

High-Power Hand Pump Works On Deep Wells

Darren Holliday's WaterBuck Pump lets him pump water from an 80-ft. well by hand. Holliday wanted a pump that would work off grid to supply his home and garden water needs. What he came up with does that and a whole lot more.

"Deep well hand pumps are not practical, except for emergencies, because of the effort required," says Holliday. "I wanted something my wife or I could both pump to get a lot of water, not just now, but when we are in our 70's and 80's."

Holliday designed the WaterBuck for his own use, but is now selling it. The 76-in. tall, two-handed pump uses its mechanical advantage to let him pull big volumes of water from 80 ft. and deeper.

The WaterBuck has a 4-ft. wide handle to accommodate two people, and the handle can be extended from 4 to 5 ft. for greater leverage. Holliday recommends it be used with windmill-style reciprocating pump cylinders of up to 6 in. in diameter. He suggests using 3/4-in. fiberglass sucker rod to handle the high torque produced by the WaterBuck.

The current WaterBuck has a 16-in. stroke. Holliday plans to go to 18-in. on the next generation. He suggests the machine could handle a 26 or 28-in. stroke, though it might require two people to do the pumping at greater depths.

The pumping rate and depth that water can be pulled from depends largely on the size of the cylinder as well as the stroke.

"If you used a 2-in. cylinder in a well with a static water level of 300 to 500 ft., you could

still produce 3 gpm with the WaterBuck," says Holliday. "With a shallow well, an 8-in. casing and a 6-in. cylinder, a WaterBuck could produce more than 30 gpm."

Volume produced also is a matter of the strength of the person pumping. Holliday has run trials using his WaterBuck with a 4-in. brass pump cylinder, a static water level of 80 ft., a 2-in. drop pipe, and a 3/8-in. metal pipe sucker rod.

"I can pull 13 1/2 gpm with 17 full strokes of the WaterBuck with the pump lever extended to 5 ft.," says Holliday. "A 64-year old woman reached 7 gpm with 19 half strokes."

Holliday compares his output to a standard hand pump. He estimates it would require a strong, fit man stroking a traditional hand pump 60 times a minute to get 3 gal. of water from a 3-in. cylinder with a static water level of 80 ft.

While Holliday intends to use his WaterBuck off grid, he suggests it also offers dependable back-up to powered pumping systems.

"If you put in at least a 6-in. casing when drilling a well, there is room for a 3-in. well cylinder in addition to a submersible pump," he says.

Holliday says the WaterBuck can be used with a standard pressure tank. It will force water into the tank, building up water pressure to around 50 psi to supply home needs.

The current generation WaterBuck is priced at \$6,300 when sized for a static water level of 80 ft. That would be considered



Home-built, two-handed pump lets Darren Holliday pull big volumes of water from an 80-ft. deep well by hand.

high compared to a hand pump, but it's less than a comparable solar system or even a 10-ft. windmill. The price includes a brass reciprocating pump cylinder, brass stuffing box, cylinder strainer, fiberglass sucker rods, sinker bar and concrete anchors.

Gym weights can be added, if needed for leverage, to each side of the handle bar of the pump. A built-in counterweight offsets the weight of the sucker rod in the cylinder.

Holliday says a new generation WaterBuck will have a cam added "off the shaft" on both upper ends of the pump lever. Similar to cams found on pumps over oil wells, they

will increase efficiency for greater output and less effort.

"The counterweight for the sucker rod may not be needed with water levels less than 100 ft. deep, but with it I think we will be able to pump water at levels of 600 to 700 ft.," says Holliday.

See the WaterBuck in action at www.farmshow.com.

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Grain "Unbagger" Rolls Up Plastic As It Empties Bag

Neeralta Manufacturing has introduced a double-duty grain extractor. It unloads a 9 to 12-ft. dia. grain bag at up to 150 bu. per minute and rolls up the empty plastic bag into a neat 30-in. wide, 350 to 400-lb. roll.

"We've been selling grain baggers for years, and the plastic is always a hassle for people to handle," says John Wierenga, Neeralta Manufacturing. "We've been working on an extractor for several years and decided to add the bag wrapping mechanism."

Wierenga, who runs the company with his brother Rob, says his father Burt, who founded the company in 1984, was actively involved in the research and development. The three of them see the bag pickup feature as good for customers and good for the environment.

"In Saskatchewan alone, they say there are more than 1,000 tons of plastic bags used each year," says Wierenga. "They are getting serious there about a recycling charge like a deposit on the bags. We can see it coming in Alberta. The only way to recover a charge

like that will be to recycle the plastic. Our extractor will make that easier."

The Neeralta Grain Extractor is available in either trailer or 3-pt. hitch style and retails for \$39,900. Equipped with a self-contained hydraulic pump and reservoir, it can be mounted on a 90 hp tractor.

The spool that wraps the bag is located at the top of the extractor above the auger. When the bag is empty and has been fully wound in place, it's tied off. As the two-part spindle it has wrapped on is drawn out of the way, the plastic bale drops down on top of the auger and rolls into a waiting truck, trailer or onto the ground for later pickup.

"Because the bag is wound up, it should shed wet or clinging grain and dirt," says Wierenga. "This is important for companies that recycle the bags. We were contacted by one of them, and getting clean plastic was their biggest challenge."

There are other machines that wind up bags after emptying, but Wierenga says they don't leave the plastic in as tight a bale as his



Neeralta Mfg.'s new grain extractor can unload a 9 to 12-ft. dia. grain bag at up to 150 bu. per min., then roll the empty plastic bag up into a neat 30-in. wide roll.

machine. He adds that bags left on the ground attract mice and other critters that can get in and nest.

To see the Neeralta Grain Extractor in action, check out the video at www.farmshow.com.

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Cordless Clippers For Livestock

You can work on livestock anywhere with cordless clippers from Beilers Pneumatics of Christiana, Penn.

Tool store owner Elam Beiler listened to customer's requests for portable clippers and incorporated it with something most folks have – a rechargeable 18 or 20-volt battery.

"We take hand-held grinders from manufacturers and put clipper heads on them," Beiler says. He offers models for 20V Dewalt and 18V Makita and Milwaukee rechargeable batteries.

The Oster Clipmaster clipper heads come in different models suitable for trimming

cattle, horses, sheep, goats and dogs. It's common to trim off horse and cattle winter hair in the spring for sanitation and animal comfort, Beiler says.

One charge is enough to trim at least a couple of horses or cows, he adds. Customers like the convenience of taking the clippers to the animals and not having to deal with an electric cord.

The clippers (batteries not included) range from \$295 to \$325 for the various models for horse and cattle trimming. Sheep clippers run between \$339 and \$369. Beilers Pneumatics also sells batteries, chargers and replacement



Cordless clipper heads come in different models suitable for trimming cattle, horses, sheep, goats and dogs.

blades.

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