

PowerSource

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JOHN DEERE



The PowerTech EWX 4.5L engine meets Final Tier 4/Stage IV emissions using a wastegated turbocharger designed to develop more airflow at lower engine speeds, as well as a diesel oxidation catalyst and diesel particulate filter (shown here). ▶

PRIMED FOR EMISSIONS COMPLIANCE

Xylem greets 2015 with a fleet of Godwin pumps that meet Final Tier 4/Stage IV standards



Just as a plant's xylem draws water from its roots to grow, Xylem Inc. is in the business of moving water using industry-leading technologies that are helping make our world a greener place. A global manufacturer of pumps, Xylem Inc. is taking an environmental lead in the clean air effort by offering the Godwin range of diesel-driven portable pumps with John Deere Final Tier 4 engines.

The Godwin NC150 Dri-Prime pump now meets Final Tier 4/Stage IV emissions with a 55-kW (74-hp) PowerTech EWX 4.5L engine. The portable pump is suitable for both sewage and clean water applications. ▶



More than a clean-water pump

Godwin Dri-Prime pumps have the ability to self-prime completely from dry with long suction lines, making them ideal for a variety of dewatering and pumping applications. Built simple and rugged, Godwin pumps have the solids-handling capability to continuously pump sewage and debris-laden wastewater.

Mike Ramos, director of operations and engineering for Xylem's Godwin brand, says he's been working closely with John Deere engine distributor Bell Power Systems to develop Final Tier 4 pumping units. Two years ago, Xylem developed a Godwin HL225M pump with a PowerTech PSS 9.0L engine. During the last quarter of 2014, the company began offering the PowerTech EWX 4.5L engine on several models of Dri-Prime pumps, including Godwin's flagship model, the 6-inch CD150M. Other pumps powered by this engine include the NC150 non-clogging sewage pump, the HL80M high-head pump, and the hydraulic-submersible Heidra range.

Built with smarts

Electronically governed, the PowerTech EWX 4.5L replaces the mechanical PowerTech M 4.5L Interim Tier 4 engine, which previously powered these pumps. Ramos explains that while the move to Final Tier 4 increased the overall size and price of the pumping unit, there are advantages. He says today's clean-air engine technologies led to advances in engine electronics, which have improved the communication of its pumping units.

Godwin pairs the Final Tier 4 engines with a PrimeGuard controller, a fully programmable microprocessor-engine-control system that offers auto-throttling of the engine rpm in response to changing pressure, level,

and flow. "It's really about matching pump performance to the requirements of the application. In a lot of applications, the performance requirements of our pumps can change from hour to hour, depending on the conditions," explains Ramos. "The ECU gives us the opportunity to vary pump speed in response to these changes, which improves fuel economy."

Xylem also recently introduced Field Smart Technology (FST) that works in conjunction with the PrimeGuard Controller. FST allows customers to constantly monitor and control equipment remotely to ensure optimum performance.

Using cellular combined with redundant satellite technology, off-site operators can monitor the amount of soot accumulation in Final Tier 4 engine systems, as well as fluid pressures, temperatures, and fuel consumption.

Ramos says the transition to Final Tier 4 required teamwork between Bell Power Systems and Godwin suppliers. "Bell Power Systems supplied 3-D drawings of the engine for the incorporation into our package. They worked with our suppliers to make sure that those pieces all fit together and worked together," says Ramos.

During extensive testing at the company's test facility, the CD150M was placed under various load conditions. "Bell Power helped us fine-tune the ECU setting to ensure that we were getting the required horsepower out of the engine," says Ramos. "As a result, the engine is very responsive to changes in load and speed. It also did well on the regeneration and performed as expected, even under very lightly loaded conditions."

A legacy continued

Mike Delzingaro, vice president and director of sales, says he expects the PowerTech EWX 4.5L engine to deliver the same solid performance as its predecessors. "We've started with the 4039D, migrated to the 4045D, and finished with the 4045T over the past 20 years. We know it will be reliable, efficient, and the technology is proven. John Deere offers a broad range of engines, and the John Deere support network is second to none. That's why we've bought thousands of their engines over the past two decades."

According to Delzingaro, all future sales of the Godwin Dri-Prime model CD150M 6-inch pumps will include John Deere Final Tier 4/Stage IV engines. Xylem will strategically place the new pumping units into the company's rental fleet in order to serve large metropolitan cities like Chicago, New York, and Philadelphia that require Final Tier 4/Stage IV engines.

"We've adopted the technology, we've been using it, and we've embraced it," says Delzingaro. "Reducing emissions is more sustainable for our future, and for our kids. That's the most important thing."

📷 Engine distributor: Bell Power Systems in Essex, Connecticut. www.bellpower.com





PEAK

PERFORMANCE

**RUBBLE MASTER RM 80GO!
MAKES SLOPES SAFER FOR SKIERS,
EVEN AS GLACIERS RETREAT**

Keeping ski slopes smooth is paramount for resort operators: They are safer for skiers, require less snowmaking in snow-free seasons, and are easier to groom. But as glaciers retreat, glacial debris is left behind and must be removed. In Switzerland, resourceful construction experts Andenmatten Hoch und Tiefbau AG brought in the RUBBLE MASTER RM 80GO! impact crusher. At an altitude of 3,000 meters (9,842 feet), the experts and crusher are tasked with smoothing 20,000 cubic meters of icy, rocky slopes. Now that's peak performance!

