

POWERSOURCE

A publication of John Deere Power Systems

Winter 2019

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POWERSOURCE

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PowerSource™ is a publication of John Deere Power Systems. PowerSource is published quarterly for John Deere Power Systems distributors, OEMs, and end users of engines and drivetrain components. Subscriptions to this publication are available free of charge. Log on to JohnDeere.com/PowerSource to request or modify your subscription. Inquiries can also be sent to the following address:

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Quoted statements in this publication reflect the personal opinion of the person interviewed. To learn more about John Deere engines and drivetrain components, visit JohnDeere.com/jdpower.

A large blue and black harvester is shown in a field, harvesting rows of green crops. The machine has a large front-mounted harrow and a complex rear harvesting mechanism. The background shows a sunset sky with orange and yellow hues.

The Harod harvester was designed for one-person operation and boasts a capacity of 10 cubic tons (11 U.S. tons) per hour.

TURNING OVER A NEW LEAF

Large commercial grower speeds up spinach harvesting with the Harod harvester

What do you do when the market does not meet your need for a solid, high-capacity harvester? If you are future-thinking, large-scale vegetable producer Emmett, you build your own! This UK company's Spanish engineering operation, Harod

Fabricación, designed a robust, reliable harvester that cuts spinach at a faster rate and with less labor. To drive its one-of-a-kind harvester, Emmett chose the John Deere PowerTech™ PWL 4.5L Final Tier 4/Stage IV engine.

"Typical vegetable harvesters on the market are developed for low-capacity production. We found that these don't offer the reliability and requirements for the high-capacity operations that are more commonplace today," says Richard Clark, company director. "Many large-scale farmers have to maintain a harvester on standby just to ensure they can keep production rolling when breakages occur, which is costly and ineffective."

From farm to fork

As a vertically integrated farming, packing, and marketing business, Emmett supplies high-quality UK supermarket retail customers with highly specialized vegetable products.

In addition to producing spinach, Emmett grows and packages leek, kale, cavolo nero, and organic spinach and kale — all from its fields in the UK, Spain and Italy. "This guarantees a 100 percent year-round supply of our products using the best soil types and climates," highlights Clark.

"In all we do, we try to ensure that the entire farm-to-fork process is as environmentally responsible and productive as possible. We encourage our team to contribute ideas on how to improve our operations. The Harod harvester was one result of this collaborative, innovative approach; the choice of the John Deere engine was another."

One-person, all-weather solution

Measuring 2.85 meters (9.4 feet) high, 2.45 meters (8 feet) wide and 6.5 meters (21.3 feet) long, Emmett's harvester boasts a capacity of 10 cubic tons (11 U.S. tons) per hour. The rubber tracks keep ground pressure and disturbance low, despite the

unit's 6.5-metric ton (7.16-U.S. ton) weight.

Designed for one-person operation, the "best seat in the house for the best operators" includes an enclosed cab and modern controls. The operator manages the main functions with the joystick, and the conveyers and loading arm with the touchscreen.

From the cab, the operator has a perfect view of the cutting blade, preventing crop damage during spinach harvesting. The 2.5-meter (8.2-foot) adjustable vibrating conveyer removes small leaves and cotyledons (bitter baby leaves), while the air blower supports cut leaf quality and helps prevent foreign objects from being collected with the crop.

Moving forward

The John Deere engine contributes to the reliability, productivity, and fuel efficiency of the harvester, helping Emmett cut down on frustration, labor costs, and time, while meeting its environmental goals. "We wanted a 98-kW (130-hp) engine that meets the strictest emission regulations and is backed by local service worldwide," Clark explains.

"With John Deere and Transdiesel, we were confident that would be the case. We discussed the requirements and working conditions with Transdiesel and found the 4.5L engine to be the best choice," he says. "This is the first time I've worked with John Deere engines, and we've had excellent service locally in Italy and the UK. And when we have a question, Transdiesel provides excellent support, by phone and in person."



We encourage our team to contribute ideas on how to improve our operations. The Harod harvester was one result of this collaborative, innovative approach; the choice of the John Deere engine was another."


— Richard Clark, Emmett



The Harod spinach harvester offers operators a clear view of the cutting blade to prevent crop damage during spinach harvesting.



With four harvesters in operation, Emmett wants to bring a standardized design with multiple cutting widths to market for larger-scale growers as well, so they can harvest faster and more efficiently. "As we move forward, we will certainly continue to work with Transdiesel, John Deere and its global distribution network," concludes Clark.

 Distributor: Transdiesel S.L. in Coslada, Madrid, Spain: www.transdiesel.es



The PowerTech™ PWL 4.5L Final Tier 4/Stage IV engine contributes to the harvester's reliability, productivity, and fuel efficiency as well as Emmett's environmental goals.



FLOW CONTROL

Idrofoglia's JP200 self-priming process pump increases application flexibility and productivity in fluid handling

Moving aggressive, corrosive, solid-laden fluids is an ever-increasing challenge for process plants. It's a job best left to expert fluid handling companies and a specialized pumping solution such as the JP200 self-priming process pump built by Idrofoglia. Customized for a U.S. customer and powered by a John Deere PowerTech™ 6.8L Final Tier 4 variable-speed engine, it tackles the most abrasive fluid applications while keeping operating costs down and minimizing wear.

