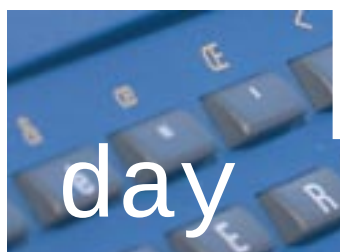
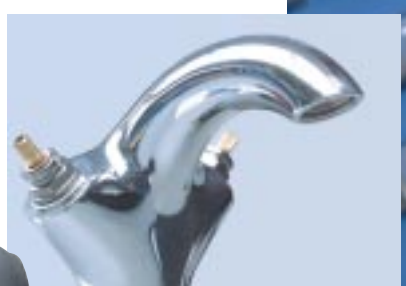
PRODEL

Automated Assembly Lines

Millions of products assembled every day

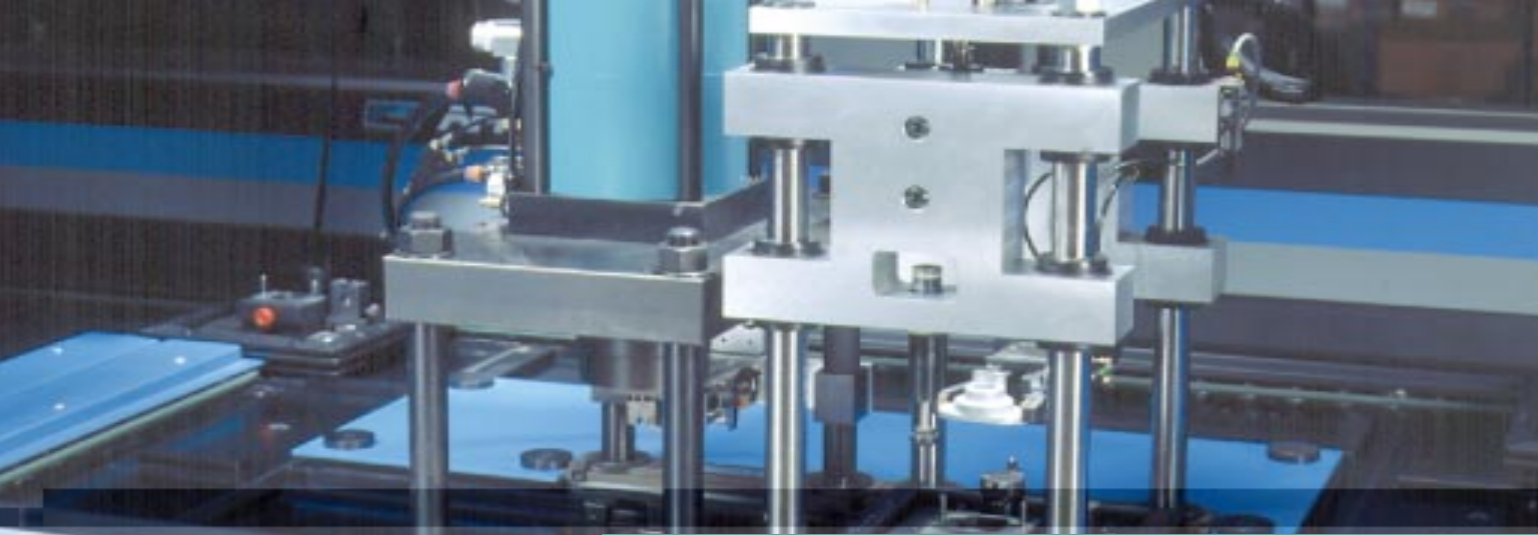




For more than 40 years, groupe Prodel supplies automated lines for major automotive, electrical hardware and consumer product companies. Its innovative solutions and knowledge of various technologies make it a particularly adapted partner for launching new product or to give competitiveness to an existing product.

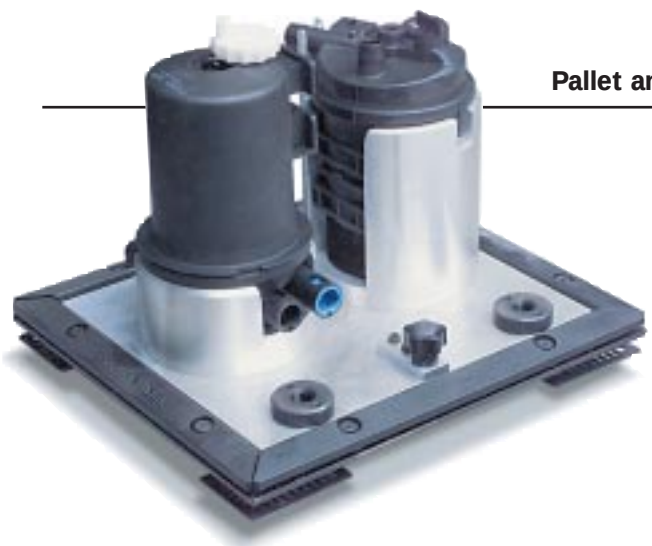
Prodel considers engineering quality, assembly system performance and efficient technical support for the success of a customer s investment.

