

# Lino<sup>®</sup> Simplify

## Simplify Solidworks<sup>®</sup> assemblies

### Challenge

Due to increased globalization, more 3D models are being exchanged with third parties. This involves the risk of unintended use of the models. Companies can prevent this by sending simplified and obfuscated 3D models. This will protect your intellectual property and make reverse engineering very difficult.

Another reason to use simplified models is to build layouts. Conventional 3D CAD models contain too much information. By simplifying your models, unnecessary details are removed. This will decrease graphics load, loading times and improve handling of files.

### Solution

**Lino<sup>®</sup> Simplify is an Add-In for Solidworks<sup>®</sup> that will automate the process of model simplification.**

The simplification process is a fully automated process. So once the correct settings are set, Lino Simplify will do its magic. Lino Simplify works for both part and assembly files and will process all dependent files as part of the simplification process.

Both whole Solidworks assemblies and individual parts can be output as files. The user selects whether the simplified file should also be exported to Parasolid and/or STEP.

### Highlights



Simplification of assemblies/parts



Creating layouts (e.g. for project planning)



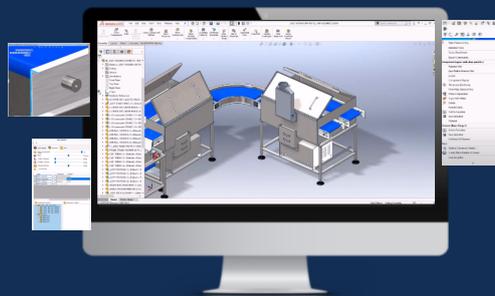
Increased performance through data reduction



Prevent reverse engineering

### Features

- File properties and the degree of simplification are defined globally
- E.g. welds and holes can be removed from assembly components



- Deleting feature information prevents reverse engineering
- Options to delete or retain different component types



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## Functions

**Different settings in the Solidworks<sup>®</sup> Add-In Lino<sup>®</sup> Simplify will affect the simplification result:**

### Global Settings

In this tab, users can set generic simplification settings like configurations to process, filename pre- and suffix and the level of simplification.

Users can use file property values in the prefix/suffix. This allows you e.g. to create unique files per revision.

### Settings Parts

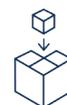
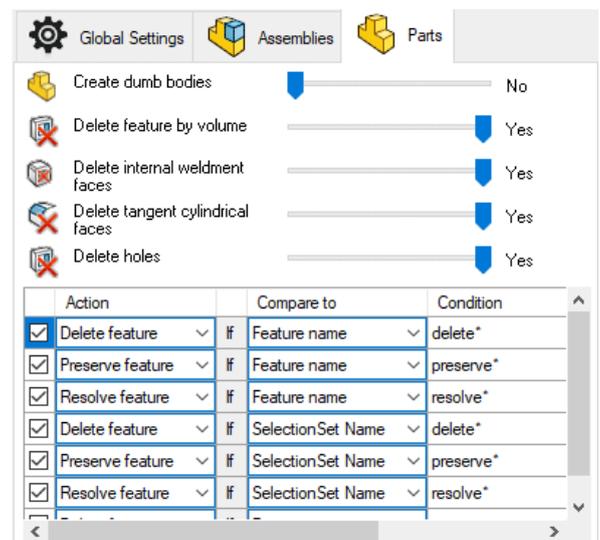
Part settings affect the simplification of individual parts and parts that are used as component in assemblies. Use *Create Dumb Bodies* to delete all feature information from the model. This will give you the best result to prevent reverse engineering and will automatically disable the option to preserve mates.

Users can choose to delete features based on their relative volume. Furthermore, users can choose to delete internal faces of weldment or to delete cylindrical faces. This last option will e.g. delete faces of bends in sheetmetal models.

Besides that, users can choose to delete holes from the model. Users can also use conditions to delete, preserve or resolve features based on their name.

Lino Simplify provides tools to easily (batch)rename features for the right application. Selection sets can also be used to delete, preserve or resolve features, regardless the name of the feature.

All these settings will work best on Solidworks models, but also imported geometry will be simplified.



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## Functions

### Settings Assemblies

This tab contains all settings that will affect (sub)assembly files.

