

IntelliFinishing

**The Most Flexible Paint Systems
in the Industry**

www.intellifinishing.com

*Automated, Flexible
Liquid and Powder
Coating Systems*

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Complete Finishing Systems

IntelliFinishing materialized from more than eighty years combined experience in paint finishing and coating systems across multiple industries, working with some of the biggest names in the business. We have created finishing systems that use revolutionary modular conveyance allowing for maximum control, quality and efficiency.

This innovative conveyance technology differs from other conveyors by allowing load bars to move independently, both forward and backward, with individual speed control for each section. Each process area is designed to act independently for maximum flexibility and quality output while saving valuable floor space.

Our automated paint systems include all aspects of the finishing and coating process including:

- Unique Conveyor
- Washers
- Ovens
- Controls
- Powder Booths
- Liquid Coating Booths
- Platforms
- and more...

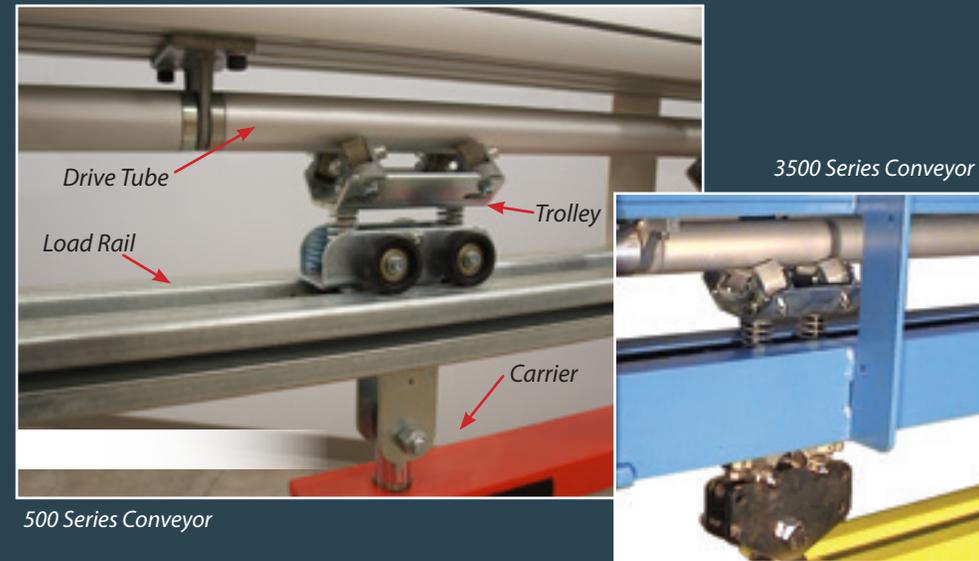


3500 Series Conveyor – 20,000lb+ weight

Conveyor Overview

The backbone to the IntelliFinishing design is the conveyor with friction driven trolleys propelled by the spinning tube paired with smart controls. This technology provides ultimate flexibility and efficiency allowing carriers to:

- Move both forward and reverse
- Stop in a zone or within a process
- Move at variable speeds within zones
- Change processes or destinations of products with immediate system response



500 Series Conveyor

3500 Series Conveyor

Conveyor Capabilities

The capabilities of the conveyor allow for the following system features:

- Reduced footprint (one project resulted in a 43% reduction)
- Safer for Load/Unload, Masking, Painting, Inspection, etc.
- Responsive to Lean process flow
- Part recipes can vary process times for some parts without affecting process times for other parts
- Highly configurable and modular for future expansion and/or process changes



500 Series Conveyor – up to 1,000lb weight

Construction

The IntelliFinishing conveyor is a bolted together floor (or overhead) supported system. Due to the bolt together construction, this conveyor can be easily modified and moved and can be installed in half the time of conventional conveyor systems. We offer a variety of conveyor models with the ability to handle different weight categories which enables us to further customize a system to fit your specific process needs.



