



## ENHANCING A BESTSELLER

**The Muck-Truck® E-Max electric wheelbarrow powered by the Vanguard™ 48V 1.5kWh\* Swappable Battery Pack – Si1.5.**

Muck-Truck® has led the construction equipment industry for over 36 years with its commitment to quality, simplicity, and innovation. Now the company continues this tradition with the E-Max Muck-Truck, a battery-electric powered wheelbarrow that is revolutionizing operational efficiency and sustainability in construction, thanks to the advanced technology of Briggs & Stratton's Vanguard 48V 1.5kW\* Commercial Battery (Si1.5). This integration is setting new benchmarks for rental companies moving towards electrification. The new cooperation between Briggs & Stratton and Muck-Truck, bolstered by a longstanding and successful collaboration with Boels Rental over many years, is based on the importance of joint efforts by industry leaders in meeting the demands for standardization in the construction industry.

Terry Rowlands, Managing Director of Muck-Truck Limited, commented on the selection of the Vanguard battery system as follows: "Choosing the Vanguard Battery was a business decision. The Vanguard Si1.5 proved to be the optimal choice for applications like our E-Max Wheelbarrow, primarily due to its easy swap-out feature that enhances productivity, allows standardization for rental fleets and diminishes ownership costs. Furthermore, Briggs & Stratton's Vanguard battery packs are specifically designed for commercial machinery where performance is crucial, ensuring our equipment meets the high standards expected in the industry."

The E-Max Muck-Truck, with its Vanguard Si1.5 battery, brings a suite of benefits crucial for both end users and rental services. The powerful 950 Watts

\* Total energy measured using a 0,2C discharge per IEC 61960-3:2017.



**THE VANGUARD Si1.5 PROVED TO BE THE OPTIMAL CHOICE FOR APPLICATIONS LIKE OUR E-MAX WHEELBARROW, PRIMARILY DUE TO ITS EASY SWAP-OUT FEATURE THAT ENHANCES PRODUCTIVITY, ALLOWS STANDARDIZATION FOR RENTAL FLEETS AND DIMINISHES OWNERSHIP COSTS.**



Terry Rowlands  
Managing Director of  
Muck-Truck Limited



**48V 1.5KWH\*  
COMMERCIAL BATTERY  
SWAPPABLE BATTERY - Si1.5**

This battery pack offers the ability to swap out between applications on the job site, reducing downtime, and featuring multiple mounting configurations, ensuring flexibility for any situation.

- **Operational Confidence:** Integrated Battery Management System (BMS) constantly monitors and measures the pack's voltage and temperature to ensure safe and efficient operations.
- **Flexibility:** Single CANbus J1939 communication protocol allows OEMs to communicate with the battery's J1939 (automotive standard) CANbus.
- **Increased Uptime:** Up to 1000-cycle life to 80% initial capacity.

<b>NOMINAL VOLTAGE (V):</b>	51,4
<b>NOMINAL CAPACITY** (Ah):</b>	28,4
<b>NOMINAL DISCHARGE CURRENT (A):</b>	100
<b>CHARGE TIME TO 100% WITH 1425W CHARGER*** (MIN):</b>	90
<b>PACK WEIGHT (KG):</b>	11,8

motor ensures efficient operation, necessary for the rigorous demands of commercial construction work. Its speed capabilities, up to 3.5 mph (5.6 km/h) forward and 1.75 mph (2.8 km/h) in reverse, coupled with manual steering, afford users with rapid and precise maneuverability around job sites. The substantial carrying capacity of 800 lbs (365 kg) and the ability to navigate 30-degree slopes make it a versatile tool for various tasks. Importantly, its continuous loaded runtime of up to 130 minutes enhances productivity by ensuring extended operation periods without the need for frequent recharging. Being powered by Si1.5 battery, it runs on zero emissions and impresses with its significantly lower noise level than engine-driven models.

The rapid recharge time of the Si1.5 battery to 80% in just 50 minutes and standardized charging protocol significantly reduce equipment downtime, increasing rental turnover rates and customer satisfaction. These features not only boost productivity for the end user but also translate into a higher return on investment for rental houses, showcasing the E-Max Muck-Truck as a perfect example of how Vanguard's innovative battery technology is tailored to meet the dual needs of operational efficiency and economic viability.

Paul Bramhall, Director of Electrification / Rental EMEA at Briggs & Stratton, summarizes: "The key benefit here is the standardization of batteries across multiple brands and applications. As power agnostics at Vanguard we are committed to helping OEMs accelerate their electrification portfolio and increase their potential for future alignment with rental fleets needs."

