

Plant Simulation Assembly Library

Model, simulate, animate and evaluate manufacturing assembly processes

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

Summary

The Tecnomatix® software's Plant Simulation Assembly Library enables you to digitally model a manufacturing facility's assembly processes so that you can evaluate the characteristics and performance of these processes long before they are deployed in an actual production system. You can use the library's intelligent objects to quickly and efficiently model complete assembly systems. The library's objects provide customizable and flexible building blocks that you can easily use to increase both the speed and accuracy of your assembly modeling.



Plant Simulation 3D assembly visualization includes manual operations, shift models, lot sizing, setup strategy and different worker logic to handle product failures (rework), machine breakdowns and priority products (fast runner).

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

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Plant Simulation Assembly Library

Features

- Assembly-specific statistics
- Attribute-dependent assembly
- Auxiliary buffer
- Bill of material administration
- Branching
- Clustering
- Disassembly station
- Distribution manager
- Evaluation tools
- Finite state machine
- Histograms
- Just-in-time object
- Overflow buffer
- Part manager
- Personnel library
- Process line
- Production sequence
- Protective circuit
- Protocols
- Retouch area
- Rework station
- Sequence quality analyzer
- Skid handling
- Status diagrams

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).

Challenges of modeling your assembly processes

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

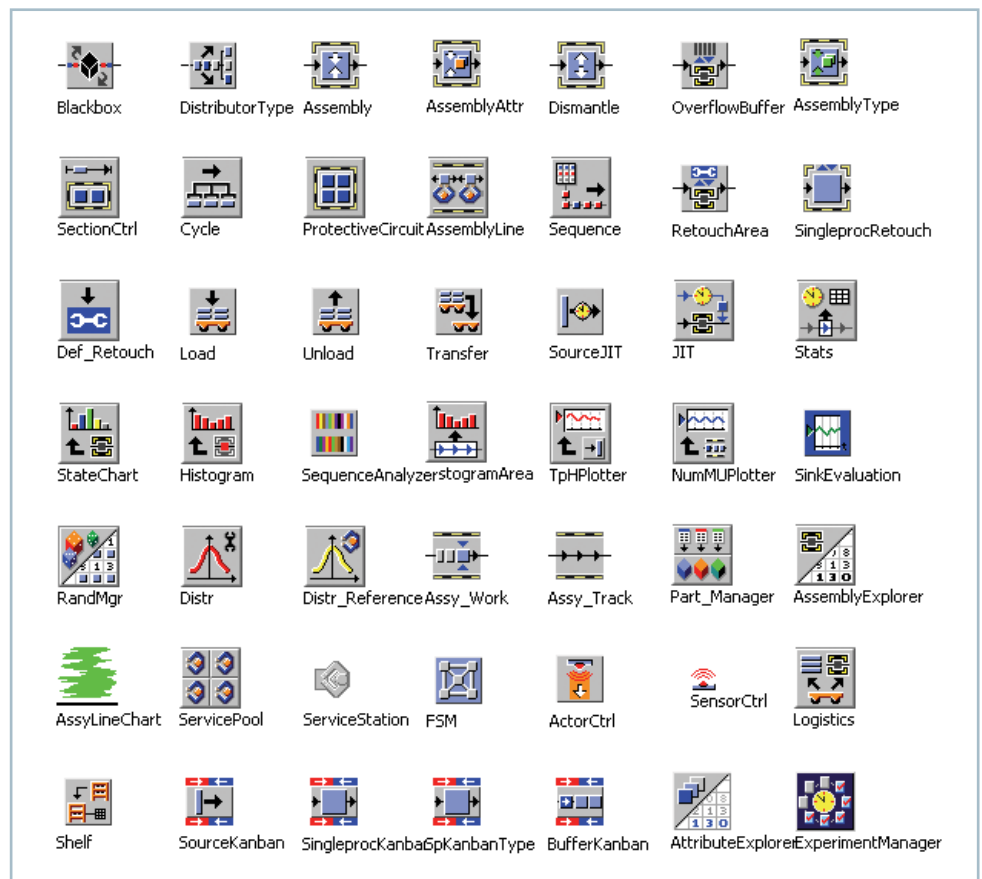
- Handle different products at the same time
- Handle high numbers of product variants
- Meet required just-in-time and just-in-sequence reaction times

The models 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.



Key Assembly Library objects.

Flexible assembly process modeling

Tecnomatix software's 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.

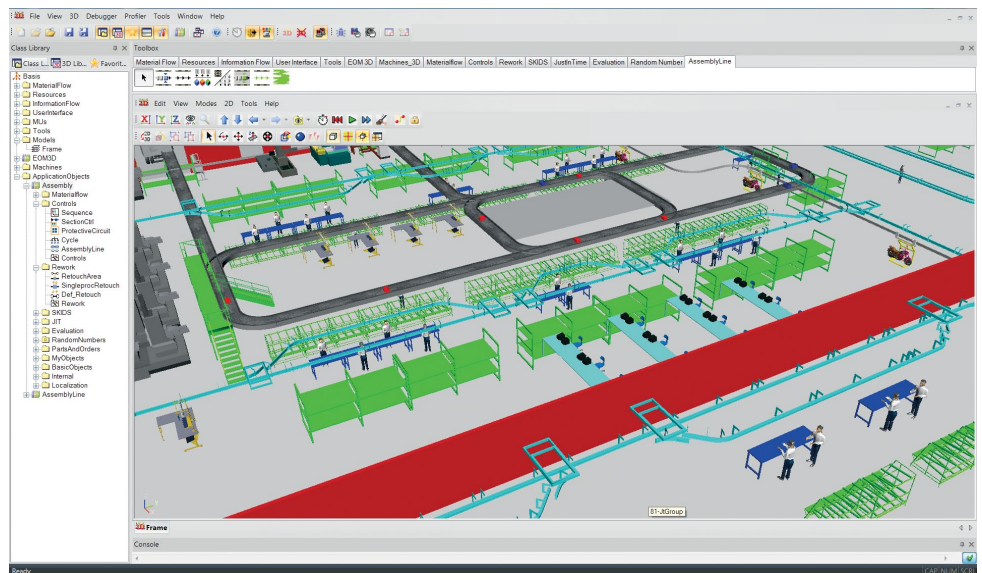
Beyond process modeling

The Tecnomatix approach to assembly facility simulation enables you to record 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 assembly facility simulation 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.



Plant Simulation 3D assembly visualization of a production facility.

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