Keeping businesses flowing

Founded on 40 years of supplying over 100,000 installed pumps worldwide, Italy-based Idrofoglia's pumps are tried, tested, and proven to deliver in agricultural and industrial applications. The heavy-duty JP200 pump was customized for testing new industrial fluid piping systems in the U.S.

The JP200 pump offers a capacity of approximately 650 cubic meters (22,954 cubic feet) per hour. With a flow rate of 360

Idrofoglia is recognized internationally for its extremely efficient and reliable technologies for water and fluid movement and for its worldwide distribution network. The pumps are built from high-quality materials using the latest generation of technologies and drawing on the company's 40 years of experience.

cubic meters (12,713 cubic feet) and a pressure of 5 bar, the pump is capable of moving a wide range of fluids, including water, acidic chemicals, wastewater, petroleum, oil, sludge, abrasive slurry, and food. The pumping unit and 350-liter (92.5-U.S. gallon) fuel tank are mounted on a fixed frame. Easy access to hoses and the impeller speeds up maintenance and parts replacement.

Variable speed means more control

Idrofoglia likes to use variable-speed engines in its solutions, because they give operators more control over the pumping process. "To remain competitive, fluid-handling companies must keep the total cost of ownership of their pumps down while maximizing their uptime," explains product manager Michele Pretelli. "Using variable-speed engines can help achieve this balance. By configuring the right pump speed for each application, companies can reduce the number of pumps in the fleet while decreasing fuel costs and equipment wear."


For more than two decades, Idrofoglia has relied on the proven performance and fuel efficiency of John Deere variable-speed engines in its Fox and Turbo range of 60 to 186 kW (80 to 250 hp) motor pumps. For the customized JP200

pump, Idrofoglia transitioned to Final Tier 4. Italian engine distributor Rama Motori S.P.A. recommended and supplied the John Deere PowerTech PVS 6.8L engine.

This larger engine required some changes to the usual pump setup, so Rama and Idrofoglia engineers worked together to ensure a perfect fit. "We then tested the pumps thoroughly to ensure that the Final Tier 4 engines maintain the proven performance customers expect from our pumps," Pretelli comments. "We are very pleased with the final product we supplied."


"John Deere is a historic brand, valued worldwide," Pretelli adds. "The engines are powerful and efficient, and the support network is reliable. Both the engines and Rama have played a major role in the success of our pumping solutions. Rama's knowledge about our industry and our products is impressive. They really understand our market and know instinctively which engines will provide the best results for our clients."

The U.S. customer needed the two JP200 pumps on very short notice. This was no problem for Idrofoglia's lean manufacturing process and committed engine supplier Rama Motori. "Customer satisfaction is a priority and goes well beyond customization of our products," says Pretelli. "It means keeping in close touch with our customers and offering them first-class packages, value for money, comprehensive care, local service, and all the backup they want."

 Distributor: Rama Motori S.P.A. in Reggio Emilia, Italy; www.rama.it



Customers have a choice of open or semi-closed (silent) motor pumps. They can be mounted with a fuel tank on a fixed frame or trailer. Customized configurations are also possible.



YOUNG AND AMBITIOUS

General Power embarks on a global mission as a manufacturer of John Deere-powered generator sets





General Power recently introduced a line of mobile rental generator sets, including this 105-kWe model available with a PowerTech 4.5L Final Tier 4/Stage V engine.

General Power is a small company with big plans. After more than a decade serving as a distributor in the power generation market, the company and its 30 employees began manufacturing GENPOWERUSA generator sets. In just two years, General Power introduced a line of stationary emergency generator sets, a line of completely customizable mobile generator sets, and most recently a robust line of rental generators.

“Our supply chain partners are often surprised by the size of our very lean team and the youth of our organization in relation to our achievements, especially since many of our partners met us just over 10 years ago when we were a one-man operation,” explains Gabriel Lopez, director for General Power.

Built to order

All three lines of generator sets share common components and are built as modules, which allows General Power to quickly assemble them to customer specifications. “This gives our customers full control of getting either an industrial-type base model, a fully packaged rental-grade model, or anything in between,” explains Lopez. “Our customers don’t pay a cent more for features they don’t need.”

John Deere engines are at the core of this modular design and drive every power node from 30 to 500 kWe. “From inception, we very specifically decided to adopt the entire range of generator-drive John Deere engines, from 2.9L to 13.5L engines,” says Lopez.

One of the first generator sets the company designed, prototyped, and sold was a 40-kWe generator set driven by a PowerTech™ EWX 2.9L engine. “This engine block offers us five different Final Tier 4-compliant models from 30 to 50 kWe in both 50 and 60 Hz,” explains Lopez. “That’s very relevant to us because we have customers across a few different industry segments that need a Final Tier 4 engine solution to power 1500-rpm, 50-Hz machinery. This engine offers that solution.”

Although General Power’s OEM program is only two years old, the company is not new to John Deere. In fact, the company, located in the export hub of Miami, Florida, has been a worldwide distributor of John Deere-powered generators for more than a decade. “From our very roots, we have been immersed working with premium-quality John Deere-powered generator sets, which we have distributed to thousands of customers across virtually every segment and continent of the

international market,” says Lopez. “It was this level of exposure to John Deere — its engineering and worldwide support network — that drove us to choose them as the drive behind our GENPOWERUSA generator sets.”

