

Robotics OEM Overcomes Material Performance Limitations

— THE PROBLEM

A robotics OEM required a molded component with a specific combination of mechanical performance characteristics that could not be met by off-the-shelf materials. The application demanded controlled stiffness, predictable wear behavior, and resistance to environmental exposure. Standard urethane grades and alternative plastics either lacked durability or introduced unwanted tradeoffs in performance, limiting system reliability and design flexibility.

— THE SOLUTION

MPC leveraged its custom polyurethane formulation capabilities to develop a material tailored to the application's performance requirements. Through collaboration with the engineering team, MPC adjusted durometer, additives, and formulation chemistry to balance stiffness, wear resistance, and long-term stability. Prototype components were produced and evaluated to validate material behavior before full production.

— THE RESULT

The custom formulation delivered consistent performance where standard materials had failed. The robotic component met durability and performance targets without requiring design compromises, enabling the OEM to move forward confidently into production. The ability to tune material properties directly to the application reduced redesign cycles and improved overall system performance.

MARKET

Industrial

AMR and Automation

SOLUTION

Custom Formulation

Wear Resistance

PRODUCT

Custom Molded Components

TECHNICAL SPECIFICATIONS

MATERIAL

Custom polyurethane formulation

TUNED PROPERTIES

Durometer, additives, chemistry

PROCESS

Cast molding

VALIDATION

Prototype components, pre-production evaluation

Tell us what you're working on.

One partner — from concept to production — for performance that can't stop.

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