### Dorman Products Reduces Travel Waste by 16% with Autonomous Mobile Robots

Decreasing travel time to enable pickers to pick faster and more efficiently

Since 1918, Dorman Products, with multiple manufacturing and distribution sites in the United States, has served as one of the automotive aftermarkets top pioneering problem solvers. The company has released thousands of parts and components that repair professionals, auto enthusiasts, and owners could once only buy from original equipment manufacturers. Always innovating, Dorman provides new and advanced solutions to individuals and businesses for their automotive maintenance needs.

In the same way, Dorman has forged efficiencies at its multiple manufacturing and distribution sites; it prides itself on the innovations it has brought to its facilities with a spirit of continuous improvement, often inspired by its employees, which the company celebrates as its “contributors.”

Recently Dorman looked at the thousands of miles traveled inside its warehouses by contributors, either on foot or using material handling equipment (MHE) such as forklifts and pallet trucks, to see if autonomous mobile robots (AMRs) could reduce time spent traveling and enable contributors to dedicate more time to valued tasks such as stock picking.

### SUMMARY

**Customer**
Dorman Products

**Industry**
Manufacturing and Distribution

**Challenge**
Eliminate travel waste and enable contributors to dedicate more time to valued tasks such as stock picking

**Workflows**
- Shipping Lane Delivery
  - Freight1500 Pallet
- Outbound Production/Picking
  - CartConnect100

**Business Outcomes**
- Accelerated material movement workflows
- 16% reduction in the distance contributors travel within the warehouse
- 16% improvement in pick rate and in revenue per labor hour
- Enhanced warehouse delivery accuracy
- Improved product delivery times
- Easily created and customized workflows in-house and in real time with drag and drop software
Motivation: Getting Auto Parts to Customers Even Faster while Enhancing Productivity

“Getting products to our customers on time is key to our business model,” says Ryan Ogden, Operational Excellence (OpEx) Manager at Dorman Products. “If we can’t get parts to them on time, the probability they’re going to look for Dorman again is low.”

Meeting customer needs meant Dorman had to look for ways to become more efficient outside of just bringing in additional headcount labor and looked to AMRs to improve product movement, decrease order cycle times and reduce time contributors spent walking within the warehouse or using material handling equipment.

“The number one waste my team always identifies is travel,” says Ogden. “If you add up the amount of walking that they do any given month, it’s over 15,000 miles.”

“Installing automation, specifically AMRs to reduce order cycle times was critical,” Sandra Grogg, an OpEx team member states. “With AMRs, we can tackle some of that travel waste and bring efficiency to how we move products through the building.”

“Flexibility was also key,” Ogden says. “The ability to implement AMRs, or any automation for that matter, without disrupting the process and dissatisfying customers was essential.”

Robots to the Rescue

To automate material movement in its 750,000-square-foot Warsaw, Kentucky facility, Dorman deployed both the Freight1500 and CartConnect100 AMRs.

The Freight1500 handles full pallet moves. Pickers build pallet orders and when an order is complete, it is dropped on a pallet transfer station. From there the AMR picks up the pallet and delivers it to the shipping dock for trailer loading.

Dorman’s production department also benefits. “The 1500 will come to production with a payload and leave production with a payload saving travel time on both sides of the process,” says Ogden.

For smaller e-commerce orders, the CartConnect 100 is used. Pickers offload orders to the AMR which head directly to Dorman’s rush processing area for shipment.

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Ryan Ogden, Operational Excellence (OpEx) Manager, Dorman Products
“Deploying the Freight1500s and CartConnect100s has helped us to decrease travel time and enable the pickers to pick faster and more efficiently,” says Troy Murphy, OpEx analyst and computer-aided design (CAD) specialist.

“We are freeing our contributors from the thousands of miles a year they were spending moving products from one point to another.”

Ease of AMR Deployment, Plus Drag and Drop Programming

Implementation happened in a phased approach and deployment was simple. Grogg put it this way: “We uncrated the robots, mapped the facility, loaded them into the map, and they were ready to go.”

Dorman started small allowing its contributors to see how AMRs could eliminate travel and that went a long way. “They were able to see it’s not AMRs happening to me, I’m happening with the AMRs,” says Grogg.

“The software is very easy to use,” says Troy Murphy, OpEx analyst. “It’s literally drag and drop anytime you want to build or change a workflow.”

16% Reduction in Travel Time: “Now I Call the Robot”

When talking about reducing travel waste, Ogden highlights precise figures. “We have already reduced that by 16% and we are planning on going after the rest by creating new workflows for our AMRs.”

Another measure comes from Patricia Justis, a distribution specialist who assembles kits to order (KTOs). “I wore a step counter to work one day and tracked 30,000 steps,” Justis remarks. “Now, when something is ready to be moved, I call the robot. I can stay at my station and continue working, letting the robots do the lifting.”
16% Improvement in Pick Rate and in Revenue per Labor Hour

With contributors walking and driving less, they can pick more, boosting pick rates and revenue per hour.

“Our AMRs are eliminating almost 112 miles per day of travel waste,” Grogg says. “We’ve seen a 16% improvement in our pick rates and a 16% improvement in our revenue per labor hour. We’ve seen benefits on all levels of our KPIs.”

Enhanced Accuracy and Less Waiting

Another benefit has been enhanced accuracy in loading dock deliveries. While inaccurate deliveries were an uncommon problem for Dorman, “we have seen a decrease in misplaced product on the dock,” Grogg affirms. “Prior to our AMRs, which drop precisely where directed to, an operator on a piece of material handling equipment (MHE), might forget the exact delivery location, or they might see that a stage is overflowed and drop it one or two stages over. This doesn’t happen with our AMR deliveries.”

Angela Fields, a kitting clerk, says her productivity has increased. “With AMRs, we have a dependable and constant flow of materials, all of which benefit our customers.”

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Angela Fields, Kitting Clerk, Dorman Products
An Exciting Future

With its culture of innovation and unrelenting focus on continuous improvement, Dorman Products demonstrates there are few limits to how AMRs can be integrated into workflows to boost productivity and value.

“When we were looking for an automation partner, we selected Zebra because of the ability to rapidly deploy,” Ogden comments. “We looked at the waste within our existing process and said if we can improve that, we’ll see improvement overall. Start small and scale.”

Grogg agrees. “The sky’s the limit. The only thing holding you back from what you can make these AMRs do is your imagination.”

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