"Vulcan Grip" Pulley Treatment Eliminates V-Belt Slippage

"Our patent pending Vulcan Grip treatment for pulleys eliminates belt slippage and pulley wear in V-belt drive systems, resulting in dramatically improved performance. Belts run cooler, sheave wear is virtually eliminated, and fuel efficiency and production are improved," says Jon Osborne of Extreme Industrial Coatings in Airway Heights, Wash.

Vulcan Grip is a factory-applied, super-hard nanoceramic coating for sheaves and pulleys that has a microtexture resembling an asphalt road surface. "That texture dramatically increases the coefficient of friction between belts and sheaves. And the coating is ultra-durable; only diamond can cut it," says Osborne.

"We're a small company, yet we believe this technology will change the world of V-belt power transfer," says Osborne. "Ever since the introduction of V-belts back in 1917, no one has improved on the coefficient of friction between belts and sheaves in a way that was both durable and belt friendly. Vulcan Grip means operators can say goodbye to costly worn belts and sheaves and loss of power and fuel efficiency."

Belt slippage isn't always easy to see, says Osborne. "You might not hear the belts on your machine squealing so you think they're not slipping. However, if the grooves in the pulley are becoming deeper or your belts are always hot, it's proof there is belt slippage."

He says the coating process is highly specialized so they need to do it in their shop. "Our customers send us their pulleys, or we buy stock pulleys and coat them. It's not an inexpensive process and is marketed to end users who understand that 'time equals money'. Our main market is high horsepower machines such as combines, forage harvesters, rotary tillers, and feed mixers that transmit a lot of power."

Osborne began offering the process last January in the Pacific Northwest, and they've already treated more than a dozen wheat-harvesting combines and self-propelled forage harvesters.

"Right before the wheat harvest in eastern Washington this summer, we sent fliers out to several dozen big farms in the area and got a tremendous response. One farmer called to say we were too late for this season because he already had his machines working in the field, but he still wanted to thank us because he's glad that finally someone is doing something about this problem. Who calls to thank a manufacturer for mailing them a flyer?"

Osborne says belt slippage creates friction and heat, which wastes engine power. "Your machine may have a powerful engine, but its production will be limited by how much power you can put through the belt. By eliminating belt slippage, all the power gets transmitted downstream."

The results can be impressive, says Osborne. "One of our customers, Phil Kuiken of Sunnyside, Wash., for the last two seasons has used pulleys treated with Vulcan Grip on his Claas 980, which is an 800 hp self-propelled forage chopper. He told us he saves 20 to 50 gal. of diesel fuel per day when running his Vulcan Grip-equipped harvesters. He's able to operate the engine at 100 percent of engine rpm's, whereas in the past he had to back off because the belts were slipping. As a result he is also able to go faster and chop 5 more truck loads per day."

Vulcan Grip's super hard surface is said to make belts last longer, too. "When belts don't slip, they don't get hot. Because Vulcan Grip's ultra-hard surface gives sheaves 'friendly friction', belts last much longer and run cooler to the touch," says Osborne.

"For example, Kuiken's forage harvester was generating so much heat due to belt slippage that he couldn't even put his hand on the hood that houses the belts and engine without getting burned. However, after the pulleys were treated with Vulcan Grip, the belts were merely warm to the touch. The pulleys and bearings weren't hot, either."

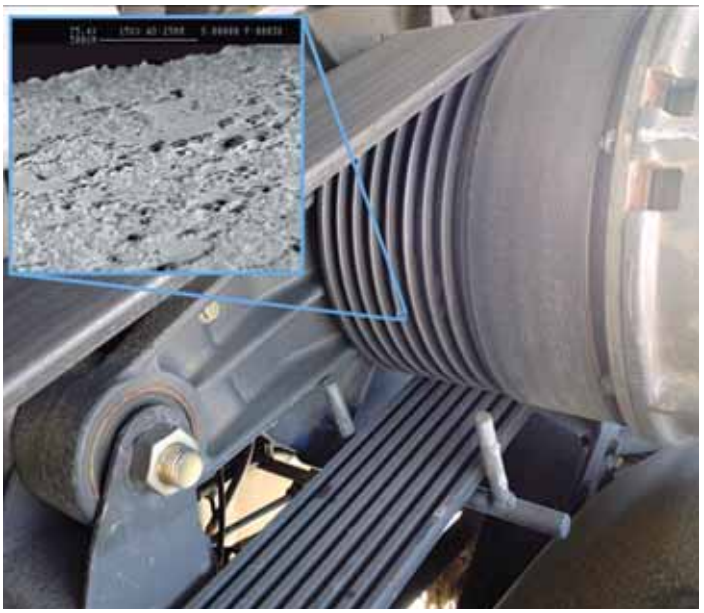

Photo shows pulley treated with Vulcan Grip on a Claas 980 self-propelled forage harvester. Vulcan Grip's ultra-hard microtexture (inset) resembles an asphalt road surface under a microscope.

