



Allen Thompson, Neil Meador and Mark Russell of the University of Missouri-Columbia with their new-style electric motor.

“Single-Phase” Electric Irrigation Engine

A new-style electric motor could provide a low-maintenance alternative to gas or diesel engines used to run irrigation systems, according to researchers at the University of Missouri.

Neil Meador, Allen Thompson, and Mark Russell have been testing a 30 hp single-phase Written-Pole motor that can run off the standard power lines of any rural cooperative because it requires a relatively low starting current.

The engineers connected the Written-Pole motor, which runs on 240-volt power, to a standard turbine irrigation pump.

“The biggest advantage is the low maintenance and trouble-free operation,” says Thompson. “You don’t have to check the oil and refuel it every couple of days like you do with an internal combustion engine. It’s dependable and quiet - you can let the motor run for weeks without worrying about it.”

Electric motors have not been an option for most farmers who irrigate because larger electric motors require a three-phase power line.

The Written-Pole motor was originally

designed for power failures. It has an exterior rotor that provides enough momentum to drive the system after the power is off. The motor will run with no load for 30 minutes or more after it’s switched off.

“Even with a full load, if you drop the power for, say, 10 seconds, it’ll continue to rotate. It slows down, but when it’s energized again it’ll come right back up,” says Thompson. “A conventional motor would shut down, and you’d have to go through the restarting procedure and the problems associated with that.”

Thompson says there is equipment on the market to convert single-phase power into three-phase power. But starting a three-phase motor with a rotary phase converter requires up to four times as much current as it takes to start a single-phase Written-Pole motor, and it costs 28 percent more to operate per year,” he notes.

Contact: FARM SHOW Followup, Dr. Allen Thompson, 251 Agricultural Engineering Building, University of Missouri, Columbia, Mo. 65211 (ph 573 882-7044).

Digital Tire Pressure Gauge Is “Most Accurate On The Market”

“As far as we know it’s the most accurate tire pressure gauge on the market,” says Ed Miller, Wauseon, Ohio, about his company’s new pistol-grip, digital tire pressure gauge.

Powered by a pair of lithium batteries, the microprocessor-controlled “Waekon T2000” gauge compensates for altitude and temperature changes and shows air pressure in tenths of a pound. It’s accurate to within .10 of 1 psi. The gauge takes seven pressure samples - one per second - and shows a digital readout of the maximum reading found in the seven samples.

“Other gauges can read tire pressure only to within 1 or 1/2 psi. The extreme accuracy of our gauge comes in handy because many radial tire manufacturers are promoting lower air pressure for less soil compaction,” says Miller. “Radial tires are designed to be used at low pressures so even a fraction of a pound difference in tire pressure can significantly affect the tire’s carrying capacity.

“Another reason to have an accurate tire gauge is that seasonal drops in air temperature can greatly affect tire pressure. On average, tire pressure drops 1 psi for every 10 degree drop in air temperature. If you put 36 lbs. of pressure in your car tires on a 90-degree day and leave it alone, by the following December when it’s 10 degrees above zero the tire pressure will be 8 lbs. lower. That’s

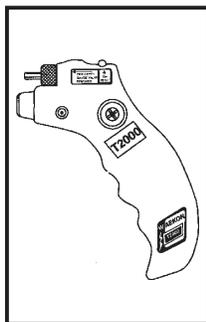
why it’s important to check tire pressure on a monthly basis.

“An accurate tire pressure gauge is also very important for tractor pulling contests, where it’s critical that both rear tires have exactly the same pressure so that the tractor doesn’t go down the track crooked.

“The gauge is not designed to be used on tires filled with fluid or calcium chloride. They require a special gauge.”

One end of the tool is graduated in 1/32-in. increments for measuring the depth of tire tread. The end piece pulls out and can be used to remove the valve assembly from the tire stem to let air out fast.

