



GLIDE-LINE™

**OPTIMIZING THE
ORIENTATION,
ACCESS, AND
PRESENTATION OF
LARGE PRODUCTS
DURING YOUR
ASSEMBLY
OPERATIONS**

To increase the throughput of your manufacturing process for large assemblies, you'll need a conveyor system design that enables you to optimize the orientation, access, and presentation of your products. To automate your material handling, you must have innovative devices that integrate seamlessly with your conveying solution.

There are many situations in which conventional roller conveyors are suitable for manufacturing operations. However, they are not ideal when conveying wide or awkwardly sized products, especially when you are looking for a gentle handling conveyor solution. Traditional conveying systems may not be economically viable when you need to orientate, present, or access large parts at specific process stations in your facility.

To optimize the orientation, access, and presentation of products like appliance parts, glass panes, sheet metal assemblies, solar panels, and other delicate products, you need a gentle, flexible solution. This solution should also prevent damage while conveying, transferring, rotating, or lifting indexed items on the line efficiently.

Read on to discover the latest solutions and technologies available to engineers who need to optimize direct product assembly operations.

CONVEYING UNIQUELY SHAPED APPLICATIONS THROUGH THE ASSEMBLY PROCESS STAGES

To optimize the material flow in your assembly operations, an open and flexible base conveyor system design gives you the automation capabilities and configuration freedom you need. Your base system should allow you to automate your direct product handling processes and prevent damage while gently moving items through your facility. Our base conveyor systems are configurable down to 1mm increments.



When it comes to belt or chain “strand” spacing, we can simply add more strands and space them out as needed to support the load where required. This eliminates the need to add a ton of additional hardware to support your application, which is common with conventional roller conveyors... the most evident being making exceptionally large diameter rollers (which get heavy and expensive very quickly).

A **Multi-Strand Direct Product Handling System** can support lightweight, fragile products like solar panels and appliance parts like refrigerator door frames by utilizing one of our **Timing Belt Conveyor Solutions**. It provides smooth motion and precision control at each stage of the assembly process.



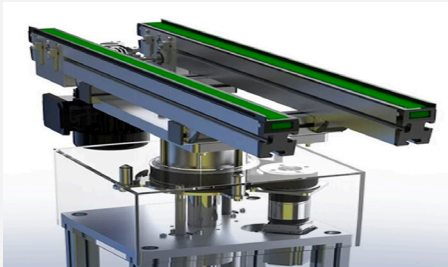
For heavier loads, we recommend our **Roller Chain Conveyor System**, which provides all the same benefits and features of the Timing Belt Solutions, but with added dynamic traction control of the friction forces that drive the rollers. This is especially helpful for products like tire assemblies and aerospace frames.

Once you have a suitable base conveyor system, you can choose from a host of standard custom solutions to optimize the remaining stages of your product orientation, presentation, and access requirements.

DIRECT PRODUCT HANDLING SOLUTIONS FOR ACCESSING WIDE PRODUCTS CONVEYING

More and more, we see manufacturers looking for a robust, yet economical system that optimally conveys and manipulates parts during each process step. To accomplish this, the unique devices and accessories need to be modular and flexible to enable you to gently move, transfer, rotate, and lift products directly on the line. The ideal solution will also improve employee safety and ergonomics, while also maximizing operational equipment effectiveness (OEE) for greater production efficiency.

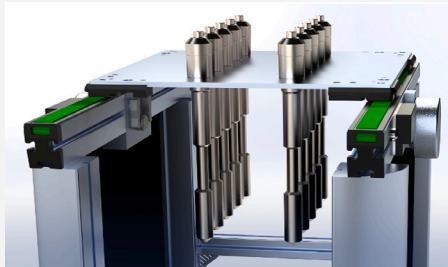
To design a system that provides optimal access to your products and manipulates them directly on the assembly line, check out the products below:



ROTATION UNITS

Provide smooth motion control while rotating products directly on the line. They also have completely customizable options to suit your needs

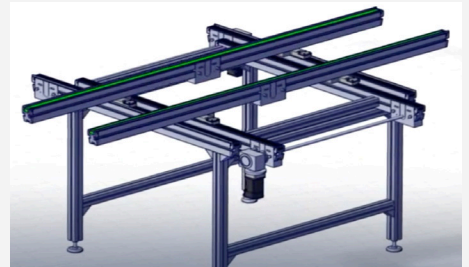
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OPEN CENTER DESIGN CONVEYORS

