

“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



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.

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.”

“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.

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“Wheel Rim” Stump Burner

Digging out tree stumps is ordinarily a job for a bulldozer or an expensive stump grinder. Californian Matthew McKinzie came up with a relatively easy and inexpensive way to get rid of stumps when clearing land. He burns them out using old tractor wheel rims.

“I use the idea mainly on thorny locust and hedge trees because they burn hot even when cut fresh. I burn up not only the stump, but the entire tree. Normally everything is gone within 3 to 4 days,” says McKenzie.

“I cut down the tree, then build a fire on the stump with the wheel rim in place around it. Normally everything is gone within 3 to 4 days. I stoke the fire once a day, burning the stump to below ground level. I’ve also used



Matthew McKinzie burns out tree stumps using old tractor wheel rims. “I cut down the tree, then build a fire on the stump with the wheel rim in place around it,” he says.

this idea to burn elm trees, but I first mix in some hedge trees to make the fire burn hotter so everything else will burn up.”

He says the wheel rim contains the heat inside the ring without letting it escape, focusing the heat down into the ground. “It works even better than stacking brush in a

pile. No matter how tight the pile is stacked, it still won’t burn as well as inside a ring because all the heat escapes,” notes McKinzie.

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