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PRODUCT  
HANDLING

# ENGINEERED CONVEYING & ROBOTIC SYSTEMS



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## THE KLEENLINE ADVANTAGE

Since 1987, KLEENLine has offered a simplified and sensible approach to automation in clean production environments. With a unique mixture of Standard and Custom robotic automation solutions, as well as Controls Engineering and In-house Fabrication, we bring it all together for a complete machine solution. We offer up-front engineering and process design support, engineering with SolidWorks 3-D design capability as well as a complete fabrication, assembly and testing facility. Control systems are built in our UL approved panel building facility. Each KLEENLine installation includes in-house construction, start-up assistance and on-site service. KLEENLine offers sanitary conveyor design for easy cleaning. Vertically integrated design and manufacturing and our expertise handling difficult applications gives us a clear advantage over the competition.

## TOTAL PROJECT EXECUTION

From concept to completion, KLEENLine manages each project closely to ensure customer satisfaction. We can do this because of our vertically integrated in-house design and manufacturing capabilities. With our vast experience, many companies have chosen KLEENLine simply because we are the only company that has been able to provide total solutions to solve their sanitary product handling challenges.

## SYSTEM ENGINEERING

- Process Design Support and Line Layout using AutoCAD
- Robot Simulations for Cycle Time Verification
- System Design Models using SolidWorks
- Facility Layout Planning
- OEM Outsourcing and 3rd-Party Integration
- Single Source Responsibility
- KLEENLine Facility Acceptance Test

## CONTROLS ENGINEERING

- Authorized ABB, Fanuc and Staubli Integrator
- UL Approved Control Panel Shop with Licensed Electricians
- Touchscreen HMI, Central and Satellite Stations
- Robot Motion, Vision System and PLC Programming
- SCADA and Line Control Integration

## COMPLETE FABRICATION & ASSEMBLY

- Exclusive Stainless Steel Construction
- Complete In-house sheet metal and Structural Fabrication
- Food Grade Quality Welding Shop
- Electrical Panel Shop

## KLEENLINE SERVES THE FOLLOWING INDUSTRIES

- Food
- Animal Health
- Beverage
- Pharmaceuticals
- Personal Care
- Medical Devices

## KLEENLINE IS COMPLIANT WITH THE FOLLOWING

- BISSC
- USDA
- FDA
- cGMP Standards



# ROBOTIC PRODUCT HANDLING



KLEENLine has its origins in food handling, conveying and orientation, linking processes and packaging. By leveraging this vast experience, we have developed fully integrated robot and vision solutions to complement our conventional solutions. Robotic systems can be integrated with engineered conveyor systems and packaging equipment for a turnkey clean line.



## BENEFITS OF ROBOTIC HANDLING

- Increased Speed and Efficiency
- Flexibility for Product Changes
- Decreased Product Waste
- Decreased Production Costs
- Improved Quality and Verification
- Improved Operator Safety

## PICK & PLACE ROBOTS

Using the latest machine vision and robotic technology, the product, wrapped or unwrapped, is picked from a process belt, oriented and placed for the next processing or packaging step.



## CASE PACKING ROBOTS

Oriented products are grouped and robotically picked and placed into secondary packaging, such as corrugated cases. KLEENLine can fully integrate these cells with high-speed case erecting and closing equipment.

## PALLETIZING ROBOTS

For a complete packaging solution, palletizing robots can automatically orient and layer cases onto a pallet, interleaving layer orientations for load stability. Automated stretch-wrapping of the pallet can be added.





# PRODUCT ORIENTATION

The key to successful automation is to create and maintain the orientation of random or moving product. KLEENLine specializes in sanitary conveyors and modular clean equipment to convey and control product while arranging it in the proper orientation for any downstream process, from picking to packaging to palletizing.



## RECIPROCATOR

Servo-driven, high-speed retractable nose conveyor for right-angle transferring of product from single or multiple lanes into rows for tray or oven loading.



## HIGH-SPEED LANE SWITCH

Accepts product flow from single lane and diverts to multiple lanes.



## COMBINER

Alters product flow from multiple lanes or branches to a single lane.



## SMART BELT

Servo-driven belt to adjust timing and spacing between products. Typically used as in-feed to Reciprocator and high-speed Lane Switch.



# INTEGRATED LINES



KLEENLine provides integrated sanitary product handling lines that combine engineered conveyor systems, aligning and orientation systems, 3rd party equipment and robotic solutions with electrical controls and complete installation services.



## CASE HANDLING

Conveyors for merging, diverting, rejecting and transferring cases.



## BI-FLOW ACCUMULATOR

In-line accumulation table designed for random buffering and discharge of accumulated products.



## BELT TURN CONVEYOR

Flexible sanitary fabric belt conveyor saves floor space through tight turns while maintaining smooth flow and product alignment.