The high-capacity RM 80GO! crushes rock on the moraine-covered Fee Glacier in ski resort area Saas-Fee, Switzerland.





Thanks to its engine power, the RM 80GO! managed the 12-kilometer (7.5-mile) climb at a 30 percent grade on its own crawler track in only 10 hours.

MOUNTAIN HIGH, VALLEY DEEP

Andenmatten was requested by Swiss ski resort operator Bergbahnen Saas-Fee AG to remove the glacial debris, consisting of rock and sand, and to fill recesses in the ice. The project started in August and, due to the temperatures, the construction activities had to be completed by October.

“While we have several RUBBLE MASTER impact crushers, this demanding job needed the new high-capacity RM 80GO!,” says Egon Andenmatten. “The lower air density at

that altitude reduces crushing performance by 20 to 30 percent compared to a valley, while fuel consumption is considerably higher. The RM 80GO! is the first to be fitted with an additional diesel particulate filter, which solves the problem.”

The RM 80GO! can transform up to 160 tons of rock into high-quality, cube-shaped aggregate per hour, while consuming on average 18 liters of fuel (4.75 gallons US). “Combined with the durability and easy operation, this makes it a great return on investment for use anywhere: mountains, valleys, even city centers,” says Gerald Hanisch, CEO of RUBBLE MASTER.

MEETING HIGH ALTITUDE CHALLENGES

In the face of the challenges, the work is progressing smoothly. Andenmatten recalls how the roughly 24-ton tracked mobile crusher climbed 12 kilometers (7.5 miles) at a 30 percent grade in just 10 hours. “We only needed towing assistance from an excavator on the final, steepest stretch. The John Deere PowerTech PVX 6.8L 164-kW (220-hp) engine was impressive: It never stalled for a second!”

And while working at 3,000 meters (9,842 feet) can cause altitude sickness, the Andenmatten team is right at home in these conditions. They are smoothing the ice surface, filling channels and recesses, and breaking the largest boulders into 400- to 500-millimeter (16- to 20-inch) fragments using hydraulic hammers. “Again, the engine is working a treat. Even at this altitude, and with the extra particle filter, it delivers maximum performance,” comments Andenmatten.

At high altitudes, the construction window is only a few months long. But with the RM 80GO!, it seems that’s all experts like the Andenmatten team need to keep business — and slopes — smooth.

📍 Engine distributor:
Hamilton AG in
Lauterach, Austria.
www.drivingsolutions.at



A view from the top! The RM 80GO! at an altitude of 3,000 meters (9,842 feet) with the village of Saas-Fee in the background.

Photos courtesy and copyright of RUBBLE MASTER HMM GmbH.



Ten 93-kW (125-hp) PowerTech 6.8L engines power this indoor 10-pump irrigation system in Europe. "They are extremely reliable, require little maintenance, and are easy to service," says Pascal Garení.

This Sterling 150-400 irrigation system in South America is powered by a 93-kW (125-hp) PowerTech 6.8L engine.

WATER IS LIFE

2 Garení Industrie 'Amazone' irrigation pumps save farmers' crops and profits

The Amazon River in South America runs more than 6,683 kilometers (4,150 miles) through Peru, Colombia, and Brazil, and in terms of water flow it is the largest river in the world. French pump solutions manufacturer 2 Garení Industrie has evoked its power and magnitude by naming one of its range of irrigation pump solutions "Amazone." Day in, day out, these high-intensity pumps guarantee large-scale crop farmers a constant flow of much-needed water.

Fresh water is the lifeblood of agriculture. During dry spells or harsh winters, irrigation pumps and systems that guarantee sufficient water supply to crops are essential. 2 Garení's Amazone range was developed for demanding applications such as large-scale crop farming and agro-industries, but it is equally at home in construction projects.

The Amazone series comprises open and closed pumps mounted on an agricultural trailer with a standard hitch, removable

spindle axles, and two stabilizer feet. With capacities ranging from 30 to 180 cubic meters (1,000 to 6,357 cubic feet) per hour, they feature 60-kW (80-hp) PowerTech 4.5L or 93-kW (125-hp) PowerTech 6.8L engines. "Apart from being extremely reliable, the engines require little maintenance and are easy to service," comments Pascal Garení, company founder and owner.

"The pumps and the engines — naturally they go together — have proven very reliable in 24/7 working conditions in applications all over the world. The pumps are extremely easy to use. Operators can choose to operate them manually or by remote control — both automatically or using a cellphone."

Safety first!

2 Garení has placed a lot of attention on startup safety. All units feature a key-operated startup contactor, a water separator on the fuel circuit and water sensor safety mechanism, a front-panel protective

fuse, and various engine and pump safety mechanisms. Galvanized and waterproof covers ensure protection against rough weather conditions, contributing to a long equipment life.

"With turnkey solutions we hope to make customers' daily activities simpler and more profitable. We continuously invest in new technologies and integrate these into our products and services. Every day we are committed to providing sound advice plus expert tech support and training, and to meeting new business demands and environmental standards."

 **Distributor: NPS SAS** in Pontchâteau, France; www.npsdiesel.fr

GO FOR BETTER OR BEST?

John Deere has you covered with two engine oils that provide quality protection at an optimum price

Plus-50™ II premium engine oil provides advanced performance at all emission levels, all while extending drain intervals up to 500 hours* when paired with John Deere oil filters. Torq-Gard™ is a hardworking oil for engines Tier 3/Stage III A and below and offers a standard drain interval at a lower cost.



