



Engine-mounted generator improves efficiency and creates a new product offering for Mauldin Paving Products

Cross Company replaced a secondary power source with an engine-mounted generator to create an electric screed at a competitive price

Mauldin Paving Products is an Original Equipment Manufacturer (OEM) of asphalt paving equipment, based near Greenville, SC. They produce over 200 pieces of equipment per year which are sold throughout North America via a dealer network. Their commercial pavers can be generally classified as small, running a 49 horsepower engine, medium (74HP) and large (110HP) and are used by contractors and municipalities of all sizes. All have a heated screed which requires additional power to operate correctly.

The large, 110HP paver powers the screed with a traditional hydraulic pump run by the diesel engine which pushes fluid to a remotely mounted hydraulic motor which in turn provides power to the electric generator unit. Unsurprisingly, there is a lot of power loss between the engine and the output of the generator. Despite the inefficiency of this system, the larger engine has enough extra available horsepower to power the application.

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- Glen Calder, Vice President of Operations

The small and medium-sized pavers use propane, an unreliable power source: it's hard to gauge how long it will last and hard to remember to replenish. The medium-sized paver does not have enough additional power to run the screed electrically without increasing the engine size – and increasing the cost of the machine.



Cross's account manager, Steve Burton, saw an opportunity to improve the efficiency in the large machine using a generator mounted on the engine's bell housing. When he took the idea to Mauldin, their Vice President of Engineering Product Development, David Calder, immediately saw an opportunity – not in the large paver but the medium one - to power the screed without having to upsize the engine.

Cross's engineering team worked with Mauldin Paving Products to develop and finalize the concept, all the way through the finite details of fit and finish. Cross provided 3D modeling up front and 2D finished drawings, resulting in a generator that worked right out of the box. Said Burton, "The details on physically mounting the generator to the engine bell housing were crucial. It was a truly collaborative process."

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For the dealer network, it provides a very marketable product at a competitive price - a simpler machine with a more reliable power source for the critical screed. When the OEM offered the dealers the option of either traditional or electrical, all but one paver sold were electric despite a price premium. This medium sized paver with the electric option also sold out an entire year in advance!

Mauldin Paving Products is currently integrating the new generator into its smaller, 49 HP machine which will again launch a unique, desirable feature into the market. They also anticipate moving the new technology to their larger 110 HP machine to improve its efficiency. This gives the OEM the opportunity to use the additional power to improve the screed or to create other options to add value to their customers and end users.

Glen Calder was pleased with the success of the project and praised Cross's Mobile Hydraulics and Controls team and their account manager, Steve Burton. "Steve has and we have gained a tremendous amount of knowledge on the project. Cross should be successful in implementing the concept in several different spaces," he said.

The application of this bellhousing mounted generator provided a solution to power an electrical accessory with such improved efficiency over the previous method that an increase in engine size was not needed. This gives the customer a clear market advantage. For the future, with the addition of a battery pack and controls, this generator creates the foundation for a true hybrid vehicle.



To learn how the Cross team can provide tangible value to you and your customers with electrification or a variety of other technologies, please visit www.crossco.com/mobile-hydraulics or call 855.778.2795.

Mauldin Paving Products is a brand of the Calder Brothers Corporation. They produce a range of asphalt pavers, road maintainers, asphalt rollers and other machinery for the municipal paving market. For more information, please visit www.4amauldin.com or call 864-244-4800.