

## They Restore Windmill Gear Cases To Better Than New

Paul Petrocchi at American Windmill restores gear cases to better than new with a special oil seal and roller bearings.

"One of the reasons we started installing roller bearings and oil seals was having to throw away the clothes I wore when working on windmills as oil from gear cases went everywhere," says Petrocchi. "I wanted to be able to go up the tower and have it be a clean and safe place to work."

Petrocchi and his wife Ellen Sattler do complete restorations of old windmills, as well as install new ones, mostly in western and southern states. They have worked on windmills for more than 35 years. Petrocchi began as a college intern in a windmill factory carving blades. While he works up on the towers, Sattler handles the business end, as well as building towers and operating cranes and trucks. She is also his main consultant.

"She can't use a tool, but she can see how it should be used to resolve a problem and explain it to me," says Petrocchi.

Although their specialty is Aermotor, they work on all brands and models of windmills.

"We've worked on more than 100 different

models from different manufacturers," says Petrocchi. "Most of the work I do is on the platform. We also do some in the shop. We'll restore a gear case like it was just factory made."

Upgrading gear cases to prevent leaks is a unique specialty and spans all makes and models. He explains that with the exception of one made by Duplex, most machines were not sealed off or not sealed off well.

"Companies did all kinds of things to seal off the nose, while some just dumped in oil," says Petrocchi. "If you can seal it off, the oil stays in the tank and stays cleaner."

To seal off a gear case, Petrocchi often has to modify the nose of the main casting to accept the roller bearings and oil seal.

"We end up cutting off from 2 to 5 in. of the nose of the main gearbox. We then make a bell shape flange to fit inside the nose," says Petrocchi. "It expands when heated to seal tightly to the old case."

He explains that the flange has to be fabricated carefully. If it expands too much, it can shatter the old cast iron gearbox.

Some rebuilders will put a needle roller

bearing in, but not the hardened shaft and needle housing. The shaft is key and has to match the housing in hardness.

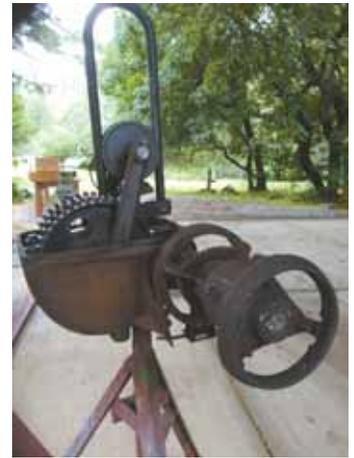
"We are fortunate to have an older machinist who is really into metallurgy," says Petrocchi. "You need to know what the metal will do. If you build it like the hub of a car wheel with a hardened shaft, a great set of bearings and an oil seal, you have it."

If a FARM SHOW reader has a windmill or gear case to be restored or upgraded, Petrocchi suggests sending him pictures, the make and model, as well as the diameter of the fan. "We need pictures of the gearbox, any ID marks, the tail and the tower, as well as dimensions of cross members and the ladder."

Petrocchi recommends anyone interested in windmills and windmill restoration should subscribe to the Windmill Gazette. He also recommends attending the Windmill Technology Certification Workshop (Vol. 38, No. 6) at New Mexico State University.

Sattler recommends readers contact them by phone or email as she and Petrocchi are often traveling for business.

Contact: FARM SHOW Followup,



**American Windmill specializes in restoring gear cases to prevent leaks, using a special oil seal and roller bearings.**

American Windmill, 5981 Silver Ridge Lane, Placerville, Calif. 95667 (ph 530 644-3008; ellen@windmills.net).

## Business Is Good For Baler Repair Experts

The older the baler, the more likely its owner will end up calling Vernon Hershberger for parts and repair, or at least advice. Fixing balers is a big part of Hershberger's farm equipment repair business. If a customer is too far away for an economical visit, Hershberger or an employee will try to assist over the phone.

"We specialize in aftermarket parts," says Hershberger. "Increasingly, companies have stopped offering OEM parts for their older balers." Either the part is interchangeable on a newer baler and the number gets changed, or the company just doesn't want to support the older models. Sometimes they just can't find a mechanic willing to work on older balers.

"Our customers often come to us simply to save money," adds Hershberger. "Our aftermarket parts can cost 25 to 75 percent less than what they would pay at a New Holland or Deere dealer.

"We can also supply parts for Case IH balers, but there aren't a lot of them in our area," says Hershberger. "We carry a lot of parts for round balers, including belts, which we buy in bulk and make up to order."

While the bulk of business is done within 100 miles of the Baltic, Ohio, shop, the company has a growing reputation.

"We had one customer bring his Deere 214 square baler on a trailer from Ft. Wayne, Ind.," says Hershberger. "That's close to a 4

hr. drive one way. His dealer had refused to work on it."

He recently shipped 2 New Holland square balers and a single bar mower to the Dominican Republic. He has sold parts to baler owners in most states in the U.S. and into Canada.

When a call comes in for help, the biggest challenge involves the knotters. "The farmer knows it doesn't tie, but not why," says Hershberger. "We start by asking how the ends of the twines look. Are they played? Where are they in the knotter? It is very difficult to try to fix a baler over the phone."

If knotters are a challenge, perhaps an even bigger one for the repairmen is knowing when to advise against repair. "You have to get to that happy medium between fixing the baler properly, yet not overspending for the customer," says Hershberger. "We have had people bring in a rusted out machine and want to fix it, but they would tie up more money than it is worth."

Recently Hershberger started cutting down older balers to make half size, decorator bales. The little bales are popular as yard decorations.

Hershberger finds the baler market interesting. When he first purchased Farmer's Equipment and Repair from the previous owner, Hershberger didn't do any work on balers.



**Vernon Hershberger rebuilds bale knotters as well as many other baler parts. "We specialize in aftermarket parts," he says.**

"I did some the second year and quickly discovered a big demand for a baler mechanic," says Hershberger.

Luckily for him he soon hired a young mechanic with a touch for balers. Hershberger gives Alvin Schlabach a lot of credit for the growing business.

Hershberger notes that Schlabach shares his satisfaction with helping a customer resolve a problem. "We both enjoy the challenge and

excitement of fixing a problem under the pressure of the baler being in the field and the farmer trying to get the hay baled," says Hershberger. "There is a rewarding feeling to getting a baler fixed."

Contact: FARM SHOW Followup, Farmer's Equipment and Repair, 3589 State Route 643, Baltic, Ohio 43804 (ph 330 897-1106).

## "Quick Connect" Shop Vac Pump

If you've ever used a shop vac to dry out a flooded basement, you'll be interested in this "quick connect" vacuum pump that hooks up to Ridgid vacs that have a drain. It lets you use an ordinary garden hose to quickly pump the water outside, without having to haul the full vac up and down stairs.

A standard 5/8-in. garden hose connects to the pump. The unit pumps water at 10 gpm up to 40 ft. high.

Sells for \$49.97 at Home Depot (ph 800 474-3443; www.homedepot.com).



**"Quick connect" vacuum pump hooks up to Ridgid shop vacs and uses a garden hose to pump the water outside.**

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