

“Regrooving” Extends Tire Life 30,000 Miles

Before you toss any used truck tires, check to see if they’re labeled “regroovable.” A standard regroovable tire can run for another 25,000 to 30,000 miles, says Rob Cornell.

Cornell started regrooving tires when he was an owner/operator of a Fedex delivery truck. Tires on the truck cost him about \$200 each, but regrooving the four rear tires cost him practically nothing. The upfront cost of a regroover was \$300, though they’re available for less than \$100.

“I bought a Van Alstine G100 with extras,” says Cornell. “It plugs into household current, and if I am really deep or the blade is dull, I can crank up the heat and it will go. I can often go through half a dozen tires with a single blade.”

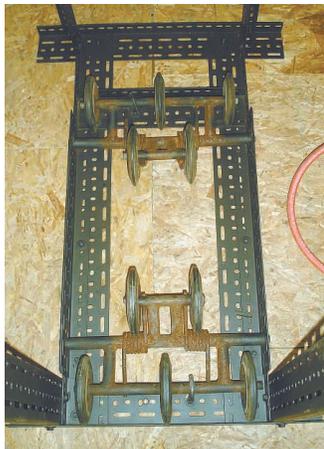
With blades costing less than \$1 each, tire regrooving really paid for Cornell.

To make the job easier, Cornell designed and built a tire regrooving cage. He saw a used one for sale on eBay for \$300, but his cost him nothing.

Cornell wanted to be able to spin the tires as he regrooved. At the same time the cage needed to be able to hold the tire in place if the going was difficult. His regrooving cage does both. The cage is four sided with an open end and top. Cornell rolls the tire in the end and rotates it on roller assemblies. When he needs the tire stabilized, he can lean it against either side or move it forward so it’s wedged between a roller assembly and the end of the cage.

Roller assemblies came out of a junked snowmobile. Each assembly consists of a set of three rollers in line followed by a set of two. The tire rolls forward over the first assembly and then rides between it and a second assembly, rotating on the two pairs of rollers.

Cornell built the 18 1/2-in. wide by 36 1/2-in. long by 38-in. high cage out of discarded shelving framework. The 1 1/2-in. by 3 1/2-in. angle iron was thick enough to be strong,



Rob Cornell bought a Van Alstine G100 tire regrooving machine. Tire rotates on a set of wheels.

yet easy to bore out and bolt together. Base pieces extend a few inches beyond the width of the cage to provide added stability.

To mount the assemblies, Cornell cut two additional 26-in. strips of the angle iron. He mounted them with the 3 1/2-in. side perpendicular to the floor, allowing him to bolt the assemblies through the high sides. They ride just above the floor so the rollers can spin freely. A clothesline hook over the center of each roller assembly axle and bolted to the framework helps keep them from twisting under the weight of a tire.

To regroove a tire, Cornell first checks it with a tread depth gauge. When he’s finished, he has to have at least 3/32 in. of material from the bottom of the groove to the top. On a snow tire, he might have 10/32 to 12/32 in. remaining when finished.

“Tires are incredibly thick if they are made to be regrooved,” says Cornell. “If you get



Regrooving cage allows Cornell to spin the tires as he regrooves them and also holds tire in place if the going gets difficult.

too deep, you can see the core of the tires with the metal belting. You don’t want to go that deep.”

Cornell says regrooving is easy to do. Simply insert the regroover into the existing grooves and retrace them. The regroover uses a combination of heat and a cutting blade to remove material.

“You want to go over the tire first to remove any stones or glass buried in the tread as they will dull the blade,” he says. “If there are exit channels, they need to be regrooved as well. Just follow the old pattern of grooves.”

Cornell regrooves tires for some of his former co-workers and others for \$50 each. He says it makes a nice sideline for him, but allows that anyone could do it for themselves for only a few dollars per tire.

“When I started regrooving my tires, none of the guys I worked with knew it could be done,” he says. “As long as you follow Department of Transportation guidelines, you can do it. It’s not rocket science.”

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Magical Magnets Make Terrific Tools - And Toys

You won’t believe what you can do with rare earth magnets. Called Neodymium-Iron-Boron (NdFeB) magnets and made with rare minerals, these super powerful magnets seem almost magical in many ways. They transformed Dan Bartmann from a guy selling magnets on eBay into an enterprise called Forcefield that sells magnets to everyone from magicians to major international corporations like Boeing.

“We started selling surplus magnets, expanded into recycling computers for magnets, and now buy direct from the manufacturers,” says Bartmann. “We are one of the few companies who keep a large assortment of all kinds of magnets in stock.”

Bartmann had become familiar with NdFeB magnets when he used them as components for wind turbine alternators. His website now offers page after page of technical and non-technical information on the magnets and their uses.

Available magnets range from miniature ones only 1/16 by 1/32-in. to as big as 2 in. square. While that may not seem large, it is the power that counts. Prices vary according to size and strength.

“Two inch square magnets can be quite dangerous,” says Bartmann. “They weigh about a pound. If two of them come within about 6 in. of each other and your fingers get in the way, they would smash together with

enough force to break a finger.”

While magicians looking for tools for their magic acts are regular customers, others are interested in magnets for more unique uses, including water treatment and magnetic therapy.

“We don’t promote either as there is not evidence to support them,” says Bartmann. “Another big group of customers is people trying to build perpetual motion machines. We have a whole thing on the website that says why it is impossible, but we still appreciate their business.”

An entire section on Forcefield’s website deals with safety. It notes that pacemakers and defibrillators are sensitive to strong magnets. It also warns that they can fly into each other or into steel or iron with such force as to shatter, sending out shrapnel-like particles. Magnets should also be kept at least 24 in. away from cassette tapes, floppy discs, credit cards, video tapes and computer hard drives. The company also warns against drilling or machining Neodymium magnets as they can shatter or even ignite, giving off toxic fumes and burning like magnesium.

Among the novel uses for the magnets mentioned are hundreds of ideas from customers. They include keeping freezer doors shut, improving a model train engine’s ability to hug the track, and holding written directions to a motorcycle gas tank so they



Cleaning up spilled or dropped nails is a good use for rare earth magnets. By attaching them to rake fingers, you can sweep through gravel to remove any fallen nails.



Magnets range in size from miniature ones only 1/16 by 1/32-in. to as big as 2 in. square.

don’t fly off when driving 100 mph.

Cleaning up spilled or dropped nails is a common use. Company personnel describe attaching magnets to rake fingers as a great way to sweep through gravel to get any fallen nails. As nails gather, simply rub them off into a pail.

Some uses make equally good sense, such as holding pieces of sheet metal together for



welding, or holding tools. And, of course, there is always the obvious...stick big things (like FARM SHOW!) to the fridge.

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