Choosing the right engine oil is essential for maximizing engine performance and longevity. At John Deere, we don't take a one-size-fits-all approach to engine fluids. We set our standards high and have invested years of developing quality oils that best suit the engine and the application it works in.

Think of it as a "better and best" approach to engine oils. There's Torq-Gard, which offers a better value for Tier 3/Stage III A and earlier engines. We also give you premium-grade Plus-50 II oil that delivers the best protection for newer engines, although it can also be used in older-model engines.

Specifically, John Deere engineers designed and tested Plus-50 II oil in John Deere engines to provide advanced lubricant performance in Interim Tier 4/Stage III B and Final Tier 4/Stage 4 engines. While Plus-50 II oil is classified as a CJ-4 oil, the CJ-4 rating is the minimum specification. In fact, Plus-50 II surpasses all CJ-4 requirements. Also, it is the only oil in the CJ-4 class that successfully passed the stringent John Deere JDQ-78X offroad engine dyno test — the most severe engine dyno test for high-temperature oil oxidation in the industry.

"We ran engines for 500 hours at full load and high heat, and then evaluated engine parts and oil to determine how well the oil protects the engine under such extreme conditions," says Chad Smith, product line marketing manager with John Deere Merchandis.

"We found that Plus-50 II exceeds all industry requirements and the high standards set by John Deere engineers."

Consider this: When you pair Plus-50 II with our John Deere oil filters, you can extend your drain interval to 500 hours* when using a sufficient oil pan. That's twice as long as standard oil.

Plus-50 II has three viscosity grades, such as 15W-40, 10W-30, and 0W-40, that can be used for all engine brands and types, both diesel and gasoline, in both on-highway and offroad applications. It's also backwards compatible, meaning that John Deere Plus-50 II is suitable for engines with and without emissions control devices.

Want a lower cost option for your Tier 3/Stage III A and earlier engine? Torq-Gard is a hardworking, standard-interval oil for engines Tier 3/Stage III A and below. It protects in a broad range of applications, including 4-stroke diesel and gasoline engines. It's also available in several viscosity grades for applications from moderate to very cold operating temperatures.

Bottom line: Regardless of your engine and application, we've got you covered. Whether you own a stationary emergency gen-set with a Tier 3/Stage III A engine or are heading to the field with a Final Tier 4/Stage IV, John Deere offers "the better and best" oils for your application needs.

For more information on Torq-Gard and Plus-50 II oils, contact your qualified John Deere technician or visit our website at www.JohnDeere.com/engines.



GETTING DOWN TO THE NITTY-GRITTY

John Deere engineers designed oil filters with tight pleats and even media spacing to ensure better filtration. Our oil filters also feature a spiral and crimped center tube to add strength to prevent our media from collapsing and letting unwanted particles into the engine's system. Unlike most of our competitors, we use rubber gaskets (rather than cork or cardboard) to create a tighter seal.

*Service intervals may vary by engine model. Refer to your operator's manual for recommended maintenance schedules, or contact your John Deere service dealer for details.

ROCK SOLID ON JOHN DEERE

CEC responds to a customer request for riprap and screening machines powered by John Deere engines

Jeff Hamilton is known for being really hard on equipment. It's not that he doesn't take care of his machines. The fact is, Hamilton Construction LLC is the largest supplier of riprap and armor rock in the state of Alaska, and the equipment that he uses to crush and screen the rock endures a good hard beating, day in and day out.

That's why Hamilton operates a large fleet of rock-processing machines manufactured by Construction Equipment Company (CEC) of Tualatin, Oregon. The equipment is known for enduring tough working conditions, which is important since it often operates in very remote locations and is subjected to dusty, and often bitterly cold, conditions. "We operate at least 11 portable crushing plants, five riprap plants, and another dozen screening plants," says Hamilton. "CEC equipment is known for reliability and longevity."

Hamilton Construction continues to build its fleet of CEC equipment throughout Alaska. As they do, the company specifies its new rock equipment with John Deere diesel engines. "We have a choice of engines, but we stick with the best of the best," says Hamilton. "We've had good luck with John Deere engines." In addition to buying new equipment, Hamilton Construction is also in the process of replacing competitive air-cooled diesel engines with John Deere power in its screening plants and riprap machines.

CEC offers John Deere engines on four models of its Screen-It® screening plants and a riprap separator known as the Quarry King®. "We began using John Deere power units as a result of customer demand, which goes back to our flexibility to meet customer needs," says Josh Golston, vice president of sales and marketing for CEC.

As a manufacturer of portable rock crushing and screening equipment, the power-dense John Deere engine is a good fit, he explains. "For us, the horsepower output as related to the physical size of the power unit is important because we often deal with limited space. John Deere is compact and easy to install."

CEC's portable Screen-It machines produce dozens of products, from gravel and sand to compost and wood chips. Want to produce topsoil? A Screen-It can turn wet, sticky soil full of sticks, wood, and rock into high-quality topsoil and will also produce two additional products.

"Compared to competitive machines, CEC equipment produces products at a lower cost per ton or yard," says Golston. He explains that while "some competitors have tried to make their machines more complicated, CEC tries to keep its machines simple to operate and maintain in order to keep the cost per ton and yard as low as possible.

"We use readily available components," he says, adding that John Deere engine, parts, and service are also readily available. "It's never an issue to find a service location. John Deere dealers are pretty much in any city in the country."

