



CASE STUDY:

inVENTUS[™]
POWER

THE POWER OF SYNERGY

Synergy between battery and charger manufacturers is necessary to scale innovation and successfully solve the challenges original equipment manufacturers (OEMs) face. For a strong partnership, both companies need to share similar values. The collaboration between Inventus Power and Delta-Q Technologies (Delta-Q) is an example of just that.

Inventus Power and Delta-Q were first introduced by an OEM, well-known in the ground support equipment industry, in 2017. Recognizing that they shared similar standards and core values, Inventus Power and Delta-Q expanded their collaboration into new markets

and worked on their first opportunity together in the lawn and garden space.

Combining Delta-Q and Inventus Power's expertise and drive for innovation enables them to deliver quality battery and charging solutions to their customers. Their customer-centric mindset sets their clients up for success and encourages their team to deliver the best experience. OEMs are also supported throughout the process, from initial sales contact through to product delivery and beyond. These values have benefitted Inventus Power and Delta-Q's customers, as they continue to work together to shape the future of electric drive systems.

WHO IS INVENTUS POWER?

Celebrating their 60th anniversary in 2020, Inventus Power is a leading name in advanced battery systems, with over one billion battery packs sold globally. They specialize in the design, manufacture, full system support and configuration of standard and custom lithium-ion battery packs. The company is well established in the medical and military sectors – two of the most rigid fields from a performance and safety perspective – and is expanding further into commercial motive applications. Inventus Power is creating more synergies from system integration, by improving product compatibility with Delta-Q charging systems.



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SYNERGY ON QUALITY AND CUSTOMER-CENTRIC VALUES

A common theme in all Delta-Q collaborations is identifying companies with shared values. Inventus Power is no exception. Both companies invest heavily in their brand, with a strong emphasis on innovation and customer service excellence.

Delta-Q and Inventus Power put a lot of effort into building their company cultures. They are customer-focused and ensure their teams are delivering the best experience to their clients. They listen to their customers' wants and needs and develop battery and charging solutions that solve their technical challenges.

Innovation to Delta-Q and Inventus Power is a core value – with a scope wider than just product engineering. It's about building the organization. They re-invest in their people, focus on research and development, and continually work with their customers to solve any unforeseen challenges with their products. They are not just looking at today, but further into the future. Their aim is to help define and create a battery system and charging solution that is fully scalable across industries and products.

CHALLENGES IN LAWN AND GARDEN CARE

Delta-Q's first commercial project with Inventus Power was with Ariens, a leader in the outdoor power equipment industry. Ariens was looking to convert one of its commercial zero-turn mowers from a high carbon-emitting internal combustion engine to an optimized and efficient carbon-free product. Using Inventus Power's 60 years of experience in battery technology and Delta-Q's leadership and innovation in the battery charging space, the two companies delivered an intelligent power source solution. This solution maximized the life and performance of the commercial mower, while optimizing the total cost of ownership to the end customer.

While this is one example of an OEM looking to transition from internal combustion engines to electric drive, there are many more with similar interests in the lawn and

garden space. This shift is largely due to regulatory changes and environmental and health hazards.

Many OEMs are hesitant to transition because their customer base understands and relies on gas-powered equipment. OEMs also lack resources to educate their end-users on the benefits of battery-powered outdoor power equipment. One challenge is showcasing the value of moving away from gas, and that electric drive vehicles are on-par with, if not better than, their gas-powered counterparts. The other challenge is helping OEMs and their end-customers embrace the value of lithium-ion battery technology and how it reduces total cost of ownership for the end-user.

The best way to overcome these challenges is education. It is key to helping OEM customers and their end-users pursue electrification and realize the total cost of ownership savings of adopting lithium technology. Inventus Power

*Gravely® 60" PRO-TURN®
EV – Electric Commercial
Zero Turn Mower*



focuses on guiding OEMs through the electrification process, helping them understand where to start and what their power requirements would be. They educate them on their different battery options and how electrification with lithium-ion battery systems improves product longevity.

Delta-Q helped Inventus Power enter the lawn and garden care market by providing them with an understanding of charging infrastructure as part of the client-education process. Inventus Power leverages Delta-Q's expertise to educate OEMs on how machines are charged and how they can utilize their charger to:

- make informed operating decisions,
- reduce the total cost of ownership, and
- maximize machine performance and longevity.

