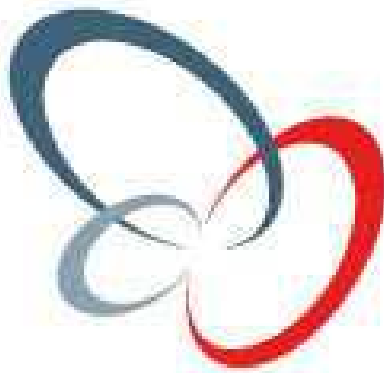


Shrinkwrap



PTC™
Shaping Innovation

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Objective:

At the end of this tutorial, you will:

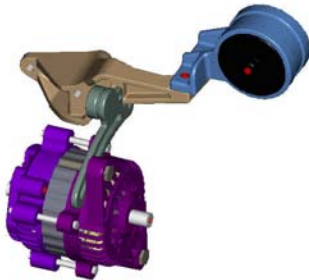
- Know three types of shrinkwrap parts.
- Know how the use of shrinkwrap parts affect regeneration times
- Know how shrinkwrap parts can be used for Vendor supplied component library parts.

Overview:

Many parts, especially Outside Plant (or Vendor) assemblies, contain much more detail and many more parts than are necessary to ensure proper space allocation in Pro/ENGINEER assemblies. Additionally, it is often not desired to submit assemblies with non-standard hardware to Pro/INTRALINK.

Pro/ENGINEER techniques exist to reduce the file size of these assemblies greatly and represent them as simple piece parts. When this shrinkwrap capability is used the files are not only smaller but the vendor hardware does not need to be submitted to Intralink.

There are four types of shrinkwrap: **Surface Subset**, **Faceted**, **Solid Merge**, and **Data Sharing** (Data Sharing available in 2000i2 and beyond).



Solid Merge type. Accurate mass properties, not associative.



Surface subset type. Accurate Mass Properties, not associative.



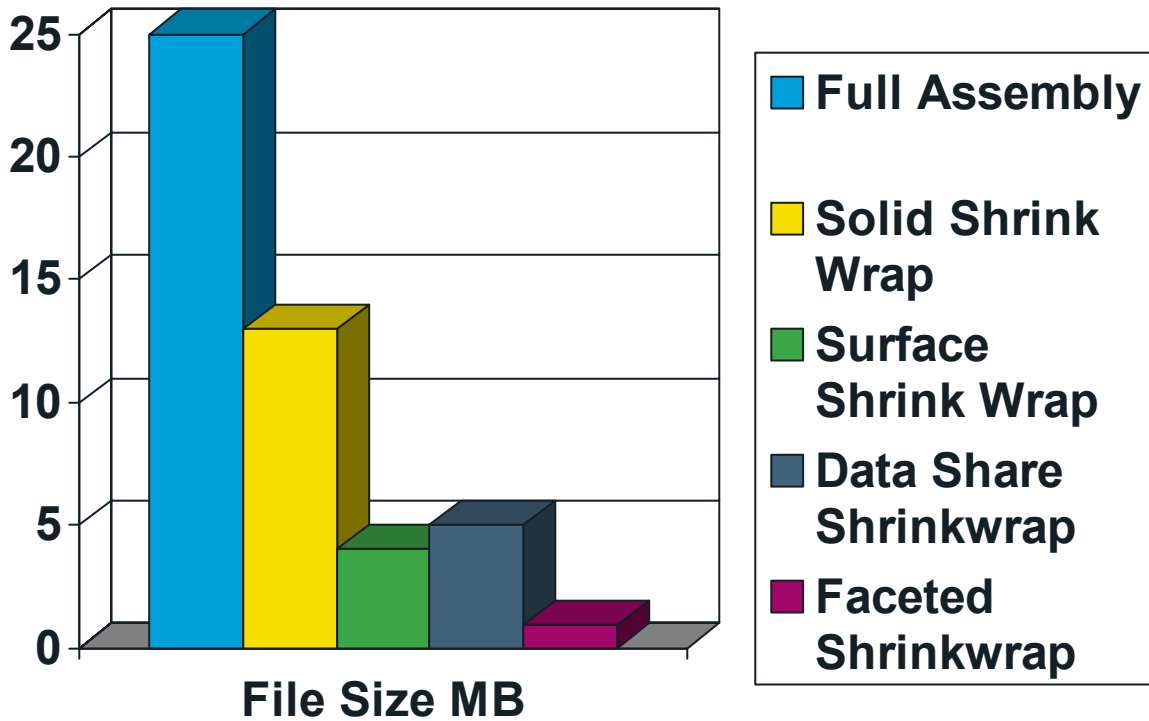
Faceted Shrinkwrap. Accurate Mass Properties, not associative.



