

VANGUARD



Minijerab-Vujtek.cz



PERFECT PICK FOR EMISSION-SENSITIVE AREAS

Briggs & Stratton and Technotrade partner with KOVO-VŮJTEK to develop their first electric pick & carry crane powered by Vanguard™ 48V 5.0kWh* fixed commercial battery packs (Fi5.0).

Czech family-owned company KOVO-VŮJTEK s.r.o. specializes in facade glazing and building interiors. As their out-of-the-ordinary tasks need extraordinary solutions, KOVO-VŮJTEK started to build their own diesel-engine powered pick-and-carry cranes. Those uniquely designed, excellent maneuverable machines already surpass the productivity of common spider cranes dramatically. But the existing diesel-engine powered models Scorpion Mark I and II have limited applicability – particularly at idle and in emission-sensitive and indoor settings. It's now time for an electric model!

Soughting a cleaner and more efficient power solution for its Scorpion crane, the KOVO-VŮJTEK team identified some key requirements, including reduced operational

expenses and environmental impact, minimized noise pollution in the workplace, and improved user comfort. They also wanted to address the limitations of indoor diesel and petrol engine emissions to increase future crane deployment in emission-sensitive areas. Additionally, this line of work involves significant idle time. When not handling the material, the already highly efficient diesel-engine powered models still consume fuel. An electric drive solves that issue, enhancing efficiency, lowering the total cost of ownership, and offering emission-free operation.

KOVO-VŮJTEK's Director & Chief Engineer, Radovan Vůjtek, undertook extensive research into suitable power solutions and was impressed by Briggs & Stratton's

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

Vanguard commercial battery portfolio: “Having evaluated our options in the market, we highly appreciate the advanced architecture of the Vanguard battery packs: High levels of safety thanks to the cell modules layout, high quality of the materials and components and robust design and durability are all necessary for being able to operate the machine in a variety of weather conditions and working environments.” He continues: “We were also looking for a strong partner with a global market reach that would allow for international distribution and Vanguard could provide this requirement.”

Vanguard technology partner Technotrade s.r.o., a specialist in the design of complex system solutions for off-highway machinery, was chosen to support KOVO-VŮJTEK during the development process to implement the game-changing commercial battery packs into the all-new pick-and-carry crane. Having deployed a wide range of demanding applications, including forestry, construction equipment, and autonomous vehicles, Technotrade's expertise with Briggs & Stratton's innovative Vanguard power solutions positioned them as the ideal partner for KOVO-VŮJTEK to bring the new electric machine to life: Scorpick ENTER.

The innovative pick-and-carry crane is powered with two Vanguard 48V 5kWh* Fixed Commercial Battery Packs (Fi5.0) allowing a power consumption of 10kWh*.

Scorpick ENTER's battery capacity is intentionally oversized compared to the daily power consumption of approximately 7.5 kWh, ensuring it is more than enough for a full day of crane operation with a significant margin. A key feature of the machine is its compatibility with custom EV charging stations, as it has a standardized charging socket that allows the user to easily recharge the batteries nearly everywhere.

During development, KOVO-VŮJTEK specified that the Scorpick ENTER's batteries should be placed on the sides of the back of the frame and tilted sideways at 8-10°. This allows the operator to have a clear view of the machine's edges when standing behind it and moving it around. To successfully accommodate this nonstandard placement of battery packs for machine production, Technotrade and Vanguard worked in close partnership with KOVO-VŮJTEK.

Jakub Kejduš, Managing Director of Technotrade, said, “We are delighted to have been able to help our long-term customer KOVO-VŮJTEK and electrification partner Vanguard to bring this innovative and complex machine to the market. It is great to work with such like-minded, forward-thinking companies who, just like us, believe that electric machines are the way to go for the off-highway equipment industry. Not only because they are quiet and



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**HAVING EVALUATED OUR OPTIONS
IN THE MARKET, WE HIGHLY
APPRECIATE THE **ADVANCED**
ARCHITECTURE OF THE
VANGUARD BATTERY PACKS.**

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Radovan Vůjtek
KOVO-VŮJTEK Director
and Chief Engineer

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Jakub Kejduš

Managing Director of Technotrade



environmentally friendly, but mainly because they are more productive, efficient, and much more comfortable to use. The difference in productivity is remarkable, at least from our experience in this particular segment of pick-and-carry cranes.”

Vanguard's Fi5.0 fixed battery provides excellent power control and responsiveness when compared to the diesel engine. The electric motor produces a completely different power curve with significantly better control over the power and proportioning of the power output. This is a crucial factor when maneuvering glass panels with millimeter precision. Additionally, it saves time as moved objects fit in at the first trial, which makes the electric Scorpick ENTER even more productive.

