

Air-Powered Manure Transfer Pit

"It cost just \$1,500 but does the job of a new \$10,000 system," says Ronald Mandrell, Erhard, Minn., who built an air-blast manure transfer pit to move manure by air to his lagoon during winter months.

Mandrell poured a 6 by 6 by 6-ft. concrete pit at the end of his dairy barn and positioned below his barn cleaner. The top of the pit is sealed by a metal disc that he cranks into place from the inside with a steering wheel crank. The pit is pressurized by three air hoses that feed out of a small air compressor. One air hose comes up from the bottom of the pit to agitate it, one simply acts as a vent in case the pit door should ever need to be opened, and the other pumps in air at about 12 psi, which Mandrell says is plenty to force all the manure out the 16-in. dia. PVC outlet pipe to the lagoon in minutes. The lagoon is located about 100 ft. from the barn.

"We use it only in the winter. During the summer manure



drains away to the lagoon without air. We've got about 28 milk cows and it takes about 2 days to fill the pit. We've used it for 5 years," says Mandrell, who spent \$1,500 for cement, PVC pipe, and air compressor.

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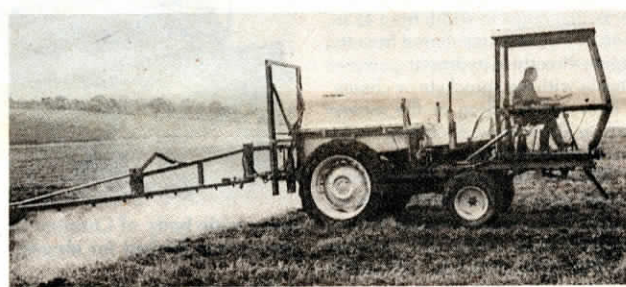


Photo courtesy Power Farming

"Forward" Spray Rig Built From Old Tractor

A "forward control" spray rig built on the frame of an old Massey Ferguson tractor provides outstanding visibility and big carrying capacity for British farmer Tim Spurge who built it from scratch.

Spurge farms near Harwich, England and does lots of in-season spraying of wheat, peas, linseed and other crops. He needed a sprayer that would do the job quickly with better up-front visibility. He spent about \$9,000 to build the unit including the Massey 165 tractor used for the power unit, the wheels, spray tank and boom.

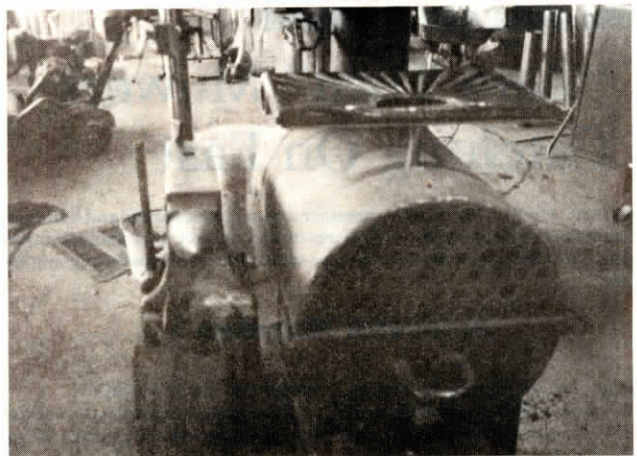
The first step was to remove the cab from the tractor to open up the tractor frame. The engine, clutch and transmission were not modified but a power steering pump was installed to handle the increased load of the front cab, 450-gal. spray tank, and the 36-ft. boom. It was made from a second-hand steering ram and actuating valve with a

hydraulic pump which is driven by the valve gear on the right-hand side of the engine. To increase field clearance of the homebuilt sprayer, Spurge installed bigger wheels both front and back which increases forward speeds in any gear. Finally, the 3-pt. linkage and swinging drawbar were removed.

The sprayer chassis carrying the cab, tank, and boom was built from two lengths of 4 by 2-in. channel iron that's bolted along each side of the tractor and to the front weight frame mountings. Channel iron cross members brace up the frame.

The forward cab mounts on rubber iso-blocks attached to the chassis beams at each corner of the cab frame to reduce vibration. Frame of cab was constructed from lengths of 1½-in. sq. tubing. It's got a big front-opening door with gas struts to hold it open.

Most of the conventional tractor controls were retained,



Home-Built Shop Stoves

Vince Koebensky, Buffalo, Minn., built two shop stoves with totally different designs but which he says work equally well to heat large unheated shop areas.

The first was put together using a 2-ft. dia., 3-ft. long section of ¾-in. walled boiler pipe and 47 2-in. dia. boiler tubes. The small 2-in. tubes are welded to two ½-in. thick boiler end plates and run clear through the upper half of the stove. A swing-down firebox door makes for easy loading and cleanout, and a draft control is located on the lower portion of the door.

Mounted on top of the stove is a grate from an old oil stove. "It's ideal for drying out gloves and wet rags. The flue pipe is 8 in. in dia. and has ½-in. thick walls. Located above and below the damper in the flue pipe are two 3 by 24-in. pipes cut into the flue and welded in place which allow you to recover any heat making it's way up out of the stove."

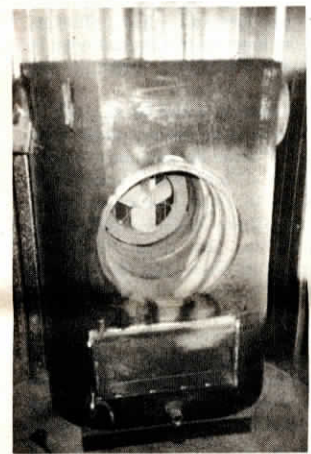
The open ends of the 47 tubes running through the stove are enclosed on one end. A variable speed fan blows air through them and out into Koebensky's 24 by 40-ft. shop.

"The stove is made from such heavy materials that it continues to radiate heat long after the fire dies down," says Koebensky.

Koebensky's second stove was built with a 265 gal. oil tank, a 55 gal. heavy duty drum and an old 12-in. dia. by 6-ft. long water tank.

including the twin-pedal brake and single-pedal clutch, by installing remote linkages beneath the new cab. Gear and pto levels are also operated through mechanical linkages.

The tractor's original steering wheel and column were installed in the cab by mounting the steering gearbox to a chassis



The 265 gal. tank sits in a vertical position on one end. The 55 gal. drum mounts horizontally through the center of the tank and flush in front. It protrudes out the rear about 12 in. so that the variable speed fan mounted inside it is away from the hottest heat of the stove. The fan blows heat out into the shop.

The 12-in. dia. water tank also mounts horizontally through the large oil tank. It mounts cross ways through the tank, just above the 55-gal. drum and it also contains a variable speed circulating fan.

Koebensky installed an oversized firebox door on the front side to accommodate oversized logs.

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cross member with the drag link connected to the power steering unit.

Sprayer pump is powered directly off the pto shaft. Complete sprayer controls mount in cab.

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