Lino® 3D layout

3D layout planning for Solidworks®

Challenge

Today, virtually all layout plans are generated using 2D CAD systems, even though the individual plant equipment components are designed as 3D objects. The resulting system and medium discontinuity represent an obstacle to end-to-end automation, degrades quality and can result in substantial follow-on costs: in 2D-supported planning, problems do not become visible until the plant equipment is manufactured or assembled.

Still, manufacturers have stuck with 2D-supported planning because up until now, generating a 3D layout plan was considered too complex, requiring extensive time and effort even for the most sophisticated CAD experts.

Solution

Lino® 3D layout is fully integrated in Solidworks, enabling you to generate the reliable 3D layout plans needed for planning and selling industrial equipment simply and extremely rapidly.

Lino 3D layout lets you easily position, configure and put together plant equipment components in a layout.

With this software, your sales team can now generate 3D layout plans for complex machines right at the customer site and examine them together in 3D. When the order comes in, the data can be transferred directly to the designers.

easy generation of 3D layout plans

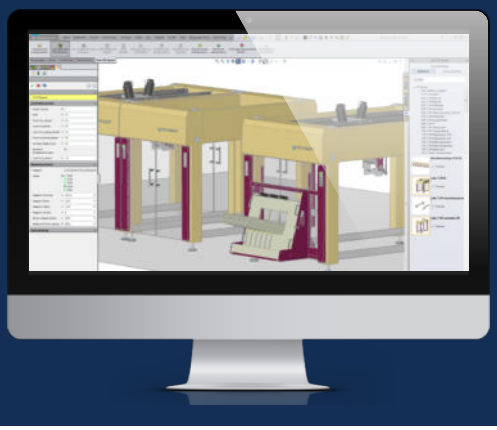
faster offers for the sales department

accelerated generation of layout plans

early identification of collisions

Features

- Consistent processes without system and media breaks
- Even employees with little CAD knowledge can generate 3D site plans



- Lino 3D layout provides all data necessary for calculation and ordering
- Professional presentation thanks to convincing 3D layouts

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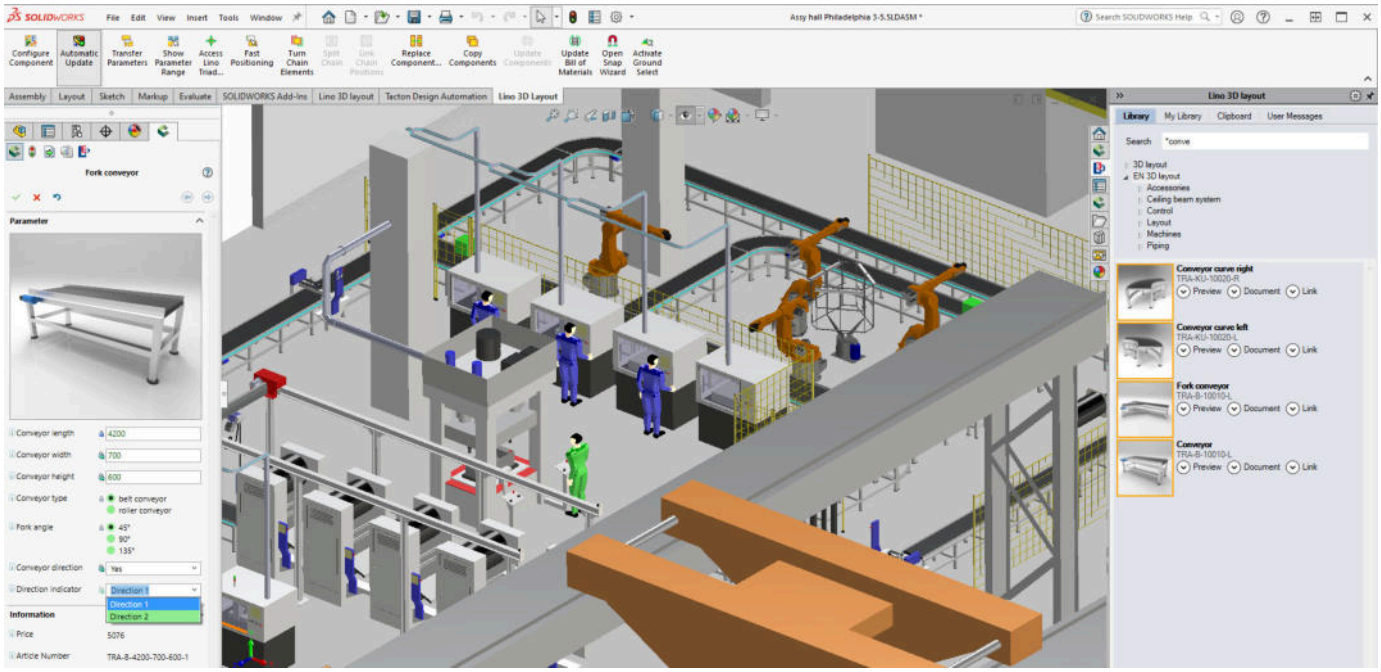
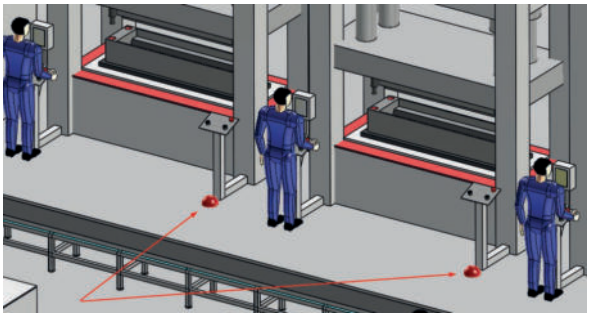


