Polyurethane Wheel for Warehouse Automation Robots

Title	Polyurethane Wheel for Warehouse Automation Robots
Thumb	
Address	Anfeng Industrial Park, Dongtai City, Jiangsu, China
Website	https://www.poly-wheels.com/
Email	sale06@kfqizhongji.com

Description

In warehouse automation, wheels serve as the critical connection point between equipment and the floor, directly impacting both stability and operational efficiency. However, improper wheel selection often leads to significant operational challenges, such as traction loss and navigation errors on specialized floor surfaces, as well as premature wear and frequent downtime caused by high-frequency operations. By deeply investing in material science and engineering design, Philson provides customized polyurethane wheel solutions that effectively address these critical pain points, ensuring your automated warehouse equipment remains highly efficient, precise, and stable.



Material Performance: NDI, MDI, TDI, and PPDI Systems

Polyurethane wheel performance is engineered through the selection of specific material systems—NDI, MDI, TDI, and PPDI—each chosen to meet distinct mechanical requirements:

PPDI Systems: Engineered for extreme conditions, these systems provide exceptional resilience, outstanding cut-and-tear resistance, and superior thermal stability, making them the preferred choice for heavy-duty applications subjected to continuous high-speed movement and extreme thermal stress.

NDI Systems: Characterized by exceptional dynamic load capacity, superior abrasion resistance, and high heat dissipation, this system is optimized for intensive, heavy-duty AGV applications.

MDI Systems: Optimized for a balanced profile of durability and elasticity, this system provides structural integrity and long-term stability for high-performance robotics.

TDI Systems: Utilized for general-purpose load wheels and guide rollers, this system offers robust mechanical properties and reliable performance for moderate-load transport environments.

Key Advantages of Our Polyurethane Wheel Solutions

We prioritize technical excellence to ensure our polyurethane wheels perform under pressure. Our technical team has developed solutions that offer distinct advantages:

Unmatched Wear Resistance & Longevity: We formulate our polyurethane to withstand high-frequency starts, stops, and constant movement, ensuring a significantly longer service life than standard rubber or plastic wheels.

Precision Performance under Heavy Loads: We ensure that our wheels maintain their structural integrity even under maximum rated loads, which is crucial for the high-precision navigation required by AGVs.

Superior Floor Protection: We manufacture wheels that minimize surface marking and damage to warehouse flooring, protecting your facility investments.

Hydrolysis Resistance: We utilize advanced additives to prevent chemical breakdown, ensuring our wheels remain durable even in high-humidity or varying temperature environments.

Application: Tailored PU Wheels for Warehouse Automation Systems

Our polyurethane wheel are precision-engineered to meet the specific mechanical requirements of your automated systems:

AGV, AMR, & Mobile Robotics: We deliver high-performance drive and load-bearing solutions tailored for everything from efficient linear transport to complex omnidirectional mobility.

ASRS Stacker Cranes, Shuttles, & Transfer Carts: Designed for rigorous 24/7 demands, our assemblies feature keyway-mounted drive wheels and travel wheels for long-distance durability and track stability.

Automated Sortation Systems: Our specialized wheels for crossbelt sorters and general guide/support applications ensure precise track alignment and movement stability,

directly maximizing system uptime.

Custom Urethane Wheels for Automated Warehouse Requirements

As a specialized OEM manufacturer, we understand that every robotic platform has unique design requirements. We offer comprehensive customization options to meet your specific project goals:

Hardness Customization: We provide a range of Shore hardness options to perfectly match your floor conditions and load requirements.

Dimension Precision: We machine all wheels to tight tolerances to ensure seamless integration into your existing drive assemblies.

Specialized Configurations: Whether your application requires specific profiles or specialized tread patterns, we deliver solutions tailored to your unique mechanical design.

Ready to enhance the performance of your warehouse robots? Contact us today to discuss your polyurethane wheels. We are prepared to provide the technical expertise and custom manufacturing services you need to keep your warehouse moving efficiently.