



UMH[®]

How to Reduce Labor Costs and Increase Throughput with Shuttle Automation

**A Practical Guide to Modernizing
Your Warehouse with Pallet Shuttle Technology**



What's Inside?

- **The Problem with Traditional Storage Methods**
- **The Solution: Pallet Shuttle Automation**
- **The Numbers: ROI Case Study**
- **How It Works: UMH is here to help**
- **Bonus: ROI Calculator**
- **Your Next Steps with UMH**

Introduction: The Pressure on Today's Warehouses

**Labor shortages. Rising wages.
Skyrocketing demand for faster fulfillment.**

If you're running a warehouse or distribution center, you're feeling it. Manual processes, forklift congestion, and outdated storage systems make it hard to scale—and harder to stay competitive.

That's where pallet shuttle automation comes in!

This guide will show you how 2D and 4D shuttle systems can help you:

- **Reduce** labor dependency
- **Increase** pallet throughput
- **Maximize** your storage density
- **Improve** worker safety and reduce forklift traffic

We'll break it all down: the tech, the benefits, *real results* and, how to get started.





The Problem with Traditional Storage Methods

Most warehouses still rely on manual put-away and retrieval using forklifts. It works—but not without major drawbacks:

- Heavy labor requirements → *More* shifts, *more* costs
- Forklift congestion → Bottlenecks and *safety* hazards
- Underutilized storage space → *Wasted* cubic footage
- Inconsistent performance → Human error *slows* things down

As demand grows and skilled labor becomes harder to find, this model becomes less sustainable.

The Solution:

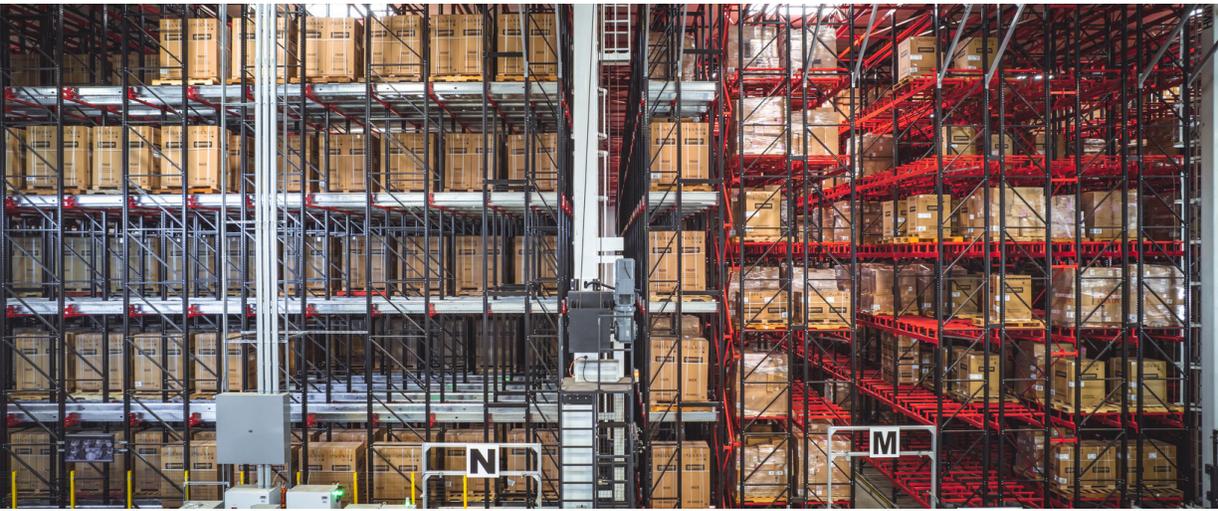
Pallet Shuttle Automation

Pallet shuttles are semi- or fully automated vehicles that move pallets inside high-density racking systems. Operated remotely or integrated with your WMS, they eliminate the need for forklifts to enter the racking structure.

Two Types of Shuttles:

- **2D Shuttles:** Move in and out of a single lane. Ideal for deep lane storage and fewer SKUs.
- **4D Shuttles:** Move in, out, and side-to-side. Best for complex systems and high SKU variety.