Best of all, the engines are reliable workhorses in the harshest of conditions. "The less you have to worry about, the better," says Golston. "We've never had any problems with a John Deere power unit. They've been reliable."

 Distributor: Cascade Engine Center in Seattle, Washington, www.cascadeengine.com

SOLID SERVICE AND SUPPORT

CEC equipment sources its engines from Cascade Engine Company in Seattle, Washington. Once Screen-Its and Quarry Kings are built, they are sold through three John Deere dealer organizations, including Erb Equipment Company, W.I. Clark Construction and Industrial Equipment, and Plasterer Equipment Company Inc. CEC machines are also supported by a worldwide network of John Deere dealers long after the sale.



"We have a choice of engines, but we stick with the best of the best."

— Jeff Hamilton, Hamilton Construction LLC

Powered by the 86-kW (115-hp) PowerTech E 4.5L engine, the Quarry King is rugged and built for heavy rock sorting.

Run cooler to last longer

Cool-Gard II. Designed for today's heavy-duty engines.

- Extends service intervals as much as 20 percent
- 6-year/6,000-hour service life
- Meets cooling demands of advanced engine technology
- Provides superior performance in all liquid cooling systems
- Compatible with all John Deere engines
- Protects against corrosion deposits
- Nitrite-free
- Contains Bitrex® to help discourage accidental ingestion



JOHN DEERE

THERMAL OXIDATIVE STABILITY COMPARISON

METAL	PRODUCT TEST RESULTS (weight changes in mg / metal)			
	COOL-GARD II	Universal	Long Life	Automotive
Copper	28	269	205	240
Solder	5	24	32	26
Brass	17	68	123	151
Steel	6	86	29	173
Cast Iron	5	386	160	361
Aluminum	0	371	342	34

COOL-GARD II provides superior thermal oxidative stability, protects your system, and can be used in all liquid cooled engines. The lower the number, the more protection the coolant provides.



COOL-GARD II is designed to ensure surfaces are clean and more efficient. Other coolants can leave harmful deposits and restrict flow.

TOP TANK TEMPERATURES ARE RISING



COOL-GARD II is formulated to protect longer in new technology engines with higher top tank temperatures.



COOL-GARD II's bright golden color provides immediate recognition of the new formulation.



BUILT TO THRIVE

Liebherr's new range of mid-size wheel loaders helps contractors thrive in industry and recycling, as well as rehandling applications

The L 526 shows flexibility and power at this concrete handling site.



The recycling industry can be extremely rewarding — and demanding. But there are people and machines that thrive in such a challenging environment. Always on the go, industrial and recycling contractors need equipment that doesn't just help them cope but that supports them to overcome all the obstacles to their success — like Liebherr's newest mid-size wheel loader.

“Hard-driving operators, triple shifts one after the other, plenty of overtime work — wheel loaders are put under a lot of pressure in the recycling industry,” explains Hubert Feneberger, product manager for mid-size wheel loaders at the Liebherr plant in Bischofshofen. “Like most brands, our range could always ‘hold its own.’ However, we have continuously collected insights from customer feedback and are always researching and developing new technologies. The switch to Final Tier 4/ Stage IV standards offered the right moment for us to bring another dedicated, all-around solution to market. So we further enhanced our already successful Interim Tier 4/ Stage III B-compliant mid-size wheel loaders. The result was three brand new mid-size wheel loaders that offer contractors all the flexibility they need to be more productive and successful in rehandling and industrial applications, including the recycling sector.”

All-around flexibility

With the new range, the L 526, L 538, and L 546 feature tipping loads of 7,700, 9,500, and 10,500 kilograms (16,975, 20,943, and 23,148 pounds) respectively. These units are more powerful yet gentler on the environment than other wheel loaders in the same category and offer highly flexible deployment. “Customers can choose between Z- and P-Kinematics at no extra cost, which is unique in the industry. This lets them configure their wheel loader completely to their specific needs and allows us to always guarantee the most appropriate solution,” continues Feneberger. Using Z-Kinematics, customers can handle standard gravel, sand, earth, or clay. P-Kinematics are often used with heavier attachments, such as high-tip or light-material buckets for handling materials like glass, metal, scrap, paper, sawdust, or coal. Switching between attachments is easy with the optional hydraulic LIKUFIX quick-change system. With the LIKUFIX system the operator can change attachments from the cab with the push of a button, increasing safety and comfort.

The L 546 is the flagship of this newest generation and is even more versatile and robust than its predecessor, the proven L 542. “Larger axles and a reinforced steel frame have increased the ruggedness of the design of the L 546 and of the other models in the mid-size range. By increasing the tipping load, the units can move more material per hour, enhancing profitability. While adding many innovations and enhancements — including a refined interior cabin design for even more comfort — we have also retained features that have proven successful, such as the optional front and rear chassis protection. It keeps the owner's investment secure, without compromising flexibility.”

In the battle to control costs, fuel consumption is always a major factor for any contractor — sometimes making the difference between surviving or thriving in the market. “We aim to produce the most fuel-efficient wheel loaders in the market. Compared to conventional transmission systems, our proven hydrostatic driveline of the new mid-size wheel loaders with Liebherr Power Efficiency achieves a significant reduction in fuel consumption.”

To guarantee the best possible performance and fuel efficiency for this range, Liebherr fitted it with John Deere PowerTech 4.5L Final Tier 4/Stage IV engines. “They have a dynamic throttle response, plus a modest

sound and vibration level that we like for our wheel loaders. John Deere engines also combine diesel particle filter (DPF) and diesel oxidation catalyst (DOC) with SCR (selective catalytic reduction) technology, which has been proven in, for example, John Deere tractors.”

