



Generator rolls like a 2-wheel cart and is powered by the engine on any riding lawn mower or garden tractor.



To use you slide the mower deck out and slide generator into place, then slip on the belt and tension with a ratchet strap.

Generator Transforms Garden Tractor Into Power Plant

Joe Gezel and Brad Ross invented a generator that's powered by the motor on your riding lawn mower or garden tractor. Instead of buying a generator that may sit unused for years and not start or run when you need it, the Iowa partners suggest a generator can be one more useful attachment – like a snow blower, blade or tiller – for your garden tractor.

"It fits on virtually all models of mowers," Gezel says of the New Millennium Power Generator. You just slide the mower deck out; slide the generator into place, slip on the belt and tension with a ratchet strap. Takes less than 5 min.

You set the throttle between 110 to 115

volts per the indicator gauges (half to 2/3's throttle), and the governor takes care of the load.

"It's rated at 10,000 watts with multiple 120/240 volt outlets," Gezel says.

"The uniqueness of it is the ease of operation. It fits a market gap that's not currently being addressed," Brad Ross adds, noting the generator is simple to hook up without assembly or special tools.

The 148-lb. generator rolls like a 2-wheel cart and can be stored upright in the garage.

Gezel, who worked for highline contractors chasing storms, witnessed the devastating losses of people without power after

tornadoes, ice storms and other disasters. On the way to a ballgame, Ross mentioned there should be a way to use the engine in a riding mower – something many homeowners own or plan to purchase. Ten months later the partners were talking to a patent attorney.

"On our last test, it ran 36 hrs. continuous using 3/4-gal. of fuel per hour to produce 8,500 continuous watts and 30 amps. Two horsepower per kilowatt is recommended (20 hp) but its design will allow it to produce power in direct relationship to the horsepower provided," Gezel says. He adds that the generator has an 85 percent continuous rating, staying at 61 hertz, which is important for

safe operation of electronics.

The 10,000-watt, New Millennium Power Generator sells for \$1,299, available through the partners' website and at VanWall Energy dealerships. It's compact, lightweight and easy to ship.

The partners are open to adding dealerships and are developing options for hydraulic-orbit drive and pto drive.

For now they are getting the word out to people who own riding mowers.

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Earth Brick Building Catches On In Cold Climates, Too

Adobe-style homes have always been popular in the Southwest U.S., but they've recently been gaining popularity in Wisconsin, Iowa and Minnesota. The up-front cost of Earth Block buildings isn't dirt cheap, but long-term benefits make them a better deal, says Dan Johnson, Midwest Earth Builders. Johnson has been building with earth bricks for 14 years.

"Earth block buildings are produced on site with local soils so less energy is used to produce, process and transport the materials," says Johnson. "That's important to a lot of my customers. Others just like the benefits of the solid buildings they provide. The earth bricks store and release heat when used in a passive solar design or with wood stoves. Plus they are fireproof."

Johnson adds that people also like them for the design capabilities. It's easy to build arches and curves, and they can be left exposed like a fired-brick wall or plastered with a wide variety of colors and looks.

"Earth bricks can be set in mortar like regular bricks, dry stacked in place like adobe, or stacked with the use of a clay slurry to seal them together," says Johnson. "All that's needed is the right soil consistency."

Too much sand causes the bricks to crumble, while too much clay will produce a brick that cracks as it dries. Johnson's ideal soil for earth bricks is 30 percent clay and 70 percent sand with no organic matter. Sand can be added if the available soil has a higher ratio of clay. If producing bricks for an exterior wall, he also adds either Portland cement or lime.

"There's no perfect soil as you always have some silt in it," he says. "If we don't have acceptable soil on site, we can usually find it nearby and haul it to the site."

Johnson uses a double action hydraulic press from EarthTek, Inc. to make uniform size and density bricks with square corners. The company recommends compressing the

earth blocks at 2,300 psi, though that can vary depending on the raw materials.

Johnson has the second largest EarthTek block maker, which cost him \$60,000. It can be operated by a single person, but is most efficient with two or three people, he says. The machine can produce up to 360, 4-in. high by 14-in. long by 2 to 10-in. wide blocks per hour.

Earth Tek makes powered blenders for mixing sand and clay soils to get the right consistency and base for optimum bricks. Johnson uses a tractor with a rototiller to prepare the soil being used and to mix in additional sand, clay, lime or Portland cement as needed.

"What we are producing is an unfired brick," he says. "We always put a protective coating on the exterior whether stucco or even siding. In southern climates, you can just make the bricks and use them. In our area, I like to make them and cure them for about two weeks."

Earth brick construction uses the same foundations as other construction techniques. Johnson has used earth bricks for interior and exterior walls and interior only with stick-built exteriors. He has also used them for partial interior walls to absorb sunlight or heat from a wood stove.

Johnson notes that the only difference between earth brick construction and other styles is in the cost of the walls. Windows, roof, foundation and other costs remain the same. "It typically adds 3 to 4 percent to the total cost of a house," he says.

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Earth block buildings, popular in the Southwest U.S. for years, have recently been gaining ground in Wisconsin and Minnesota.



Earth bricks can be left exposed like a fired-brick wall (left). Earth block buildings are produced on site with local soils.