ADAPTABLE CONVEYOR SOLUTIONS:

HANDLING TOTES AND TRAYS DIRECTLY ON THE LINE

SAFE AND EFFICIENT MATERIAL HANDLING SOLUTIONS FOR YOUR PRODUCTION LINE

GLIDE-LINE™

When handling totes and trays, the application often calls for a combination of manual and automated assembly processes taking place at different stages of the production line. Manufacturing complex products like automotive components or medical devices could have multiple stages that require interfaces with feeding systems, controlled stops for operator interactions, smooth starts that prevent product damage, and seamless transitions between production stages.

Any conveyor design you select should address all of these elements while also improving operator safety, reducing the cost of ownership, and enabling automation at scale. With totes and trays, a stable frame with controlled stops and starts is essential. You may also have to deal with obstructions, elevation changes, product accumulation requirements, and changing the orientation of the totes or trays.

In this eBook, we'll discuss the complex application challenges of handling totes and trays, and demonstrate how you can solve them with Glide-Line's flexible, fast, and infinitely configurable designs.

IMPROVE COMPLEX TOTE AND TRAY HANDLING WITH EXPERT CONTROL THROUGHOUT THE ASSEMBLY LINE

Totes and trays are frequently used in the manufacturing sector to facilitate the efficient handling and transportation of products through processing stages. They are the standard method to carry or convey irregularly shaped parts that cannot be placed directly on the conveyor. Handling containers directly on a conveyor line presents unique challenges to manufacturers.

Some of these include:

HANDLES - The container may require handles for manual transfers from one conveyor to another

DEPTH - The dimensions of the container could make it difficult to place items into - or take out of - the tote

WEIGHT - Heavier products may require sturdier tote designs that will increase the total weight the conveyor needs to carry

SPEED - Controlling acceleration and deceleration of the line is essential to prevent bump stops and sudden starts to protect products against damage

SAFETY - Where manual operators are involved in the assembly, you need to consider the line controls and ergonomics of workers

PARTS SHORTAGES AND SUPPLY CHAIN CONSTRAINTS WILL CONTINUE WELL INTO THE NEXT YEAR, WITH COSTS INCREASING, DELIVERIES DELAYED, QUALITY DECLINING, AND CLIENTS BEING LOST.

SOURCE: WWW.PLANTENGINEERING.COM

Designing a system that overcomes these challenges is possible with the right manufacturer. More broadly, the business benefits the solution offers should also inform any design decisions you make today. Factors like scalability, expansion, automation, and integration should factor into your system evaluation.

HERE ARE FIVE WAYS YOU CAN SOLVE YOUR APPLICATION CHALLENGES WITH A GLIDE-LINE SYSTEM DESIGN

1 CONVEYOR DRIVES, CONTROLS & ZERO CONTACT ZONED CONVEYORS

One of the parts that everyone is struggling to find are chipsets and semiconductors required for AC drives. The variable frequency drives (VFDs) used in most conveyor designs aren't easy to source, forcing manufacturers to look for alternative solutions that can perform according to the same design parameters these components offer.

Choosing a solution that provides the drive control you need that doesn't require a VFD or servo can help speed up the lead time when sourcing the system, eliminate concerns about spares, and reduce overall operating costs.

Glide-Line's Zero Contact Zoned Conveyors use DC drives and controls to:

- Provide smooth starts and stops while maintaining the required friction to move totes and trays on the belt
- Control the movement of each product pallet across different zones and prevent product collisions that lead to damage
- Design a conveyor system with expandable sections that can adapt and grow with your manufacturing operation

Learn more about our Zero Contact Zoned Conveyors here

2 TRANSFERS AND ELEVATION CHANGES

Moving totes and trays through different production stages may require vertical transfers, traffic control systems, or customized solutions to accumulate products. Integrating these functions with a tote or tray conveyance system could increase the physical footprint, create bottlenecks, or obstruct workers from accessing products.

Eliminating curved direction changes, and automating vertical transfers are all possible with Glide-Line's range of custom standard solutions.

The Glide-Line 360 product line provides you with expert material handling functionality including:

- A customizable solution that integrates with all other Glide-Line conveyors to move products efficiently through the facility
- 360° movements of product pallets including elevation changes and handovers to other conveyor lines for storage or accumulation
- Smooth handovers that don't require additional space in the facility, allowing you to go over, under, or around other production lines