Floor plan creation with Lino 3D layout with configuration dialogue (left) and component library (right)

This is how to work with Lino 3D layout

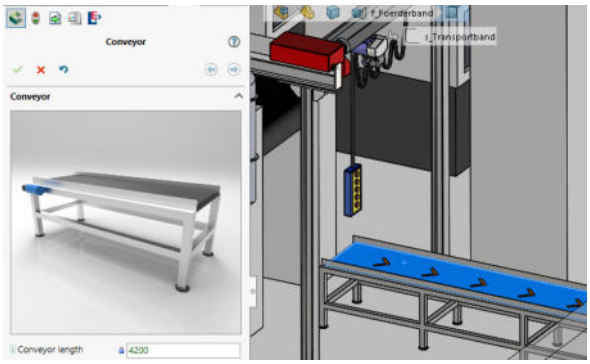
First, the user seeks in a library the required plant component and drags it with the mouse in his project assembly. During the drag operation all possible snap positions for this component will be highlighted in form of red balls.

If the user then reaches one of the red balls with the mouse, the new component “snaps” automatically in the right position (drag & drop). The necessary mates will be created by Lino 3D layout automatically in the background.



Possible snap positions for components are indicated by red balls

If Lino 3D layout finds out that the new component can be configured, then the configuration tool “Tacton Design Automation” will be started automatically. The user can now input the technical data which are required for the configuration. The technical rules and constrains which are stored in the components make sure that only meaningful input will be accepted – and that the component will only be modified towards allowed respective meaningful shapes and sizes.



Configuring a belt conveyor with Tacton Design Automation

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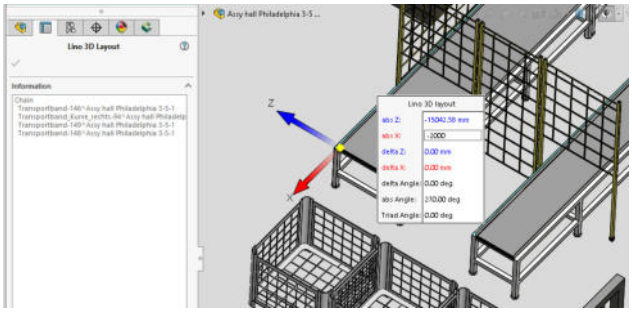
Using the Lino 3D layout “Triad” the user now positions and turns groups of associated components with a so far unknown comfort until each component is located at the right place. Not only thus Lino 3D layout differs significantly from the “classical” assembly handling in SOLIDWORKS.

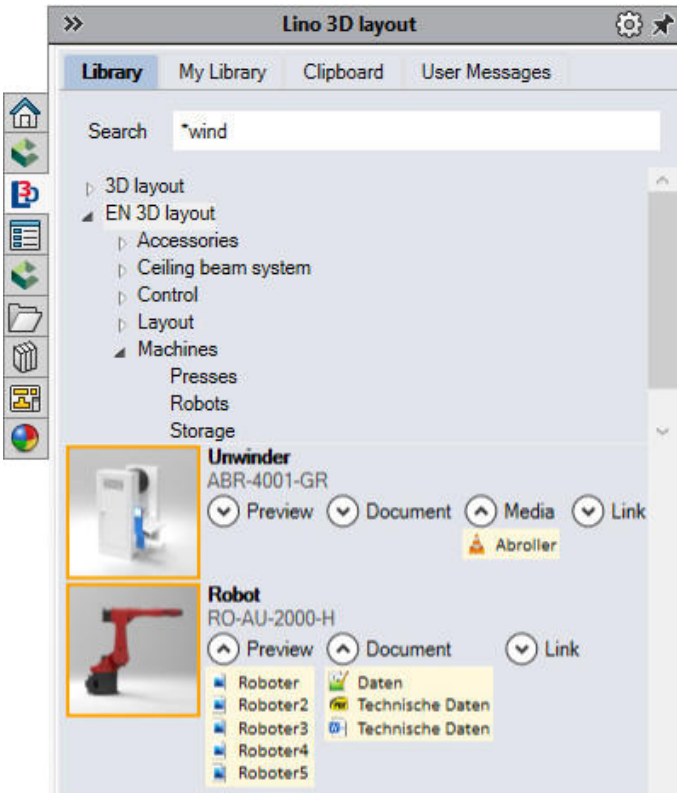
If required, the user can split component chains easily in order to add components in between. Additionally the orientation of a component can be changed with only a mouse click - without taking care of SOLIDWORKS mates.



