

# Monster Machines For Problem Soils



The big 3,200-lb. parabolic shank requires 60,000 to 100,000 pounds of drawbar pull.

## WINGS ON POINT LIFT AND SHATTER SOIL

### Giant Tillage Shank Works 4 1/2-Ft. Deep

When Congress passed a law in 1978 requiring strip mining companies to restore all mined row-crop land to its original yield potential, big mining operations began looking for equipment that could help with the job.

Before opening a strip mine, companies generally remove a 4-ft. layer of topsoil with earth movers and stockpile it to be returned later. Replacing just 100 acres of soil 4-ft. deep requires up to 15,000 115-ton loads. The companies had to find a way to rip deep through the resulting compacted "concrete" soils.

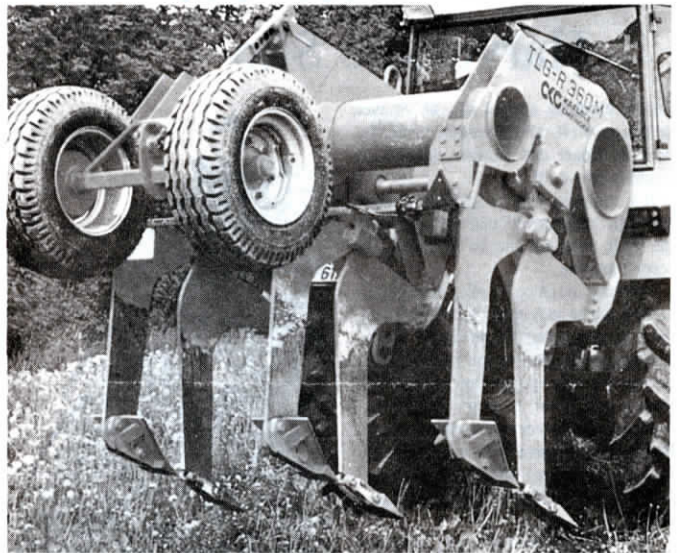
Three mining companies approached Bill Dietrich, founder of DMI, Inc., Goodfield, Ill., to build a giant-size version of Dietrich's successful "Tiger" tillage tools that use small up-front shanks to "prefracture" soil ahead of bigger parabolic shanks that reach deeper. The giant "Tiger II" plow DMI built has

four regular Tiger shanks up front that prefracture down to a depth of 20 in. ahead of a 4-in. thick, 3,200-lb. parabolic shank that digs down to 4 ft., 6 in., lifting and fracturing soil with its side-mounted wings.

The big plow, which was introduced at farm shows this fall, requires 60,000 to 100,000 pounds of drawbar pull, depending on the severity of compaction. A typical 50,000-lb., 4-WD tractor provides just 27,000 pounds of pull so a 500 hp. or larger crawler tractor is required.

Key to success of the big DMI tool are the wings on the point that lift and fracture soil. Without the wings, says Dietrich, the shank would only "push" the soil to one side or the other.

For more information, contact: FARM SHOW Followup, DMI, Inc., Box 65, Goodfield, Ill. 61742 (ph 309 965-2233).



Moveable ripper shares break up the soil and reduce horsepower requirements by lessening forward resistance.

## MOVEABLE SHARES BREAK UP HARDPAN DOWN TO 3 FT.

### Deep-Plowing "Pulverizer"

A German-built machine that breaks up and pulverizes soil down to 3 ft. deep with moveable shares has caught on with custom-operators who specialize in solving tough soil problems and with large farm operations that can justify regular use of the machine.

FARM SHOW first featured the innovative pto-driven deep-plowing pulverizer more than 6 years ago in a report from the DLG Show in Munich, Germany. Since then, Martin Equipment of Goodfield, Ill., has started importing the machine to the U.S. and Canada.

The moveable ripper shares on the new plow are powered by a rotating shaft on the plow frame that connects to driveshafts down the front of each shank. As the shares

move out and down, they loosen the solidified ground. When it comes back up, it lifts the soil upwards, pulverizing it all the way to the surface.

"Besides breaking up the soil, the powered shares also lessen the plow's horsepower requirements by lessening the forward resistance," according to the company, which recommends at least 150 hp. for the 5-shank model (2 shanks up front and 3 shanks in back). The machine is available with either pto or hydraulic drive. It'll work about 3 acres per hour. Sells for right at \$17,000. It's also available for lease.

For more information, contact: FARM SHOW Followup, Martin Equipment, Inc., Jct. 1-74 & Rt. 117, P.O. Box 70, Goodfield, Ill. 61742 (ph 309 965-2502).

## "LEAVES CHUNKS OF SOIL AS BIG AS CARS"

### 6-Ft. High Monster Plow Reclaims Flooded Land

It isn't very often that the Soil Conservation Service recommends using a moldboard plow. But that's what's happening in St. Charles County, Mo., where a 6 ft. high, one-bottom monster plow weighing 4 tons and taking a 5-ft. deep bite is reclaiming flooded bottomland.

The giant-size plow, owned and operated by Aholt & Sons, Inc., an Augusta, Mo., construction firm, is pulled by 3 Caterpillar D8 bulldozers hitched together, one in front of the other. Each "Cat" has 600 hp.

"Where sand was less than 8 inches deep, most farmers chisel plowed," says Dennis Alexander, district conservationist for the Soil Conservation Service in St. Charles County. "But on deeper sand, we recommended a moldboard type plow like this. It mixes up the soil so it isn't stratified, bringing rich soil up from deep underneath and turning under the sand."

"The plowing operation itself costs \$350 to \$450 per acre, depending on the hardness of the ground and the plowing depth," notes Robert Aholt, Aholt & Sons. "But in heavy clay, the plow leaves chunks of soil as big as cars. To level off those chunks, we have to go back in with another Caterpillar equipped with a blade. That operation adds about \$100 to the cost."

The plow was originally built in the early 1950s by a California farmer to invert soil high in salinity. According to Aholt, only 5 or 6 such plows have ever been built. "We've had to rebuild this plow a few times," he adds. "It's not equipped with an automatic reset feature. And with three Cats pulling, hitting a tree stump or large rock can really tear things up."

The plow is 20 ft. long, 6 ft. high and 4 ft. wide. It's supported by a 16.9 rubber tire in back, a 14.9 x 29 rubber tire in the furrow,

and a steel wheel in front. The company transports the plow on a flatbed truck.

In the field, the plow's 15 ft. tongue is hitched to the drawbar of the rear Caterpillar. A cable is loosened, and the weight of the plow sinks it into the ground as the Caterpillars move forward.

"Pulling at 2 mph, we're covering about one acre per hour," notes Aholt, who adds that sand is very hard on the Caterpillar tracks.

For the next 2 or 3 years on the plowed land, most farmers will plant wheat or alfalfa - crops which put deep tap roots into the soil, says Alexander. "It will take that long to get the soil structure back," he notes.

For more information, contact: FARM SHOW Followup, Aholt & Sons, Inc., RR 1, Box 50A, Augusta, Mo. 63332 (ph 314 228-4493).



Plow takes a 5-ft. deep "bite" out of flooded bottom land.