General Power sources its John Deere engines from its engine distributor, Flint Power Systems. “The engineering support that we receive from our John Deere account manager is excellent,” says Lopez. “Artur Martyniuk has been pivotal to our growth. He has been consistently collaborating and facilitating every phase of the process, from the very first time we reached out to John Deere all the way to the time we finally launched our product line and presented it to the world. He has been and continues to be an excellent partner.”

Flint Power Systems assembles the engine and cooling package as one module, with the aftertreatment package as a separate module. “Flint Power’s design features the aftertreatment device on top of the engine,” says Lopez. “When their traditional design didn’t fit the exact needs of one of our prospects interested in buying our 280-kWe generator set, they completely re-engineered the package in record time.”

General Power has the option to purchase a John Deere engine in any configuration, whether it’s a bare engine or a complete power unit. “Flint Power allows us to choose exactly what we need on a case-by-case basis. This level of flexibility and immediate support creates great synergy between our companies,” explains Lopez. “Their versatility and flexibility empower us to focus on the customer first. It’s also fueled the quick deployment.”

cooling kit, and aftertreatment assembly that’s already been prototyped and tested to John Deere specifications. This ready-to-use power unit, combined with our exhaustive engineering and prototyping processes, gives us a high level of assurance that we will pass the comprehensive John Deere application review. Not only does this further enable our quick-lead time capabilities, it also makes our prototyping cycles significantly more effective.”


To meet urgent demands, General Power stocks a wide variety of John Deere engines and cooling kits, along with Stamford and Leroy-Somer alternators, steel and aluminum generator enclosures, single-walled and double-walled UL listed tanks, and generator trailers. Lopez says General Power can usually assemble and ship a 30- to 200-kWe generator within two weeks. Some common nodes can be assembled in 24 hours, and a customized unit in just 48 hours.

GENPOWERUSA generator sets are shipped globally and have worked in a wide variety of applications. The generators sets have gone to disaster-stricken areas of the Caribbean, dozens of mobile and prime power applications across the U.S., and to one of the 10 largest equipment rental companies in the country. More recently, 300 generator sets were shipped to Venezuela to support the dire conditions of that country’s electrical grid.

Lopez says John Deere makes it possible for a small company to accomplish big things.

“The Flint Power team has been supportive of us from day one. We have a lot to thank them for, because not only were we a brand-new OEM, but we were also brand new to Tier 4 Final. They educated us from the ground up, and their responsiveness is unlike anything that I’ve ever been exposed to.”

Lopez says the reliability of the John Deere engine and the support of the worldwide network of John Deere dealers give him peace of mind. “The unwavering reliability of the John Deere engine is pivotal to our ability to distribute generator sets worldwide. Without the trusted John Deere dealer network, we wouldn’t dare ship generator sets to so many remote and sometimes inaccessible locations,” relates Lopez. “Our John Deere-powered generators are trusted by customers in every corner of the world.”

 Distributor: Flint Equipment Company in Albany, Georgia; www.flintequipco.com

It was this level of exposure to John Deere — its engineering and worldwide support network — that drove us to choose them as the drive behind our GENPOWERUSA generator sets.

— Gabriel Lopez, General Power

Receiving a complete power unit gives General Power the opportunity to bring a new generator set model to the marketplace quickly. “We can purchase an entire engine,



EXACT *FIT*

Western Power Products helps integrate a Final Tier 4 engine into a new low-profile nut harvester

Exact Harvesting, an innovator of nut harvesting equipment, always strives to be on the cutting edge of technology.

With deep roots in California's orchard industry, Exact Harvesting builds nut harvesters, tree shakers, sweepers, and conditioners — machines "built by farmers for farmers."

And the company continually looks for new technologies to make orchard operations more productive, safe, and profitable. "The desire to do something different, to do something better — and to make our customers as efficient as possible — has always been a focus for us," says Nelson Tye, Exact Harvesting's engineering manager.



A custom PSL 4.5L engine fits the tight confines of the E7000 harvester.

Among the most notable innovations are three patented dust-suppression systems that reduce the tremendous amount of dust typically produced during nut harvesting and sweeping operations. The patented water system shoots water into the blower housing to capture dirt and dust, turning it into mud that falls to the orchard floor. These low-dust machines have been well-received by not only farmers and machine operators, but also drivers who travel nearby public roads during harvest time.

After years manufacturing tow-behind harvesters, Exact Harvesting recently introduced its latest innovation, the E7000 self-propelled harvester. The harvester features a floating-head design that follows the contour of the orchard floor as nuts are harvested. "Customers were wanting our harvester packaged in a self-propelled design," relates Tye. "As we began the design process, we came up with a floating head idea. Compared to our standard harvesters, the new harvester features a longer conveyor chain, which allowed us to slightly increase ground speed and produce a cleaner product."

A longtime customer of John Deere engines, Exact Harvesting had been powering its E6000 tree shaker and E-1155 sweeper with Interim Tier 4/Stage III B engines. The company's recent product launch coincides with the transition to Final Tier 4 emissions compliance. On the E7000, a PowerTech™ PSL 4.5L engine powers all of the hydraulic functions, including the ground drive, fan, and conveyor chain motors. The company

has also begun manufacturing the self-propelled E-1160 sweeper with the PowerTech EWX 4.5L engine, which powers the hydraulic drive and sweeper head.

