

Arrow points to "master" cylinder at base of hand clutch lever. A fluid reservoir mounts just ahead of cylinder.

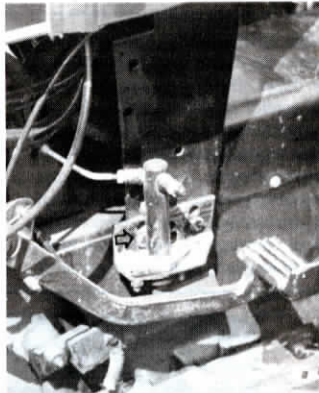
## Powered Hand Clutch Lets Injured Farmer Drive Tractor Normally

"This hand clutch could be used on almost any tractor. It works independently of the foot pedal so you can use either the hand clutch or foot pedal depending on who's driving the tractor," says David Graham, Ewing, Va. He and a friend, Bill McNeely, modified a Case/IH 395 tractor after a friend who had lost the use of his left leg approached them about finding a way to operate the clutch by hand.

Because both the clutch pedal and gear shift lever are positioned on the left side of the tractor, Graham says they had to find a way to mount the hand clutch on the right side of the tractor so the driver could clutch with his right hand while shifting with his left. That made it difficult to set up a mechanical linkage. Instead they decided to devise a manual "hydraulic" hand clutch using master and slave cylinders taken from a hydraulic clutch on a small pickup.

"The best thing about the idea is that it doesn't restrict normal use of the foot pedal by anyone else," says Graham.

The hand lever mounts on the right side of the tractor. The men made a mounting bracket out of angle iron and short pieces of flat bar to allow the lever to pivot about 6 in. up from the bottom. The bottom end of the lever attaches to the push rod of the master cylinder, which extends up under the hood of the tractor. The master cylinder is plumbed directly to a small slave cylinder mounted on the left side of the tractor, positioned alongside the clutch pedal. The push rod on the slave cylinder attaches to a piece of flat bar that pivots up and down and



Arrow points to "slave" cylinder that pushes on spring-loaded lever alongside clutch pedal.

is connected to the clutch linkage with the same pin used to connect the foot pedal.

A fluid reservoir mounts on the right side of the tractor just ahead of the master cylinder. "The hand clutch has been in use for a year with no problems. The owner's pleased with the ease of use," says Graham, noting that the only cost of the setup was \$25 for the master and slave cylinders, which were bought at a salvage yard. Everything else was just scrap metal. "As far as I know, there's nothing like this hand clutch on the market," Graham points out.

Contact: FARM SHOW Followup, David Graham, Rt. 1, Box 60, Ewing, Virginia 24248 (ph 703 980-7443 or 703 445-4681).

## He "Recycles" Waste Oil In His Tractor's Front-End Loader

"It saves me the cost of adding hydraulic oil to my front-end loader and seems to have no adverse effects on it," says David Gould, Bangor, Maine, who "recycles" waste oil by using it to replace hydraulic oil that leaks out of the Dearborn front-end loader on his 1953 Ford 850 tractor.

Gould's tractor has two hydraulic systems - an internal one to raise the 3-pt. hitch and an external one to operate the loader. The loader frame serves as an oil reservoir. Over the years the frame developed cracks, allowing oil to leak out. He adds about 10 gal. of waste oil to the loader every year.

"By using waste oil I never have to buy hydraulic oil," says Gould. "I don't use it in the tractor's internal hydraulic system. I change the oil filter every couple of years. I've been using waste oil for 15 or 20 years with no problems. I originally tried it because of the expense of hydraulic oil. A 5-gal. pail sells for about \$20. It would be

difficult to weld the cracks shut on the frame. I'd have to purge the entire reservoir with detergents before I could do any welding to avoid an explosion.

"People can't believe it when they watch me add waste oil to my loader. They're sure that it'll damage the hydraulic pump, but it never has. Most of the loaders used on old tractors have a vane-type pump that's built very rugged. It doesn't need the sophisticated hydraulic oil required by modern loaders. The loader valve is also built heavy and the hydraulic hoses are made to withstand any kind of oil. They don't swell or break, even in winter.

"However, I don't think waste oil could be used on modern loaders. They have smaller valves that would probably get damaged by the dirt in the waste oil."

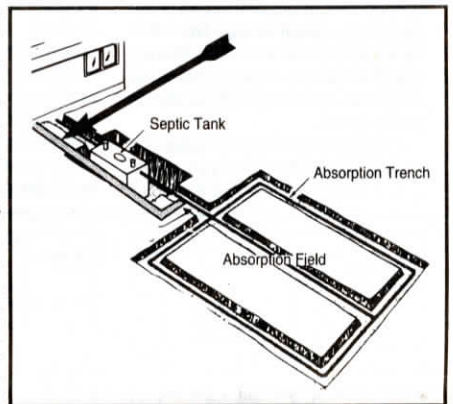
Contact: FARM SHOW Followup, David F. Gould, 2220 Ohio St., Bangor, Maine 04401 (ph 207 947-7822).



## By-Pass Drain Improves Septic Tank Performance

Septic tanks can't do the job they're intended to do if water from your clotheswasher, dishwasher and sink empty into the tank along with other household wastewater, says E.H. Heidenreich, Northville, S. Dak.

The ideal solution is to have two drain lines coming out of the house, bypassing the septic tank with the one that carries the wash and sink water. "My father-in-law taught me this trick 50 years ago and there are some tanks he installed that have never had to be cleaned out. Bacteria just when you run all that water through the tank. My own septic tank is 35 years old and I have never touched it," says Heidenreich.



Arrow points to pipe bypassing septic tank.

(Reprinted courtesy The Neighbor, Sioux Falls, S. Dak.)

## Here's Where To Go To "School" For No-Till

If you're looking for more hands-on information about new no-till methods, here's two places that offer nuts & bolts training.

**No-Till Development Center** - Jim Kinsella has operated the No-Till Center near Lexington, Ill., (ph 309 365-8041) with the support of BASF, since 1988. In that time he's showed his methods to more than 50,000 farmers, logging thousands of miles each year talking to producers. Farmers can visit the center and see all kinds of innovations. Kinsella brings together a core group

of innovators twice a year to discuss new methods and to analyze successes and failures.

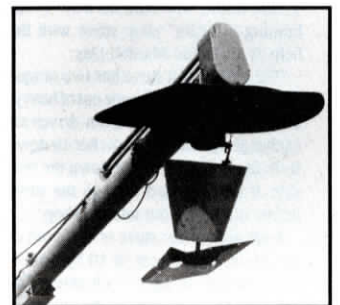
**Marion Calmer's Research Center** - Galesburg, Ill., no-tiller Marion Calmer runs what may be the largest individually owned research center in the country. He tests all types of methods, equipment, varieties, and chemicals on his farm. Tour fees last summer were \$30 per person pre-registered. Tours are scheduled in July and August. For more information, call 309 334-2609.

## Quick Way To Fill Bins

You can speed up bin filling by attaching a grain spreader and bin cover to the spout on your bin fill auger, says Len Corzine, Assumption, Ill., who says the idea saves time when moving from bin to bin.

Wiring for the electric-powered spreader runs down the auger housing and is simply plugged in as the auger's activated. The bin cap keeps rain out and dust in.

Contact: FARM SHOW Followup, Len Corzine, RR, Assumption, Ill. 62510 (ph 217 226-4303).



Electric grain spreader and bin cap mount on upper end of auger.