Scorpick ENTER has already proven its efficiency over traditional diesel-powered cranes: Operating in a real working environment, the Scorpick ENTER is providing KOVO-VÚJTEK with a solid return on investment, as shown by the installation of 10 large-format glass panels during a commercial building project. The energy used for the job was approximately 2.800 W, using 28% of the 10kWh battery capacity. The machine was then charged at a commercial charging point, costing approximately 0,50 EUR (13 CZK). For the same task, with a diesel engine, an



48V 5.0KWH* COMMERCIAL BATTERY FIXED BATTERY - FI5.0

Powerful, efficient and safe: This fixed battery pack is designed to blend seamlessly into any equipment setup.

- **Expandable:** Packs can be combined in parallel for additional capacity.
- **Durable:** Multiple protective features tested to withstand harsh conditions, including extreme temperatures, impact, vibration, moisture and dirt.
- **Increased Uptime:** Up to 2000-cycle life to 80% initial capacity.

NOMINAL VOLTAGE (V):	51,6
NOMINAL CAPACITY** (Ah):	98,7
NOMINAL DISCHARGE CURRENT (A):	100
CHARGE TIME WITH 1050W / 1425W / 3000W CHARGER*** (H):	5.5 / 4 / 2.5
PACK WEIGHT (KG):	39

*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.

estimated 3 liters of diesel would be consumed, costing 4.80 EUR (120 CZK). A benefit is taken from an electric drive, which, among other things, does not consume any energy when idle.

Integrating the Vanguard Fi5.0 lithium-ion battery answers all of KOVO-VŮJTEK's requirements. Firstly, a dramatic noise level reduction of the machine of around 70 dB compared to approximately 100 dB with the diesel-engine powered version. This provides improved user comfort and enhances on-site communication between the crane operator and the workers responsible for the placement of the moved object. In addition, the elimination of emissions at the point of use ensures environmentally friendly operation. This now allows the Scorpick ENTER to be deployed in a broad range of working sites, particularly including the indoor spaces of commercial buildings, shopping centers, or clean environments.

Radovan Vůjtek commented, "I am proud of the result we have achieved. Scorpick ENTER is a very well thought through piece of machinery and has the potential to change the segment. Thanks to the comfortable remote control and using only proven components from renowned manufacturers such as the Vanguard lithium-ion commercial battery packs, I think the machine has the potential to prove its innovative qualities across the



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Pia Weimer

Director Marketing EMEA Engines & Power at Briggs & Stratton

international market. Compared to the conventional diesel version of the crane, which we are also still using in our business, the battery-powered crane is a much better work companion for me, both as an owner and operator.”

Pia Weimer, Director of Marketing EMEA Engines & Power at Briggs & Stratton adds: “Projects like these show that Vanguard does not simply provide components but supports customers in applying power throughout the entire integration process. We have established an outstanding network of technology partners all around the world - such as Technotrade in the Czech Republic. With the help of our technology partners, small to midsize OEMs like KOVO-VŮJTEK have a place to not only source high-quality components but also access to electrification engineering expertise they wouldn't have in-house.”

Looking to the future, KOVO-VŮJTEK sees the Vanguard-powered Scorpick ENTER as a strong contender for the rental market thanks to its ease of operation, low operating costs, and minimal maintenance requirements. As a versatile machine, it can be used on almost any type of construction site with its compact dimensions, low weight, excellent maneuverability, and easy transportation. As the prototype is being tested in a real working environment on different projects, KOVO-VŮJTEK focuses on introducing Scorpick ENTER to the local and international market.

CONTACT US NOW

TO FIND OUT HOW VANGUARD CAN HELP YOU POWER YOUR EQUIPMENT



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



For more news and updates, follow us on LinkedIn:

www.linkedin.com/company/vanguard-commercial-power/

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 TECHNOTRADE

Technotrade aims to be a strong partner to OEMs and support them by designing complex system solutions for off-highway machinery. The company's full-electric / electric-hydraulic drive systems and advanced control software have been proven in a wide range of demanding applications, from forestry and construction equipment to autonomous vehicles. www.technotrade.cz

ABOUT KOVO-VŮJTEK S.R.O.

Established in 1998, family-owned Czech company KOVO-VŮJTEK boasts more than two decades of experience in the glazing market, developing its expertise and continually improving its applications with a focus on safety, efficiency, and reliability. KOVO-VŮJTEK install heavy glass elements using their own developed, highly efficient pick & carry cranes in various locations and conditions, such as clean rooms, steep slopes, muddy terrains, and tunnels. Tasks include laying marble paving, setting up portals, glass, and showcases, and working on challenging terrains like roofs. minijerab-vujtek.cz

VANGUARD

BRIGGS & STRATTON

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