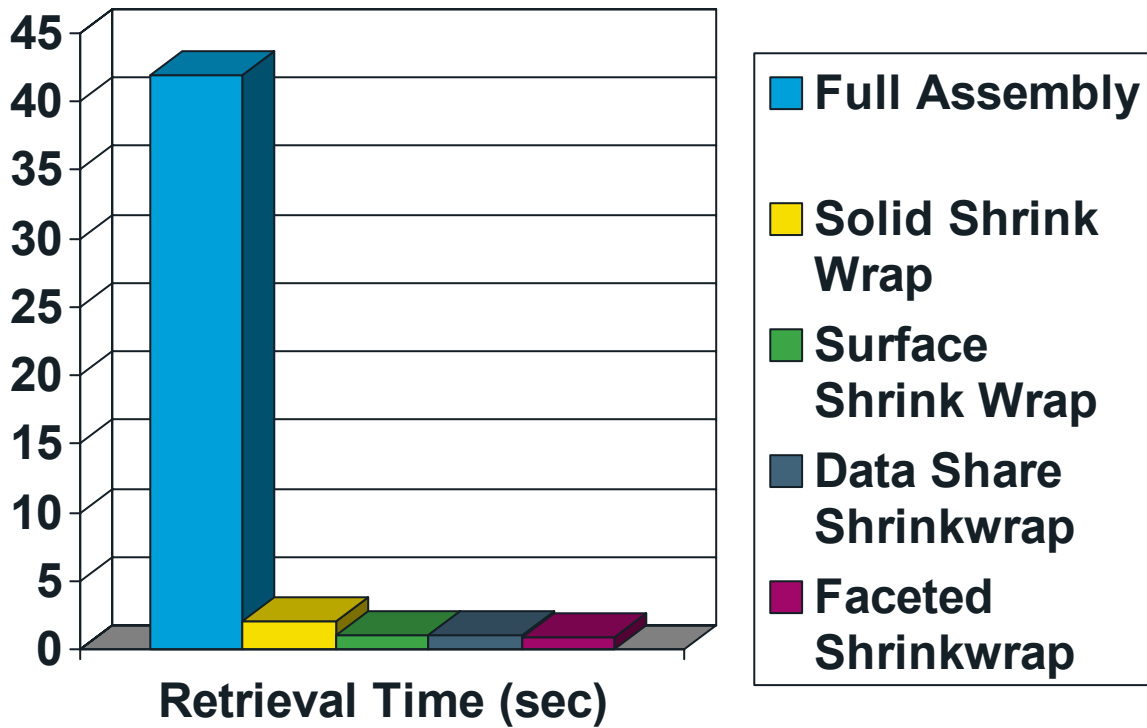
Data Sharing Shrinkwrap. Can toggle between associative and stand-alone. Created using Data Sharing functionality available in Pro/ENGINEER 2000i2 and beyond.

Metric:

Shown below are the types of file size reduction that can be achieved when assemblies are simplified using Shrinkwrap. Actual data taken from a typical oilfield equipment assembly.



Corresponding improvements in retrieval time of the resulting part are also achieved. See below:



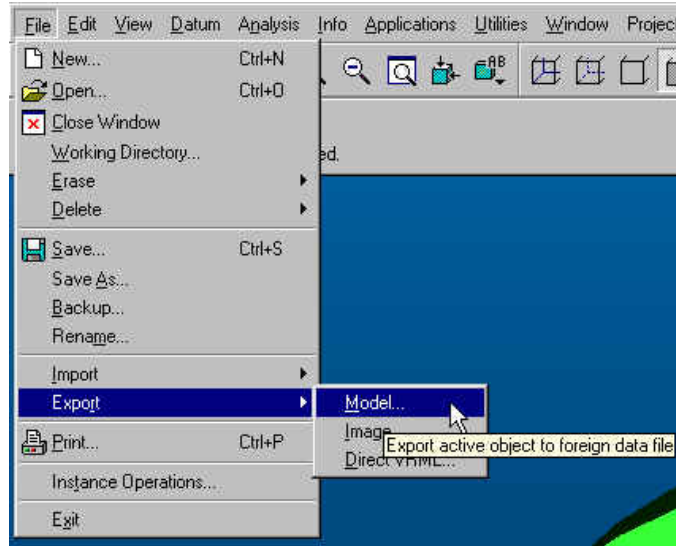
Tutorial:

To create non-associative, exported shrinkwraps follow the steps below.