The Results: Real ROI from Real Facilities

Let's look at what happens when you implement a shuttle system.

Case Study Snapshot:

A 100,000 sq. ft. cold storage facility upgraded to 4D pallet shuttles:

- Labor costs dropped by 28% in the first 6 months
- Throughput increased by 45%, enabling faster outbound fulfillment
- Forklift travel was reduced by 70%, improving safety and efficiency
- Storage capacity grew by 30% without expanding their footprint

The Bottom Line:

How Shuttles Save You Money

- 1. Labor Reduction:** Fewer forklift drivers needed for internal rack movement. Lower training, turnover, and safety costs. One operator can control multiple shuttles
- 2. Faster Throughput:** Shuttles move continuously and efficiently. Reduced idle time = more pallets moved per shift.
- 3. Optimized Space Usage:** Denser racking = more product in the same footprint. Flexible slotting improves inventory management.
- 4. Improved Safety:** No forklifts entering racking = fewer accidents. Fewer touchpoints = less product damage

How Implementation Works

Site Evaluation: UMH experts assess your site, inventory flow, and challenges.

Design & Planning: We propose a tailored solution, including racking and shuttle quantity.

Installation & Training: Minimal disruption, full integration, and operator training included.

Ongoing Support: We stick with you—training, maintenance, and scaling as you grow.



BONUS!

Estimate Your ROI in 3 Steps

Use this quick framework to see your potential gains:

1. Current annual labor cost for forklift operators

Example: \$600,000/year

2. Estimated reduction with shuttles

Common range: 20–40%

3. Annual savings:

\$600,000 × 30% = \$180,000 saved annually

Now factor in increased throughput, improved safety, and storage gains—and the value only goes up.



Ready to Automate? Take the next steps!

Pallet shuttle automation isn't the future—it's the now.

Whether you need to move more pallets, store more product, or reduce labor reliance, UMH can help you build the right solution.

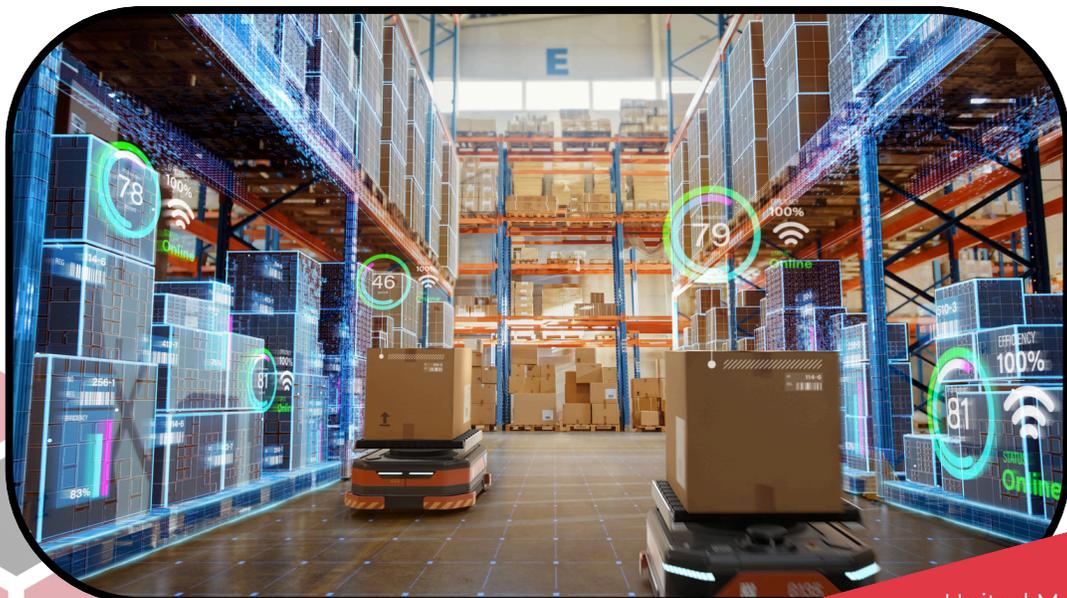
Let's build your warehouse!

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Schedule your free shuttle consultation today and take the first step toward a smarter, faster facility.



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