## CHICANING CONVEYOR

A series of diverters and speed-up conveyors to align and singulate random products to allow individual handling.



# CUSTOM SOLUTIONS & APPLICATIONS



To provide complete sanitary solutions to our customers, KLEENLine offers many other custom product handling components. Some examples are shown below, but custom innovations can be developed as needed.



**BELT CONVEYOR**



**ROTARY DISK ACCUMULATOR TABLE**



**SETTLING CONVEYOR**



**ULTRASONIC CUTTER**



**SPREADER**



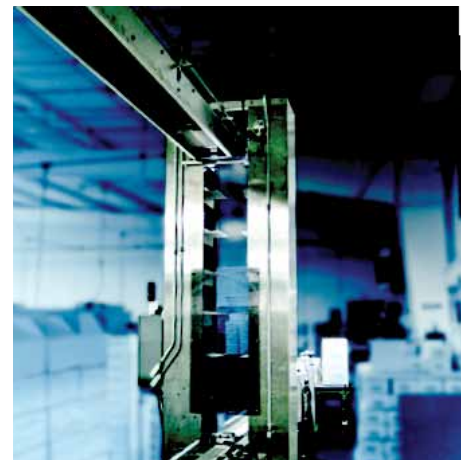
**CUSTOM PACK OFF**



**INCLINED CONVEYOR**



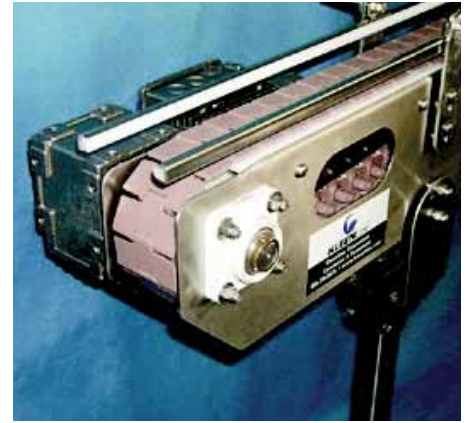
**VERTICAL HOPPER INFEED**



**VERTICAL CASE LIFT**

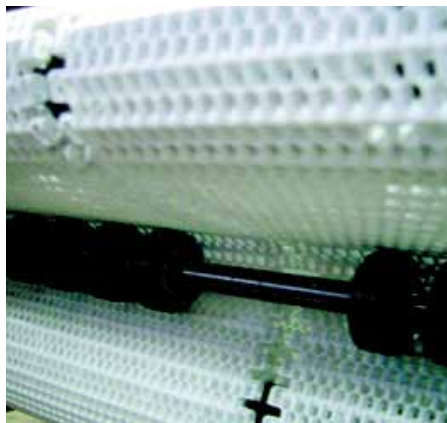
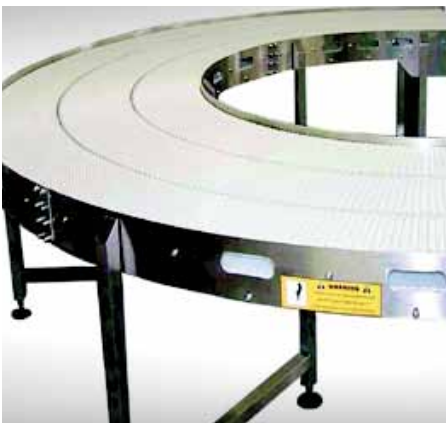
# ENGINEERED CONVEYOR SYSTEMS

KLEENLine is a leading manufacturer of engineered stainless steel conveyors and related equipment. We specialize in high-quality, low maintenance sanitary designs used primarily in the food and pharmaceutical industries.



## TABLE TOP CHAIN CONVEYORS

Table Top Conveyors can be built for strict sanitary conditions. Our adjustable table-top conveyors can be designed for a variety of applications including: transporting, merging, diverting or accumulating products.



## MODULAR PLASTIC CONVEYORS

Modular plastic conveyors are ideal for sanitary handling applications because the belt construction allows for easy cleaning and low maintenance. Mat style plastic belts provide durability and are approved for FDA and USDA direct food contact. Sprocket driven thermoplastic belts ensure positive tracking while providing trouble free performance.



Bring us the toughest sanitary line challenges in your business. KLEENLine has earned their reputation as a leading provider of sanitary product handling solutions including conveyors, product handling equipment, vision systems, robotics, automation controls, and systems engineering services. Our super-sanitary, completely automated, and fully-integrated solutions are designed in-house for each customer. And as part of the ProMach Product Handling business line, KLEENLine helps our packaging customers protect and grow the reputation and trust of their consumers. ProMach is performance, and the proof is in every package.

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