



Two 2½-in. hydraulic cylinders, powered by power steering pump, can easily dump 6,000-lb. payloads.

DO-IT-YOURSELF CONVERSION

Pickup Dump Works Off Power Steering Pump

You can turn your pickup into a dump truck using power supplied by your truck's power steering pump. Larry Richter, director of the Mother Earth News Magazine's Eco-Village, developed the idea and agreed to share it with FARM SHOW readers.

The project began a year ago when Richter bought a used 1975 Chevy ¾-ton pickup that was no longer equipped with a bed. He built his own heavy-duty dump box.

Critical to the success of Richter's dump-bed design is the rear hinge setup, which is made from 3-in. channel iron, 1-in. steel pipe, and some cold-rolled rod. Two 3 by 10-in. channel iron posts, boxed at the top end for extra strength, are bolted and welded to the truck's chassis rails at the rear. Two-inch lengths of schedule 40 pipe, welded through the posts, serve as bushings for the 1 by 40-in. hinge pin, which is locked to the bed through similar pipe mounts that are boxed and welded to the bed's main rails.

Once he had the home-made box hinges, Richter had to figure out where to mount the hydraulic cylinders. The 2½-in. dia. cylinders with 24-in. strokes have a straight load-lifting capacity of 11,780 lbs. Since they're mounted at an angle, however, some of the capacity is lost.

The cylinders' upper clevis eyes are locked with ¾-in. cold-rolled pins to brackets on a crossbar just forward of the bed's midway point. He fastened the lower ends of the cylinders to angle iron attached to the truck chassis frame rails. He chose an angle that gives him a truck tilt of about 32° although he says if he did it again 45° might be better.

To secure the hinged bed against any lateral shifting, he made up two descent guides of 2 by 15-in. channel iron, sprayed one end of each slightly, and faced the flanges with 3/16 by 2-in. flat stock. These guides fasten to the chassis about a foot behind the rear of the cab so that the bed's main rails settle snugly between the guides when lowered.

The most attractive feature of Richter's dump-bed conversion is the fact

that it's relatively inexpensive due to the fact that it uses the power-steering pump for power. In essence, instead of supplying high-pressure fluid directly to the steering box, the converted pump now delivers its load through a pressure gauge and into a 4-way hydraulic control valve. The only modification necessary was to replace the existing reverse-flared hose fitting with a standard pipe-thread coupling. From there, one of the valve's working ports is plumbed to a splitter — simply a glorified T fitting — the two outlets of which are connected to the lower chambers of the hydraulic cylinders.

The upper chambers of the double-acting cylinders are likewise joined through a T-fitting and plumbed to the control valve's other working port.

To complete the fluid circuit, the valve's outlet port is tied back into the steering box through a reverse-flared fitting, and the box is plumbed to the pump return port in the standard fashion. Of course, as he would with any hydraulic circuit, Richter was careful that all the lines and both sides of the cylinders were filled with fluid to assure that no air pockets were trapped in the system before he made the final connections.

Under normal driving conditions, with the bed down, the three-position, 4-way valve's open-center designs allows pressurized fluid to bypass the working ports and travel directly to the steering box, which is essentially what it did before Leroy's modifications. But once the valve lever is pulled to activate the lifting cycle, "live" fluid is directed to the cylinders' lower chambers which lifts the bed but also simultaneously forces fluid in the upper chambers to exhaust past the unused working port, through the open return circuit in the valve, and into the steering box, where it's returned to the pump reservoir.

Conversely, when the control valve lever is pushed to lower the bed, the cylinder's upper chambers are pressurized and the evacuated fluid on the piston's opposite sides is relieved



Hookup is automatic and takes less than a minute.

ALLOWS YOU TO SWITCH ATTACHMENTS RIGHT FROM THE TRACTOR SEAT

"Quick-Tach" For Tractor Loaders

New from MDS Manufacturing, Parkston, S. Dak., is a quick-tach system for tractor loaders that allows the driver to hook up to a manure bucket, bale fork or other attachment without leaving the tractor seat.

Called the Sur-Lock, it's currently available for Deere, Farmhand, Du-Al and Allied loaders which incorporate a double cylinder hookup with the cylinders located on top or underneath the main loader arms.

"Many farmers have three or more attachments for their tractor loader. Changing from one to the other manually can be a real hassle, as every farmer well knows," explains Steven Hohn, inventor-manufacturer. "Either you're too high or too low, plus the fact that some components are so heavy it takes two persons to jockey them into position for manual hookup.

"With our new Sur-Lock, the driver simply drives into the attachment. The hookup is automatic and takes less than a minute or so," Hohn explains.

He notes that springs inserted in the Sur-Lock generate 97 lbs. of downward pressure on the latch mechanism. "This assures a quick, positive hookup which stays latched. The system features a heavy-duty,

spring loaded, self-aligning tapered latch. When you drop off an attachment, the latch has to be reset manually. Once reset, the operator can automatically hook onto the next attachment and be ready to go to work with it — without having to leave the driver's seat."

MDS Manufacturing also makes a Bale Stabber which is custom built to perfectly fit nine makes of major loaders. "Unlike most conventional bale stabbers that clamp or bolt onto a loader bucket with grapple fork, the Bale Stabber attaches to the loader frame (or to the Sur-Lock quick-tach) in place of the bucket. "Because the loader bucket and grapple fork aren't needed, you eliminate more than 1,000 lbs. of excess front end weight on the loader tractor's front wheel spindles," Hohn notes. "Because of the compactness of the hookup, the load is brought 24 in. closer to the tractor, thus further decreasing weight on the spindles."

The Sur-Lock quick tach retails for \$320, and the Bale Stabber for \$275.

For more information, contact: FARM SHOW Followup, MDS Manufacturing, Rt. 1, Box 2-C, Parkston, S. Dak. 57366 (ph 605 928-7951).

through the valve as before. To compensate for the additional fluid required by the cylinders, fittings, and extra hoses, Richter cut a hole in the side of a 1-gal. fuel tank, brazed a 1½-in. collar over the opening and joined the tank to the neck of the pump reservoir with a length of radiator hose. Though the neck cap fits the tank, he's had to work up a baffled vent that doesn't allow returning fluid to escape with the pressure.

Richter says the power steering pump was designed to put out 1,500

psi at 2 gal. per minute which is more than enough to lift heavy loads. In fact, he often hauls and dumps 6,000-lb. payloads of gravel with no problem.

For a complete set of plans that detail the do-it-yourself power steering dump bed, contact: FARM SHOW Followup, Mother Earth News Plans, Dump Truck, P.O. Box 70, Hendersonville, N.C. 28791.

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