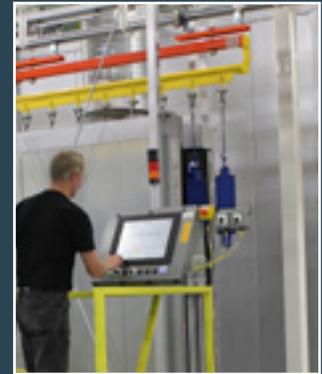
Modular construction allows for installation in half the time of conventional systems

Smart Controls

With the addition of recipe-based controls, parts are grouped by part families, with the recipe dictating the process times. Each carrier may be processed in a different way as they move through the system. Another unique feature of the IntelliFinishing system is the ability to change speeds in the wash or oven allowing for extra time in a stage for extra processing.

The smart controls in an IntelliFinishing system are easy to run, allowing maximum efficiency and providing the following:

- Track and record part data for product validation and analysis
- Run dissimilar products back to back for Lean product flow
- Scale production up or down without sacrificing quality
- Share data with ERP or scheduling systems
- View work instructions, like masking or labeling, from any HMI station or from any computer with web access
- Control each component of the system independently according to the part recipe
- Adjust component variables, like wash time, wash pressure, oven temperature, oven air turns and oven part time depending on the part recipe



HMI station

Maintenance

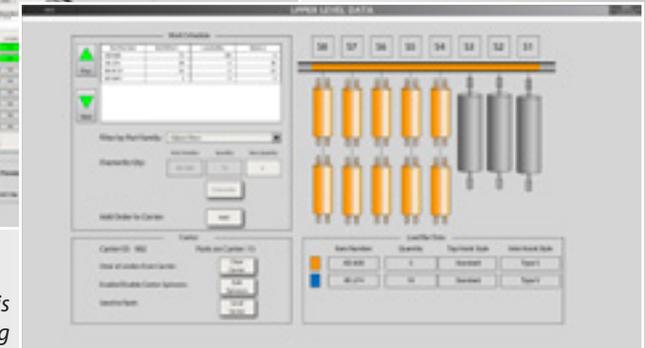
Unlike power & free or monorail systems, the IntelliFinishing conveyor does not use a chain to move the parts. Dripping oil, greasy take-ups and chain stretch are eliminated with our system, giving you a clean, quiet and efficient minimal maintenance conveyor.

IntelliFinishing provides an overall system simplicity making it easy to run and maintain. Our systems have approximately 75% less maintenance than traditional power & free or monorail conveyor systems.

An IntelliFinishing system is designed to a different standard, having 99% uptime. Many traditional systems have more than 5 to 20%, or more, downtime.



View your complete system and find the location of carriers easily



Part hanging strategy is displayed for proper loading

Reduce Labor Costs

Manufacturers are constantly looking for ways to reduce labor costs while maintaining quality and throughput. In some cases, an IntelliFinishing system reduces total cycle time, number of operators and overhead costs.

Reduce 3 Shifts to 1



One of our customers was able to reduce 3 shifts to 1 by installing an IntelliFinishing automated finishing system. The efficiency and lean capabilities of our system cut the total production cycle time in half compared to their previous monorail-style paint system.

Reduce Overhead Labor Costs

An IntelliFinishing system can reduce direct labor and related overhead costs including:

- Injuries
- Turnover
- Training
- Absenteeism
- Workers' Compensation Insurance

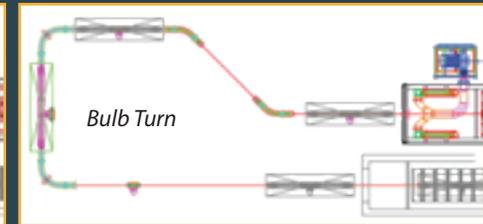
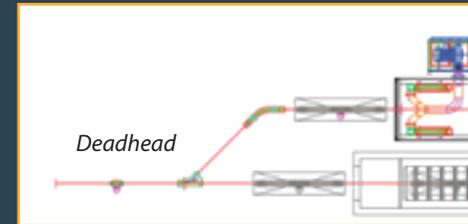


Lifts reduce the risk of injuries

Deadheads Offer Flexibility

Deadheads can be added to your complete finishing system to add flexibility in almost all aspects of your paint system. The addition of deadheads can offer nearly unlimited layout options.

You can significantly reduce required floorspace by adding a deadhead to a finishing system. The turn on a traditional system running large parts on a long load bar requires a large bulb turn, taking up a large portion of floorspace. On an IntelliFinishing system, a deadhead can be added to re-orient the part and direction of travel in a much smaller space.



