Production Lines

Modern industrial production relies on smooth interaction between people and machines, fast real-time data flow, artificial intelligence, digital tools and flexible processes. Tekna transforms these features into real value, delivering fully automated production lines built around advanced innovation and integration principles that meet Industry 4.0 requirements.

Robotized Stations

Robotized station for trajectory-tracking trimming of PVB | EVO on car windshields, using anthropomorphic robots to pick up and move the glass.
This allows controlled, fast and repeatable removal of excess
PVB | EVO along the outer edge of the glass.
Robot paths are managed through preset recipes, with optimized speeds to reduce cycle time and prevent damage during processing.

Automated Tire Inspection with AI Vision

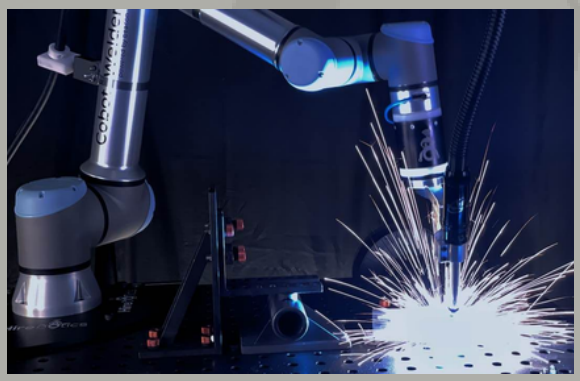
Automatic reading and inspection of defects, markings and symbols on a tire, achieved using laser profilometry for 3D scanning and reconstruction of both the outer and inner surfaces of the tire.
An advanced vision software automatically detect and measure surface and structural defects to ensure consistent quality and full production compliance.
Deep OCR software is used to decode text, pattern-matching techniques verify symbols and dedicated vision systems detect and measure surface defects.

Robotic Automatic Palletizing System

The automatic palletizing system uses a robot to load and organize packages on pallets without manual work.
It supports any product setup, any pallet format, and allows very fast format changes, avoiding the pauses typical of other solutions.
It can also use collaborative robots designed to operate safely next to human workers.

Robotic Welding Station

A robotic welding station is designed for repetitive welding jobs using a collaborative robot.
The operator teaches the robot by moving the torch by hand, setting the welding paths, torch position, and movement speed.
The robot will then repeat the programmed work accurately and consistently.

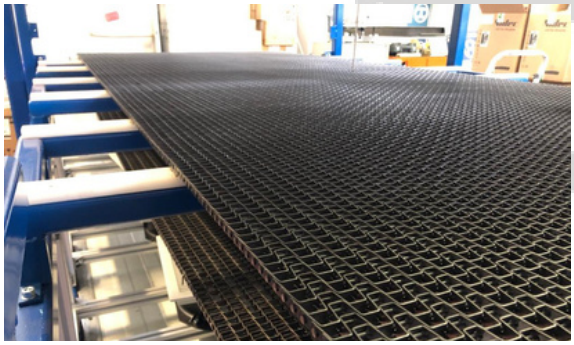


Automatic Warehouses

In automated warehouses, the entire process of moving goods inside the facility is fast, efficient and fully supervised.
Technology supports operators by allowing them to handle picking and storage quickly and safely.
Logistics becomes smarter, with picking and stocking tasks requested through intuitive digital platforms that provide all the necessary information.

Heavy Load Handling Systems

Advanced automation and power technologies are used to manage cranes and custom-built machines for heavy-duty operations.
Thanks to easy-to-use interfaces and control panels, operators can run equipment safely and smoothly.
Tekna has created systems for container handling, coils, bulk products and steel sheets for leading industry players.



Transport Systems

Tekna designs and builds material-handling systems using modular structures that are easy to maintain and carefully selected for the specific materials to be moved. Strength, low weight and modular construction are the key advantages of these conveyors, along with the option to integrate diverters, elevators, tilters and sorters.
They are suitable for horizontal or inclined transport and can be built with belts, rollers or tapes depending on the type of product.

