

VANGUARD

BY
MAPRO
SYSTEMS AB



LONG-AWAITED INNOVATION

Mapro Systems AB powers 4x4 Drängen agricultural machine with game-changing Vanguard™ 48V 1.5kWh swappable commercial battery.

With a rich 30-year history in farming, Sweden-based Mapro Systems AB is an industry leader in the development and provision of innovative agricultural and forestry machinery. Dedicated to sustainability, Mapro Systems boasts an international presence, with products deployed across much of Europe, Japan, Africa and Australia. A global demand that is due to the brand's focus on high quality, user-friendly lightweight machines requiring minimal maintenance.

Given Mapro Systems' strong focus on sustainability, the company sought to develop an electric alternative to its existing petrol engine driven 4x4 Drängen, a planting, weeding and harvesting machine used in the agriculture sector. As part of this process, a list of needs for the new battery-powered application

were identified. Firstly, a reduced operating speed to facilitate precise agricultural tasks, such as planting and harvesting, was required. Minimised vibration would be essential to ensure operator comfort and machine stability during use. Lower noise levels should enhance the working environment and align with eco-friendly standards, to create a healthier environment for those in the surrounding area. And finally, a reduction in the total cost of ownership to create an attractive, cost-effective offering.

To develop the electric Drängen and achieve the operational requirements, Mapro Systems needed to identify the right battery to power the machine. Enter Briggs & Stratton's Vanguard 48V 1.5kWh commercial swappable battery (Si1.5), encompassing

all the attributes in question, they were introduced to the battery by Briggs & Stratton's Swedish sales representative. The battery's design significantly reduces vibration and noise for improved operator comfort and environmental friendliness. Its easy connectivity and swappable feature allow rapid, efficient battery changes, essential for maintaining continuous operation. Furthermore, the battery's quick recharge capability, reaching 80% in just 50 minutes, minimises downtime, making it a highly efficient choice. The battery also meets the zero-emissions standards at point of use, demonstrating how switching to electric can help to move towards reducing environmental impact. Together, these features make the Si1.5 battery an ideal match for the electric Drängen harvesting machine's requirements, providing reduced speed and smoother movement, eco-friendliness, and overall operational efficiency.

Mats Andersson, Managing Director of Mapro Systems AB explains, "The interchangeability of the Vanguard Si1.5 battery is a key benefit. It is small, handy, and fits our machines perfectly. The connection is secure when plugging in or swapping the battery at the docking station and it is lightweight, making it easy for operators to handle over long distances without the risk of incorrect connections. The Vanguard 1.5kWh battery

offers a full day's runtime, which is crucial for our operation, and the charging time is ideal, as you can recharge it over lunch ready for the afternoon, leaving the machine in the field. There is also the option to eliminate downtime altogether if there is a secondary battery at the location, making the operation incredibly efficient."

Andersson concludes, "Why did we choose the Vanguard 48V 1.5kWh commercial battery pack? I would say it chose us. We were waiting for a battery like this – it perfectly fits our needs."

The new 4X4 Drängen Electric, powered by the Vanguard 48V 1.5 kWh commercial battery pack transforms the way farm workers deliver tasks such as planting, weeding, and harvesting, making the overall usage of the machine smoother and more enjoyable. With the new battery the machine is able to function as normal, continuing to accommodate up to 5 people with an ergonomic design that allows them to lie on it while performing their tasks, minimising physical strain during jobs that require precision and endurance, like planting or weeding. The machine's design also continues to allow for the accurate placement of plants at the right depth, ensuring optimal growing conditions. For weeding, the worker's prone position on

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Managing Director of
Mapro Systems AB





the machine provides a clear view of the field, enabling them to spot and effectively remove any small weeds between the plants.