Ideal for products that need to hang vertically below the trunk line and move through the assembly operation without running into obstructions from the conveyor components

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CENTERLINE ADJUSTABLE CONVEYORS

Allows you to adjust the width of the conveyor (dual adjustable and single-sided) if you need to deal with different sized products coming down the line

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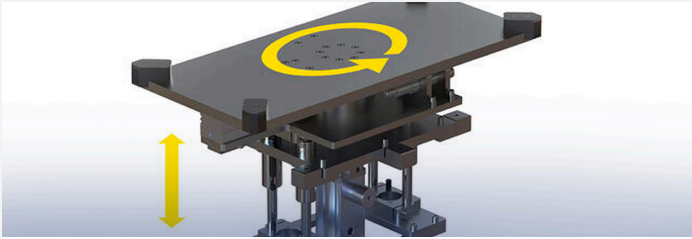
COMPANIES CAN IMPROVE EFFICIENCY WITH BETTER ACCESS

Here's how:

- **Appliance manufacturers:** Companies that produce appliance parts like doors for refrigerators or ovens need to convey, present, and access items to perform specific process steps
- **Solar panel producers:** Working with solar panels requires gentle transfer and manipulation at each stage of the process, while also giving engineers optimized access for wiring and gluing operations
- **Automotive fabricators:** Automotive assembly parts including tires and wheels, panels, or large plastic components like dashboards can require an assembly line to turn, tilt, and maneuver them to access fastening locations
- **Energy sector:** To manipulate wind turbine blades through a manufacturing process, customized systems often provide major advantages, such as easily lifting and transferring or rotating parts between areas of the facility.

CONTROLLING TRAFFIC ON THE LINE WITH OPTIMIZED ACCESS

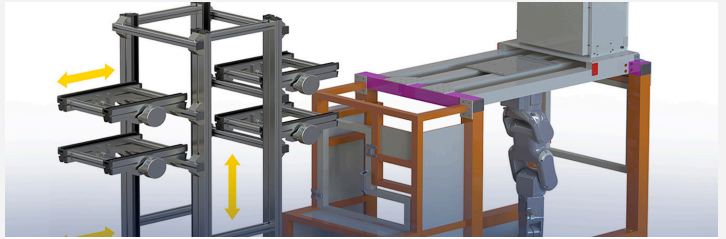
In some applications, you'll want to provide access for a visual inspection or quality assurance check on the line without stopping traffic. If a manual check or assembly operation check is required, you should consider the ergonomics of the operators and provide them with optimized access to the part, especially with wide or awkwardly sized parts and products. You can lift and access your parts without obstructing traffic using the devices on the next page



MANUAL LIFT AND ROTATE UNIT

These provide optimized manual access to a part through various rotation and lift capabilities.

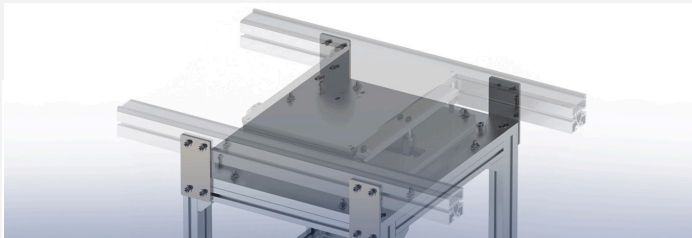
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MACHINE TENDING STATION

These stations allow operators to accumulate, load, and release items at a specific point on the line depending on the application.

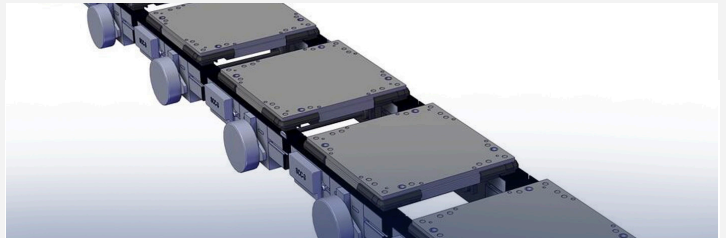
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PEDESTAL MOUNTING SUPPORT SYSTEM

These systems are used for heavy-duty lift and locate stations. The pedestal support system can handle up to 1,500 pounds to offload items into another process.

