The Plant Simulation Assembly Library enables you to create well-structured, hierarchical models of a plant's assembly lines and assembly systems. You can use these models to simulate, animate and evaluate both basic and complex assembly processes.

The library provides tested and optimized high-level objects that you can leverage to model the basic components of an assembly line, as well as the knowledge and toolsets that represent a complete assembly system.

The library lets you quickly simulate the assembly line's processes through the use of assembly-specific components that are capable of representing predefined resources, order lists, operation plans and control rules.

Subsequently, users can leverage Tecnomatix analytical tools to optimize the throughput of these simulated processes, relieve process bottlenecks and evaluate the impact of different production variations (including different line production control strategies).

**Benefits**

- Provides task-specific objects that have been tested and optimized to support complex assembly operations
- Facilitates up to 5 times faster and more detailed modeling
- Increases productivity and improves the efficiency of your plant design and optimization activities
- Enables you to evaluate more plant design scenarios and assess more complex alternatives
- Provides objects that are both easy to learn and use, as well as flexibly adaptable when new or unforeseen tasks arise

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**Challenges of modeling your assembly processes**

Assembly lines are often evaluated on the basis of their ability to:

- Handle different products at the same time
- Handle high numbers of product variants
- Meet required just-in-time and just-in-sequence reaction times

The models that you use to simulate, animate and evaluate these characteristics need to be flexible enough to account for these key characteristics – as well as to account for unexpected considerations and complex production requirements.

For example, you might be required to quickly remodel your assembly line processes to accommodate unexpected factors such as the need for rework or revised quality inspections. Similarly, you may
need to establish a hybrid assembly system that combines manual workplaces with automated stations – or final assembly lines comprised of moving workplaces.

**Flexible assembly process modeling**

Tecnomatix Plant Simulation Assembly Library is highly flexible; it enables you to rapidly model – and remodel – your desired assembly layout using already tested and optimized objects that can be quickly adapted from one task to another.

In addition, you can use other objects, such as assembly workplaces, buffers, distributors and sorters, to represent the material flow. The library also provides objects for organizing and managing your assembly processes, including assembly controllers, bill of material administration, material allocation and personnel administration.

**Beyond process modeling**

Tecnomatix approach to plant simulation assembly enables you to record the availability of the assembly system’s personnel and machines in a calendar that allows you to systematically plan your resource usage.

In addition, the library’s Explorer object provides an easy and transparent means of setting the assembly system’s capacity, cycle time and assembly object availability.

Once your process simulations have been executed, you can record their results, such as resource and buffer utilization, in status diagrams and histograms or export them in tables.

The Tecnomatix approach to plant simulation assembly is especially valuable because it enables you to be much more precise – and therefore productive – when you model entire assembly systems and their processes. In addition, its flexibility provides you with a quick and effective tool for planning and facilitating the optimization of your assembly systems.