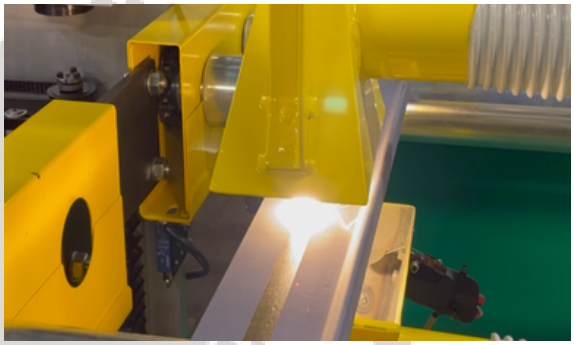
Transport, Bottling and Storage Line

Automating a full production line requires the integration of machines with specific functions. Bottling, weighing, storage and transport are examples of machines that need to be combined to create an automated system capable of optimized gripping cycles, accurate positioning and reliable repetitive processes, while speeding up packaging operations and pallet formation. Tekna, as a system integrator, can design, build and commission production lines tailored to every need.

AGV and AMR Robots

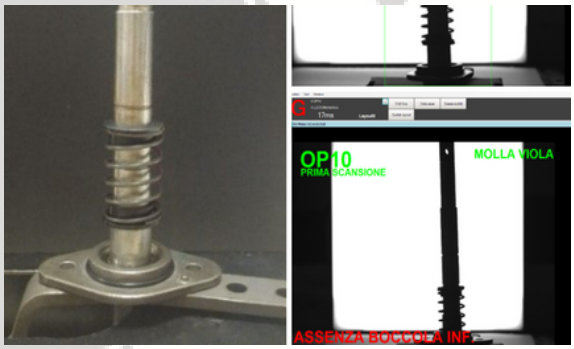
AGVs (Automated Guided Vehicles) and AMRs (Autonomous Mobile Robots) represent the new frontier of automated logistics.
They are used inside industrial facilities to move products without the need for any fixed handling systems.
They navigate autonomously through real-time calculated routes, detecting obstacles or changes in the stored map and recalculating their path to complete specific missions such as picking, releasing or transferring items between different lines.

Laser System for Primer Removal on Metal Sheets



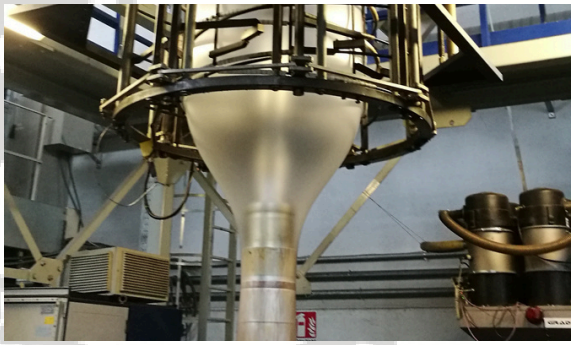
The primer is a coating applied directly to ferrous materials, allowing them to be stored outdoors. The laser system developed by Tekna uses an innovative technology to remove primer from the surface of ferrous materials, metal sheets and profiles. A laser source, a collimator and a scanning head are positioned at a set distance from the material, enabling cold primer removal without deforming the treated metal profile or creating reflective surfaces.

Mechanical Assembly Verification



Using artificial vision systems with monochrome matrix cameras and scene backlighting, this process checks in real time—while the operator assembles the parts—that the subassemblies making up the car gear lever match the recipe, are installed in the correct sequence and in the right orientation.
If an error occurs, the operator receives a specific warning message describing the issue.