Precision problem-solving

Tye admits he was "assuming the worst" as Exact Harvesting prepared to transition to Final Tier 4 engines. After all, both the harvester and sweeper are low-profile machines with limited space for engines. "We have to make our machines as small as possible, so in turn, we really need the engine package to be small. That's a big deal for us as a manufacturer of orchard equipment."

Fortunately, Tye's initial concerns were calmed, thanks to the engineering ingenuity of Western Power Products — a company with a deep knowledge of the agricultural industry and the needs of its OEMs and local growers. "I gave Western Power models of our engine compartments from our Interim Tier 4 machines and pretty much asked them to 'fit it as close to this as you can.'"

Western Power Products went to work. Collaborating with Tye and his team, the John Deere engine distributor developed a complete power unit and designed and fabricated custom mounting brackets and exhaust piping. "Everything about the engine package is completely customized for us," says Tye. Western Power shifted the location of the air filter and



The low-profile E-1160 sweeper is well-suited for modern orchards.

canisters and fabricated the necessary piping. “We received a package that was very compact and fit how we wanted it. We were concerned about where we would locate the DEF (diesel exhaust fluid) tank. But because of its small size, we were able to easily position the tank right behind the engine enclosure.”

Subtle size difference

“Not only were we transitioning to Final Tier 4, but we also went up to a bigger engine, and we barely had to adjust the size of our engine compartment,” continues Tye. “The most we had to expand our engine compartment in any direction was 2.54 to 5 centimeters (1 or 2 inches). At the World Ag Expo in Tulare, California, customers were looking at our sweeper and asking us when we’re going to switch to Final Tier 4, and we’re like, ‘That is the Final Tier 4 engine.’ They just weren’t expecting to see it that small.”

The move to the Final Tier 4 offered another significant benefit — the engines seem quieter. “As soon as we turned each of them on, we realized, ‘wow, the noise level is night and day difference.’ Without any other changes, we were able to

reduce the noise level quite a bit from Interim Tier 4 to Final Tier 4. It was a pleasant surprise. The engine sits right behind the cab, and we don’t have a lot of room for noise barriers to maximize operator comfort. Any noise reduction is awesome.”

Tye applauds Western Power Products for making the transition to Final Tier 4 a painless process. “I really can’t say enough about the work Western Power did on our Tier 4 engine packages. We were able to tell them what we wanted and what changes we wanted, and they just took it and went with it. If we had to try and figure out the design and all the requirements that go along with that, it would have taken a huge toll on our staff.”

The Final Tier 4 engines are performing well in the field, too. “They hit the field and ran better than our Interim Tier 4 machines. It made me feel like we met — if not exceeded — our customers’ expectations with our Final Tier 4 package.”

 Distributor: Western Power Products, Inc., in Bakersfield, Long Beach, and Woodland, California; www.wppdiesel.com

The Sgariboldi 8000 mixing/feeding systems offer farmers multiple benefits including reduced labor and improved herd health.

RAPID RATIONS

Sgariboldi's 8000 range of self-propelled mixer/feeder systems helps large-scale dairy farmers boost feed efficiency and returns

A comfortable stall, ample bedding, proper air circulation, and a well-balanced diet all add up to happier cows and greater volumes of more nutritious milk — the keys to success for today's dairy farmer. Sgariboldi's 8000 range of self-propelled mixing/feeding systems — now powered by John Deere Final Tier 4/Stage V engines — helps busy farmers optimize the health and comfort of their cows and speed up feeding operations, for top-quality milk and healthy returns.

One machine takes the place of three

Sgariboldi in Codogno, Italy, designed the 8000 mixer/feeder range specifically for medium to large dairy farms of 250 to 300 lactating heads and up. The range enables forward-thinking farmers worldwide to move to a single-machine system while increasing stock health, reducing feed spill, and saving fuel.

The three models in the range each use a different technology to address specific environmental conditions, feed products, and customer needs. "All the machines boast a robust modular frame and top-level components for long-term reliability and durability," says Luca Sgariboldi, chairman of the company. "Highly customizable, they offer an ideal solution for each farmer."

3 MODELS

COMBI 8200

self-propelled, horizontal single auger
capacity of 17 to 28 cubic meters
(600 to 988 cubic feet).

GULLIVER 8000

paddle system
capacity of 18 to 31 cubic meters
(635 to 1,095 cubic feet)

GRIZZLY 8100

vertical single or twin auger
capacity of 18 to 32 cubic meters
(635 to 1,130 cubic feet)



Sgariboldi's 8000 range of self-propelled mixing/feeding systems help busy farmers improve feeding efficiency.


Farm-smart

At the heart of the range is the company's integrated "intellitechnology," including intuitive controls, automated cutting precision, unmatched milling speed, and automated auger speeds for perfect mixing. Combined with total mixed ration (TMR) feeding technology, this smart system improves live-weight gains, ration quality and control, milk quality, and milk yields — all while reducing labor.

In January 2019, Sgariboldi switched from John Deere Final Tier 4/Stage IV model engines to the John Deere 168-kW (225-hp) PowerTech™ PVS 6.8L Final Tier 4/Stage V engine, on the advice of Italian engine distributor Rama Motori S.P.A. The new engines fit right into the existing space at the rear of the machine, and the engine cover can be opened completely for full access to the engine and hydrostatic systems.