We have designed systems which expanded the conveyor from fabrication to the finishing process and directly to shipping. Because our system has independently controlled zones, the section of conveyor from finishing to shipping was designed to move faster through the non-value added areas.



Floor Space Savings

Layouts for IntelliFinishing systems frequently save space – up to a 43% reduction compared to traditional conveyors.

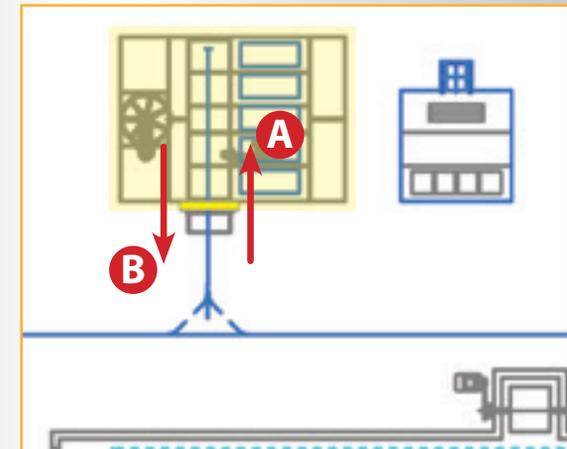
How do we reduce floor space?

- Chainless conveyor requires no extra space for return chain
- Conveyor moves forward and reverse allowing for spurs and deadhead of parts to masking area, load/unload or into a process
- With long parts, shuttles may be used instead of making large radius turns
- Based on the process time, zones of the conveyor can run at faster or slower speeds instead of at the slowest speed

What is a Deadhead?

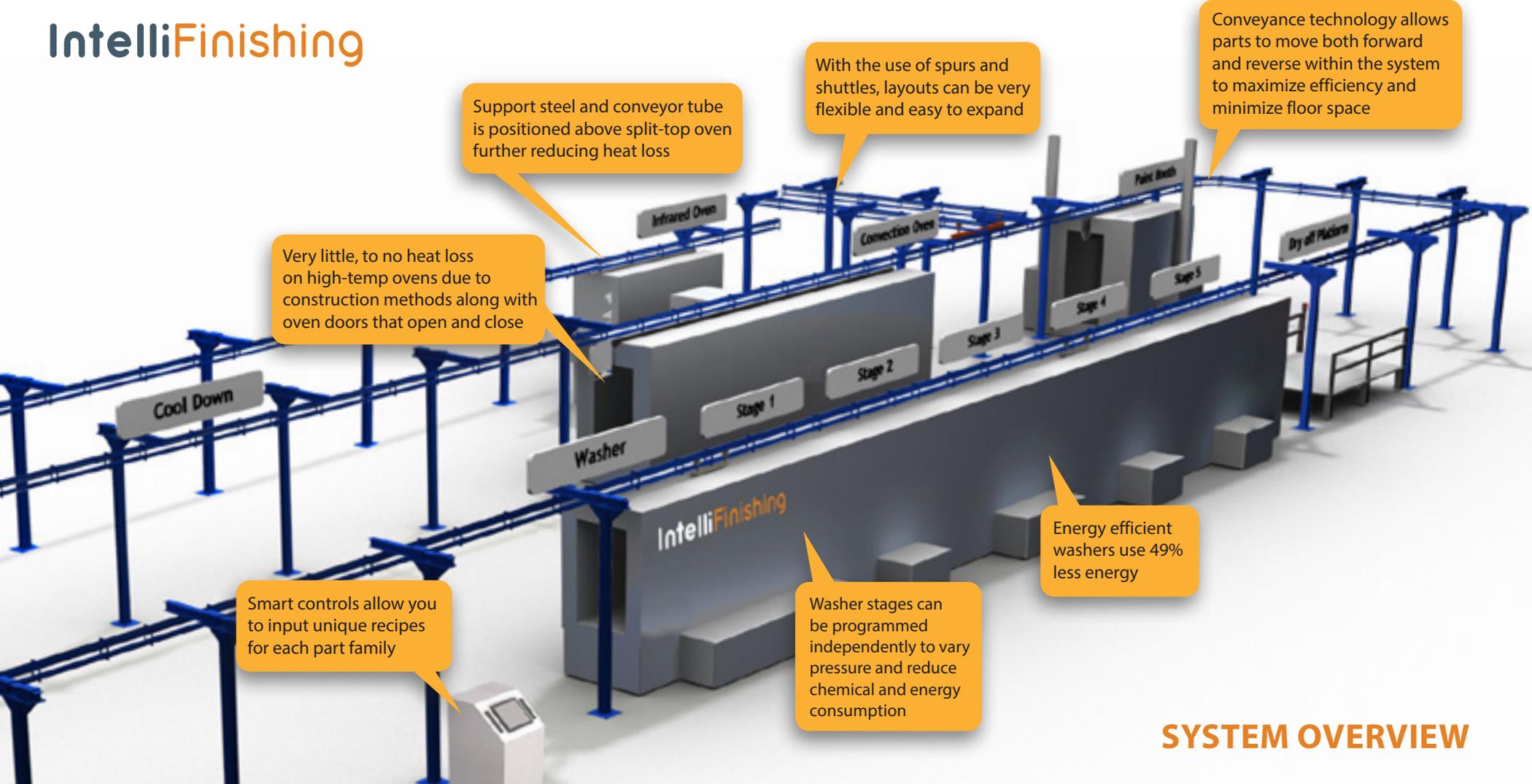
A deadhead is similar to a u-turn except the carrier doesn't actually make a turn; instead it just reverses to move in the opposite direction.

