

Good vibes and family values: delivering for fertilizer users worldwide

A shared passion for well-built, well-engineered products that solve problems is at the heart of a flourishing partnership that's delivering value for fertilizer users worldwide, writes Allen Twidell, mobile equipment vibration specialist at Martin Engineering.

When dry fertilizer equipment specialist Doyle Equipment Manufacturing hooked up with bulk material handling expert Martin Engineering, both firms got a lot more than they bargained for.

A proud fourth-generation family business, based in the heart of the US Midwest, Doyle has become one of the leading manufacturers of mobile equipment for fertilizer blending, conveying, tending and spreading, with customers in over 70 countries worldwide. "We pride ourselves on manufacturing quality equipment and have always been committed to excellent service far after the sale," said Doyle's President, Monty Doyle. "We understand the importance of building strong relationships — our core values and dedicated employees continue to be the reason we have been able to produce such dependable products."

In 2016 the company relocated from Quincy, Illinois across the Mississippi River to a new state-of-the-art, 208,000ft² manufacturing facility in Palmyra, Missouri, with new machining equipment for improved efficiency and better safety during the build process. The campus has since grown to over 422,000ft² of manufacturing space, all part of a plan to accelerate growth, boost performance and generate more value from their supply chain — including the sourcing of the vibrators



Doyle's state-of-the-art facility in Palmyra, Missouri, USA (and below). Photo: ©Doyle Equipment Manufacturing Co 2023.



Doyle's 24ft trailer tender has a modular design that allows it to be customized to meet customer needs (photo: ©Doyle Equipment Manufacturing Co 2023).

that prevent material buildups in the bins and hoppers of their fertilizer tenders.

That's when the team first spoke with Martin Engineering which — like Doyle — is a family firm established in the Midwest in the mid-20th century. Best known for solving material flow problems in high-volume foundation industries such as mining, cement, steel and, of course, fertilizer, Martin Engineering was originally founded on the innovative design and manufacture of vibrators — products that continue to this day,

providing a reliable and efficient solution to flow problems across multiple industries. Doyle's state-of-the-art facility in Palmyra, Missouri, USA.

Doyle's VP of Marketing & Technology Casch Doyle explained: "When we first started talking to Martin Engineering, we were looking to get more value out of our supply chain without compromising on product quality. Martin already had a market-leading vibrator — the Cougar® MDC — but we needed a customized version to be able to use it on our tenders." Rugged and economical, the Cougar® MDC (Medium-size DC voltage) is tried and tested in markets such as aggregates and concrete to prevent material hang-ups. A service-free, self-contained unit, it improves the speed and efficiency of unloading wet, sticky and even frozen materials from trucks and mobile plants. But the characteristics of dry fertilizer are more complex — not only sticky but highly corrosive — and the lightweight aluminium that the standard Cougar® is made from simply wouldn't work.

Martin set about creating a version of the MDC vibrator made from ductile iron, a graphite-rich cast iron that has excellent impact, fatigue and corrosion resistance. At the same time, the bolt-fixing pattern was redesigned so the new vibrator would fit straight onto Doyle's tender equipment without changing their existing configuration — two bolts rather than four on the standard Martin vibrator. That also meant it could be retrofitted to older Doyle equipment being maintained or upgraded for their customers.

The Cougar® was also redesigned to operate with lower amperage so it would pull less power, allowing smaller cables to be used, and the performance was adjusted to better suit the material properties of fertilizers by increasing the vibration amplitude using equal force.

After almost a year of research and development, extensive trials of the custom vibrator were conducted at Doyle's Palmyra factory. Soon afterwards, in the spring of 2019, the new version of the Cougar®, named the 'MDCV', went into production at Martin's global manufacturing facility in Neponset, Illinois, USA on a production cycle to match the demands of the seasonal agricultural calendar.

"Essentially the entire MDC unit was completely redesigned by Martin, enabling us to cut our costs substantially and gain superior performance," Casch continued. "There are additional benefits for our customers too as the new device uses less



Martin's Cougar MDCV, customized to meet Doyle's exacting specifications and standards (photo: ©Martin Engineering 2023).

energy in operation than the previous supplier's unit. And thanks to the high quality of Martin's products, they have doubled the warranty offered by our previous supplier."

As a result of its exacting requirements, integrated supply chain and a partnership approach, Doyle now fits its tenders with Martin's MDCV vibrator — even the power cord is made to the desired length with a special plug. That ensures that fitting is labour-free for the team at Doyle and its customers.

With the customized solution provided by Martin proving its worth, an increasing majority of Doyle's customers are now choosing to have the MDCV fitted as an optional extra. To date more than 2,500 Martin vibrator units have been fitted to Doyle's new fertilizer tenders and the company's technicians are increasingly retrofitting the MDCV to mobile equipment already in use in the field. That's helping Doyle to realize its growth ambitions, with a year-on-year increase in sales of around 20% in 2022 and a further 30% growth anticipated by the end of 2023.

Looking ahead, both companies are committed to further innovations that add value for end users, from major investments in technology to simple ideas that improve the customer experience. One example is in the labelling on the vibrators: "The MDCV is now Doyle-branded to ensure that we as the OEM own the relationship with our customers, giving them the assurance that we back the components we put on our products," said

Doyle's VP of Supply Chain, Case Doyle. "It helps us show a united front, it gives the customer clarity on where to go if an issue comes up, and also helps our parts department to handle any queries quickly and easily. The team at Martin steps in to support when required."

So, what started out as a drive for a more cost-effective solution has been a journey of discovery for both parties that has delivered a higher quality, more reliable product, stronger future prospects and a better end result for all. Casch Doyle concluded: "The strength of our partnership with Martin Engineering is based on the fact that we have similar roots and share similar values, and most importantly a mindset that realizes the value in well-engineered, well-built products that solve problems for customers. In just a few years we've built a strong relationship and we love the dynamic between our two family businesses — and I hope that will endure for future generations."

ABOUT DOYLE EQUIPMENT MANUFACTURING

Doyle Equipment Manufacturing is home of worldwide quality dry fertilizer blending, conveying, tending, and spreading equipment. Located in Palmyra, Missouri, USA, Doyle is a four-generation family owned and operated company. Founded by the late Merle Doyle, an innovative leader in the fertilizer equipment business, Doyle has been the leading manufacturer of bulk blenders for dry fertilizer since introducing



Fitted to Doyle's tender trailers the Cougar MDCV prevents fertilizer buildups and bridging to maintain flow (photo: ©Martin Engineering 2023).

the first rotary style drum blender in 1961. Today, with Merle's grandson Monty Doyle as President, the business continues to lead the way by offering top quality products with the most advanced features, service, and best warranties. The future looks bright, with the fourth generation — Colt, Catie, Case and Casch following in the family footsteps.

ABOUT MARTIN ENGINEERING

Martin Engineering has been a global leader

in bulk material handling for more than 75 years, continuously developing new solutions to make high-volume processing cleaner, safer and more productive. The company's series of *Foundations*[™] books is an internationally recognized resource for safety, maintenance and operations training — with more than 22,000 print copies in circulation around the world. The 500+ page reference books are available in several languages and have been downloaded thousands of times as free

PDFs from the Martin website.

Martin Engineering products, sales, service and training are available from 17 wholly-owned business units in Australia, Brazil, Chile, China, Colombia, France, Germany, India, Indonesia, Italy, Malaysia, Mexico, Peru, Spain, South Africa, Turkey, the UK and the USA, with partners in numerous other countries worldwide. The firm employs more than 1,000 people, approximately 400 of whom hold advanced degrees.