Designing for values

Liebherr also benefits from the experience of John Deere. “Our engineers worked very closely with those of John Deere during the development of the Interim Tier 4/ Stage III B model, and we received preliminary information about the additional parts for the Final Tier 4/Stage IV engine, especially the diesel exhaust fluid (DEF). This allowed us to make space for Final Tier 4/Stage IV parts at a very early phase of development to keep the unit compact. We're also confident that with the modular approach of John Deere, the engines will require few modifications to meet Stage V regulations when they arrive in 2019/2020.”

Liebherr and John Deere share some of the same core values, including long-term reliability. “It's very important to work with an engine supplier who thinks like we do and shares our principles. It gives both us and our customers confidence in the quality and performance of our products.” And with values like those, Liebherr will be thriving right along with its customers!

The L 526 operates at a timber yard, powered by a PowerTech PWS 4.5L Final Tier 4/Stage IV engine with 103 kW (140 hp) max power.



Liebherr mid-size wheel loaders are particularly popular in the recycling industry. This L 526 is equipped with P-Kinematics and a high-tip bucket.



PRIMED FOR THE FUTURE

Pioneer Pump continues to grow its product line and global presence

Pioneer Pump recently introduced its UP Series of pumps, which can be configured with various engines, pumps, trailer options, and enclosure options.



PowerSource is pleased to feature an interview with Paul Schlumpberger, president of Pioneer Pump in Canby, Oregon. Since the company's inception, Pioneer Pump has been manufacturing John Deere-powered pumping units for use in agriculture, industrial, mining, oil and gas, municipal, and rental applications around the world. In addition to operations in North America and the United Kingdom, Pioneer Pump also manufactures John Deere-powered units in Johannesburg, South Africa. Schlumpberger talks about the company's pioneering spirit and steadfast pursuit for excellence in the global marketplace.

PowerSource: Pioneer Pump has experienced tremendous growth over the years. What do you attribute this success to?

Schlumpberger: Quality, efficiency, and service — Pioneer Pump builds one of the most reliable pumps in the industry. In applications like mining, oil and gas, or sewer bypass, a pump breakdown can be catastrophic. We have one of the highest efficiency end-suction centrifugal pumps in the world, especially in high-lift applications. Our pumps are designed for that type of application. We are also a company that partners with our customers for the life of the pump. We are set up globally to support the equipment. We sell our pumping units through a distribution network that stocks parts and that are prepared to service our equipment.

PowerSource: What are the main reasons why you power your pumps with John Deere engines?

Schlumpberger: We have the premium pump in the industry, and coupling that to a premium engine is important for customer perception. Also, we are serving a global market, and it's really important for us to have service and support for the engine. John Deere has an excellent service network in North America and South Africa where our John Deere-powered pumps are sold.

PowerSource: Tell us about your testing facility.

Schlumpberger: We have a 151,416-liter (40,000-gallon), closed-loop test facility to simulate almost any system. When we develop

a new pump, we need to be sure the pumping unit hits the power curve like it should. We also have an outside pit that we use for testing parameters such as suction lift.

PowerSource: Many pumping units work in some remote locations in North America and South Africa in open-pit mines. In fact, your North American John Deere engine distributor, Steve Hatt with Cascade Engine Center, mentioned a pumping unit powered by a PowerTech PSX 9.0L engine is dewatering an open-pit mine in Faro, Yukon.

Schlumpberger: Yes, the customer had a short lead-time, and we had an Interim Tier 4 unit built up for testing. They needed something right away, and we sold it to them in May 2013, and it's still up there working.



Pioneer Pump recently tested a pumping unit with a PowerTech PSS 9.0L Final Tier 4/Stage IV engine for a leading North American rental company.

PowerSource: Mine dewatering is also a big market for your units built in South Africa, correct?

Schlumpberger: Yes, about 70 percent of the pumping units in South Africa are used for open-pit mine dewatering.

PowerSource: Do you customize your pumping units?

Schlumpberger: About 80 percent of what we do is customized for the customer. A mine site in North America is going to be different from a mine site in South Africa. That's part of the reason why we have international locations. These locations will take our standard pump end and customize it into a package that is suited for the region and the specific customer using locally designed packages, regional suppliers, and resources.

PowerSource: Pioneer Pump sources its John Deere engines from two John Deere engine distributors — Power O2 in South Africa and Cascade Engine Center in Washington. What advantages do John Deere distributors have over competitive engine manufacturers?

Schlumpberger: John Deere allows its engine distributors to customize the engine package to our specifications, which is a

benefit. For example, Cascade Engine can determine the mounting locations of the diesel particulate filter (DPF) and diesel oxidation catalyst (DOC), which result in a power unit that is more robust and compact than competitive suppliers.

PowerSource: Pioneer Pump's product portfolio includes about 40 pump models with engines ranging from 22 kW (30 hp) to 447 kW (600 hp). Your product line continues to grow with the recent addition of the UP Series. What does UP stand for?

Schlumpberger: UP stands for Universal Platform. We call it that because it can be configured with various engines and pumps on the same platform. It features patent-pending technology that allows the end user to have both an open pumping unit and a sound-attenuated unit with one package. If a customer buys an open unit, they can later add the enclosure. It gives customers, especially rental businesses, a lot more options. The idea was generated from our vast experience with rental customers.

