

# Multipolar Development Corporation's Virtual Pole™ Design Innovation to Revolutionize Electric Machines

*Prototype to Prove Concept Just Months Away*

AUSTIN, TEXAS, UNITED STATES, June 23, 2023 /EINPresswire.com/ -- [Multipolar Development Corporation](https://www.einpresswire.com/news/2023/06/23/multipolar-development-corporation) (MDC) an electrical and automation engineering company announced it is nearing completion of its first Multipolar™ electric vehicle (EV) propulsion enhancement system prototype, supporting its industry-disrupting new Virtual Pole™ technology. The invention, specifically for trucks and freight vehicles, has the potential to revolutionize the industry.



“MDC’s Multipolar™ electric machine prototype is developing at a rapid pace. Manufacturing of the first motor is expected to be completed in the summer of 2023,” stated Multipolar CEO and inventor Shaun McCutcheon. “The models show it will even work better than anticipated, and the prototype will be further confirmation.”

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The increasing demand for electric machines that can operate at high voltages and manage industrial-sized applications has necessitated design innovation as internal combustion engines are phased out. MDC’s Multipolar™ motor design meets this demand using intelligent control during machine operation to enhance efficiency, reduce mechanical wear, and adapt to environmental conditions by finely tuning the parameters of individual

electromagnetic poles in the machine.

The Multipolar™ advanced control system can alter the speed and torque of an electric machine using Virtual Pole™ technology to create a versatile, customizable machine that meets modern industrial challenges.

### The Virtual Pole™ advantage

Traditional electric machines consist of a fixed number of individual electromagnetic poles arranged radially within a rotor and stator. The number of poles needed, as well as the magnetic field strength and polarity of each, is determined by the torque-speed profile required by each application.

Pole-changing, or multispeed, motors alter their speed and torque – limited typically to a few modes – by controlling the wiring connections between the poles, effectively changing the number of poles by grouping adjacent poles according to polarity. For example, A 24-pole motor can be rewired as a 12-pole motor with groups of two poles.

In contrast, the Multipolar™ design controls the magnetic strength and polarity of individual electromagnets directly and independently, turning each into a “virtual” pole that can be adjusted instantaneously through intelligent control.

The advanced control system can thus create groups of virtual poles that comprise effective poles of any number, strength, and polarity on demand.

Using this Virtual Pole™ design, the number of effective poles that can be achieved is limited only by the total number of individual electromagnets in the machine.

MDC Operations Manager Ryan Jones stated, “The Multipolar™ machine versatility, owing to its state-of-the-art design and control, will ensure that the motor performs at optimal efficiency for any application operating point. As our technology continues to be proven in virtual and actual tests, vast improvements in the EV industry are on the horizon. We look forward to inviting more partners, supporters, and investors to be part of the revolution.”

### Versatility and efficiency in the modern machine age

The intelligent control system of Multipolar™ machines makes use of data, both real-time and historical, to optimize every machine. The long-term mechanical wear and imperfections that typically reduce efficiency in high-power electrical machines have made them impractical for many industrial applications thus far. Onboard sensors that inform Multipolar™ machine learning algorithms can help compensate for these imperfections by providing data to the advanced Multipolar™ control system.

Using Virtual Pole™ technology, MDC is striving to break this high-power barrier, operating at voltages of 700 V and above, by compensating for electrical arcing, environmental conditions,

and other factors that affect electric machines at high voltages.

Designers can also customize their end products, creating a custom machine controller for their needs. Performance is optimized both at setup and during operation to meet design specifications.

Changing pole configuration through Virtual Pole™ technology, with a range of operational speed and torque options at full power, designers can even repurpose Multipolar™ machines when needed.

“Multipolar™ will prove to be one of the most significant modernizations to motors and generators,” McCutcheon explained. “Our technology is moving us into a truly digital machine age – an advanced machine without many of the inherent inefficiencies and limitations of legacy energy conversion.”

Multipolar Development Corporation is an Austin, TX-based C-Corporation comprised of energy, electrical, and mechanical engineering experts and technicians.

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Please visit: <https://www.multipolarmachine.com/>

For more information or to schedule an interview with Shaun McCutcheon, please contact Dan Rene of kglobal, at [daniel.rene@kglobal.com](mailto:daniel.rene@kglobal.com) or 202-329-8357.

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