

He Tightens Flywheels On Deere 2-Cyl. Tractors

If you've got a loose flywheel on your 2-cylinder Deere tractor, Dave Darr is the man to see. He makes cast iron replacements for some and rebuilds others.

"I cast new ones for the popular 720 and 730 diesels," he says. "For others, if there are no cracks, I can rebuild them, replacing the OEM hub with my Steel Draw-In Taper-Loc Hub."

The new hub replaces the bolts originally used to tighten flywheels to the shaft. On older flywheels, the bolts have often been tightened so far and so hard that they crack the cast "ears" they extend through.

"Once the ears crack, there is no way to tighten the flywheel, and once the splines wear, the flywheel won't stay tight," explains Darr. "Two slots in my Taper-Loc Hub allow it to tighten down on the shaft as the tapered flywheel is pushed onto it."

Rebuilding the flywheel consists of tapering the center that fits over the hub. Before tapering an old flywheel, Darr checks it carefully for cracks. One customer took his flywheel to a machine shop and had it Magnafused, which Darr says is a good idea.

"It's cheaper to pay \$125 for a Magnafused than shipping it to me with cracks," he says. "I will just reject it, and you are out shipping and a flywheel. If there are fine cracks and I put it in a lathe at high speed, it can be very dangerous."

If the flywheel doesn't have to be replaced, Darr removes the old splines from the flywheel center, fits it in a lathe, and cuts a taper into it. This matches the taper in the Taper-Loc Hub.

To install the flywheel, you slide the Taper-Loc Hub onto the shaft and then slide the flywheel into place up and onto the taper. As the flywheel is bumped into place, the hub tightens down on the shaft. A lock nut holds the pressure against the flywheel.

Darr explains that the process requires precisely following instructions. He includes two pages of directions with his product.

"The Taper-Loc Hub fits even a fairly worn crankshaft," says Darr. "If a crankshaft is new or extremely worn, a specially fabricated hub may be needed."



Dave Darr casts new flywheels for 720 and 730 diesels. He rebuilds other models using his Taper-Loc Hub.



Taper-Loc Hub fits into a worn flywheel, tightening up its hold on the shaft.

New flywheels carry a suggested retail price of \$800 to \$1,000. Rebuilds usually cost around \$360. With shipping both ways, a rebuild can cost \$500 to \$600.

Contact: FARM SHOW Followup, Allen Machine Works, 100 Fairview Circle, Jonesborough, Tenn. 37659 (ph 423 753-5738; allenmachineworks@hotmail.com).

"On The Tractor" Crankshaft Spline Repair

Before you replace a worn down crankshaft, consider reconditioning the splines. Glen Delisle did just that on a John Deere Model A two-cylinder tractor. Best of all, he did it without removing the crankshaft from the tractor.

"I needed to recondition a shaft to fit the clutch hub," recalls Delisle. "I used a welder to build it up and then used a compound machinist vice to grind it down."

Drive splines inside the clutch hub were squared and trued with what Delisle calls an "overgrown" hacksaw. That was done by hand.

Delisle says the complicating factor is having to address rotational and centering tolerances on the shaft splines. He bolted a special bracket to the engine block alongside the shaft.

The bracket was a piece of channel iron with a floating steel plate that could be raised, lowered and moved in and out on threaded rod. He then mounted the machinist vice to the plate to hold a high speed, air powered die grinder. The rods allowed him to get the exact height and placement he needed.

"The compound machinist vice has a

double set of V's like a tool post on a lathe, so you can feed the die grinder in and out," says Delisle. "I adjusted it so it was dead center over the crankshaft. This allowed me to slide the die grinder parallel to the shaft and grind it to the required tolerances."

The tapered centering splines required a light cut taken off of each as the shaft was rotated.

Although it took him two attempts at rebuilding and grinding, Delisle says he succeeded. As he worked, he tested the out-of-true wobble of the the clutch face many times. When he reassembled the clutch hub and shaft for the final time, it rotated with a wobble of less than 1/5000 of an inch.

"The clutch works very smooth now," he says. "I was stuck at first, but this method works."

Contact: FARM SHOW Followup, Glen Delisle, P.O. Box 464, Spiritwood, Sask., Canada S0J 2M0 (ph 306 883-2144).

Machinist vise mounts on a floating steel plate attached to a threaded rod. Vise holds a high speed, air-powered die grinder that Delisle used to recondition crankshaft splines.



Shop pit has recessed lighting and a ventilation system made from PVC pipe and an old furnace fan. "It sure beats laying on a roller under a jacked-up vehicle," says Larry Brown.



Ventilated, Lighted Shop Pit

"When I put up my new shop I wanted to make it easier to change oil and work under my vehicles," says Larry Brown, "so I built a pit that's 5 ft. deep, 4 ft. wide and 16 ft. long in the floor of the shop. Now I can stand up when I work under a vehicle and actually see what I'm doing."

Brown used 2 by 6 rough-cut boards to form the sides and ends of the pit. The concrete walls are about 4 in. thick on the bottom and 6 in. thick on the top, reinforced with scrap steel. In one sidewall he made inset pockets that are 6 in. deep so he could install recessed fluorescent lights. "I've seen a lot of pits where a trouble light is all a guy has to work with, and that's not very bright. I put those fluorescents in, painted the walls white and it's much brighter than any trouble light," Brown says.

For ventilation, which is important in pits to remove CO2 gasses, Brown ran a 4-in. pvc pipe from the ceiling of the shop down a side wall of the building and into the pit. The pipe is connected to an old furnace fan

that blows air from near the ceiling down into the pit. One switch runs the fan and lights. "The ventilation system does double duty," Brown says. "It takes the chill out of the pit on cold days, and keeps fresh air coming in when I'm down there working."

On the floor of the pit Brown laid pieces of 1-in. thick metal grating, material that's normally used for stairs and floors in manufacturing plants. "It isn't slippery, my feet stay dry and if I spill anything, it's easy to lift a section of grate and clean it up," Brown says.

When he isn't using the pit, Brown can cover it with 2 by 6 rough-cut boards that lay on top of the pit walls and level with the shop floor.

"This pit isn't anything fancy," Brown said, "but it's probably the best \$200 I've ever spent. It sure beats laying on a roller under a jacked-up vehicle."

Contact: FARM SHOW Followup, Larry Brown, RR1, Box 20, Site 7, Grande Prairie, Alta., Canada T84 2Z8 (ph 780 532-0178).