The Vanguard Si1.5 battery offers a game-changing solution for heavy-duty equipment. With the ability to charge one battery while another is in use, it reduces downtime and ensures that machines are operating optimally for longer periods of time. Additionally, the easy latch system enables swift battery replacement between applications, which allows for greater flexibility in tackling various tasks.

Safety is of utmost importance in the heavy-duty equipment industry, and the Vanguard Si1.5 battery ensures secure operation under challenging conditions with its robust casing and integrated management

\*Total energy measured using a 0,2C discharge per IEC 61960-3:2017. \*\* PER IEC61960 \*\*\* Based on nominal temperatures, charge will vary at the extremes.

system. The Si1.5 battery also has tremendous connectivity capabilities thanks to the J1939 standardized communication protocol, which is used extensively in heavy-duty automotive applications. Developed by the Society of Automotive Engineers (SAE), J1939 defines the communication network architecture, message format, and rules for exchanging data between electronic control units (ECUs) in commercial vehicles. The J1939 CANbus protocol allows Si1.5 battery to communicate effectively with other components of equipment, enabling seamless integration and efficient operation. This communication makes tasks such as monitoring battery status, managing power distribution, and ensuring overall safety during operation.

Moreover, the integrated battery management system (BMS) is responsible for regulating the battery's functions and maximizing power discharge in every scenario. By controlling the individual cells of the battery, the BMS monitors discharge and charge rates, preventing energy capacity reductions and the risk of a thermal runaway event

For operations and fleet managers, effective self-monitoring batteries off-site are vital in reducing downtime and supporting staff before issues arise.



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**THE KEY BENEFIT HERE IS THE STANDARDIZATION OF BATTERIES ACROSS MULTIPLE BRANDS AND APPLICATIONS. AS POWER AGNOSTICS AT VANGUARD WE ARE COMMITTED TO HELPING OEMS ACCELERATE THEIR ELECTRIFICATION PORTFOLIO AND INCREASE THEIR POTENTIAL FOR FUTURE ALIGNMENT WITH RENTAL FLEETS NEEDS.** ”

Paul Bramhall

Director of Electrification /  
Rental EMEA at Briggs & Stratton

The Vanguard Si1.5 battery's BMS acts as the battery's brain, ensuring that it functions safely and efficiently in all situations to reduce downtime to an absolute minimum.

Pia Weimer, Director Marketing EMEA at Briggs & Stratton, emphasizes: “Vanguard is committed to offering the highest value and confidence in our products, which is why we have recently extended the commercial warranty for our battery range to 8 years. This is backed by robust performance data and our promise of quality and endurance to both end users and the rental market.”

The Muck-Truck E-Max wheelbarrow, powered by the Vanguard Si1.5 battery is a step towards a more sustainable and eco-conscious construction industry. Its innovative battery design enables operation in areas where traditional equipment cannot, due to strict noise and emission regulations. E-Max represents a future where power, standardization, low costs of ownership, and environmental responsibility drive the equipment rental market forward.

# CONTACT US NOW

## TO FIND OUT HOW VANGUARD CAN HELP YOU POWER YOUR EQUIPMENT



Find out more about Vanguard on: [www.vanguardpower.com](http://www.vanguardpower.com)



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### ABOUT BRIGGS & STRATTON

Briggs & Stratton, headquartered in Milwaukee, Wisconsin, provides innovative products and diverse power solutions to help people get work done. Briggs & Stratton is the world's largest producer of engines for lawn and garden, turf care and job site power equipment and is a leading designer, manufacturer and marketer of lithium-ion batteries, standby generators and energy storage systems through its Briggs & Stratton®, Vanguard®, Ferris®, Simplicity®, Snapper®, Billy Goat®, Allmand®, Branco® and Victa® brands. Briggs & Stratton products are designed, manufactured, marketed and serviced in over 100 countries on six continents.

### ABOUT MUCK-TRUCK

Manufacturing the largest range and most reliable machines in the industry has kept the Muck-Truck company as the world leader in motorized wheelbarrows for 36 years. Since 1993 the Muck-Truck has evolved to become the world's most popular pedestrian mini-dumper. Muck-Truck's success secret is due to constant research, development and listening to their customers' feedback. As a growing company, Muck-Truck is adding new Electric Powered Machines to their range to keep the Company ahead of the competition and to help with the environmental issues currently being raised.

# VANGUARD

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