We have made these three rules more than our duty: our passion.



Mechanical Engineering

The variety of applications handled by our engineering department provides customers a number of integration solutions and help in selecting the best one. Prodel is able to create a customized solution to meet the customers needs with few modifications.

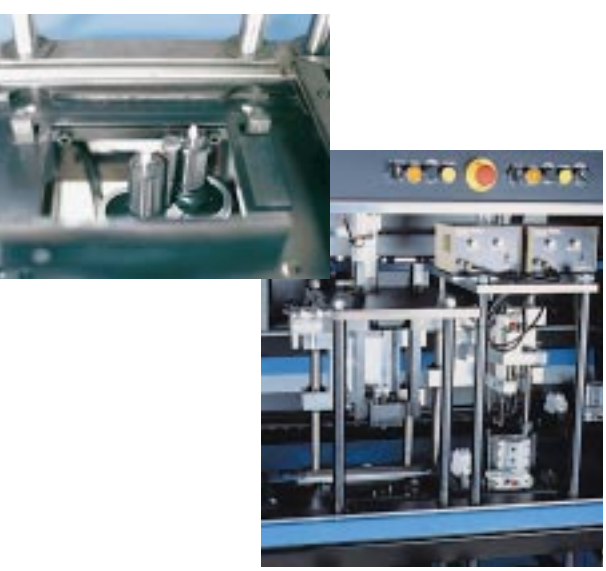


Pallet and Fixtures

The automated assembly process of a product depends on the design and on the organization of fixtures on the pallet.

Fixtures can be easily removed using interface plate and locating pins diminishing the change over time when running multiple products.

Mechanical Units



The closed column structure and the integrated anvil of the Prodel indexing stations are particularly suitable for mechanical press operations that need strength and precision.

The pallet can also be accessed from underneath the module table if needed to avoid useless product manipulations.

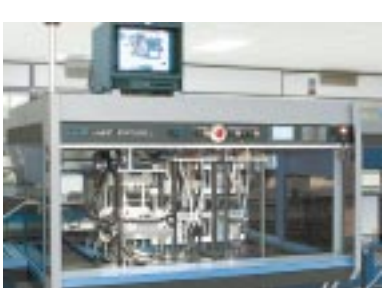
Parts Feeding Techniques

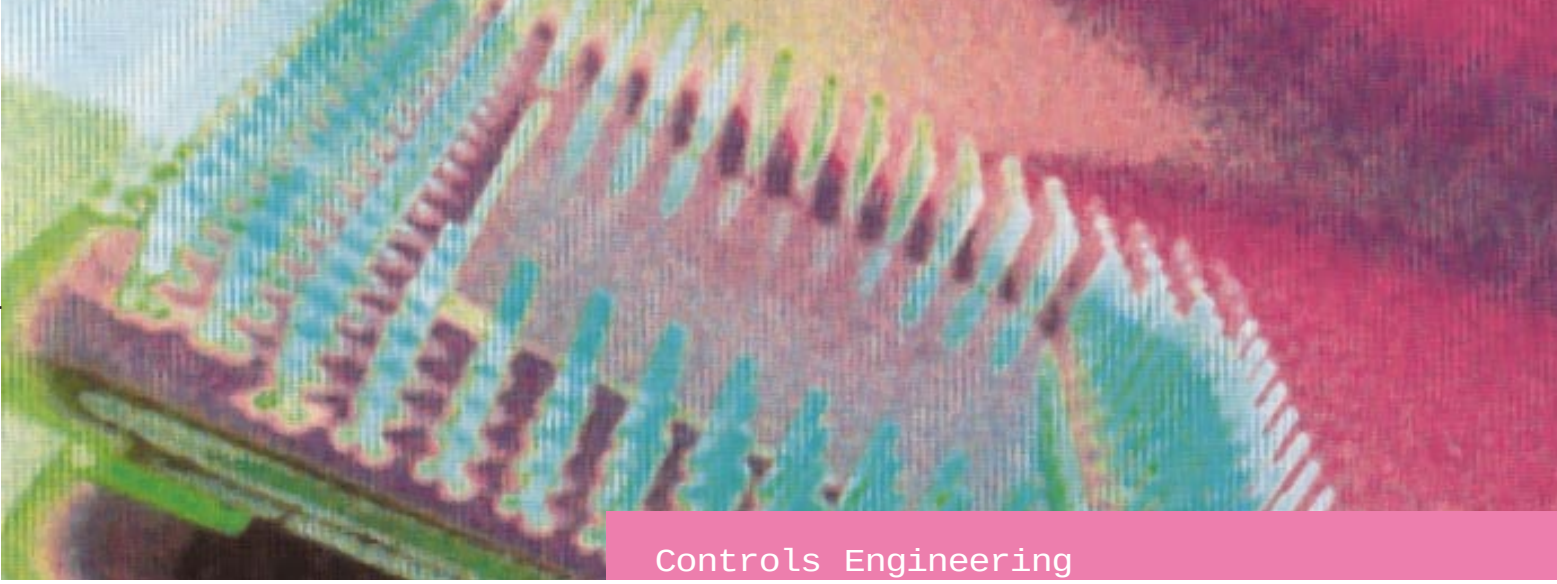
Prodel lines allow for an easy implementation for external part feeding systems that are fully accessible and away from the working area.