As seen in the diagram, parts move into the paint booth in direction A, then reverse directly out of the paint booth in direction B.



Deadhead in the Paint Booth

IntelliFinishing



Support steel and conveyor tube is positioned above split-top oven further reducing heat loss

With the use of spurs and shuttles, layouts can be very flexible and easy to expand

Conveyance technology allows parts to move both forward and reverse within the system to maximize efficiency and minimize floor space

Very little, to no heat loss on high-temp ovens due to construction methods along with oven doors that open and close

Smart controls allow you to input unique recipes for each part family

Washer stages can be programmed independently to vary pressure and reduce chemical and energy consumption

Energy efficient washers use 49% less energy

SYSTEM OVERVIEW

+ Layout & System Flexibility
"We have traditional finishing systems at our other plants and we chose IntelliFinishing because it offers flexibility for our lean environment and our changing processes."

+ Easy to Use
"I cannot believe how much better this system has been compared to our old system [traditional power & free]. The ease of operation and dependability has been excellent."

+ 99% Uptime
"We are in the process of taking advantage of extreme line density, allowing us to run the line harder for a shorter period of time."

+ 75% Less Maintenance
"The system runs so efficiently, our output per hour is almost twice what it used to be."

Our System is LEAN

The most significant area of waste reduction is the reduction of the number of employees it takes to run an IntelliFinishing system. One customer went from three shifts to one when replacing a monorail system. From maintenance to forklift operators to station operators to data input, an IntelliFinishing system decreases the number of employees that are necessary to run a finishing system.

Compared to traditional systems with waiting waste, an IntelliFinishing system increases efficiency and throughput by eliminating production gaps, moving bottlenecks and downtime. Conveyor is approved by automotive manufacturers which require at least 99% uptime.

Defects, overprocessing, and overproduction are significantly reduced with recipes, independently controlled zones, and no dripping lubricants. The chainless conveyor system teamed up with smart controls and recipes result in consistent quality.

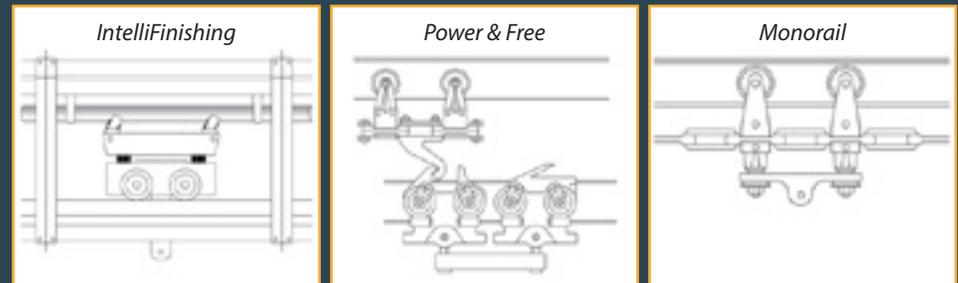
A decrease in energy and motion waste are achieved with a conveyor that runs only when a carrier is present, processes that run only when a carrier is present and the use of variable frequency drives (VFD) for conveyors and process equipment. Flexibility of an IntelliFinishing layout may also allow for placement of stations for better utilization of employees and floorspace savings. One IntelliFinishing customer replaced nearly 3,500 feet of chain with 2,500 feet of conveyor track.