"For 20 years, John Deere and Rama have offered us support throughout the entire design and development process for our equipment, from the initial consultation and 3D rendering all the way to engine installation and testing," comments Sgariboldi. "John Deere and Rama Motori are solid and reliable, especially in terms of both the provision and the effectiveness of after-sales service. We export most of our equipment all over the world, so it is very important for us to be able to rely on the global network. The 5-year comprehensive warranty coverage for the engines is another huge plus and keeps our customers satisfied."

With its strong focus on service and innovation, Sgariboldi offers dairy farmers ever smarter mixing and feeding solutions that make the feed process faster, simpler, and more intuitive. Farmers can get more work done with less effort.

 Distributor: Rama Motori S.P.A. in Reggio Emilia, Italy; www.rama.it

The PowerTech PVS 6.8L engine meets Final Tier 4/Stage V emissions requirements which is helpful when operating in dairy barns.



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**JOHN DEERE AND
RAMA MOTORI ARE
SOLID AND
RELIABLE,
ESPECIALLY IN TERMS OF
BOTH THE PROVISION AND
THE EFFECTIVENESS OF
AFTER-SALES SERVICE.**

— Luca Sgariboldi, Sgariboldi

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A SUCCESSFUL LAUNCH

Airman USA develops its first John Deere Final Tier 4 generator set with the support of Flint Power Systems

When you're a young company challenged with launching a new line of generator sets to the North American marketplace, it helps to have an engine distributor willing to go the distance with you.

That's the experience of Airman USA. When the company set out to develop a new line of Final Tier 4 generator sets, they faced a lot of firsts, including pairing a well-established Japanese generator with a John Deere diesel engine.

Airman USA is a subsidiary of Hokuetsu Industries, a longtime Japanese manufacturer of air compressors and diesel generators. Established in 2014, Airman USA sources generators, enclosures, and other components from Hokuetsu and assembles mobile prime-power generator sets at its facility in Adairsville, Georgia.

"Our basic tenant for how we manufacture is quality first," says David VanEvery, marketing coordinator for Airman USA. "We're not the cheapest brand and don't have plans to be; we aim for reliability and longevity. You can see it in the construction of our units, from the sound-dampening insulation to the steel components. We actually have foundries that melt our steel for our frames and fuel tanks."

The company's search for a diesel engine led them to John Deere. "While researching engines, we were focused on quality, because we are very, very keen

on that," explains VanEvery. "We decided on John Deere because of the reliability and longevity. The John Deere engine warranties reflect that." VanEvery also recognizes that John Deere Final Tier 4 engines are fuel-efficient and require low maintenance. He believes the efficiency of the aftertreatment system contributes to this cost efficiency.

Engineers collaborate

The SDG 150 — a Silent Diesel Generator rated at 150 kVA — was the first to receive a John Deere Final Tier 4 engine. When Airman USA met with their John Deere engine distributor, Flint Power Systems, they soon realized that the benefits of John Deere went beyond just a quality, cost-efficient engine. VanEvery found that Flint Power Systems provides value-added services. "Once we started more in-depth talks with them about engineering, we realized that Flint Power placed high importance on helping their customers transition to Final Tier 4."

That transition required months of collaboration and careful communication between the companies, says Victor Tisdale, vice president of operations for Flint Power Systems. "Airman had only used competitive engines for generator sets prior to this project. There were many differences in the application requirements between the competitive engine manufacturers and John Deere. We spent many hours on late-night conference calls explaining these different application requirements and fielding questions. And we worked through an interpreter, since

neither engineering team had personnel that spoke the other team's language."

Flint Power Systems provided comprehensive engineering support in all areas of application integration and design, supplying custom 3D models of the PowerTech™ PVL 6.8L engine, as well as the aftertreatment, cooling, and diesel exhaust fluid (DEF) systems. They established exhaust system regeneration and DEF inducement strategies and designed new exhaust piping so that the aftertreatment system could be mounted remotely. And because it was the first time Airman had placed a digital controller into a generator, Flint Power provided J1939 communication specifications so that the controller would communicate with the engine.

Going the distance

Application engineers from Flint Power Systems and John Deere Power System also traveled to Japan for a week to perform application testing on a prototype unit in Niigata, Japan, and then tested everything once again at the Airman USA production facility in Georgia.

"They were excellent about working through some of the issues and making changes as needed," says VanEvery. "Without their support, I think we may have delayed development by another half a year or longer. Flint Power was really instrumental in getting the 150-kVA generator sent out on schedule."

 Distributor: Flint Power Systems in Albany, Georgia; www.flintequipco.com



TOL Incorporated knows how to rise to the occasion when it comes to manufacturing pruning machines to support the ever-changing needs of the orchard industry.

Leveraging more than 40 years in the design and manufacture of orchard equipment, TOL Incorporated continually seeks new technologies and designs to boost the productivity and profitability of pruning contractors and growers of fruit and nuts.

When a California orchard grower approached the company to design and manufacture a self-propelled pruning machine

with more cutting capacity, TOL took on the challenge and went to work to develop a new dual-boom hedger, the HD1800RM, in just eight months.

