

Simple Fix For Diesel “Blowby”

David Luttrell says he fixed the “blowby” problem on his 1975 Ford 4400 industrial diesel engine with just a little creative plumbing.

“Whenever the tractor sat idling for a few minutes, it would leave a puddle of oil and nasty residue on the ground,” Luttrell says. “One day I was talking to my father, who was an engineer, and I asked him about plumbing the breather tube line back into the engine. He suggested giving it a try because with all his experience working with engines, he didn’t see why it wouldn’t work.”

Luttrell first cut the breather tube shorter. Then he plumbed a solid line back and into the air intake behind the air filter. He says that simple fix solved the problem of oil and blowby smoke and the tractor has run great for the past 5 years.

“I thought when I first ran the tractor after I plumbed the line that it sounded different that it did before,” Luttrell says, “and I guess that would make sense since air, smoke and oil from the breather tube was making a full circle back to the intake. However, the engine didn’t misfire; it seems to have just as much power as it did before, but all the smoke and oil is gone.”

Luttrell bought the 4400 from an equipment auction in Pennsylvania with the understanding that it had a bad engine. “The auctioneer told me the tractor was owned by the county and that it was used for mowing road ditches. They wanted to get rid of it because they thought the engine needed to



All it took was a little creative plumbing for David Luttrell to fix the “blowby” problem on his 1975 Ford 4400 industrial diesel engine.

be overhauled,” Luttrell says. “I started the tractor on the lot and it sounded fine, so I took a chance and bought it.”

“I’ve used the tractor 5 years for loader work and heavy lifting and it runs just fine,” says Luttrell, who never overhauled the engine after making the fix. “I change the oil, the oil filter and air filter regularly and beyond that, it’s never caused me a nickel’s worth of problems.”

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Sanding attachment consists of an 8-in. long, 1/2-in. dia. wooden dowel rod that fits into the chuck on Wallrath’s cordless drill.

Simple Way To Sand Inside Cylinders

“It works great for polishing the inside of any hole,” says Robert Wallrath, Houston, Texas, who came up with this sanding attachment for his 1/2-in. cordless drill. It consists of an 8-in. long, 1/2-in. dia. wooden dowel rod that fits into the drill chuck.

“The end of the dowel rod has a saw cut that’s deep enough to slip in a strip of 2-in. wide coated sandpaper,” says Wallrath. “The sandpaper wraps itself around the rod, and

centrifugal force pushes it out as the dowel turns. It actually does a nicer job than using a file. Works great for removing corrosion from inside a cylinder that covers the tines on my garden rototiller, for example, and for cleaning out corroded brake calipers and other jobs.”

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“Swamp Cooler” Built From Old Furnace

“To cool off on hot days while working in my shop, I converted an old furnace into an evaporative ‘swamp cooler’ that simply hooks up to a garden hose that feeds cool well water into it,” says Gary Eberspacher, Milford, Neb.

The wheeled unit operates on standard 110-volt electricity.

He started with an old house furnace and cut the heating chamber and sheet metal off just above the squirrel cage fan. He used angle iron to make an angled frame and mounted it above the fan, filling in the sides and top of the frame with leftover sheet metal from the furnace. He mounted a used cooling coil from a heating and air conditioning shop in front of the fan.

Cool water runs through the cooler and then out through another hose that runs out to his lawn tractor sprinkler.

“It does a great job. Depending on how hot it is outside, I can lower the temperature 10 to 15 degrees in my small 20 by 30-ft. shop,” says Eberspacher. “I raise my shop’s garage door just enough so I can slip the hoses under it, and I use a switch mounted on the cooler to turn it on or off. The hoses hook up to pipe fittings that I had a local shop solder onto the cooler.”



Gary Eberspacher converted an old furnace into this evaporative “swamp cooler” that hooks up to a garden hose.

There’s no way to drain the cooling coil, so before winter sets in Eberspacher pumps antifreeze through it to make sure it doesn’t freeze up.

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Powder-coated metal parts look better and the finish lasts longer, says Chris Borning, who launched a business that powder-coats all kinds of metal objects.



Powder-Coat Extends Life Of Metal Parts

Chris Borning makes a good living powder-coating all kinds of metal objects – big and small – for farms and other industries. As a motocross racer in high school, he discovered powder-coated parts looked better and the finish lasted longer than paint. He went on to launch his business, C&L Powder Coating. He says his customers like the speed of the process and the durability of the coating.

“As soon as the coated part comes out of the curing oven and cools, it is ready to go,” says Borning.

Powder coating is a multi-step process. Older parts may be sandblasted, while new parts often go through an acid wash process. Then the powder is electrostatically charged to stick to the bare metal as it is applied. When the part goes into the oven, the powder liquefies and bonds to the surface.

“The cure time is 10 min. at around 400°F,” explains Borning. “Actual time in the oven depends on the thickness of the metal. Curing is achieved when the entire part reaches the required temperature for the full time.”

The size of the oven can be the limiting factor. C&L started out in 2009 with a 6 by 6 by 10-ft. oven. This past summer they added an 8 by 8 by 22-ft. oven to handle bigger jobs, like a request to coat 6 Deere tractor wheels.

“The farmer had planned to get them painted, but decided to go with powder coating,” says Borning. “We sandblasted them and applied a primer, top coat and clear coat. I put a 1-year warranty on the finish, but I expect he won’t have to touch those wheels for 20 years.”

Borning explains that the number of coats and the powder used can depend on how the product will be used and where. He won’t do an automotive wheel if the customer doesn’t agree to all the proper steps.

“Wheels take a lot of abuse and often don’t get cleaned,” he says. “If you don’t go with the primer, color coat and top coat, you’re asking for failure.”

Different powders offer different features, such as UV protection with polyurethanes, and rust and acid protection with epoxies.

“We may use an epoxy primer with a poly topcoat,” says Borning. “Acids won’t eat through the epoxy, and you get the color you want with the poly, plus UV protection to keep it from fading.”

Color choices used to be limited, but that has changed. “One powder manufacturer has more than 6,500 colors,” says Borning. “You can even get special textures like wrinkles.” Special colors can also add to the cost.

He notes that the yellow for the Deere tractor wheels costs around \$9/lb. Each job is bid accordingly. The Deere wheels were approximately \$150 each.

Limiting factors to powder coating are the thickness of the part and the ability to hold it at the right temperature.

Borning suggests that FARM SHOW readers interested in powder-coating should give him a call to discuss size, expected use and shipping. If considering other powder coaters, he recommends comparing the steps they follow and coats they recommend. He

points out that not all powder-coating is the same.

“I have a regular customer from Illinois who ships parts for us to coat,” says Borning. “He went through 5 different powder-coating operations before he tried us and was satisfied. It is a matter of quality and the time the operator is willing to put into the job.”

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