He Overhauls Hydraulics On Antique Deere Tractors

If your antique John Deere needs its hydraulics repaired or overhauled, Gary McLaughlin can probably do it. Growing up on a farm, he learned welding and hydraulics repair from his dad. Today the director of maintenance at an aircraft company uses some of his dad's vintage metal lathes to repair and rebuild vintage hydraulic systems on evenings and weekends.

"I work on anything Deere built between 1934 and 1960," says McLaughlin. "I specialize in hydraulics, but also do custom machining."

He does repair and overhaul for Deere Power-Trol, Custom Power-Trol, Power Lift valves, Rockshaft control valves and Touch-O-Matic systems. He also consults with others who are restoring or repairing hydraulics and gives seminars at antique shows and gatherings.

McLaughlin got interested in the Deere Power-Trol when he restored a 1951 B that had been sitting in the weeds. Soon he was working on hydraulics systems for others. In 2006 he decided to get serious about the hobby and started MACfabrications.

"It took me about a year to build the tooling, develop the documentation and get the training I needed," says McLaughlin. "Now you can send me what you have, and I'll rebuild it back into what Deere installed originally. I test every part with a hydraulic mule and have just finished a test stand that will drive remote pumps."

Knowing what to do sometimes means knowing when and when not to follow the repair manual. McLaughlin says that Touch-O-Matics are challenging and require following the manual word for word. However, in one case the manual says to install a seal backwards.

"In that case, if you follow the manual the seal will leak like a sieve," he says.

When faced with an unavailable or extremely expensive part, McLaughlin finds an alternative or makes his own. "A customer asked me to make some selector valves," he recalls. "Deere wanted $289 for each of the 20 left in private stock. I bought the tooling, reverse engineered the part, and started making them. I pretty much break even on the $150 I charge for a selector valve assembly."

When a customer sent McLaughlin a worn (and no longer available) pto shaft for an R, he figured out how to remachine it. First he under cut it, and then he shipped it to a company that put a hard chrome layer on the entire shaft. Hard chroming, he says, is an industrial process that's like applying a weld without heat.

Gary McLaughlin uses vintage metal lathes to repair and rebuild hydraulic systems on antique Deere tractors.

"When I got it back, I ground it back into tolerance," says McLaughlin.

In addition to his hourly rate for custom jobs, McLaughlin has set rates for cleaning, disassembly, inspection, reassembly, leak checking and setting pressure on common systems. He charges $250 for Power-Trols and Power Lifts and $175 for Rockshaft control valves. Overhauls of Dashpot relief valves are $50 and pressure settings of them are $25.

Contact: FARM SHOW Followup, MACfabrications, 241 North Lane, Granville, Mass. 01034 (ph 413 357-9098; 51jdmack@comcast.net; www.macfabrications.com).

Polaris Repowered With Yamaha Motorcycle Engine

When Ed Pacha bought a used Polaris Magnum 425 ATV with a bad engine, he planned to repower it with a V-twin 750. However, when he tore into the Polaris, he realized he couldn't make the Polaris belt drive work with the 750's shaft drive.

"I found a 1981 Yamaha Virago 920 cc motorcycle engine that had a chain drive," says Pacha. "To use it, I figured I just had to substitute sprockets for the variable speed belt drive ahead of the Polaris gearbox."

Pacha kept both the high/low gearbox and the transmission and clutch from the 920. That gave him 10 speeds forward and retained a reverse gear. Drive chains to the front and rear axles from the back of the gearbox didn't have to be changed. In fact, the only major change was to split the Polaris frame ahead of the gearbox and add 7 1/2 in.

"Spreading the frame made room for the engine and, once I made mounts, I just dropped it in," says Pacha.

Other minor changes included eliminating the foot brake from the Polaris, replacing it with a master brake cylinder from the motorcycle, and adapting the brake lines. He also mounted the Virago brake lever on the right handle bar. Pacha mounted the Virago clutch lever on the left handlebar. The high/low control also had to be remounted.

Pacha says his repower is a work in progress. He has a temporary fuel tank mounted to the front rack and has yet to make a cowling to cover the engine. His biggest challenge will be reworking the gearbox. While everything works great and he has tremendous torque, top speed is only 12 mph.

"The variable speed belt drive is what gave the Polaris its higher road speeds," says Pacha. "I may try to put a planetary gear on the drive end of the gearbox or simply rebuild the gearbox altogether. I've reworked the sprocket ratios all I can."

When the engine went bad on his Polaris Magnum 425 ATV, Ed Pacha replaced it with a 1981 Yamaha Virago 920 cc motorcycle engine.

Pacha asks FARM SHOW readers with ideas to give him a call.

Contact: FARM SHOW Followup, Ed Pacha, 3263 Highway 78, Brighton, Iowa 52540 (ph 319 694-4108; govenorbrn@yahoo.com).

Barbeque Grill Converted Into Portable Table Saw

"When my gas barbeque grill wore out, I discarded the grill and turned the rolling stand into a portable radial arm saw," says Elroy Lindaas, Mayville, N. Dak.

"First I removed the grill from the stand, leaving the side shelves on. The saw came with a metal framework, which I bolted to the grill's frame. Then I used heavy plywood to build a cutting surface like the ones that usually come with radial arm saws from the factory. The cutting surface was then bolted to the saw frame.

"I can easily move the saw wherever I need it, and roll it out of the way whenever I'm not using it. It works great," says Lindaas. "To be safe, be sure to mount the saw as close to the center of gravity as possible."

Contact: FARM SHOW Followup, Elroy N. Lindaas, 735 153rd Ave. N.E., Mayville, N. Dak. 58257 (ph 701 786-3064; enl@polarcomm.com).

Elroy Lindaas converted an old gas barbeque grill into this portable table saw.

Torque Multiplier Loosens Stuck Bolts

Get rid of that cheater pipe, says Graham Keeney, and make your own torque multiplier to break loose rusted bolts.

"This is a lot safer; it doesn't slip off," says the retired International Falls, Minn., trucker. "You can really pull with it."

Keeney needed something to break loose rusted trailer spring U-bolts. So he purchased a 24-in. long 1/2-in. socket drive breaker and removed the drive at the end. Then he cut off two 1/4-in. hardened steel chain links and cut out 5/8-in. gaps in one side of each of the links. He used 7018 rod and welded one chain on the end of the breaker and the other one 4-in. back.

The gap is just enough to slip in the handle of open and box end wrenches and twist them in securely, Keeney explains. He's used his homemade tool with 3/4 to 1 1/8-in. wrenches.

He hasn't come across any bolt that he couldn't break open with his torque multiplier, although he sometimes uses a little heat on badly rusted nuts and bolts.

"It was very simple to make, and it does the job," Keeney says.

"You can really pull with this tool, and it won't slip off," says Graham Keeney, who made his own torque multiplier to break loose rusted bolts.

Contact: FARM SHOW Followup, Graham Keeney, 3913 Highway 11, International Falls, Minn. 56649 (ph 218 283-2360).