to it in parallel," says Jacob. "I mounted it to the rear frame of the caddy with an arm welded to the end. It connects the rock shaft to the drill's mechanical lift."

He pinned the top link for the 3-pt. to a bracket he welded to the center of the rear frame. Needing a pivot point for lower links, Jacob mounted a steel rod between the axles and mounted the lower links to it. Braces welded between the front of the caddy frame and the rod, as well as a brace from it to the frame above, reinforce the rod. Top links with clevis ends connect the rocker arms to the lower links to provide lift. Additional cross bracing welded in place reinforces the entire caddy.

The parallel linkage on the rocker arm provides the vertical lift that Jacob wanted for use with the press wheel planter. He also added 80-lb. tractor weights to the front of the frame to act as a counterweight to the planter. Another 100 lbs. of weight added to the rear of the caddy frame prevents wheel slippage when the lift is activated.

"To lift or lower the planter, the operator pulls on the trip rope," says Jacob. "An adjustable trip on the drill's drive lets the operator adjust how far down the 3-pt. drops, which affects down pressure."

Jacob made a second caddy using the ground drive mechanical lift mechanism from a Minneapolis Moline spring-tooth harrow. He points out that any number of old implements have similar lift with some, like the drill he first used, having a lift on each wheel.

"If anyone has old equipment around and wants to talk about how to use it, give me a call," says Jacob. "If you think you can do it, you probably can. There is always a way to make it work."

Contact: FARM SHOW Followup, Terry Jacob, 9317 S.W. 72nd, Sedgwick, Kan. 67135 (ph 316 393-7731; ruth1110@kanokla.net).

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Bales are delivered by an apron chain conveyor to a lift arm that loads them onto wrapper.

Automatic Bale Wrapping Station

Inventor Geoff Eyre, Derbyshire, England, didn't like wrapping bales in the field where he would later have to pick them up, always having to be careful not to damage the plastic wrap.

That's what prompted him to design and build what he calls a "wrapping station" that makes wrapping a large group of round bales faster and more efficient.

Eyre invented the Traileyre round bale hauler more than 30 years ago (see FARM SHOW's Vol. 24, No. 4). It's still a popular bale hauler in the UK.

His idea for a wrapping station is that one man and a tractor could wrap bales after they're hauled off the field. The wrapping unit and conveyor are designed to load bales into the wrapper automatically.

Bales are dropped onto a pair of straight-rail conveyors that each hold 3 bales. They feed bales to a stationary wrapping unit.

Sprocket drives at either end drive apron chains fitted with cross bars that move bales down the conveyor.

Bales are wrapped by 2 McHale stationary units that were lowered about 6 in. In less than a minute, using his Traileyre bale hauler, Eyre can drop off 6 bales and head back to the field.

Power for the wrapping system comes from a stationary 27 hp. diesel engine fitted with two hydraulic pumps. Lift arms fitted with wheels move bales from the conveyors onto the wrappers.

Eyre says he's confident the bale wrappers, in conjunction with his Traileyre bale hauler, will be able to wrap 180 bales per hour.

It's still at the prototype state but Eyre expects the whole package of two conveyors, wrappers and a diesel power plant to sell for about $26,000.

New System Makes Farm Pond Water Drinkable

Brian Tennant needed drinkable water from a pond on his farm. That led him to design a plug-n-play water system that's now on the market after 12 years of research and testing.

The system can produce about 1,200 gal. per day. That should be good news for areas of western Canada where about 20 percent of farms use surface water.

"We use filtration to get rid of the particulates and then pass the water through reverse osmosis and additional treatments," explains Tennant. "The combination of multiple systems and being able to return backwash water to the pond makes our system different from others."

Tennant explains that reverse osmosis is used in other water purification systems. However, organic molecules found in surface water tie up the membrane. They have to be flushed away.

He tackles the problem in multiple ways. The first step is to install some type of aeration in the dugout to oxidize the water. He also recommends using Blue Cloud, a blue food grade dye added to the water to reduce algae growth and reduce particulates in the water. In addition, he suggests pulling water from the middle of the dugout, about one third of the way from the bottom.

A stainless steel screen on the intake gets rid of larger particles. Pre-filtering eliminates particles larger than 5 microns before the water gets to the RO part of the system.

"Most reverse osmosis units are designed to reduce wastewater to as little as 1 gal. for every 1 gal. of filtered water. This requires changing filters more often," says Tennant. "We use 3 to 4 gal. to flush the membrane for the 1 gal. that passes through, so we don't need to change the membrane as often."

The filtered water is sent through a large carbon filter designed to take out most chemicals. It also passes under UV light to disinfect any E.coli or coliform bacteria and then through a 1-micron filter to remove the parasite that causes beaver fever. Finally, it passes through a second UV light in case the first one has failed for some reason.

"Having the ability to recycle wastewater was important," explains Tennant. "It makes the system simpler and lowers cost. We make safe water without adding chemicals like chlorine."

The Dugout to RO system is priced at $16,500 if placed in an existing building. For an additional $5,000, it comes in an insulated, self-contained structure, ready to be set up at a remote location. The system comes with a 400-gal. water storage container. The Blue Cloud water coloration system is extra.

"Average water use is from 50 to 60 gal. per person per day," explains Tennant. "The tank ensures an adequate buffer."

Contact: FARM SHOW Followup, Dugouts to Reverse Osmosis, P.O. Box 599, Kipling Station, Sask. Canada S0G 2S0 (ph 306 736-9669; briantennant@sasktel.net; www.dugouts-to-ro.com).