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He says the need for tile in his area has contractors so backed up there's a long waiting list. "We'd been trying to get tilers to come in to do some work for a long time. I finally gave up and bought the tile plow. I paid for it with just the tile I installed last spring," he says.

He says his 3-pt. mounted Gold Digger is very heavily built. "It has a heavier main frame than others I'd seen," he says. He also likes the ease of changing the boot when he needs to go from 4-in. to 6-in. tile.

Charles Sharff, Fayette, Iowa: Charles believes drainage may be the most important factor in row crop production. "I put it ahead of lime and applying fertilizer, when it comes to importance in making good corn and soybean yields," he says.

"We've found that in some years, tiling results in as much as 80 bu. an acre of corn," he says. And because of this belief, Charles has laid millions of feet of tile on his eastern Iowa farm.

"I used to run a trencher to put in tile. Then when tile plows came along, I bought one from Johnson Drainage Plows."

That was five years ago. He put two mil-

lion feet of tile through that one and then sold it before buying a second Johnson plow two years ago.

"I like the design of this one," he says. Jim Johnson of Johnson Drainage Plows has changed the pitch of the plow and the boot, making it easier to pull than the previous model. I used to install tile with a trencher and learned then that it was important to lay loose, black dirt on top of the tile. Johnson's design does that."

Sharff is putting in about 75,000 ft. of tile this fall. "My son, Brent, owns it with me, and he's been putting in about 50,000 ft. a year on his land. And we're also doing some custom work with it," he says.

"We record the position of all the new tile lines with GPS. When we get done with a custom job, we give the land owner a map so they can find the tiles later if there are problems," he says. The maps are color coded, showing where 4, 5 or 6 in. tile has been installed.

"The plow is very heavily built and it has more clearance than others we looked at before we bought it. It won't plug up underneath, even when you're running deep in heavy crop residue," he says.

Sharff pulls his tile plow with a 370 hp International Quad Trac tractor. "We've pulled it with our other 4-WD tractor, a 230 hp model, with no problems," he says. "The Quad Trac handles it very well and we no longer need to pre-rip, even when we're putting tile deep."

Sharff says he's had no repair costs on this or on his previous Johnson plow. "I have absolutely no complaints about the plow. One fellow who asked me how I liked it said he thought I must be related to Jim Johnson after I told him what I thought of it," he says.

Dennis Jarvis, Terre Haute, Ind.: "I can't think of a thing I'd change on my new Soil Max Gold Digger tile plow," Dennis says.

He's on his second plow now, and says the construction and quality of the plow keeps improving.

Dennis looked at a lot of tile plows before buying one. He'd been using a self-propelled tiling machine to install tile on his 4,000 acre farm. "For a farmer, a tile plow makes a lot more sense than a self-contained tiling machine," Dennis says. He says the biggest cost in a tiling machine, which can run around \$300,000, is the engine and drive train, which

farmers don't need if they have a medium to large tractor. "And with a tile plow, there's no need to back-fill over the tile, either. That saves a lot of time.

"We've put in over a million feet with the Gold Digger plow on our own farm and have put in more than 200,000 ft. for other farmers," he says. He pulls the 3 pt. mounted tile plow with a 400 hp Case-IH 9380 articulated 4-WD tractor.

"We have some really tough ground and it pulls kind of hard at times, but it works great. We're installing mostly 3-in. tile on 40-ft. spacings. We use a laser to keep it on grade. The laser just about doubles the cost of the system, but for us, it's a necessity," he says.

Dennis uses topographical maps and surveys to lay out tile systems on his computer before he goes out to lay the tile, so he has maps to show where the tile lines are in the field. "When we do custom work for other farmers, we provide them with maps of the system, which is something even contractors don't do," he says. "And we can do it for less than most contractors, too."

"Lift And Throw" Pull-Type Ditcher

"It pulls easier than any other ditcher on the market without getting dirt on the tractor," says Edwin Erickson Sr. who developed the "Eagle Ditcher" with his son Edwin Jr.

The Milnor, N. Dak. farmers showed the ditcher for the first time at the recent Big Iron farm show in Fargo, N. Dak.