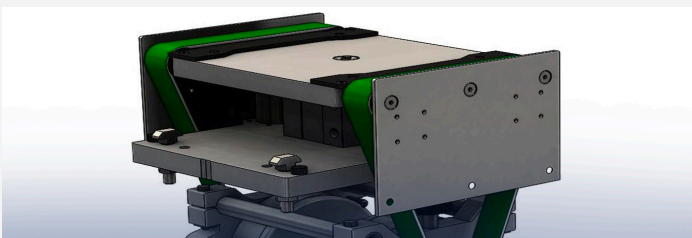
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ZERO CONTACT ZONED CONVEYOR

To ensure parts never touch each other on the line, a zero contact zoned conveyor moves each item through the assembly line with expert zone control.

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LIFT TRANSFER UNIT

These units are capable of lifting and directing products up to four different ways to manage traffic on the line between specific process steps.

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BYPASS LIFT

These combine two decks into one space. This provides access for operators by lifting a part while letting other parts pass through the station unobstructed.

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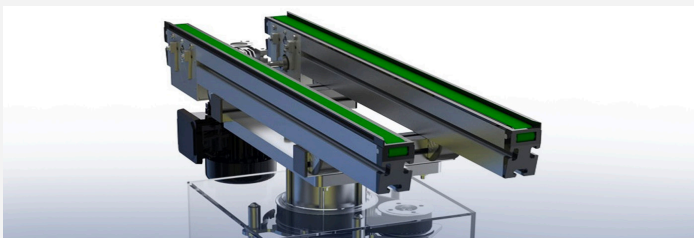
By using traffic control and conveying systems, you can **increase throughput and reduce bottlenecks**, allowing you to deliver your products to each assembly operation with expert control.

ROTATING AND PRESENTING ITEMS FOR ASSEMBLY OPERATIONS

To maximize throughput and increase OEE, you can automate the methods you use to rotate and present products to process robots or manual operators. A multi-strand conveyor system enables you to move products to stations using different location systems before manipulating the item into the ideal angle.

The main challenge for application engineers is ensuring precise control during these operations and eliminating the risk of product damage or the need for manual interventions. Lift and locate units allow you to track each indexed item coming down the line and manipulate the product according to your process needs.

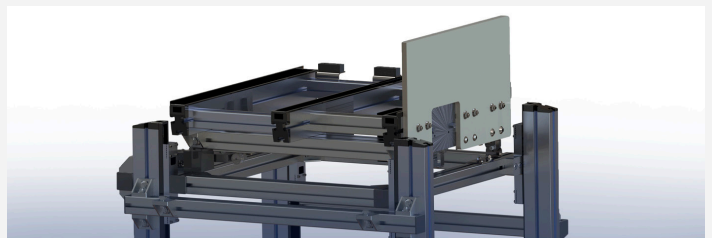
Integrated systems that allow you to move and present products directly include:



DROP AND ROTATE TRANSFER UNIT

You can simplify the layout and reduce costs by **rotating any product directly** on the line a full 360° for any angle transfer.

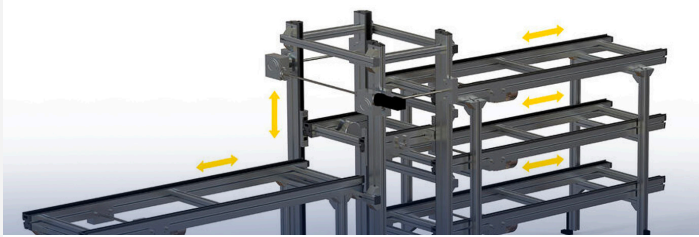
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TILTING DECK VERTICAL TRANSFER UNIT

These units provide a **controlled tilt operation** that gives both robots or a people access at a vertical angle with various z-axis movements.