PowerSource: Are these designed to accept Final Tier 4/Stage IV engines?

Schlumpberger: Yes, it can accommodate Tier 3 and Final Tier 4 engines and a wide range of horsepower.



Paul Schlumpberger, president of Pioneer Pump in Canby, Oregon.

PowerSource: Recently you had a pumping unit powered by a PowerTech PSS 9.0L engine running on the test pit for a leading North America rental company. What do you anticipate regarding the overall reliability and durability of this Final Tier 4 engine?

Schlumpberger: There's no question that it's going to be just fine. I'm 100 percent confident in John Deere.

Distributors: Cascade Engine Center, LLC in Tukwila, Washington; www.cascadeengine.com; Power O2 in Alberton North, South Africa; www.powerO2.co.za

The Vermeer TR626 is Vermeer Freeman's largest trommel screen and is capable of producing up to 152 cubic meters (200 cubic yards) of material per hour.



SORTING IT OUT

Vermeer Freeman meets emissions by powering the TR626 trommel screen with a Final Tier 4/Stage IV engine

Vermeer trommel screens are taking an environmental turn for the better with the launch of a revamped TR626 that now meets the latest emissions standards.

Manufactured by Vermeer Freeman in South Dakota, the Vermeer TR626 trommel screen has long been the company's largest and perhaps the most popular. It can be set up in as little as 15 minutes and can process up to 152 cubic meters (200 cubic yards) per hour, turning organic waste material into quality salable products such as wood chips, compost, and topsoil.

Vermeer Freeman isn't new to John Deere power. The company began powering its machines with PowerTech 4.5L engines seven years ago under the trade name

Wildcat. "The 4045 has been a rock-solid engine for us," says Scott Eberts, general manager for Vermeer Freeman. "Its fuel economy and power are something we and our customers like in an engine. We have a number of machines with multiple years and a lot of hours on them."

In the recent move to meet Final Tier 4/Stage IV emissions, Vermeer Freeman manufactured a prototype TR626 last fall with a PowerTech PWL 4.5L engine. The PowerTech PWL 4.5L engine meets the latest tier of emissions without a diesel particulate filter (DPF), reducing the package size, service requirements, and cost.

Eberts says while the PowerTech PWL 4.5L engine is taller than the previous John Deere 4.5L engines, the overall footprint of

the power unit remained the same, "minimizing the work to implement the Final Tier 4 engine."

With the new engine also came some improvements in performance and efficiency. Eberts says transitioning to the new Final Tier 4/Stage IV engine increased the horsepower from 93 kW (125 hp) to 100 kW (134 hp) — an increase that Eberts says will be well-received.

Vermeer Freeman also added a new integrated control system to help operators optimize the performance of the machine. In addition, there's also a handheld radio control that will allow operators to monitor and control the trommel screen from a distance. "With the control system, operators are able to monitor the engine load and



The CT616 is a towable, self-powered compost turner that will soon aerate material with a PowerTech PSS 9.0L Final Tier 4/Stage IV engine.



In the recent move to meet Final Tier 4/Stage IV emissions, Vermeer Freeman manufactured a prototype TR626 last fall with a PowerTech PWL 4.5L engine.



fuel usage, and have the ability to fine-tune the operation to their needs," he explains.

The TR626 is among several Vermeer products to become Final Tier 4/Stage IV compliant. John Deere Final Tier 4/Stage IV engines also power several other Vermeer machines manufactured at Vermeer headquarters in Pella, Iowa, including the R400T mud recycler, as well as the T655 and T755 track trenchers.

Soon, Vermeer Freeman will power its Vermeer CT616 compost turner with a PowerTech PSS 9.0L engine. The CT616 is a towable, self-powered compost turner that aerates material to increase the speed of composting. The CT616 can turn a windrow 1.8 meters (6 feet) high by 4.9 meters (16 feet) wide. "There's no comparable machine

like it," says Eberts. "There are some compost turners that are larger and smaller, but the CT616 has a market niche all of its own."

Over the years, Vermeer has relied on the technical assistance and expertise of Northstar Power to meet emissions standards. In fact, the John Deere engine distributor supplied John Deere engines to Wildcat Manufacturing years before Vermeer acquired the company in 2009.

"We have a really good relationship with Northstar Power," says Eberts. "Our engineering teams work well together. They know our applications and know what we need."

Because Vermeer is a global company, it relies on the worldwide network of

John Deere dealers to service and support its customers, says Eberts.

"We have customers that run a lot of hours every day, and the machine needs to run. They want to know service is available, and we are going to partner with companies that will help us take care of customers around the world. That's what we are going to get with John Deere power."

 **Distributor: Northstar Power LLC in Ankeny, Iowa; www.northstarpowerllc.com**



THE RIGHT CHOICE FOR REPAIRS

John Deere offers quality new and remanufactured parts to ensure the performance, uptime, and longevity of your diesel engine

When it's time for an engine repair, don't settle for a substandard part that could jeopardize the performance and longevity of your John Deere-powered machine. John Deere offers two quality engine repair part solutions — new John Deere parts and John Deere Reman remanufactured components — designed to quickly get your machine back up and running at optimum performance.

When you buy a new John Deere part, you can be assured that it's been manufactured and tested to the latest John Deere specifications. Some part manufacturers claim their engine parts meet or exceed John Deere specifications. But the truth is, these competitors just can't compete with the continuous technology improvements of our genuine John Deere parts. You may not see the difference, but your engine can. Even though the difference might be small, the advancements make a big difference in retaining the performance and reliability of your John Deere engine.