Andersson observes, "Introducing the Vanguard Si1.5 has been a complete game-changer. We have always had customer enquiries about battery-powered machines, and now, with the Vanguard Si1.5, we can confidently meet that demand. Our customer base is interested in having zero emissions machines with low vibrations and the smooth operation of machinery. The Vanguard Si1.5 offers this to the end user, making it a great choice for those we supply. It is a proud moment for us, showcasing this swappable battery pack as the ideal power solution."

The 4x4 Drängen significantly increases work capacity by 3-4 times when compared with traditional execution. This boost is seen particularly in tasks like harvesting strawberries, where farmworkers can work continuously at the right height. The electric Drängen equipped with Vanguard Si1.5 is perfectly aligned to work within the agricultural field with the battery's increased durability that is able to withstand abuse, debris, water and dirt. The battery is able to be used across multiple product platforms making it incredibly versatile and impactful in



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.

NOMINAL VOLTAGE (V):	51,4
NOMINAL CAPACITY** (Ah):	28,4
NOMINAL DISCHARGE CURRENT (A):	100
CHARGE TIME TO 100% WITH 1425W CHARGER*** (MIN):	75
PACK WEIGHT (KG):	11,8

* 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.

increasing efficiency. The enhanced operator comfort that the battery offers is crucial within the agricultural sector, as operators spend many hours out in the field working on the machines so the reduced noise, vibration and harshness makes for a more enjoyable experience.

In terms of specification, the Drängen Electric features a Mapro hydra control hydraulic system, four hydraulic motors, two hydraulic pumps, a two motor controller Vesc 160 HP, and a hydraulic cylinder for steering. The machine delivers a 0.2 to 5 km/h speed range with foot pedal control and can run for up to seven hours on a full charge. The Drängen Electric is an adaptable vehicle with flexible wheel distance and height clearance, as well as 4x4 drive.

Andersson continues, “The Vanguard Si1.5 battery fits perfectly on the side, fully utilizing the space around the machine. Transitioning from a petrol engine to this battery has been transformative and working with the Vanguard team has been smooth with our team feeling fully supported throughout the entire process. With the CE mark and approval from Briggs & Stratton, the installation is certified, ensuring safety and reliability for the end users.”

Magnus Persson, Regional Sales Manager at Briggs & Stratton | Vanguard said, “We are excited to have

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Magnus Persson

Regional Sales Manager
at Briggs & Stratton | Vanguard

Mapro Systems as a customer. Working together to electrify their farming machines with our Vanguard commercial batteries is a practical step towards sustainability. Our Si1.5 Battery Pack offers safety and durability to customers, as well as a flexible solution for easy swapping between equipment and charger. The Drängen Electric is a truly innovative application that delivers precise solutions for agricultural workers on the ground. This is about more than just business — it is about making agriculture more efficient and environmentally friendly, together.”



CONTACT US NOW

TO FIND OUT HOW VANGUARD CAN HELP YOU POWER YOUR EQUIPMENT



Contact us via email to: **vanguardpower.emea@basco.com**



Find out more about Vanguard on: **www.vanguardpower.com**



For more news and updates, follow us on LinkedIn:
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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.

Vanguard helps professionals to get their work done by applying power to their unique commercial applications. For more than 35 years, Vanguard has partnered with customers to conquer challenges and develop innovative products. As Vanguard doesn't simply provide components, it supports customers in applying commercial lithium-ion and petrol power throughout the entire integration process, from development to serial production to after sales and training support. www.vanguardpower.com

ABOUT MAPRO SYSTEMS AB

Mapro Systems has 30 years of experience developing unique machines for sustainable agriculture, including the Drängen crowding platforms for planting and harvesting, MacTrac tractors for mechanical weed processing, and King Bore snow plow blades for pick-up Trucks. The machines are easy to use, low maintenance, and manufactured in Alunda, Sweden. Quality is crucial as the machines operate globally in various countries such as Sweden, Norway, Finland, Estonia, Latvia, England, Germany, Switzerland, France, Senegal, the USA, Japan and Australia. www.maprosystems.se

VANGUARD

BRIGGS & STRATTON

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