Vulcan Grip prices can range from $24,000 to coat all 16 pulleys on an 800 hp self-propelled forage harvester, to as little as $450 to coat a single-groove, 6-in. dia. pulley.

"In certain applications, many customers find that the cost of a high performance, permanent Vulcan Grip coating is about the same as a manufacturer-proprietary 'disposable' pulley from an equipment dealer. In other applications, Vulcan Grip can cost 300 to 500 percent more than a commodity-grade imported pulley," says Osborne.

You can watch a video on Vulcan Grip at www.vulcan-grip.com.

Contact: FARM SHOW Followup, Jon Osborne, 11319 Willow Ave. W, Airway Heights, Wash. 99001 (ph toll free 855 777-9977 or 509 991-1773; jon.osborne@rocketclutch.com; www.vulcan-grip.com).

Custom gearbox can be bolted to either side of a combine header auger to replace the belt drive.

Gearbox Replaces Combine Drive Belt

John Curtis says his company's new ratio gearbox can replace belts on high use equipment such as combines and forage harvesters. Curtis Machine designed the custom gearbox in 4 months and machined the first prototype housing from a solid block of aluminum using computer automated machining. Curtis says that with different shaft configurations, the reducer bolts to either side of a combine header auger and replaces the belt drive. "The reducer is designed to provide greater longevity than a belt drive and reduce downtime for a harvester operator," Curtis says.

The unique design won a new product award from the Western Kansas Manufacturers Association at the 2015 3I Show in Dodge City, Kan.

Curtis says the reducer was initially built for a 160 hp machine, but can be scaled up to larger horsepower combines. The company designs and builds a variety of specialty, custom and standard gearcases for combines and other ag equipment. Prices vary depending on the design, size and complexity of the gearbox or reducer.

Curtis has a nearly 70-year history of producing high quality machined parts, gearboxes, and gearing for hundreds of commercial and industrial applications. The company makes right angle, off angle, and parallel shift gearboxes for any angle from 0 to 360 degrees. Customers who need an offset 1:1 ratio, a 40:1 reduction, or a 1:40 speed up gearbox, or anything in between, can rely on Curtis to supply what they need. NEMA, SAE and custom flanges can be designed into the housing. Splined, keyed or hollow bore shafts are available.

The company has a nearly 70,000 sq. ft. facility dedicated to machined part production.

Contact: FARM SHOW Followup, Curtis Machine Company, P.O. Box 700, 4209 Jayhawk Drive, Dodge City, Kan. 67801 (ph 620 227-7164; www.curtismachine.com).

Spring-Loaded Garage Door Hinges Save Money, Stop Rattle

As a mechanic, Lester Mortier, has always been annoyed by overhead doors that rattle and leak heat to the outdoors while he works in his shop in winter. About 5 years ago, when he saw snow filtering through the door gap, he was inspired to put a spring in the hinge.

"It pushed the gap shut and it worked. I noticed the furnace was not running near as much," Mortier says.

Five years later, Mortier's patent-pending Green Hinge System is made and assembled in the U.S., and available online and through dealers. Prices start at $14/hinge or $84 for a 4-panel system.

"The number one complaint about overhead doors is door rattle, but it's the energy savings of the product that's most important," Mortier says.

He illustrates by pointing out that a 1/8-in. gap around an 8-ft. door equals a 4 by 6-in. hole in the wall.

The hinges are powder coated, 12-ga. steel with a lifetime warranty. They can be removed from one door and put on another.

The system comes in 2 styles. Commercial doors have heavier hinges with increased spring tension. Residential doors, 12-ft. and under, have a lighter spring tension.

The heavier spring tension is used for bigger doors commonly used by municipalities, schools, businesses and fire departments.

Mike Huffman, corporate account manager, works with commercial customers to tap into rebates that are part of custom business incentive programs. Wisconsin Focus on Energy, for example, offers an $80 incentive per door.

Spring-loaded garage door hinge pushes door gap shut to keep heat from leaking outside.

"Almost every state has some kind of incentive program that rewards business customers to reduce energy usage," Huffman says. "Payback is typically 1 1/2 to 3 years."

Besides saving energy costs, the sealing system helps control dust and keeps insects out.

The Green Hinge System can be purchased through the website or from overhead door dealers. Professional installation is recommended.

Contact: FARM SHOW Followup, Lester Mortier, Green Hinge System, 4429 Hwy. 22 East, Lena, Wis. 54139 (ph 920 834-3848; www.greenhingesystem.com; sales@greenhingesystem.com).