IntelliFinishing vs. Traditional Conveyor Systems

Tired of having a paint finishing system that can't be customized to suit your needs? IntelliFinishing offers you a flexible solution that is anything but traditional.

The technology that makes IntelliFinishing revolutionary is its unique conveyor system, smart controls and flexible design. Our conveyor technology allows parts to move both forward and backward within the system to maximize efficiency and minimize floor space. The control system allows you to input unique recipes for each part family and reduce chemical waste and energy usage by turning off the modules and conveyor when they are not in use. Not to mention, complete system setup can result in up to a 43% smaller footprint.

An IntelliFinishing system installs in half the time of traditional monument systems. All IntelliFinishing modules and components are built and prepared off-site and delivered in whole pieces, so whether we're replacing your old system or building a new one, the install will be completed in a minimal amount of time, getting your business up and running as quickly as possible.



History & Experience

IntelliFinishing began offering complete finishing systems in 2010, teaming unique conveyance and advanced controls, data handling and modular ovens and washers. Systems have ranged in project size from \$1.2 million to \$8 million.

IntelliFinishing's parent company, Kasa Controls and Automation, was established in 1974 and has performed many conveyor and controls integration projects for the automotive industry, along with other projects for OEM equipment providers.

Top-Rated Finishing
System Provider:



Member of:



	IntelliFinishing	Power & Free	Monorail
Low initial cost			✓
Moves through high-temperature oven	✓*	✓	✓
More layout & process options	✓	✓	
Stopping conveyor does not affect other processes	✓	✓	
Minimal maintenance	✓		
Make changes more easily	✓		
Minimizes acceleration & deceleration	✓		
Ability to go in reverse	✓		
Virtually noiseless	✓		

* requires split-top oven

Project: Small Parts Manufacturer

Carrier Weight: 750 lbs.
Type: Liquid

- More than 20% reduction in equipment costs over traditional conveyors
- Multiple deadheads resulting in reduced floor space
- Removable loadbars increase throughput and efficiency
- 3-stage wash with RO (reverse osmosis)
- Eco-friendly nanotechnology improves paint adhesion
- 2 FANUC robots (1 prime, 1 top-coat)
- 2K (two coat) paint mixing
- Dual-lane cure oven (each lane can move at speeds independent of the rest of the line)
- Konnection software tracks & records data for product validation & analysis

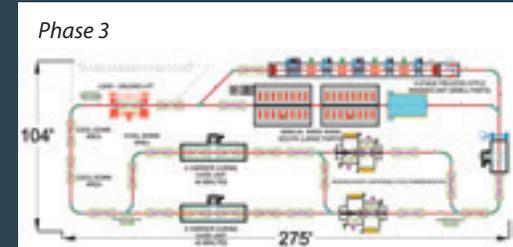
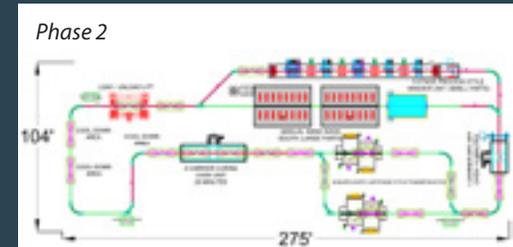
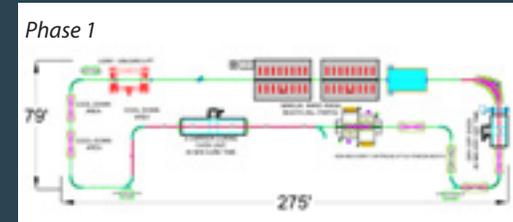


Robotic paint application is programmable for part specifications & requirements and provides a consistent, quality finish to every part

Project: Industrial Fan Manufacturer

Carrier Weight: 3,500 lbs.
Type: Powder

- Phased approach
As production increased, the second and third phases were installed to increase capacity and to automate the wash process, while keeping the manual system for oversized parts.
- Lean
The phased approach allowed the company to delay the spending of approximately \$2 million. System is flexible for changing processes and production volumes.
- Future expansion to point of use – from fabrication directly to finishing to shipping – reducing motion and transportation waste.



