

State-Of-The-Art Sand Blasting

Jim Deardorff, Chillicothe, Missouri, who has been cleaning and painting old steel for more than 20 years, has discovered a better way to sandblast.

"Most people use sandblast sand to clean paint and rust off old equipment," he says. "But for antique tractors, classic cars and even vintage airplane parts, I've found that a blend of iron aluminum oxide and ground-up black walnut shells cleans better and more gently than sand. It can be used at lower pressures, doesn't damage fragile parts and is dustless, so parts cleaned with it don't require pre-paint preparation."

He has a unique way to promote his new sand blasting medium to car and tractor collectors. "I can take all the paint off a pop can without damaging the aluminum," he says. "You can't do that with conventional sand blasting."

Deardorff discovered his new sandblast mix by accident. "I normally re-use aluminum oxide blasting material. One day as I was re-using some after using it to clean up parts that were sitting on wooden pallets, I noticed the parts I was cleaning with it immediately became bright and shiny. I looked at the material and saw that small bits of wood from the pallets had actually been blasted off and were mixed in with the aluminum oxide," he says.

"I wondered if the wood had anything to do with how clean and bright the steel looked. I sometimes use ground black walnut shells for cleaning parts in food processing plants or petroleum pipelines where sand might cause problems with bearings, manifolds or pumps, so I mixed some of the walnut shells

into the aluminum oxide and the results were even better," he says.

Deardorff found that this mixture not only cleans up the metal without pitting or scratching it, but it also helps prevent rust. "I've had some customers tell me they've let parts sit for up to a year without any recurrence of rust," he says. "I'm not sure why this is. Perhaps it just does such a good job of cleaning the metal that it's harder for rust to develop on the surface."

"I've taken parts I've cleaned with this mixture to metallurgists at the University of Missouri-Rolla School of Mining and Engineering for evaluation and am hoping they'll be able to tell me why this happens," he says.

Using his mixture of walnut shells and aluminum oxide, Deardorff has been able to reduce the amount of pressure needed to clean paint and rust from fragile parts. "I normally use about 35 psi and rarely more than 50 psi to clean with this mixture," he says.

Deardorff says parts cleaned with his mixture can usually be primed immediately with no further brushing or washing.

While his mixture is initially more expensive than sand, it can be reused numerous times, limited only by the amount of contaminants that build up in it after each use. "It takes 10 reuses to break even with it," he adds. "And when it can no longer be used for parts cleaning, I use it one more time to brush-blast galvanized steel buildings before repainting. I've found this is much more effective for removal of oxidation (chalking) and rust than power washing. And then, we can paint the same day. With power



Farmall hood sand-blasted with walnut hull mixture shows no sign of damage.

washing, we have to wait for the siding to dry."

Using his walnut shell mixture, Deardorff can strip the paint from an entire medium sized tractor in 4 to 6 hours.

You can use the new mix with any sandblaster but Deardorff recommends a closed-top sandblast pot, which uses vacuum to pull media into the chamber. "This is the only thing I've found that works at low pressure," he says. It allows him to drop the nozzle pressure without losing pressurization of the blasting media. He also uses an air-induction nozzle, which mixes outside air with compressor air and the media. "This increases the air volume, which gives a more uniform blast pattern without reducing media impact speed," he explains. "It will work with as little as 5 psi, which is what I use for cleaning off pop cans."

Deardorff packages his special blasting mix in 50-lb. bags. It's called Classic Blast™. "We hope to have it priced at less than \$20 per bag, plus shipping," he says.



To demonstrate the effectiveness of his sand-blast method, Deardorff takes the paint off an aluminum pop can.

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Unique "Brake Fix" For Ford N-Series Tractors

Tractor restorer Dale Cottrill, Marietta, Ohio, specializes in Ford N-Series tractors, which are popular for use on hobby farms and small acreages.

"The brakes on these tractors were never very good, especially in reverse," he says. "People put up with them because you normally don't have to use the brakes all that much."

In trying to come up with a "fix" for the tractors he restores, Cottrill thought back to years ago when he operated a mobile crane. "The cable drums on those cranes worked with bands, similar to the brakes on the old Ford tractors," he says. "They tended to glaze over and didn't work as well as they should have, especially when hot. I carried a can of Bon Ami powdered cleaner with me and when they began to slip a little, I'd shake some of that down into the drums."

Cottrill figured since the cleaning powder worked on the crane's brake drums, it would work on N-Series brakes, too. "I shook some down into the brakes on a 2N and it worked great," he says.

That gave him the idea for a system that would automatically pump a little of the powder into the brakes whenever needed. "I drilled holes in back plates of the brake drums and ran a pipe from those to a box I made to hold the powder. This is connected to a small air tank made from a piece of 4-in. pipe. If the brakes slip a little, you just blow a little powdered cleaner into the drums by releasing

a little air from the pipe into the box," he says.

Cottrill says the system works so well he mounts it on every N-Series he restores. He also adds a hand brake lever on the left side of the tractor to lock the brakes when parking. "The original brake lock on N-Series tractors was clumsy and difficult to get to, so few people ever set the brakes on them," he says. "There are times when the tractor needs to be left running when it's parked though, and the brakes need to be set."

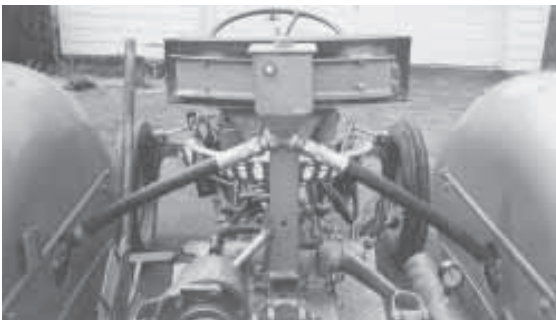
Cottrill has also come up with a power steering system for N-Series tractors that runs off a pto-powered pump. "I put an extension on the pto shaft so it can still be used for mowers and other equipment, and mount a pulley on the shaft to drive a V-belt to the power steering pump. I've been testing it on a 2N and still have a few problems to work out, but expect to have it ready to sell soon," he says.

Because the N-Series tractors don't have live pto, the power steering will work only as long as the clutch is engaged.

Besides fixing the braking problem and adding power steering, Cottrill is also making a jack for N-series tractors that mounts on the lower arms of the three-point hitch. With it, he can lift the rear wheels- or even all four wheels - off the ground for service.

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Metal box behind tractor seat holds powdered cleaner. Note small air tank, at lower right, which pressurizes box. When needed, the abrasive cleaner is blown through a pair of pipes to rear brakes.



Pulley mounted on pto shaft (left) belt-drives power steering pump. Cylinders connect to tie rods.



Cottrill also created this "self jacking" system for Fords. Attachments on front and back chain together. When tractor is driven forward, all four wheels lift off the ground.