Product Test and Labeling

Time consuming off-line test operations can be performed over several parallel workstations.

Using the data stored in the pallet escort memory and the production data processing capabilities of its Turbo controller, Prodel's flexible assembly system allows real-time production monitoring and data tracking.





Controls Engineering

The AFP/Turbo controller uses a plain language that enables programming by non-specialists and replaces conventional PLCs and robot controllers used in traditional machines. It manages pallet routing, monitors cycle progress, controls axes movements, and maintains all communication with peripherals.

Turbo Trace

The Turbo Trace embedded software monitors the productivity and return of each station. Results can be displayed in table or graph formats, directly from the LCD display on the automated module.

Turbo Scope

Installed on a networked PC, the Turbo Scope software displays the current status of the pallet circulation and performances of each station using animated computer graphics.

It also locates the bottleneck, and both measures and backs up production data.

Turbo Kit

Turbo Kit software creates or receives the production orders over the network and supervises their execution on the lines, especially when a product changeover occurs.

The AFP/Prodel has become a model of flexible assembly. With the flexibility of the system the factory can progressively automate the assembly line or reconfigure when a process change occurs or when the customer product is redesigned.

Plug & Play

Entirely autonomous, Prodel automated modules are plugable. They can be easily moved to different locations on the central base structure.

Integrated Robotics

Prodel can integrate up to 12 numerical axes within a module. The sole TURBO controller manages pallet routing, robotic motion control, and any additional integrated automation, all at the same time.

Pull system and parallel processing

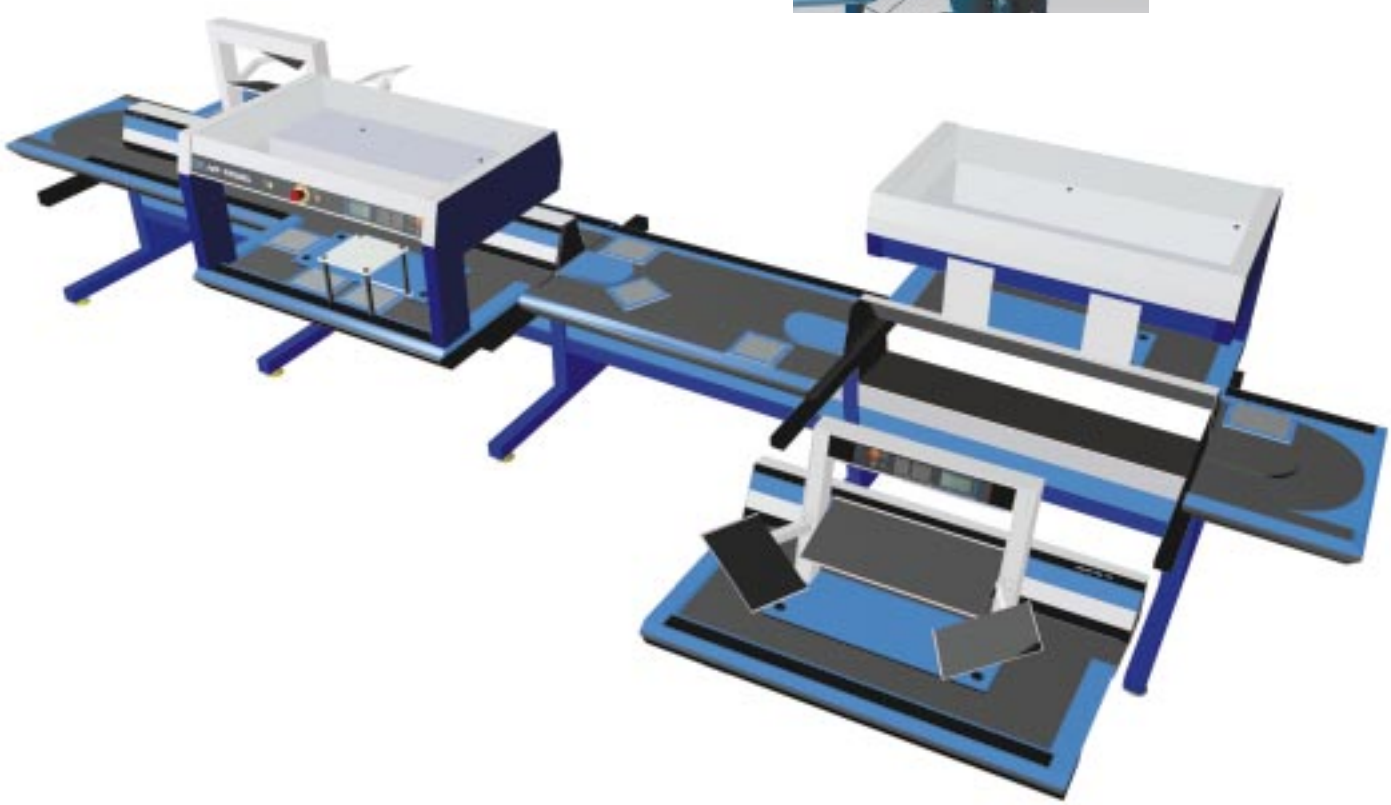
Assembly operations may be organized in 2 ways:

- In pull system mode: a pallet can leave a module only on the condition the next module can accommodate it.
- In parallel processing: pallets are distributed between modules that perform identical operations.

Ergonomic manual modules

Often using manual modules is the first step toward a fully automated assembly line. When equipped with low-level automation, manual modules can be used as a beta test to start the pre-production and help in validation of the customers' product.

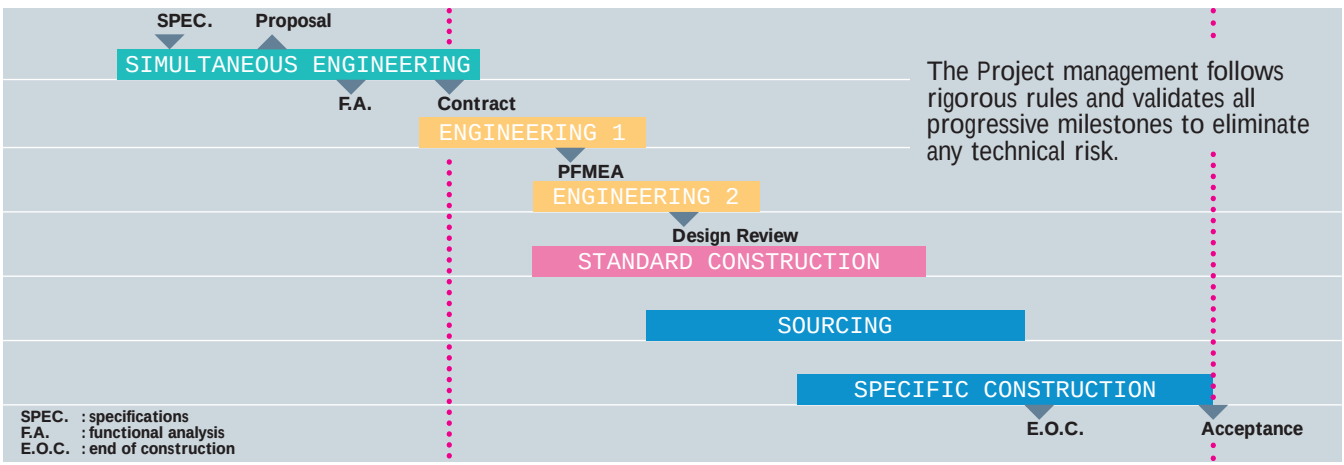
Fully automated lines often use manual modules as backup or rework stations.



Technical Support

System results and efficient return on investment often rely on user training and on-site technical support. Prodel has developed a scope of customer services to help achieve the project goals, assist with line ramp up, and monitor line performance.

Project Management



The Project management follows rigorous rules and validates all progressive milestones to eliminate any technical risk.

Training and On-Site Technical Support

Along with the training, Prodel personnel will provide on-site technical support, full or part time during line ramp up. The Prodel teams will proceed with improvements if needed and progressively transfer the competencies to the users.

Technical Documentation

On-line menus provide equipment operators help and are available at each module. The following documentation is also provided in CD and paper format:

- user manual and procedures,
- electrical diagrams,
- standard modules manuals,
- supplier documentation,
- mechanical drawings and bills of materials,
- spare parts lists.

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