Dual-lane cure oven allows parts of different sizes move at different speeds during the curing process

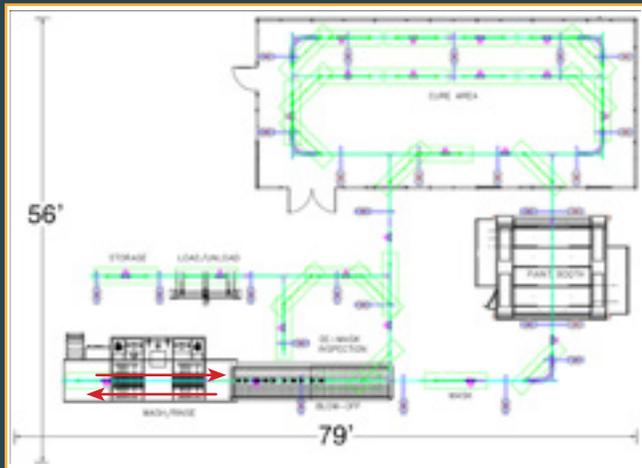


Lifts are frequently used for IntelliFinishing systems for ergonomic loading and unloading of parts

Project: Raytheon/Defense

Carrier Weight: 750 lbs.
Type: Liquid

- Complete system with CARC routing and data tracking
- Small footprint
- Less than 75 decibels
- Reduced energy consumption
- Parts tracking at any point in the system
- Data logging to ensure specifications have been met
- Lift for loading and unloading of parts



Reverse motion into and out of the process washer provided a unique solution within a small footprint

Project: Large Equipment Manufacturer

Carrier Weight: 10,000 lbs.
Type: Liquid

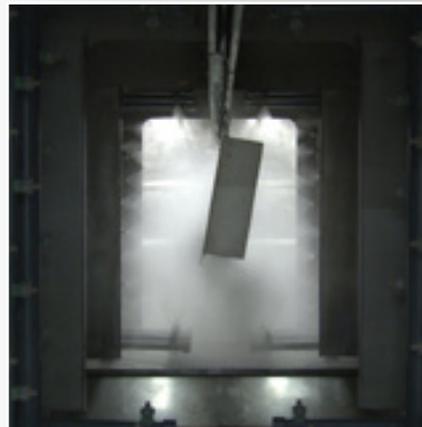
- Reduced floor space requirements by 43% with shuttle (no large radius turns, no return chain)
- Constructed smaller building



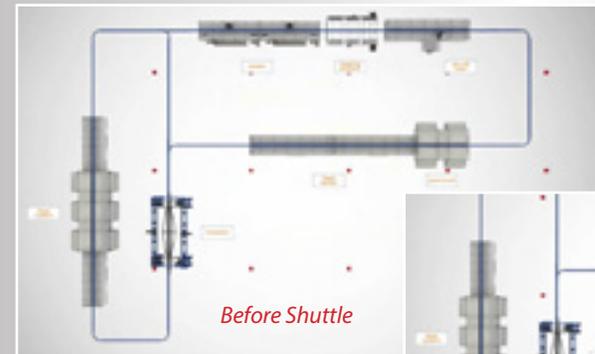
Space saving shuttle eliminates need for large radius turns

No other automated finishing system would fit the available space

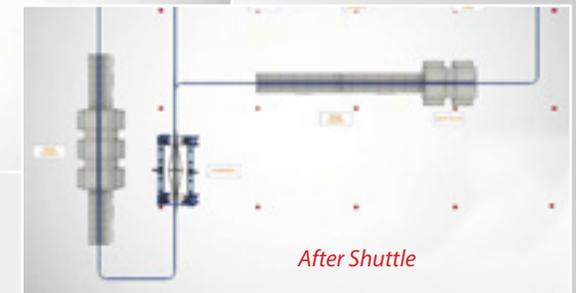
Removed 25 employees from a hearing conservation program



Insulated washers provide a 49% reduction in energy usage



Floor Space Usage:
Before shuttle 40,400 sq. ft.
After shuttle 17,400 sq. ft.



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