"One of our greatest strengths is our ability to quickly adapt to the changes in the industry," says Scott Hermann, general manager of TOL Incorporated in Tulare, California. "The HD1800RM is a great example of this strength."

Since 2000, TOL has powered its self-propelled topping and hedging machines with John Deere engines, as well as John Deere-manufactured Funk™ hydraulic pump drives and transmissions. The new HD1800RM is hydraulically powered by a 149-kW (200-hp) PowerTech™ PVS 6.8L Final Tier 4/Stage V engine and Funk™ Series 28000 pump drive.

"We've had great success with Funk products," says Hermann.



PRUNING power

TOL teams with its John Deere engine distributor to bring new Final Tier 4 innovation to the orchard



A 149-kW (200-hp) PowerTech™ PVS 6.8L engine and Funk Series 28000 pump drive power the drive system, saw blade, wing rotation, cylinder control system, and cooling system on the new TOL HD1800RM dual-boom hedger.

“They are built tough and considered to be bulletproof, provided you keep oil in them. It is very common to see Funk components with well over 10,000 hours of operation and still running. TOL and our customers have been very happy with Funk products.”

TOL purchases both John Deere engines and loose accessories, including hydraulic components, from Western Power Products.

This John Deere engine distributor also worked closely with TOL in recent years to prepare for Final Tier 4 emissions, which included trips abroad. “We requested that engineers from Western Power travel to our manufacturing facility in Israel, and we are very grateful for their assistance. This was extremely helpful and saved us a lot of time and money,” says Hermann.

Rising to the challenge

TOL engineered the cooling system for the HD1800RM with guidance from Western Power Products. “On our machines, the cooling system is very complicated. We prefer to have our cooling package at the back of the machine while the engine sits at the front of the machine. This posed some

Having a John Deere under the hood helps our customers to know that if they do have a problem, there will be a dealer nearby to support them. This is one of the strengths of John Deere.

— Scott Hermann, TOL Inc.

challenges for the Final Tier 4 engines," Hermann explains. "The engineers at Western Power helped us accomplish this goal by providing necessary guidelines to help our designs meet the engine requirements, and they ensured that the engines would operate efficiently and reliably."

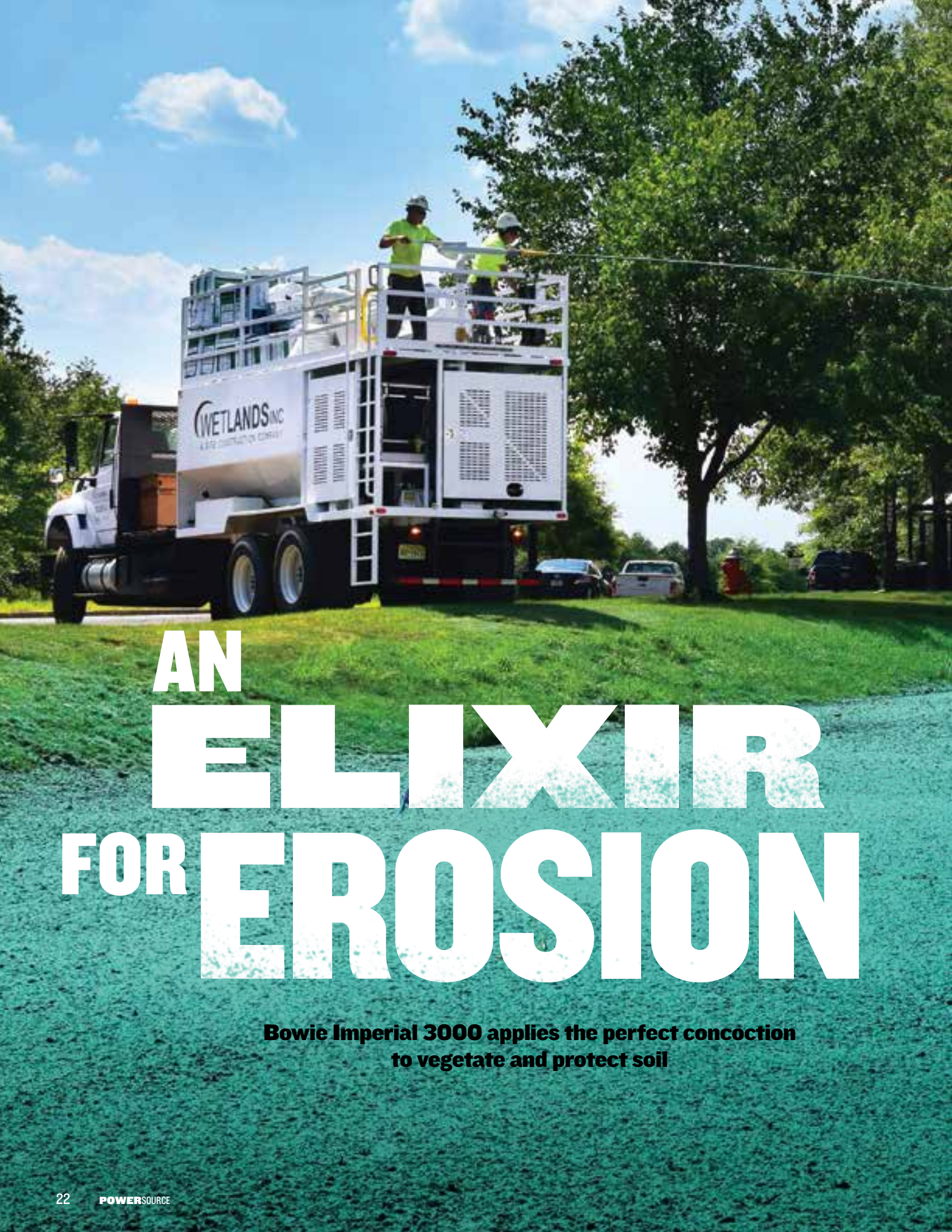
TOL's relationship with Western Power has been nothing short of wonderful, says Hermann. "So far we have had no problems with the Final Tier 4 engines, and that would not have been possible without the support of the engineering team at Western Power. We spent several years working on it to make sure we had everything correct."

