

AGRO WHEEL



PTI PELONIS
TECHNOLOGIES, INC.



The agriculture industry has undergone significant changes over the years, with technology playing a crucial role in improving efficiency and productivity. One such shift in the industry is the agricultural sector's adoption of electrification for farming equipment. Agricultural operations are increasingly using electric motors and gear drives to power and automate various machinery, including tractors, harvesters, and other equipment.

Agriculture, however, is a highly demanding sector, using large equipment that requires consistent, high power for operators to move and control it reliably out in the field. This machinery also calls for precision in positioning and operation, and this is where the AgroWheel excels. AgroWheel offers innovative solutions that address the diverse needs of modern agriculture, including automation and electric farming equipment. Learn more about the AgroWheel, its features, and how it can support agricultural operations.

Electrification of Agriculture

Electrification is a rapidly growing trend in agriculture as farmers seek to enhance equipment performance and productivity while decreasing emissions. A key benefit of electric motors and gear drives is their ability to provide precision and power in various farming applications. For instance, when you couple electric traction drive systems with the right traction management, electric agriculture equipment proves highly beneficial for handling jobs on soft or unstable ground.

Another primary advantage accompanying the electrification of farming equipment is that it allows for greater automation in agriculture. Automating equipment and processes leads to increased efficiency and productivity and reduced labor costs by boosting autonomous abilities. The AgroWheel Drive has been designed to support electrification in agricultural operations.

AgroWheel

The AgroWheel is a 100%-electric actuator solution specifically designed to meet the demands of agricultural automation applications. It's an innovative product built with a range of advanced features that make it highly effective for uses in:



AUTOMATION



PROPULSION



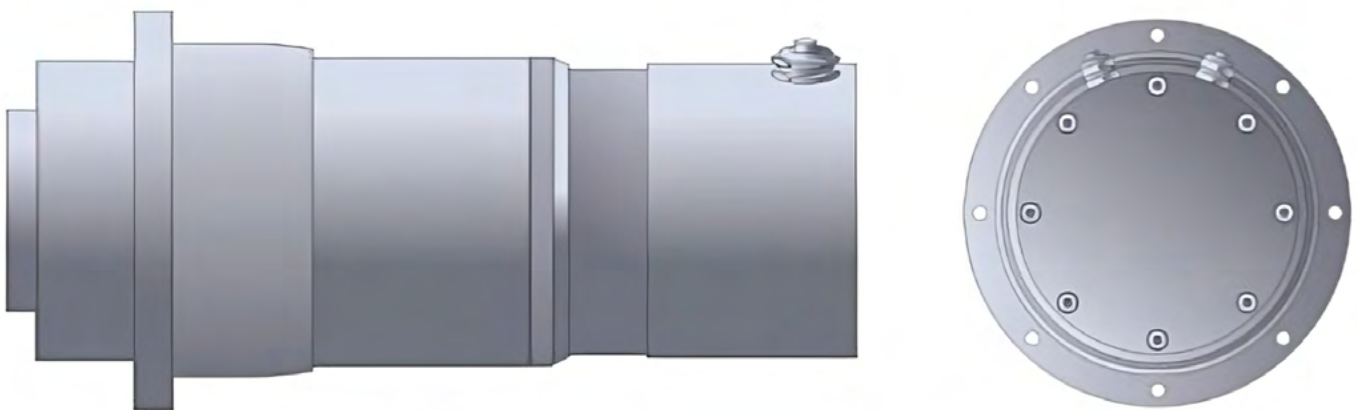
STEERING

Two of AgroWheel's properties are its integrated low-backlash gearbox and its high-performance brushless PM DC motor. Combined, they provide excellent power output, allowing the AgroWheel to deliver up to 1.5kW of power at low voltages. This high level of power output also means that the AgroWheel can generate high peak torque of up to 215Nm, which is essential for heavy-duty agricultural applications.

The holding brake and position sensor are additional features of the AgroWheel. They provide precise control over wheel movement and positioning. With a fully electric wheel drive system, the AgroWheel can operate on low voltage, making it highly efficient and cost-effective. Furthermore, the AgroWheel can reach speeds of 120 RPM, which is highly effective for improving productivity in the industry.

The compact design of the AgroWheel makes it ideal for agricultural equipment, where space is often limited. Its dimensions up to 290mm in length and 145mm in diameter allow it to fit easily into small areas without sacrificing power. This makes it suitable for tractors, harvesters, and other machinery. The AgroWheel has a high IP rating for its sealed gearbox, which means it's protected from dust, water, and other environmental contaminants.

With a lifespan of 20,000 operating hours, the AgroWheel provides reliable performance for years, even in demanding agricultural environments. The AgroWheel is also easy to integrate with modern farm electronic control systems, particularly given its customization options to best fulfill specific application requirements. Pelonis Technologies offers engineering design services and customized specifications to ensure that each product is tailored to the needs of the customer.





Advantages of AgroWheel

The AgroWheel has been designed to require zero maintenance throughout its long lifespan and provides a range of additional benefits for farmers and agricultural applications. Some of these include:



- **High peak torque.** The AgroWheel offers torque output as high as 215Nm, which enables it to tackle rugged agricultural applications. This high output ensures greater work capacity and enhanced, consistent performance.
- **Ability to decrease speed.** The integrated gearbox in the AgroWheel allows for controlled speed reduction, which is particularly useful in applications that require slower speeds and higher torque. This enhances precision in operations and reduces the risk of damage to the equipment.

- **Ability to handle bigger inertial loads.** With its high torque output and speed reduction capabilities, the AgroWheel can drive large inertial loads. This is particularly useful in applications that require moving heavy equipment around a field.
- **High positioning accuracy and resolution.** The AgroWheel is equipped with a position sensor that provides high resolution and accuracy in positioning. This feature enables the system to perform complex maneuvers and ensures precise control over the equipment.
- **Faster set-up time for positioning.** The AgroWheel's high-resolution, accurate positioning system allows for shorter positioning time frames, which increases efficiency and productivity in agricultural operations.
- **Better vibration control through damping.** The AgroWheel's gearbox is designed with enhanced damping capabilities, which reduce vibrations and increase stability. This feature helps ensure smooth and reliable equipment operation.
- **Enhanced component rigidity.** The AgroWheel's gearbox is designed to increase rigidity, which improves the system's durability, torsional force resistance, and longevity.



- **Higher radial and axial loads.** As the strength and rigidity of a geared motor increase, so do its radial and axial loads.
- **More compact design.** The design of the AgroWheel enables it to fit into small spaces and reduces the overall size of the equipment, all while still providing the necessary power for strenuous agricultural applications.
- **Load installation capabilities.** Our product's design allows for surface installations of the load, which enhances safety and stability.



Choose the AgroWheel

The AgroWheel is a reliable and efficient electric actuator and propulsion solution for challenging agricultural automation applications. With its high torque output, speed reduction, and improved damping characteristics, it's an ideal option for those looking to boost productivity while reducing emissions. Our engineering design team will work with you to customize our product and meet your unique specifications, ensuring you get the most out of your investment.

Contact us to learn more about the AgroWheel and how it can benefit your agricultural operations, or **request a quote** today to get started.



About Pelonis

Pelonis Technologies, Inc. ("PTI") is an innovator of air movement technologies, cooling fans and blowers, induction motors, and specialty heating products for commercial and industrial use.

We offer high-quality products at competitive costs and employ flexible manufacturing techniques that enable us to respond to large and small-scale requirements. Our goal is to provide our customers with significant value-added services, ready solutions, or custom designs to meet their needs. Contact us to get started today!



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