The same quality standards hold true for our remanufactured parts. John Deere Reman remanufactures engine components that deliver like-new performance at a cost that's 25 to 30 percent less than the cost of a new part. These parts are also cost-competitive compared with outside supplier or dealer in-house rebuild options. And you'll have the backing of a 1-year, unlimited-hour parts, labor, and consequential damage warranty when installed by an authorized John Deere service dealer.

Learn your R's. The only commonality between remanufactured, rebuilt, and reconditioned is "re." These terms are loosely used in the market and should not be interchanged as they truly are different. Before being branded with the John Deere Reman name, a used part is completely disassembled, cleaned, rigorously inspected, machined, reassembled, tested, and painted, according to Geoff Baxter, Reman project manager. "All parts that are used in the remanufacturing process are either new OEM parts or have been remanufactured back to new specification. Remanufactured parts also incorporate the latest design enhancements and/or design upgrades, so the Reman part is equal to or better than the original part," he adds. John Deere Reman components utilize John Deere manufacturing processes and must meet stringent John Deere standards.

"Others try to sell repaired, reconditioned, and refurbished parts, but they have no resemblance to John Deere Reman components," states Paul Schmitt, manager of aftermarket strategies for John Deere Power Systems. "John Deere engineers have the latest test data and specifications and are the only ones that can bring a component back to the latest specifications of a new product."

John Deere Reman offers a significant portfolio of components, from non-emission certified engine block assemblies from the 1970s to modern engines utilizing the

latest emissions technologies. A short list of Reman parts includes cylinder heads, turbochargers, crankshafts, camshafts, fuel pumps and injection nozzles, water and oil pumps, connecting rods, and electronic engine control units. "We are constantly evaluating our portfolio and looking to add new remanufactured products to the list," explains Baxter.

Uptime. Choosing John Deere remanufactured parts will reduce customer downtime by providing an exchange component. No more sending a component out for repair work or machining. With on-the-shelf availability, the customer simply exchanges a failed or worn component for a new one. "Any authorized John Deere service dealer can provide Reman parts and services to get equipment repaired and back on the job faster," says Baxter.

So when you're choosing an engine repair solution, don't compromise — remember only genuine John Deere parts are the right choice for your repair whether you purchase new or remanufactured. Contact your John Deere distributor or local John Deere authorized service dealer today to choose the service solution that meets your particular need.

 You can also obtain more information by visiting us at JohnDeere.com/jdpsparts and JohnDeere.com/reman.



Despite its 3-fraction drum screen, the TTS520-3 boasts a maximum speed of 80 km/h (50 mph), allowing the operator to swiftly move from one site to another.

TAKE THE ROUGH WITH THE SMOOTH

Terex Ecotec's TTS520-3 mobile drum screen breaks down abrasive materials in three simple steps

Processing abrasive materials can be tricky, and wreak havoc on equipment; just ask any contractor in biomass production or waste management. But Terex Ecotec's TTS520-3 mobile drum screen takes the rough material with the smooth, shaking, shifting, and sorting in three simple steps.

'Pure' innovation

Over the past years, Western Europe has seen a considerable rise in the recovery and recycling of polyethylene (PE) foils and films used in packaging. Smart autosort technologies separate the foil from the other infeed material and remove any fine materials, resulting in pure end fragments or fractions. The result — almost 100 percent can be recycled and reused.

But there are challenges, explains Markus Hahn, project manager screens at Terex Ecotec. "With star screens, PE foils can wrap around the stars, clogging the system and speeding up wear. And some materials are simply too abrasive for two-drum screens. The TTS520-3, with its 3-fraction drum screen, separates the material in three fractions and increases productivity and machine life."

The TTS520-3 was originally designed by Neuson Ecotec, recently acquired by the Terex Group, to further extend its broad portfolio. The drum unit, consisting of a disc-deck and traditional drum screen, provides many advantages over star screens. "It handles more types of material, and the screen drums and disc decks can be adjusted to material size. They are more resistant to abrasion, and can be replaced individually, keeping component wear costs down." For the TTS520-3, Terex Ecotec added a new trailer and a one-piece conveyor for fine fractions. Measuring 11.7 meters (38 feet) long and 2.55 meters (8 feet) wide, and weighing 18 metric tons (19 U.S. tons), it is easy to operate and transport between jobsites.

We've got the power!

The TTS520-3 is powered by a 76-kW (101-hp) PowerTech E 4.5L Tier 3/Stage III A constant-speed engine. "Mr. Lettner (at local John Deere engine distributor Driving Solutions) recommended this engine and delivered it complete, ready to build in. We decided on constant speed engines because, following emissions regulations, they don't require an exhaust after-treatment system (at least until 2019). We use 4.5L

engines in other (and larger) drum screens too, and 13.5L engines in two of our larger shredders, the TBG620 and TBG625."

"Terex Ecotec's drum screen range helps Terex close the gap that most of our competitors have. Now, there's no application for which we can't offer our customers an innovative solution. And both machines and engines are backed by a worldwide network of dealers who understand their industry," Hahn concludes.

 Distributor: Hamilton AG in Kloten, Switzerland; www.hamilton-ag.ch



The 76-kW (101-hp) PowerTech E 4.5L Tier 3/Stage III A constant-speed engine meets both stringent emissions regulations and customer performance expectations.

