



McLaen's hydraulic-operated crusher can handle even large truck and tractor filters. Access door for inserting filters is open, at left. Photo at right shows the crusher components which include crushing chamber, hydraulic cylinder, and square tubing piston.

“Crusher” Flattens Filters Fast

Old oil filters don't last long in Dale McLaen's on-farm auto repair shop. His shop-built, hydraulic crusher can handle even large truck and tractor filters and do it faster than \$1,600 commercial alternatives.

“I couldn't find a commercial filter crusher that was fast enough, tough enough, or big enough for my needs so I built my own,” says McLaen. “In about 20 seconds, it will crush most automotive filters down to about 1 1/2 in. and most truck filters down to 4 in.”

McLaen fabricated the crushing chamber out of 7 by 7-in., 1/4-in. steel tubing. A 6 by 6-in., 3/8-in. square tube piston and a 4 by 9-in. hydraulic cylinder fit inside the chamber. The piston is shimmed with 2 strips of 1/8-in. thick steel on each of its four sides to keep it from binding in the slightly larger chamber.

The cylinder pins to clevis-like ears on a plate that fits in the top of the chamber. Two pieces of channel iron are welded to the top of the plate.

“I drilled 2 sets of holes at the top of the chamber for pins that slide through the chamber walls and the channel iron,” says McLaen. “The pins let me take the plate out or raise it for taller filters by slipping them in the top pair of holes.”

An access hole in the side near the bottom of the piston lets McLaen pin the cylinder ram to ears welded to a steel plate welded to the bottom of the piston.

“Pinning the different components together makes it easy to service the crusher if needed,” says McLaen.

Most of the steel came from McLaen's scrap pile or that of a neighbor. The hydraulic cylinder came from an online surplus center, and a local NAPA dealer made the hoses.

“I power it with the auxiliary valve on my skid steer, but any hydraulic pump or set of remotes would do,” says McLaen. “Oil from the crushed filters drains out of a 1-in. hole in the bottom of the chamber and into a catch pail.”

The entire crushing unit is mounted on wheels, with the chamber mounted high enough that McLaen doesn't have to bend over to slip filters through the access door. “I can move it out into the open when there are a bunch of filters to crush and out of the way, when it isn't needed,” says McLaen. “I can crush 3 small filters or 2 large ones at a time.”

He fabricated it in his spare time over a couple of weeks. Oil from the crushed filters is burned in the shop's waste oil furnace, and the metal is recycled.

“It was fun to build and is even more fun to operate,” says McLaen. “The total cost was about \$900, and most of that was hydraulics.”

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Handy 90-Degree Wrenches

As an owner of businesses that use big trucks and heavy equipment, Kenny McCulley has accumulated an impressive collection of unique and expensive wrenches. But a couple of his “sideways” wrenches caught our attention.

“I bought cheap wrenches (12 and 6-in. from Harbor Freight) and cut off the heads with a chop saw, turned them 90 degrees and arc welded them back on,” says McCulley. “They work in hard-to-get places, like taking a hydraulic line off.”

The low-cost wrenches cut easily, he says, and he's had no problem with the welded heads breaking off.

“The weld may be stronger than the wrench,” he notes.

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McCulley bought cheap 12 and 6-in. wrenches and then cut off the heads, turned them 90 degrees, and welded them back on.



Hydraulic valve kit consists of male couplers with female extension tips, and 2 retention plates with bolts to lock the tips in place.



Kit Fixes Leaky Hydraulic Valves On Deere Tractors

Galen Snoeberger can clean up the hydraulic valve mess often found on older Deere tractors. His kit costs about \$100 less than Deere's fix and takes less than 5 min. to install.

“The little balls in female coupler tips can get worn down, loosening the connections,” says Snoeberger. “A kit from Deere to redo a valve is around \$250. My bolt-on kit is only \$150 plus shipping.”

Snoeberger has been making the kits for about a year. They consist of male couplers with female extension tips and 2 retention plates with bolts to lock the replacement coupler tips in place.

Installation is simple. Insert the male coupler tips and place one retention plate on

the back side of the housing and the other over the male tips. Bolt the plates in place with the 1/4-in., 6-in. bolts provided and screw on the female tips.

“Some valve castings have a burr on the back side,” notes Snoeberger. “They may require longer bolts, or they can easily be ground off.”

He explains that his kit can update couplings on older 20, 30 and 40 series Deere's. When ordering, select the more universal Pioneer-style female coupler tips found on newer Deere tractors. The original Deere-style female tips are also available.

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Madson's Service specializes in IH and Farmall tractor parts but also carries parts for other brands.

Looking For A Tractor Part? Try These Guys!

When you need a tractor part, it's nice to know that the salesman has hands-on experience with tractors and tractor repair. That's the kind of help Madson's Service Inc., in St. Nazianz, Wis., prides itself in offering. What started as a tractor repair shop operated by Ervin Madson in 1971, evolved into a service and parts shop that specializes in IH and Farmall but also carries parts for tractors of all colors from John Deere to Ford. In the 1980s Madson's added new Cub Cadets and parts to its inventory.

“We're small enough so that everyone wears a lot of hats and knows all parts of the business,” says Scott Madson, who bought into the family business with his wife in 1995.

With 10 to 15 outside parts vendors, and a large stock of inventory, Madson's can get parts for models from 1939 to the present, though they have older model parts as well.

“We really specialize in old restoration parts for collectors - from tune-up parts to

sheet metal to clutches and hydraulic pumps,” Madson says. “We surprise a lot of people with the parts we are able to find. We recently did some mechanical repairs on a Case IH 7140 tractor that was the first production 7140 to be sold to the public. It's always exciting to work on models or serial numbered tractors that are rare.”

Cub Cadets are also popular and make up about half of the business, he adds.

While many sales are local, employees who answer the phones are often mechanics who can knowledgeably answer questions and find the correct parts.

“We sell parts all over the world,” Madson says.

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