Many lawn and garden OEMs are bypassing lead-acid batteries and deploying lithium-ion from the outset due weight and general maintenance. Working with Inventus Power and Delta-Q provides them with a packaged solution which will help reduce their time to market.



The fact that Inventus Power can offer a complete battery and charging system with Delta-Q allows our customers to access the technical support from both companies

Tom Nguyen



VP, Business Development and Product Strategy, Inventus Power

GUIDING CUSTOMERS THROUGH THE ELECTRIFICATION PROCESS

Inventus Power and Delta-Q are working together to guide OEMs through the electrification design process, from the battery to the charger. This guidance provides OEMs with visibility on the power and cost trade-offs for their battery and charging solution.

The time spent educating OEMs on the operation of an electric system helps them reduce time to market for their new products. Inventus Power and Delta-Q recognize the importance of education to gain new clients and maintain existing relationships.

Delta-Q and Inventus Power's collaboration continues to grow and proves to be very beneficial to their customers. Inventus Power's VP of Business Development and Product Strategy, Tom Nguyen, says "The collaboration between Inventus Power and Delta-Q Technologies continues to grow. We can now provide our customers with an encompassing solution that looks at different charging logic across our portfolio of standard and custom products. As we continue to expand into new motive markets, such as e-mobility, we see the commonality in the way Delta-Q's chargers communicate with our battery solutions and how it is improving our customers' experience".

Along with the connection on core values, Delta-Q's products can communicate seamlessly with Inventus Power's battery solutions, enhancing the customer experience. Tom comments on this adaptability, saying, "Delta-Q's customization of software – the ability to help modify or tweak charger algorithms to meet the requirements of the battery system (of both current and new architectures) – has been a major bonus for our new customers."



Gravelly® 60" PRO-TURN® EV – Electric Commercial Zero Turn Mower



Delta-Q and Inventus Power reinvest in their people, focus on research and development, and continually work with their customers to solve any unforeseen challenges with their products.



THE BENEFITS OF WORKING WITH DELTA-Q AND INVENTUS POWER

Delta-Q's range of charger power levels and Inventus Power's standard and custom battery capacities provides greater flexibility for OEMs in existing and new markets. Diversification is vital to expansion in new markets, and the e-mobility space is a prime example. Delta-Q's collaboration with Inventus Power helps them strengthen their product portfolio by including a reliable charging solution. Tom speaks to this and says, "The fact that Inventus Power can offer a complete battery and charging system with Delta-Q allows our customers to access the technical support from both companies. When they're doing the integration, trying to understand requirements or simply where to start, Delta-Q and Inventus Power are there to help fulfill that piece."

Whether customers are looking for a specific battery and charging solution, or just beginning to transition their gas-powered product portfolio to electric, they can trust they are in good hands with Inventus Power and Delta-Q Technologies.



**The collaboration
between Inventus Power
and Delta-Q Technologies
continues to grow.**



Tom Nguyen

**VP, Business Development and
Product Strategy, Inventus Power**



ABOUT DELTA -Q:

Delta-Q Technologies develops and supplies battery chargers to original equipment manufacturers (OEMs) of electric vehicles and industrial equipment. Delta-Q's unique blend of engineering capability in high efficiency power electronics and embedded software design delivers innovative battery charging solutions to meet the evolving needs of its customers. With more than three million vehicles and industrial machines already using its products, Delta-Q's innovation is enabling the widespread adoption of environmentally friendly electric drive systems. Delta-Q was founded in 1999 and is a privately held company located in Vancouver, Canada. Please visit:

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delta-q.com

for more information

ABOUT INVENTUS POWER

Inventus Power, founded in 1960, is the leading provider of advanced battery systems for global OEMs. They specialize in the design and manufacture of battery packs, chargers, and power supplies across a broad range of portable, motive & stationary applications. With multi-country locations across four continents and manufacturing facilities in the U.S., Mexico, Brazil, China, & Malaysia, the company strategically positioned to support the needs of global brands. From design & engineering to performance testing & mass production, Inventus Power provides accelerated end-to-end solutions. Their broad market/application expertise, technology agnostic approach, global footprint, and vertical integration ensures the delivery of safe, reliable & innovative power solutions at an exceptional speed to market. Please visit:

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