Hermann says the John Deere dealers will carry the baton. "Most of our customers are nervous about Tier 4 engines regardless of the manufacturer. Our customers need to feel confident that they will have a local dealer to support the engine. Having a John Deere under the hood helps our customers know that if they do have a problem, there will be a dealer nearby to support them. This is one of the strengths of John Deere."

 Distributor: Western Power Products, Inc. in Bakersfield, Long Beach, and Woodland, California; www.wppdiesel.com



The HD1800RM hedges or tops both sides of an orchard row in a single pass.



AN ELIXIR FOR EROSION

**Bowie Imperial 3000 applies the perfect concoction
to vegetate and protect soil**



Construction is complete, and now you need to protect the freshly excavated soil. And you need to do it fast, before heavy rain or high winds erode all the work you've accomplished.

The Bowie Hydro-Mulcher is a fast and efficient way to stabilize vulnerable soils and help establish grass stands on excavated soils around newly constructed buildings, highways, airport runways, solar farms, and newly installed pipelines. This type of mulcher is also used in mine reclamation projects, as well as many other challenging applications.

Hydro-mulchers essentially mix seed, fertilizer, soil amendments, and mulch, then spray the material onto the ground through a discharge hose or from a deck-mounted gun. Under optimum growing conditions, seeds can germinate in about three days, creating a vegetative cover that protects fragile landscapes from wind and water erosion. "Sustainable slopes" is the latest concept. With the right seed mix, proper soil amendments, and proper application, vegetation can be grown on a slope that will never need supplemental watering or fertilization. It will sustain itself, working with nature and not against it.

Hydro-mulch materials have become highly engineered in recent years. Flexible growth medium (FGM) is rapidly gaining ground as an effective way to control erosion and establish vegetation on steep slopes. The medium, which typically contains wood fibers, co-polymer gels, and tackifiers, is sprayed over the ground to create a protective blanket and help with erosion control until a vegetation stand begins growing.

Power to mix the mulch

FGMs can be more challenging to mix and pump. Yet the Bowie Imperial 3000 Hydro-Mulcher delivers the power to shred highly compressed bales and agitate the sticky slurry. The machine features a John Deere PowerTech™ PWL 4.5L engine that drives a heavy-duty agitator with special teeth to shred and mix the material.

Bowie Industries worked closely with John Deere engine distributor *engines inc.* throughout the process of integrating a Final Tier 4 engine into the Imperial 3000. The PowerTech PWL 4.5L engine meets Final Tier 4 emissions without a diesel particulate filter (DPF), easing the process of integration. The John Deere engine distributor

also moved the aftertreatment device from the top of the engine to the rear of the engine using custom mounts and piping. "The envelope we had available for the engine was pretty limited," says Bowie Industries CEO Dean Myers. "We were challenged to get the aftertreatment to fit the space, but the John Deere engine package was flexible enough that we were able to adapt the package without much issue. The more space we could save, the better."


Plug and play

Myers says *engines, inc.* delivers the PWL 4.5L engine as a complete, fully assembled power unit mounted on a frame. "With the assistance from the engineers at *engines, inc.*, we were able to meet all the requirements necessary to comply with the Final Tier 4 regulations."

Bowie Industries' relationship with John Deere dates back to the 1980s, when the company first began installing John Deere engines on its larger Hydro-Mulchers. Some of the machines are still in operation today. Myers says this is a testament to the reliability, durability, and longevity of Bowie Hydro-Mulchers and the John Deere engines that power them.

Although Bowie Hydro-Mulchers are built to handle today's highly engineered hydroseeding materials, Myers says longevity is also dependent on how well customers take care of the equipment. "It's about as harsh of an environment as you can get. Fertilizer, moisture, dust, mulch, and glue-type additives that cling to the sides of equipment and can overspray onto the radiator, engine components, and wiring. If customers keep the mulch washed off, the Hydro-Mulchers easily last 30 or 40 years."

Myers says John Deere engine reliability is a key ingredient to a good grass stand. "If your whole goal is to stabilize soil and prevent erosion, you've got to get the hydro-mulch applied when the weather is right and the soil is prepared — before a big rainstorm. Mother Nature doesn't wait on you to get your machine out there," says Myers. "We like John Deere engines because they align with our core values of longevity, performance, and reliability."