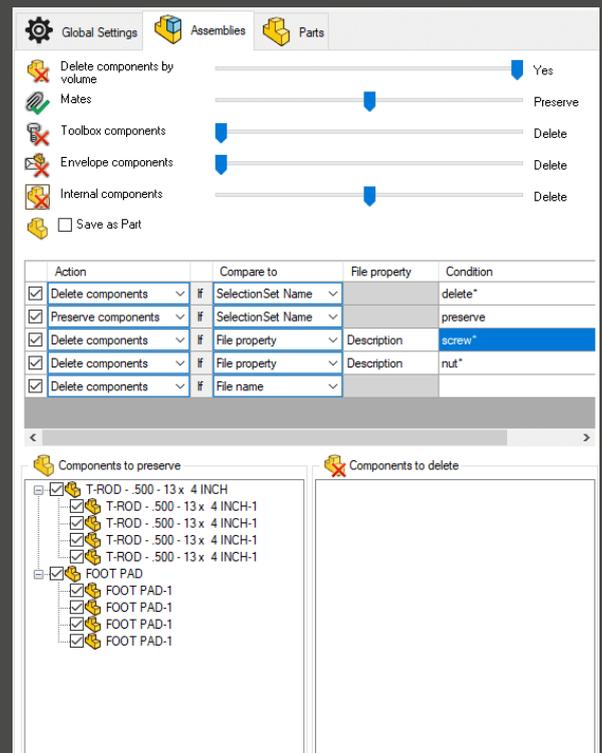
Users can set whether components should be deleted by their (relative) volume. This will result in small components being deleted.

Users can set whether they want to delete or preserve different component types (envelop and toolbox components).

Furthermore, users can set whether they want to delete internal components or if they would like to get a part file as output file. This will give you the best result to prevent reverse engineering.

Users can also define to delete or preserve components by file property or by file name. Besides that, users can also specify the name of selection sets to delete or preserve components.

The last option is to manually select the components to delete or preserve. These settings make our users very flexible in influencing the simplification result.



### Output

- The output of the simplified geometry is always in a single file – even for assemblies. For single parts, features can optionally be converted into a “dumb” import body.
- An assembly can be output either as a simplified assembly with virtual components or as a Solidworks single part (i.e. without assembly structure).
- In addition, the user can determine for individual parts such as assemblies whether Parasolid and/or STEP files are to be exported as well.
- Furthermore, a report is output as a PDF file by default, which documents the simplification results achieved in the form of comparisons of the states before and after the simplification.



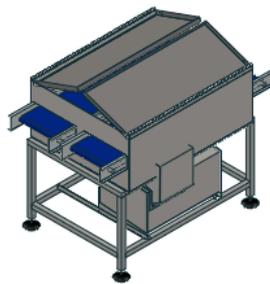
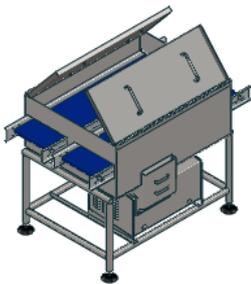
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## Simplification Report

Such a PDF report is automatically generated by Lino Simplify to illustrate the reduction.

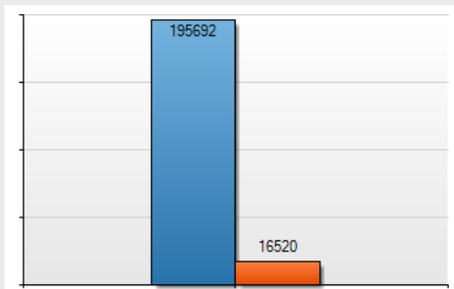
Before

After



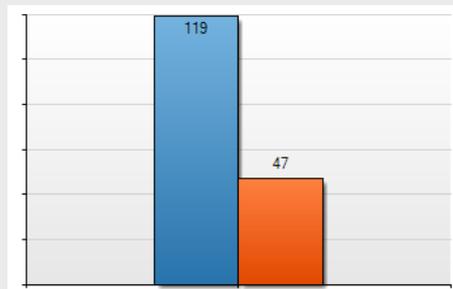
### Graphics triangles

Before: 195.692  
After: 16.520  
Reduction: 179.172 (91.6%)



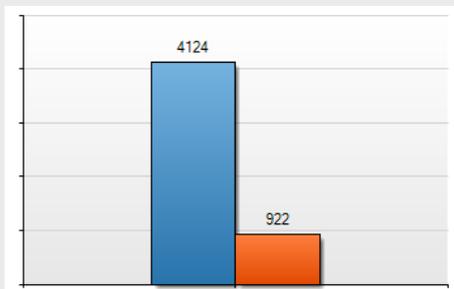
### Bodies

Before: 119  
After: 47  
Reduction: 72 (60.5%)



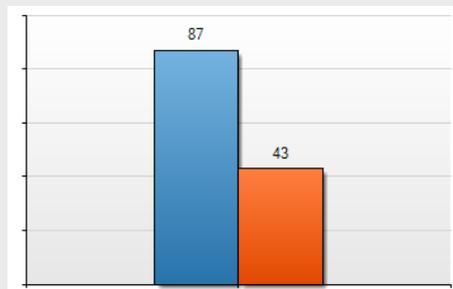
### Faces

Before: 4.125  
After: 922  
Reduction: 3.202 (77.6%)



### Components

Before: 87  
After: 43  
Reduction: 44 (50.6%)



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**Have we aroused your interest?**

Contact us. We are glad to advise you!

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