

## Where To Buy Slow-Speed Diesels

Noah Petersheim has Lister-style, slow-speed diesel engines available. While the engines can't be imported, the parts can. Miller puts parts together to make new engines and repair old ones.

"The parts are made from original Lister castings," says Petersheim. "The quality is not quite there compared to the originals, but they're still very good motors."

The diesel engines run at a top speed of 1,000 rpm's. Petersheim says the fuel efficiency of the old-style engines is what sets them apart.

"They can run 8 hours a day at 35 percent load and use only about 5 quarts of fuel," he says. "They're ideal for powering line shafts in workshops, such as leather and woodworking."

In addition to the new engines and repair work, Petersheim is always looking for used Lister engines. They're popular resale items or may be parted out for future engine repair.

"They're very simple machines," he says. "They start easy with a crank start but are also available with a battery start."

He notes that a 10-hp. engine will usually cost between \$6,000 and \$7,000. Single-cylinder engines from 6 to 12 hp. start at \$4,100. Double-cylinder 12 to 24-hp. engines start at \$6,800. Options also include a water



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pump and radiator setup.

"They're also available in gensets," says Petersheim.

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## Solar Panel Fence Powers Farm

Irish dairy farmers are putting their north/south fence lines to good use with solar panels on each side. The vertical bifacial panels concept was developed by Next2Sun, a German company, and adapted to Irish farms by Sunstream Energy owner Gene Hourihane. Instead of covering an area in panels, it harvests the sun.

By mounting the panels vertically on a specially designed frame, the resulting power curve has two energy peaks with a trough at midday. Hourihane says that type of solar production is well suited to dairy farms.

"They have high variations in electric loads, especially those batch-milking cows in the morning and evening, with those peak loads typically 10 times greater than midday loads," he explains.

Hourihane notes that standard solar panels have peak production midday "Yes, this energy can be stored in a battery to recycle, to heat water for wash down or to build an ice bank for evening milking to chill the milk, but this is just shifting the energy use. It's not a perfect match," he says. "Every unit that can be consumed directly is one that doesn't have to be purchased from a supplier, and the farmer doesn't have to pay for battery storage."

David Foran is one of Hourihane's agricultural customers. He installed a 27-

kW system in 2019 with 30 percent covered by a government grant. In a testimonial, he estimated he recouped his share (\$21,800) of the cost in less than 2 years. Initially, he expected a payback in 7 years, but higher-than-expected energy costs reduced the payback period dramatically.

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While Sunstream works only in Ireland, Next2Sun has announced a partnership with iSun, a Vermont company. The two plan to install a vertical bifacial solar fence with panels up to 6 1/2 ft. high on 30-ft. spacings on a Vermont vegetable farm early in 2024.

In announcing the new venture, iSun CEO Jeffrey Peck stated, "Thanks to the vertical mounting of the modules and the adaptability of the installation to the needs of the farmer, the valuable land is almost completely preserved for agriculture."

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## New Nozzle Evens Spray Despite Obstacles

The SymphonyNozzle by Precision Planting is a pulse-width modulation system (PWM) that can be installed and serviced on existing self-propelled or pull-type sprayers. It gives you independent control over rate and pressure to ensure consistent droplet sizes over the entire field. The nozzle lets you visualize real-time application metrics and maps on a 20/20 monitor. This makes it possible to hit a preprogrammed target rate and pressure with minimal overlap, regardless of operating conditions. It's possible to set a rate and pressure on the home screen and adjust it as necessary in the field.

Symphony will maintain consistent pressure across the boom and turn compensation for consistent spray coverage, a critical part of effectively killing weeds or stopping the spread of disease within a field. The nozzle control system uses camera technologies with artificial intelligence to vary the spray rate based on the weed size and pressure.

Targeted spraying can significantly reduce costs and improve efficiency compared to standard application rates. Likewise, it can fight against weed resistance often caused by partial herbicide coverage. Ensuring every weed gets covered the first time reduces the chances of them surviving long enough to proliferate.

The sprayer nozzle complements the Precision Planting ReClaim retrofit solution. ReClaim allows farmers to get maximum efficiency out of their spray chemicals. The retrofit boom priming and recirculation system lets applicators take spray from the



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tank to the boom and then flow back to prime the boom. The system will fit on most existing sprayers with electric or standard nozzles.

You can purchase the nozzles online from Precision Planting or through the company's network of dealers. The company reports that the SymphonyNozzle can be assembled without special tools and doesn't require technical knowledge to service or maintain.

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**Solar shingles are designed for easy installation by roofers with a nail gun, just like regular asphalt shingles.**

## Solar Shingles Work With Traditional Roofing

While integrated solar shingles have been around for a long time, GAF Energy has refined its idea, creating Timberline Solar, the world's first solar shingle that can be nailed and integrated directly into traditional roofing materials.

The Timberline Solar consists of shingles, not panels or heavy tiles. It's designed to shed water and withstand winds up to 130 mph. It also accommodates different roof dimensions and styles while remaining flexible.

"First and foremost, Timberline Solar is a roof," says Sam Boykin, GAF Marketing Coordinator. "It can be used on various types of buildings, including agricultural structures and barns, as long as the roofing assembly meets the requirements for solar shingle installation."

The solar shingles are designed for easy installation by roofers with a nail gun, just like a regular asphalt shingle. They seamlessly integrate with traditional shingles rather than going over them. This ensures optimal performance, creating a durable, reliable, and attractive solar roof.

To harness the energy generated, electrical

components and inverters are installed to convert the electricity for the utility grid and use in a home.

"Our vision is energy from every roof," Boykin says. "Timberline Solar was made by roofers and some of the most innovative minds in solar. Our commitment to innovation and sustainability sets us apart in the solar roofing industry."

Timberline Solar is manufactured in California and Texas, and a strategic rollout is underway to bring them to every state in the U.S. through a network of roofing partners.

Costs will vary by region, roof type, and size, so Boykin recommends customers contact their local roofers and inquire about availability and cost in their area.

"In general, the cost of Timberline Solar is in line with the cost of a new roof plus solar," Boykin says. "The best time to consider a solar roof, or any rooftop solar product, is when you need a new roof."

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