Sells for \$39.95 plus \$5.95 S&H.
Contact: FARM SHOW Followup, M.E. Miller Tire, 17386 State Hwy. 2, Wauseon, Ohio 43567 (ph 419 335-7010; fax 419 335-9881).



Digital tire pressure gauge reads pressure to within 0.10 psi.

Where To Find Information On Servicing Old Equipment

Here are tips on where to get service manuals, sales literature, parts books and other information on older equipment.

John Deere

Deere & Co. has an outstanding archive department. Contact: FARM SHOW Followup, Deere & Co., P.O. Box 186, Moline, Ill. 61266 (ph 800 522-7448).

Another possible source of information for Deere equipment is the Illinois State Historic Library, which also maintains archives on old Deere equipment - including horse-drawn tools from way back. Contact: FARM SHOW Followup, Illinois State Historic Library, Old State Capital, Springfield, Ill. 62701 (ph 217 524-6358).

International Harvester

The State Historical Society of Wisconsin has parts catalogs, photos, and operator’s manuals for virtually all IHC implements, wagons and stationary equipment. The archived information covers everything from 1902 to 1985. The collection also includes manuals and catalogs from the five predecessor companies that IHC acquired over the years - McCormick, Deering, Champion, Plano, and Milwaukee - dating back to 1894.

International also built and sold equipment under other names such as Chattanooga, Hosier, Keystone, P&O, and Weber.

The best way to obtain information from the Historical Society is to contact them by mail with as much information as you can supply, such as part or model numbers. Photos may be helpful as well. They will photocopy anything in the collection at a charge of 20 cents per page plus \$12.50 per order. Do not pay in advance. They will bill you after the copies have been mailed. You can also visit in person and do your own photocopying in the archives reading room. They suggest contacting them in advance to see if what you want is available.

Contact: FARM SHOW Followup, State Historical Society of Wisconsin, Archives Reading Room, 816 State St., Madison, Wis. 53706 (ph 608 264-6460).

Hart-Parr, Oliver, Minneapolis Moline, Cockshutt, & White

The Floyd County Historical Society of Charles City, Iowa, houses a huge treasure trove of old tractor manuals for Hart-Parr, Oliver, Minneapolis Moline, Cockshutt, and White tractors. Manuals are also available for combines, planters and tillage tools, as well as some construction equipment.

The materials were donated to the museum by the companies themselves. The Society sells either the original manuals themselves, or reprints.

Contact: FARM SHOW Followup, Floyd County Historical Society, 500 Gilbert St., Charles City, Iowa 50616 (ph 515 228-1099).

Other Companies

For other large manufacturers - and for smaller, less popular implement companies - you should try contacting the state historical society in the state where the equipment was manufactured. Many maintain archives or have early information about companies that have since gone under or merged with other companies.

Intertec Publishing sells service manuals for hundreds of tractor models, new and old. Contact: FARM SHOW Followup, Intertec Publishing Publications Div., P.O. Box 12901, Overland Park, Kan. 66212 ph 800 262-1954.

In addition, there are a number of private entrepreneurs who sell reprints of original owner’s manuals and service manuals. Following are a few of the best-known literature resellers:

Warren D. Jensen
Jensales Company
Box 1203

Albert Lea, MN 56007
ph 800 443-0625
(Stocks over 2,100 reproductions of original factory service, parts and operator manuals.)

Clarence L. Goodburn
101 West Main
Madelia, MN 56062

ph 507 642-3281/8481
(Service manuals, parts books, sales literature, etc., on farm tractors and equipment, crawlers, trucks, heavy equipment)

Lloyd Wenger
831A Hilltop Rd.
Myerstown, Penn. 17067
ph 717 866-7147
(Deere literature, owners manuals, parts books, etc.)

TF Literature Sales
Rt. 2 Box 8
Luverne, Minn. 56156
ph 507 283-4730
(All kinds of manuals and literature on most brands of farm equipment.)