The Lino Triad user interface in Lino 3D layout

Solution elements

The **integrated library** provides advanced search functionalities for finding the required plant components by either a full text search or a hierarchical search. The hit list contains not only the components with their pictures (also in high resolution), but also technical data, manuals, web links and even videos. So the user has all information at his disposal to choose the appropriate component for the specific layout - at one single location! The search does not only look for the names of the components, you can rather find components by searching for keywords in the content of the related documents. Components can be dragged & dropped directly from the hit list into the layout project.



Library with hit list and related documents, media and Web links

With the tool „**Lino 3D search indexer**“– which will be shipped together with Lino 3D layout – you can easily create your own component library. More than that, you can even create several application specific libraries which allow you to switch from e.g. a sales library (with simplified parts) to an engineering library (with fully detailed assemblies). The tool indexes document content too, extracts pictures from SOLIDWORKS files and creates the connection between components and their documents.

Additionally Lino 3D layout provides a **demo library** which contains a full set of configurable example components. These can be used to try out the different functions of Lino 3D layout immediately.

When adding configurable components into a layout the **TactonWorks integration** ensures that the configuration dialogue will pop up. The input used for configuring the component will be stored in the assembly - guaranteeing that each component of a layout may be re-configured at any time without losing input.

Manipulation tools: Lino 3D layout provides a number of different manipulation tools which are always available in the particular context:

- **Lino Triad** – serves as an easy-to-use manipulation tool for component chains. You can move whole chains relatively to each other, position them absolute and rotate them. All possible restrictions in Solidworks which may prevent the movement (like fixations) will be suspended automatically.

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- **Splitting and linking functions** – tools for the intuitive splitting of chains or linking of components to chains complete the maintaining possibilities for chains.

- **Component Exchange** – if implemented accordingly a **fully detailed engineering assembly** can be visualized instead of the **simplified sales component** and used for review by only two mouse clicks – keeping the initial configuration input values! The same function allows you switching between mirror-inverted components or "left-right" variants.

Definition tools: Lino 3D layout delivers all the necessary tools for the administrator in order to prepare components for their usage in the application. For instance the **Snap wizard** makes it easy to define the mate references which are needed for the automated positioning of the components. Another tool helps defining the face(s) which may be used as a **ground area** where components can be placed on.

Lino 3D layout provides **different types of global parameters**. With "real global" parameters you may e.g. control the height of all the portal cranes in a layout at once. With "chain global" parameters you can control for instance the width of all conveyors in a chain at a time. Every component which is added to this chain "inherits" the chain global parameters and adapts automatically to the chain. Apart from the mentioned ones there exist other types of global parameters too.

Even when using simplified components (parts as machine dummies instead of assemblies) you can nevertheless create complete bills of materials in SOLIDWORKS with Lino 3D layout. The application can expand the BOM that even such sub components are listed with their correct quantity and price which do not appear at all in the SOLIDWORKS feature tree!

Last but not least Lino 3D layout provides an **update function** which allows to exchange in an existing floor plan either all or chosen obsolete components with their up-to-date revisions – by only some mouse clicks. In order to do so the software checks in the background for each component if the revision stamp in the used component is the same as the current revision in the particular component in the library.

Customer benefits

- When using Lino 3D layout you can strongly **reduce the time** for creating floor plans and thereby also the time for creating a quotation – which gives you a significant competitive advantage.

- A floor plan which has been created in 3D and the resulting possibilities respective **output formats** ("walk-through", animated videos, 3D printouts etc.) creates a much higher impression to your end customer and appears much more professional than a "2D line grave".

- Because of the interactive layout creation in 3D the user and the customer **see immediately** what happens when the layout is being changed – and they can much better estimate the consequences.

- The usage of 3D based floor plan creation allows the **early recognition of possible collisions** and problem zones and helps therefore avoiding follow-up costs for last-minute changes on the construction site. The prevention of only one fatal error may amortize the investment in Lino 3D layout immediately.

- From the 3D layout assembly model **all the needed data for calculation and ordering** can be derived. In case of creating construction trades all the necessary information about bearing loads and media connections may be determined from this layout.

Have we aroused your interest?
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