

Clamp-on sensor helps you find an annoying noise inside or underneath a vehicle. Here it's shown mounted on a wheel strut.



## Wireless "Ears" Help Pinpoint Noisy Mechanical Problems

Finding an annoying noise inside or underneath a vehicle is a whole lot easier with the Wireless ChassisEAR from JS Products. You simply clamp one of the sensors into a suspect area and take a test drive.

JS Products sent FARM SHOW a set of sensors to try out and both the sensor-transmitters and receiver worked as promised.

With units strapped in each wheel well, road noise transmitted clearly to the headset connected to the receiver. Clamped to the water pump, the sound of fluid movement was clear. The 6-way switch lets the operator quickly move from monitoring one transmitter to another. (While four transmitters are standard with the ChassisEAR kit, two more can be added).

Wanting to test it out with a problem vehicle, we gave the diagnostics kit to mechanic and FARM SHOW contributor Jerry McCabe (Vol. 34, No. 5). He tried it out and was pleased with how it worked.

"This would be great for a one-man shop or anyone who works on his own equipment," suggests McCabe, who runs McCabe Auto Repair in Preston, Minn. "I can have another mechanic jump in back and slide from side to side to help locate a problem sound, but that takes him away from his job. For \$200, this unit makes finding the problem fast and easy."

## Pto Clutch Kit For 2-Cyl. Deeres

If you have a two-cylinder Deere, you can save money two ways with the WTR Pto Clutch Kit. The kit includes all the disks and separator points needed to replace the entire pto clutch.

"Buy the complete kit, and you can save up to 70 percent compared with buying each piece individually from Deere," says Dennis Weber, WTR. "Replacing them all at once saves time and extends the life on all the parts compared to replacing only those with visible damage."

Weber compares replacing parts piecemeal to replacing only one tire out of four. "All too often, tractor owners open up a clutch pack and find a few plates where the linings have fallen off," he says, "They just replace them. A few days or weeks later more fall off, and they have to open up the clutch again to replace those."

Equally important, he adds, is the increased wear on the replaced parts from having a damaged part undetected and not replaced. This is as true of separator points as the lined plates.

"People look at separator points and think they don't have to replace them unless they are burned or obviously damaged," he says. "But grooves in a separator point can shorten the life of the lining on a new clutch disc."



Road noise is transmitted to a headset connected to a receiver.

The wireless transmitter consists of a small rectangular box with microphone clamps. A magnet on the transmitter box holds it in place temporarily until Velcro straps can secure it.

The microphone clamps are wired to the transmitter. They can be clamped to springs, torque rods, shocks, body mounts, dash assembly, drive train, axle hubs, ring and pinion bearings, oil pump, etc.

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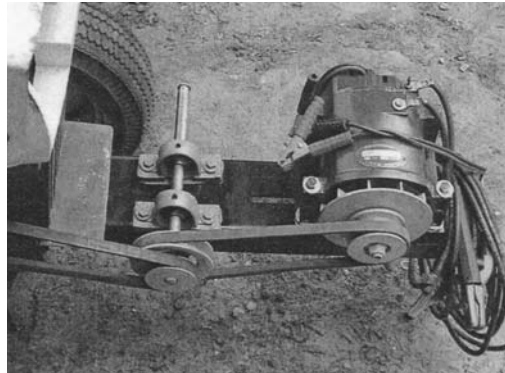
Kit for 2-cyl. Deere tractors includes all disks and separator points needed to replace the entire pto clutch.

Another advantage to replacing old pto clutch packs with new ones is improved quality. Weber explains that the glue used to fix the linings and the material is much superior to earlier versions.

"I don't think I've seen linings come off the newer versions," he says. "They are just a lot more durable."

Clutch kits vary in price from \$249 for earlier model two-cylinders to \$445 for 820 and 830 Deere tractors.

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Mike Toppen turned a Sears garden tractor and an old truck alternator into this portable, high output stick welder.

## He Turned An Alternator Into A Great Stick Welder

Mike Toppen turned an old truck alternator and a Sears garden tractor into a portable, high output stick welder. He also uses it to jump-start vehicles and for high amperage charging. He can even use it to run a TIG welder or power his circle saw or other "brush-type" tools.

"A normal automotive alternator can be used for a welder, but is limited to 60 to 70 amps output current," says Toppen. "If you're a welder, you know it's nice to have a higher output current than this. I used a truck alternator with double-drive belts and from 135 to 185 output amps. This makes for a nice capacity unit."

The used truck alternator is brushless with a stationary field coil that protrudes into the double V-belt driven field shell. This allows Toppen to put larger amounts of voltage into the field coil without overtaxing brushes. Otherwise, the alternator had the usual regulator, diode trio and bridge rectifier under the plate on the end cap.

"I removed the plate which let me also remove the regulator and the diode trio that I didn't need as I didn't want them regulating (limiting) output," explains Toppen. "I also removed the bridge rectifier and replaced it with an RD-05 from Regitar. It doesn't use avalanche diodes, which it's said don't last long in a welder."

With those minor changes, sandblasting and repainting parts, Toppen had his welder. With the help of a friend, he bent steel plate to make a mounting frame for the front of his Sears garden tractor. Its 12 hp Koehler engine had pulleys in place for various Sears add-ons that made it ideal to power the welder.

"I still needed to get the rpm's up from the tractor engine's 3,200 to 3,600 maximum rpm's to the 7,000 to 8,000 I needed for the alternator," says Toppen. "I added a jackshaft with a two-stage gear induction."

To allow for adjusting the belt drive, Toppen machined a lengthwise slot in the adapter

plate. He used pieces of square tubing to raise the welder and to mount it to the plate for easy adjusting.

"I knew I would need 40 to 50 volts and around 80 amps to get a decent arc when welding," says Toppen. "My 12 hp engine was more than sufficient in power. The 50 amps times 80 volts equals 4,000 watts, which is equal to 5 hp. We got another 7 hp to work with."

A pair of low cost jumper cables connects the garden tractor battery to alligator clamps on the field to power up the coil. Welding cables connect to the output posts on the alternator.

The first time Toppen fired up the welder, he selected an all purpose rod and a heavier duty rod. He quickly found he could adjust the engine rpm's to the welding rod to find its particular output "sweet spot".

"The great thing is that I can use it on the garden tractor the way I have it, or I can mount it on a full size tractor or even under the hood of a pickup if there's room for a jackshaft," says Toppen. "I've done equipment repairs in the field, welding tongues back on wagons and such. It adds real versatility to the shop."

Toppen offers more in-depth instructions for making the portable welder on a CD that he sells for \$15 plus \$3 shipping. The CD, along with other Toppen instructional CD's, is available on Toppen's eBay store. It includes high quality images, schematics and wiring diagrams. Also included are modifications to use the portable welder as a TIG torch and for running a carbon arc torch. He also explains how the welder can be used to power brush-type motors.

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## "Combo" Safety Glasses Also Protect Ears

You get both eye and ear protection in one with these new "combo" safety glasses that are equipped with built-in earplugs on the frames.

The built-in earplugs hook onto ear pieces that are part of the eyeglass frame, so when you remove the glasses the ear plugs come out of your ears. If you want to wear the glasses without the earplugs, simply fold the plugs over so they lay against the eyeglass frame.

The combo eyeglasses are available either clear or colored. They sell for \$12.99 plus S&H. Foam ear plugs are replaceable.



"Combo" safety glasses are equipped with built-in ear plugs on the frames.

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