You can see why we developed the Glide-Line 360 product range in this video

3 TOTE AND TRAY MANIPULATION

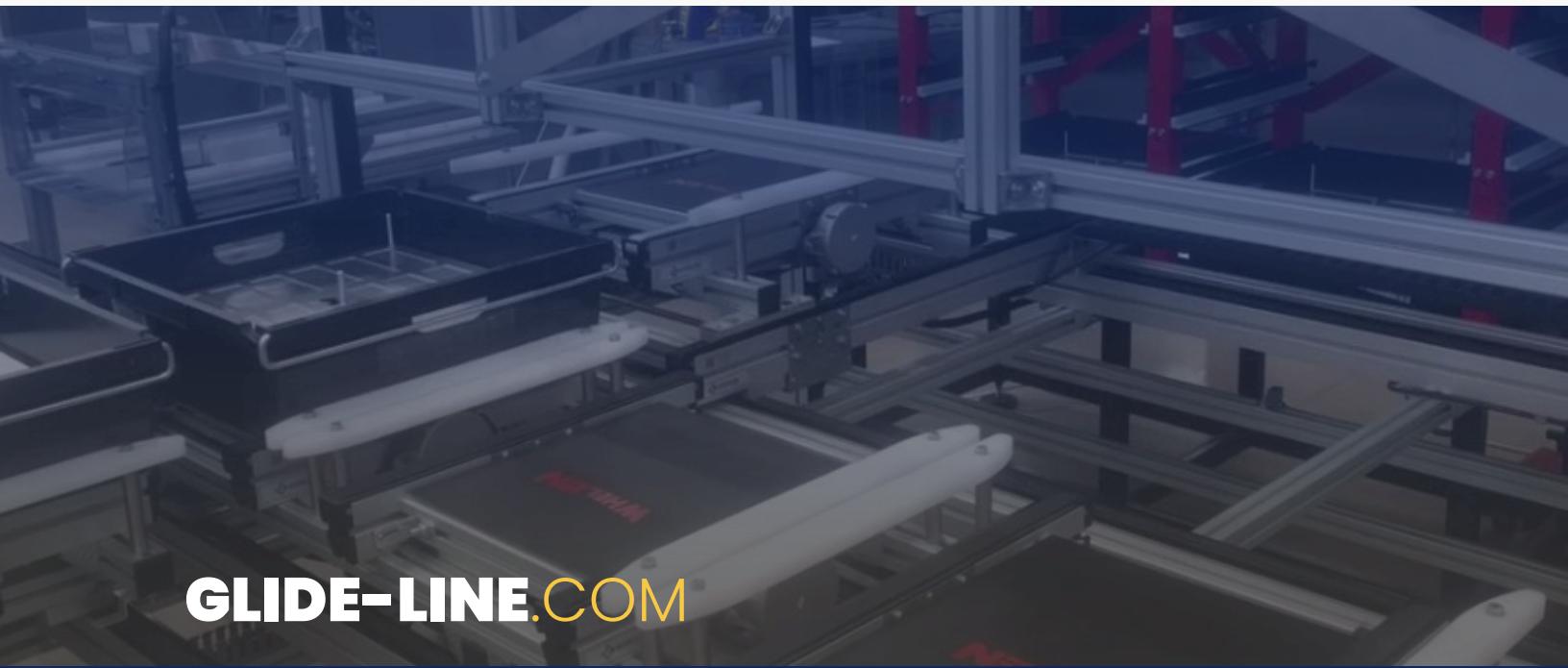
When workers interact with containers on the production line, you may have to manipulate the item to provide better ergonomics and ensure safe handling. In-line actuators could lift, lower, angle, or orientate totes according to the process requirements.

Manipulating totes with bypass stations, sorting shuttles, accumulation buffers, or angled pedestals is easy when you integrate these systems with a Glide-Line conveyor.

To provide for the safe and efficient handling of totes, Glide-Line offers:

- Transfers and merge solutions that control the flow of products between process stages
- Lifts and pedestals that enable workers to access products at the right height and orientation when performing manual operations
- Material handling systems that can shuttle, merge, divert, accumulate, sort, stack, and store pallets according to your precise requirements

To discover the latest Glide-Line product manipulation capabilities, visit our customized standard solutions gallery



4 EXPANSION AND AUTOMATION

Expanding operations to meet future production demand should be a priority when choosing a tote and tray-handling conveyor. Older systems may require more effort to automate or expand when your business needs change. Modular sections allow you to configure a new line as and when required, with limited disruptions to operations.

Conveyance technologies have evolved drastically over the last two decades. Deploying a Glide-Line solution now will ensure you can grow operations, increase automation capabilities, and enable precise control over every item that moves through your facility.

Glide-Line makes automation easy with:

- Standard offering of conveyors and devices that integrate and interface with other manufacturing control solutions
- Modular and configurable solutions to adapt your conveyor line according to your current and future needs
- Different types of actuators, drives, belts, and control systems allow you to automate processes quickly

Here is how Glide-Line helps make automation assembly easier, quicker, and scalable

5 LEAD TIMES AND SYSTEM DESIGN

Another challenge isn't just finding the solutions that can help you solve your unique application requirements, but sourcing it quickly. Once you know what's possible and what you need to achieve your production goals, you need to design and build the system to maximize ROI and minimize disruptions.

Application engineers have to be able to configure a solution, test its design in-context, and optimize the product flow around any existing infrastructure. Having a tool available to perform these activities, within existing facility models, will speed up the lead time, ensure accurate costing, and provide management with detailed information about the new solution.

With Glide-Line's IMPACT! Configurator, you can:

- Quickly assemble a system design using a standard library of conveying components
- Place, move, and replace equipment within your existing SolidWorks CAD models
- Study different scenarios, find accurate pricing, and make changes quickly when you have to expand or adapt your design

Download our free IMPACT! design software and start designing your perfect tote and tray-handling conveyor today

FINAL THOUGHTS

Glide-Line provides precise material handling systems that can scale with your production operations. For the fast and efficient movement of totes and trays, our timing belt conveyors give unmatched flexibility with the shortest lead times in the industry. You can assemble a system that solves complex application challenges and start your journey toward automated operations today.

Glide-Line is here to help make your tote and tray-handling conveyor project fast, flexible, and easy. Contact us to find out more.

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