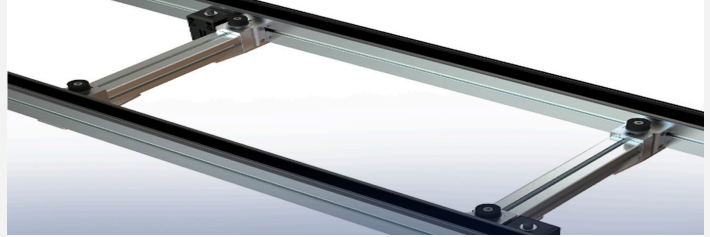
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MULTIPLE POSITION VERTICAL TRANSFER UNIT

These give you the ability to configure multiple infeed conveyors with different outfeed conveyors to help maximize product flow.

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LIFT POSITION KIT

You can locate and lift a product directly from the conveying line with positional accuracy of 0.5mm using pneumatic lift actuation.

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These devices allow you to manage each stage of your assembly operations and manipulate your large products according to your manufacturing process needs. You can combine different conveying systems with standardized custom solutions to design a product handling operation for each of your assembly process steps that require specialized presentation or rotation.

AUTOMATING STORAGE AND RETRIEVAL ASSEMBLY OPERATIONS

For larger products, automating the storage and part retrieval poses a major challenge. Engineers that need a solution for lifting parts can configure a vertical transfer unit. These units can even traverse multiple floors if required. It's possible to achieve optimal space usage in your facility by combining rotations, rack feeders, and locate devices with vertical transfer units that lift off! All of these can be integrated into your direct product handling conveyor solution.



Glide-Line's vertical transfer unit provides:

- Smooth vertical movement with precisely controlled acceleration and deceleration
- Flexible open programming to control any lift or direction changes
- Dampened stops and starts at multiple distinct locations
- Safe and gentle product acceptance and discharge with optional guarding and controls

CHECK OUT A VIDEO OF OUR 20+ FT TALL ELECTRIC VTU



You can design and build assembly cells that ensure the exact controls needed to move large products at each process stage. You can achieve this by combining lift rotates, locates, angle pop-up units, or customized transfer solutions with your multi-strand conveyor.

With Glide-Line, you can:

- Design a completely integrated system with different drive options including AC, DC, and servo with a mechanical slave-driven solution that will reduce equipment and maintenance costs
- Build a system that adjusts its width on the fly for when you need to orientate, present, or access various-sized parts on the same conveying line
- Include product accumulation stations that provide precise zone control and prevent product damage with gentle stops and smooth starts

For engineers who need a solution quickly, you can start designing your system today using our IMPACT! software.



GLIDE-LINE

START AUTOMATING YOUR LARGE PRODUCT ASSEMBLY OPERATIONS WITH GLIDE-LINE'S IMPACT!

For engineers that need to configure a direct product handling conveyor for large product assembly, **IMPACT!** (Interactive Modeling Program and Configuration Tool) enables you to quickly configure, price, and quote your solution. Integrated with SolidWorks 3D, this system provides you with all the information you need to specify a solution “in-context” with your 3D CAD models.

Engineers will gain access to millions of configuration options and part numbers including pricing information that changes dynamically as you design the system. Your design lives inside your SolidWorks CAD system, making it possible to maintain accurate and up-to-date system specifications. You can even adapt these per your future requirements.

For any unique challenge, Glide-Line is available to help customize a solution that suits your application. Once we fabricate and build the part, it will become part of your standard design. Any future maintenance, replacements, or upgrades will have a part number that grants you a quicker turnaround.

With Glide-Line's IMPACT! software, engineers can:

- Design a large product handling solution inside SolidWorks CAD models
- Dynamically price different options to find an economically optimized solution
- Establish and maintain a robust design for the entire direct product handling system
- Get real-time visual feedback during your configure, price, and quote design life-cycle

CONCLUSION

Glide-Line provides industry-leading direct-product handling solutions for manufacturers and fabricators who produce large parts. Our systems reduce product damage, prevent bottlenecks, and provide easy access to any part on the assembly line.

We have a streamlined process to configure, price, and quote products for you, giving you shorter lead times and the ability to design a solution that fits your precise needs. With a **myriad of configurable solutions** available and a willingness to customize any of our solutions according to your application, we ensure that your large assemblies will achieve optimum access, orientation, and presentation throughout your facility. Glide-Line's solutions allow you to automate your assembly operations from start to finish, increasing throughput and reducing product damage.

To discuss your direct product handling requirements with an automation expert today, **reach out to Glide-Line here.**