Prall-Tec's tracked, mobile PT1.1 Pro impact crusher keeps contractors on the move.



MAXIMUM IMPACT

Prall-Tec's first tracked, mobile impact crusher provides flexible, "no compromises" recycling strength for heavy-duty, hard to process waste

In the fast-moving crushing and recycling industry, the demand for increasingly high quality final products means equipment must do much more than simply crush stones into smaller sizes. Impact crushers that offer flexibility across applications will help contractors maximize their bottom line. Prall-Tec GmbH's tracked, mobile PT1.1 Pro impact crusher was built to break down lots of different materials into high quality final product, offering ultimate flexibility that is sure to give contractors the upper hand.

Flexibility means profitability

For over 30 years, Prall-Tec has been developing, manufacturing, selling and repairing impact and hammer mills, jaw crushers and shredders. "By creating tailor-made solutions using the customer's ideas and our own knowledge, we can offer the customer the perfect solution for his material and job," says Prall-Tec's managing director Frederik Teepe. Recycling companies and quarries in particular rely upon the

company's impact crushers (which use impact instead of pressure to crush material) to turn stone, reinforced concrete, steel, waste slag and more into gravel and other good-to-sell final products.

Using its long-term experience building stationary crushers, the ever-innovating company decided to develop its first mobile, tracked impact crusher: the PT1.1 Pro. "We aimed to include the same performance characteristics and

flexibility in a machine that can be easily and quickly moved from one place to another," Teepe explains.

The PT1.1 Pro is the biggest and most flexible crusher in the range. With the adjustable rotor speed, large safety opening for foreign material, grinding bar, newly developed hydraulic cylinders and robust crusher housing, it is ideal for handling reinforced concrete, construction waste and other hard to process materials. An adjustable feed bar ensures optimum use of the impact bars, while an optional grinding path allows the PT1.1 Pro to be used by customers in different fields as a secondary crusher for a variety of materials.

The 26.9-ton (29.65-U.S. ton) machine processes up to 250 tons (275.5 U.S. tons) of material per hour; the hopper holds 3.8 cubic meters (134 cubic feet) of inflow material, with feed dimensions of maximum 900 x 600 mm (35 x 23.6 inch).

Top service all down the line

Prall-Tec approached Crushers Inc. Ltd in Leicester, UK, to build the chassis for the PT1.1 Pro and install the engine. "I saw the quality of their work and ideas; We collaborated closely to optimize the whole machine."

For the PT1.1 Pro mobile impact crusher Prall-Tec turned to E.P. Barrus, John Deere

engine distributor in the UK. "We had good experiences with John Deere engines in generators before. We knew we could rely on their performance, and on E.P. Barrus' assistance during the installation process and afterwards. However, we did have a particular challenge. Our prototype was sold quickly, so we needed the engine in a hurry to move forward with further tests and demos," recalls Teepe.

And Barrus responded quickly, proposing a John Deere 233-kW (317-hp) 9.0L PowerTech 6090HFU84 generator set engine, which they converted to 24 Volt to meet the required specifications. John Day, general manager Industrial Division at E.P. Barrus, explains the engine choice. "This Tier 3/Stage III A constant-speed engine is a simple and cost-effective solution for industrial applications that do not require variable-speed engines."

E.P. Barrus also assisted with the installation. "The Barrus team was very patient with us, we had so many questions!" comments Teepe. "They were with us all the way, from engine choice to optimizing calibration to final test runs. Even now, as we are planning more machines, their support couldn't be better."

Reliability and global support

Day underlines the company's commitment to helping OEMs deliver powerful equipment. "John Deere diesel engines

offer recycling and surface mining/quarry operations the same advantages that have made the brand famous in the construction sector: uninterrupted power, ultimate reliability and low cost of ownership. They are driving crushers, excavators, loaders, dumpers, gensets and air compressors worldwide. These characteristics made them ideal for powering the PT1.1 Pro. After completing several performance tests with the 9-liter (2.37 U.S.-gallon) engine, Prall-Tec was able to achieve even greater output than first calculated."

Teepe concludes: "The fuel efficiency of the John Deere engines is an advantage, of course, but what's really critical is reliability: our customers need their crusher to run every day without problems, wherever they are located. Machine downtime is extremely costly for them. I was amazed to see the extent of John Deere's product support network; they are literally everywhere. This is very reassuring, for us and for our customers!"

With two PT1.1 Pros in the field and a third in production, and new machines already being planned, there is no doubt that Prall-Tec and its crushers will continue to offer maximum impact for the recycling industry!



The PT1.1 Pro is the biggest and most flexible crusher in the range, ideal for handling reinforced concrete, construction waste and other hard to process materials.

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John Deere Power Systems

A large photograph showing a close-up of a combine harvester's auger and chaffer system in operation. A thick stream of golden-brown grain is being lifted and tossed into the air, creating a dynamic, energetic scene. The background shows a vast, open field under a bright blue sky with scattered white clouds. The overall tone is one of power and productivity.

POWER behind your
productivity

With every turn of the wheel, every push of the controls, and every project completed — you're reminded why you chose John Deere engine power in the first place. John Deere engines faithfully do their jobs with performance that responds to each command, uptime delivered day after day, and low cost of operation proven year after year. We make every experience you have with our engines count, right down to the reliable support you receive at more than 4,000 service locations worldwide.

That's the John Deere experience.

JohnDeere.com/jdpower



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