 Distributor: *engines, inc.* in Jonesboro, Arkansas;
www.enginespower.com

FIRST FINAL TIER 4 BOWIE IMPERIAL 3000 GOES TO WORK



Wetlands Inc. of Saddlebrook, New Jersey, is a site construction company specializing in large commercial, state, and federal projects. When the company began its search for a new Bowie Hydro-Mulcher, they contacted Ed Dugan, owner of Northeast Bowie Sales, a dealer for the Northeast states. Northeast Bowie Sales customized the Imperial 3000 with an integrated fresh water flush tank, upgraded MCM pump, custom-mounted hose reel, and PowerTech PWL 4.5L Final Tier 4 engine.

"The engine made an impressive first impression, delivering consistent horsepower even at lower rpms," relates Dugan. "It also ran incredibly smooth, with little if any vibration on the machine and was very quiet, even at higher rpms."



THE POWER TO LEAD

Green Power's 60-kVA super-silent generator set meets a high standard for residential applications

Silence may be golden, but super-silence is green! Green Power Systems in Italy recently introduced Final Tier 4 engines into its prime power range. This first generator set powered by a John Deere 4.5L Final Tier 4 engine is expected to give Green Power a competitive advantage in urban applications worldwide.

Silent and flexible

The customized 60-kVA GP66S/J-T4 unit combines a 68-kWe (90-hp) PowerTech™ PWL 4045HFG04 Final Tier 4 generator-drive engine with a Mecc Alte ECP32 alternator, both linked to a ComAp AMF25-equipped control panel.

Rama Motori S.P.A., the Italian John Deere engine distributor and long-term supplier to Green Power, proposed the Final Tier 4 engine and assisted with the installation and testing. "We have been using John Deere engines in our standby solutions for years," Alberto Brugnettoni, product manager, explains. "For this application, we preferred this engine firstly because it meets Final Tier 4 emission regulations for prime power applications in North America. Secondly, it contributes to the gen-set's extremely low 55 dBA noise level — 10 dBA lower than a normal conversation! And finally, the dual frequency — 50 Hz and 60 Hz — allows us to switch between 1500 and 1800 rpm without programming."

The staff of Green Power works as one team with colleagues, customers, and partners, hence the company's mantra: "Team is everything." And Rama Motori is an important team member. "We enjoy exchanging ideas on the industry and its challenges," Brugnettni highlights. "They understand what we need to lead and remain competitive in our industry, they offer flexible warranty options, and they support us in every stage, from engine selection to factory testing. And their large stock of engines and spare parts ensures we never need to keep our customers waiting."

Practical, user-friendly, and compact


Green Power's generator sets combine practical design with user-friendly layout, low noise, and compact canopy. The company's design and engineering teams combine a healthy dose of creativity with strong technical expertise to ensure that these compact solutions exceed customer expectations for reliability and stability.

The straightforward modular canopy design is easy to tailor to specific needs. Some of these custom solutions include special doors to resolve space constraints in compact designs, generator sets up to 80 kVA, and more. "Part of our customization service is choice of engine. Yet when we suggest that John Deere is the most appropriate option, the customer never needs persuading," comments Brugnettni.

A solid investment

Green Power is all about providing its customers with real, long-term value. A reliable engine, supported by clear technical literature and quick delivery of spare parts, ensures that those customers get maximum performance from their generator.

Brugnettni sees plenty of potential worldwide for the new prime power generator with a John Deere Final Tier 4 engine. "And in the meantime, we're already looking at how to make the switch to Stage V to ensure that we continue to innovate and satisfy our customers."

 **Distributor: Rama Motori S.P.A. in Reggio Emilia, Italy;**
www.rama.it

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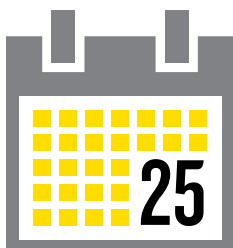
[Rama Motori] understands what we need to lead and remain competitive in our industry, they offer flexible warranty options and they support us in every stage, from engine selection to factory testing.

— Alberto Brugnettni, Green Power

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Green Power has high expectations for the 60-kVA unit with 68-kWe (90-hp) PowerTech™ PWL 4.5L Final Tier 4 generator drive engines.



LOOK FOR **JOHN DEERE POWER SYSTEMS** AT THESE

UPCOMING TRADE SHOWS, CONVENTIONS, AND EXHIBITS

October 1 – 3, 2019	ICUEE	Louisville, Kentucky, USA
November 10 – 16, 2019	AGRITECHNICA	Hanover, Germany
November 19 – 21, 2019	POWER-GEN INTERNATIONAL	New Orleans, Louisiana, USA
November 26 – 28, 2019	SITEVI	Montpellier, France
January 29 – February 1, 2020	Fieragricola	Verone, Italy
February 25 – 29, 2020	Fima	Zaragoza, Spain
March 3 – 5, 2020	Middle East Electricity	Dubai, UAE

WE'LL BE READY WHEN YOU ARE.

Register your John Deere OEM product, and enable our service team to respond should you need a warrantable repair.* Registering your engine or drivetrain component gives us the information we need to stock the right service parts, maintenance products, and servicing tools.

Register the warranty for your John Deere OEM engine or drivetrain component at JohnDeere.com/OEMWarranty.

*See specific OEM product warranty language for applicable terms and conditions.



JOHN DEERE