The two-wheeled machine isn't equipped with a big rotating cutting wheel. Instead, it uses a 4-ft. wide cutting blade that lifts dirt and drops it onto a pto-driven flywheel. Both the cutting blade and flywheel are mounted at an angle toward the front of the machine. A hydraulic-driven beater, mounted above the blade, feeds the dirt evenly onto the flywheel, which uses four steel poly-lined paddles to fling the dirt out. A 4-ft. wide rubber deflector on back helps direct the dirt. A pair of hydraulic cylinders are used to raise or lower the machine.

"It does a nice, neat job and works great for cleaning existing ditches and for making terraces," says Edwin Sr. "It's designed to slice through the dirt instead of beating it up like ditchers equipped with rotating wheels, which greatly reduces horsepower requirements. It takes only a 100 hp tractor to pull it whereas comparable ditchers require a minimum of 140 hp. The blade can cut anywhere from 1 to 9 in. deep. You can cut 2 to 5 in. deep at speeds of 2 to 4 mph. By changing the position of a pair of steel pins on the hitch you can increase or decrease the cutting depth of the blade.

"The flywheel spreads the dirt 50 to 75 ft. out. It throws the dirt out at an angle toward the back without going up in the air and ending up on the tractor. The flywheel can be driven by either a 540 or 1,000 pto gearbox." Sells for about \$10,000.



New ditcher uses a 4-ft. wide cutting blade to lift dirt and drop it onto a pto-driven flywheel that flings it outward. The design requires far less power to operate, according to the manufacturer.

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Self-Propelled Trencher Converted To Tractor-Powered Tiling Machine

"It works great for small jobs," says Ivan Linton, Strathroy, Ontario, who bought an old self-propelled, track-type trencher - minus the engine - and converted it to a tractor-powered tiling machine by hooking it up to the front half of an International WD6 tractor. The tractor drives the tracks as well as the hydraulics on the digging end of the machine.

Linton equipped the trencher with a homemade shoe on back so the machine can make a trench and lay tile at the same time. He also added a simple "water level" device to keep the tile on grade.

The operator can walk alongside the tractor or sit on a seat that mounts on one side of the tiling machine. Before the machine is used, the tile is rolled out on the ground about 2 ft. from where the trench will be dug. As the trencher moves along another worker feeds the tile down through the shoe.

"It can lay tile as deep as 5 ft.," says Linton.

He bought the trencher for \$1,600 and paid \$300 for the tractor. He split the tractor in half just behind the clutch and bolted a length

of 6-in. channel iron onto each side under the tractor. The back part of each piece of channel iron is welded to the trencher's frame. He also connected the tractor's driveshaft to the first of two transmissions on the tiling machine.

The homemade shoe consists of two 5-ft. high steel plates spaced 8 in. apart. It's raised up or down, along with the digging chain just ahead of it, by a pair of small hydraulic cylinders. A coil spring applies downpressure to keep the shoe at the bottom of the trench. Dirt dug up by the digging chain is thrown by a rubber belt to one side of the machine.

Tile is fed under a small steel wheel (the press wheel off an old corn planter) which mounts on an axle inside the shoe. The wheel presses the tile down as the machine moves forward.

The homemade "water level" consists of a 1-gal. cylinder-shaped tank mounted above the shoe. A plastic hose runs from the tank up to a piece of clear hose mounted vertically next to the tractor's steering wheel. The water level in the tank levels out with the

water in the vertical hose. The operator looks ahead through a sight glass toward stakes set at various places in the field. If the field level changes and the machine rises, the water in the vertical hose rises indicating that the shoe should be lowered.

"I use it on my farm for small jobs and also to lay tile for neighbors," says Linton. "I had been using a backhoe on back of a tractor, but it was hard to keep on grade. I can tile 3 to 4 ft. per minute in low gear and 6 ft. per minute in third gear. If I want to make a shallow 3-ft. deep trench I can put it in high gear and cover 10 ft. per minute.

"The machine goes slow enough that the operator doesn't have to hang onto the steering wheel all the time. I put a block of wood on each side of the steering shaft, about 1 ft. ahead of the steering wheel, to keep the machine going straight ahead without any help."

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Ivan Linton grafted the front end of an International tractor onto a tracked ditching machine to create a self-propelled tiling machine with super-slow creeper gears.