Extrusion and Winding Lines for Plastic Film



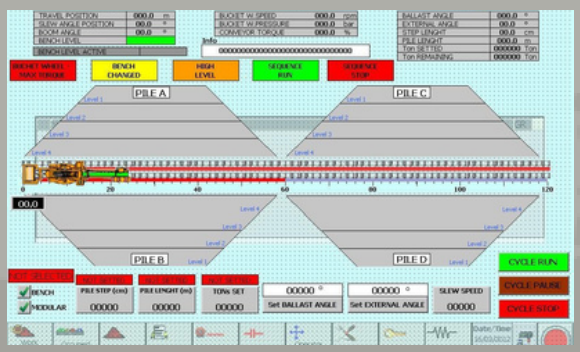
Plastic films are produced through extrusion using polymer materials and are intended for use in packaging, agriculture, construction and general surface covering.
Extruded films made from materials such as polyethylene, polyester and polypropylene are wound into reels of different diameters and sizes, ready to be used as semi-finished products in the production of finished goods.

Furnaces, Bending Presses and Glass Tempering

Automation of production lines for flat glass, side windows, windshields and rear windows for automotive or civil use.
Construction of continuous glass tempering furnaces for flat and curved glass in different sizes and thicknesses, thanks to advanced automation with recipe management and optimized control of the furnace hot chambers. Construction of bending presses driven by high-precision, high-speed axis controls, allowing the production of glass with reduced electrical energy consumption.

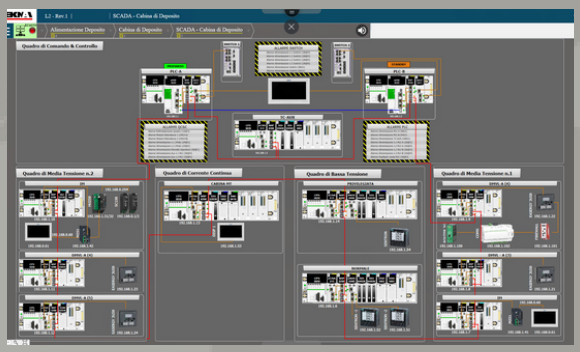
Waste Selection and Storage Systems

Growing attention to waste disposal and recycling has driven many manufacturers to invest in the development of automatic machines for waste management. Tekna has gained specific experience in automating machines for waste treatment, from loading conveyors and bag openers to shredders and compacting presses, all the way to the automation of complete waste-sorting lines for materials from separate collection, municipal waste or special waste.



Industrial Supervision

Running an automated system requires creating an operator interface to oversee line activities and activate the various planned processes. A plant supervision system, based on a PC, Panel PC or Operator Panel, makes it possible to view the layout and P&I of the system in real time, along with statuses, alarms, and data that update continuously on the line. Tekna develops supervision systems using leading SCADA platforms, connecting them with PLCs and the automation components installed in the plant.



Data Network

Transmitting data in industrial environments and managing networks requires the use of high-performance managed switches capable of handling multi-level network architectures for Level 2 access, Level 3 routing, advanced diagnostics, and redundancy and security functions (IEEE 802.1X, Broadcast/Multicast/Unicast).
Tekna can design multi-level data network structures based on standard protocols such as Ethernet TCP/IP, Modbus, VRRP, RSTP, HTTPS, TFTP, SNMP, BOOTP, GMRP, DCP, LLDP, IGMP (Snooping/Querier).

Industry 4.0

Tekna supports companies in their transition toward technological and production transformation. Industry 4.0 requires full connection between all elements within a company. Using advanced digital systems and specific techniques, individual systems such as production machines or process tools are integrated into one connected macro-system. This integration helps reduce consumption, improve processes, and analyze collected data to maximize plant productivity.

Revamping

The obsolescence of automation components, the lack of spare parts and the need to increase productivity often push customers to replace outdated yet still operating machines and production lines.
Tekna can provide complete revamping of machines and production lines, starting from the analysis of existing systems, integrating customer requirements into the new design and delivering new components all the way through to full production restart.

Augmented Reality–Based Maintenance

Thanks to its long-standing technical and maintenance expertise, TEKNA offers a virtual maintenance service built on augmented reality technologies. Tailored experiences guide plant technicians step by step in identifying the cause of any issue reported by a machine and support them through the solution. This minimizes downtime and removes the need for a highly specialized technician for each machine, allowing a single general maintenance operator to manage the entire plant.

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