

- Ameridrives
- Bauer Gear Motor
- Bibby Turboflex
- Boston Gear
- Delevan
- Delroyd Worm Gear
- Formsprag Clutch
- Guardian Couplings
- Huco
- Kilian
- Kollmorgen
- Lamiflex Couplings
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- Stromag
- Svendborg Brakes
- TB Wood's
- Thomson
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- Warner Electric
- Wichita Clutch

# Proven Braking Technologies Help Vehicle OEMs Accelerate Speed-To-Market



As seen in  
**Power Transmission  
Engineering**  
June, 2022

As seen in  
**IVT Industrial Vehicle  
Technology**  
March, 2022



# Proven Braking Technologies Help Vehicle OEMs Accelerate Speed-To-Market

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Global mobile power equipment market director, Altra Motion

The rapidly growing demand for compact, battery-powered construction and agriculture equipment has created a highly competitive market environment for equipment OEMs. Warner Electric, a global leader in electromagnetic brake technologies, is uniquely positioned to support design engineers as they meet these application challenges.

Warner Electric offers innovative braking solutions designed to reduce power consumption on a wide variety of battery-powered construction equipment, including slewing drives on compact track-driven loaders and excavators, traction wheel motors on compact skid steers and wheeled excavators and mobile elevating work platforms (MEWPs). Warner braking technologies are also ideal for many agriculture applications, including autonomous sprayers, small tractors (50-70 HP) and telehandlers.

Highly experienced Warner Electric application engineers routinely work with OEM engineering teams to develop compact, energy efficient braking solutions to meet the needs of each equipment requirement, whether it's for a completely new equipment design or the electric conversion of an existing machine.

Utilizing existing, proven braking solutions, including the popular PK and CBTB ranges, Warner engineers can quickly modify a standard brake design and ship prototypes to OEMs for testing. Warner Electric's ability to rapidly respond to a customer need saves valuable time and effort for busy OEM engineers while allowing them to focus on other critical equipment systems and components.

With manufacturing facilities strategically positioned around the world, Warner can provide short lead times while meeting the demanding delivery requirements of global OEM production schedules.

## **Original compact, powerful and proven PK brake design leads the market**

Adopted by more than 30 key OEMs since 2010, Warner Electric's popular PK brakes are installed on more than 500,000 aerial work platforms and forklift trucks in the field. The benefits of this cost competitive range include one-piece design for easy assembly, lower power consumption, longer battery life, and overall lower maintenance costs.

The PK (Very Thin) range is a pre-assembled on/off dry failsafe electromagnetic brake. This failsafe brake is used for parking and



Warner Electric innovative braking solutions are designed to reduce power consumption on a wide variety of motions for battery-powered construction and ag equipment, including autonomous machines.

emergency as well as some service braking. The machine's AC motor is used in combination with the PK brake for regenerative braking of the equipment. In addition to the standard friction material, PK brakes can also be fitted with high torque and high energy materials depending on the application. The coil can be designed for single or dual voltage and pulse width modulation power supply to reduce power consumption and maintenance.

Low-profile PK captive design brakes are particularly suitable for back-to-back dual drive configurations such as MEWPs and telehandlers. These units are enclosed to withstand harsh outdoor environments. IP67-Rated models are available to meet challenging washdown application requirements.

#### **High-torque, high-speed CBTB brakes for dual-drive E-vehicles**

The CBTB family of electromagnetic axle brakes are specifically for use on battery-powered, dual-drive equipment with capacities generally up to 8 tons (17,900 lbs.).

These advanced high-speed, high-torque brakes provide reliable emergency and parking brake functionality and allow for increased maximum vehicle speed and improved productivity.

The integration of proprietary non-stick friction material within a superior brake design ensures very high energy dissipation and low wear throughout the life of the equipment.

The CBTB is designed for equipment that requires the narrowest footprint. It is installed between both wheel motors on the load bearing axle. When engaged, its double-disc arrangement allows the brake to act on both motors simultaneously.

An optional dual-stage functionality is available to provide better control of the torque by applying 50% or 100% of the brake torque capacity. It also prevents flat surface damage to tires that often occurs when wheels lock up during an abrupt emergency stop.

New proprietary W134 non-stick friction material has been designed by Warner Electric engineers to equip the CBTB series for high-capacity braking requirements. Previously, the standard material was able to handle 57kJ at 900rpm, however, the new W134 material handles up to 190kJ at 1300rpm. This new dry friction material enables implementation of electromagnetic brakes versus hydraulically actuated and wet brake technologies, removing the risk of oil leaks.



The PK (Very Thin) range is a pre-assembled on/off dry spring applied electromagnetic brake used for parking and emergency as well as some service braking.



The CBTB family of electromagnetic axle brakes is specifically for use on battery-powered, dual-drive vehicles with capacities generally up to 8 tons (17,900 lbs.).

## About Altra Motion

Altra is a leading global designer and producer of a wide range of electromechanical power transmission and motion control components and systems. Providing the essential control of equipment speed, torque, positioning, and other functions, Altra products can be used in nearly any machine, process or application involving motion. From speed reducers on food processing and packaging lines to precision motors embedded in medical robots to brakes used on offshore wind turbines, Altra has been serving customers around the world for decades.

Altra's leading brands include Ameridrives, Bauer Gear Motor, Bibby Turboflex, Boston Gear, Delevan, Delroyd Worm Gear, Formsprag Clutch, Guardian Couplings, Huco, Kilian, Kollmorgen, Lamiflex Couplings, Marland Clutch, Matrix, Nuttall Gear, Portescap, Stieber, Stromag, Svendborg Brakes, TB Wood's, Thomson, Twiflex, Warner Electric, and Wichita Clutch.



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