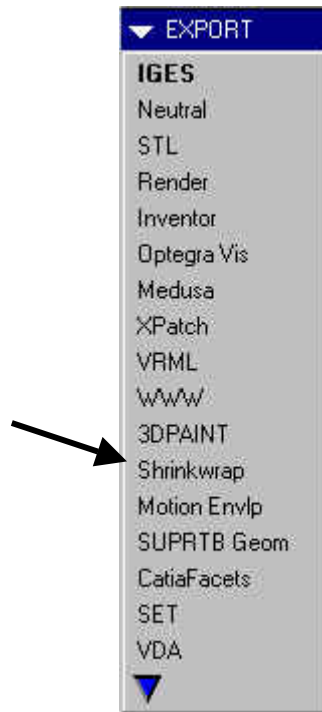
File; Open the part or assembly that you need to shrinkwrap.

To create non-associative shrinkwraps in 2000i and 2000i2:

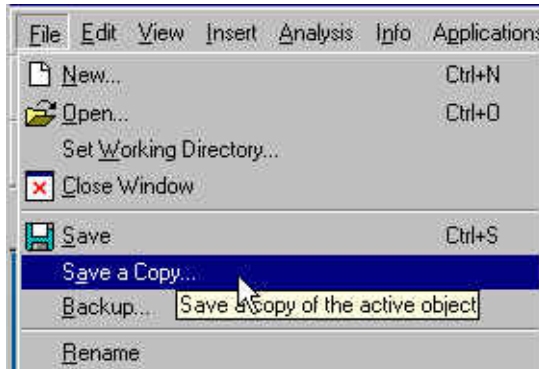
Choose **File;Export;Model:**



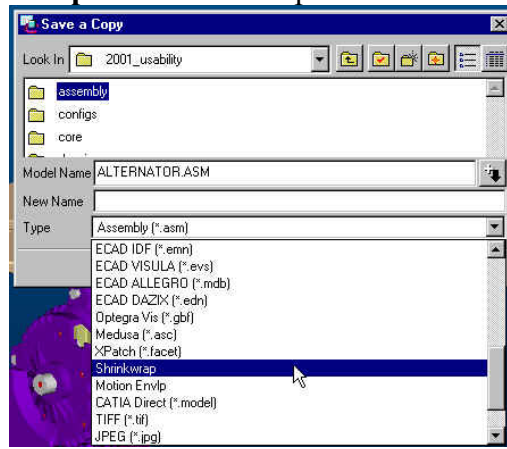
From the resulting right hand menu choose **Shrinkwrap**:



In Pro/ENGINEER 2001 select **File;Save a Copy**:

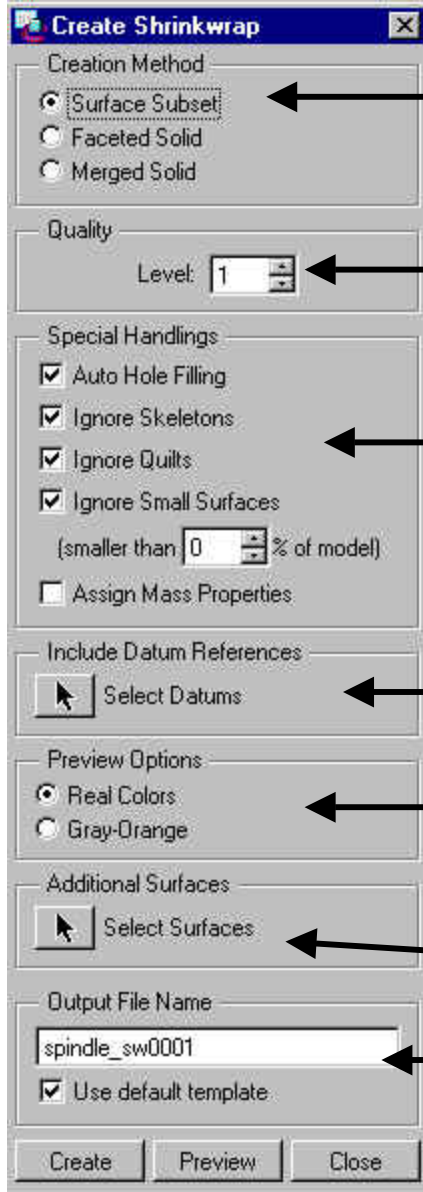


Then select **Shrinkwrap** from the File Open Browser:



At this point you should see the shrinkwrap menu for exported shrinkwrap types. The options are shown below, descriptions follow.

For Surface Subset types:



Shrinkwrap Type selection

Quality selection. Determines amount of surfaces chosen to represent the design. Scale is 1-10, 10 being the highest. Higher quality results in longer creation.

Holes, Skeletons, Quilts and Small Surfaces can be automatically removed. The current Mass Properties of the parent assembly can be assigned to the resulting shrinkwrap part.

By default, no datums are included in the new part. Desired datums can be selected here for inclusion.

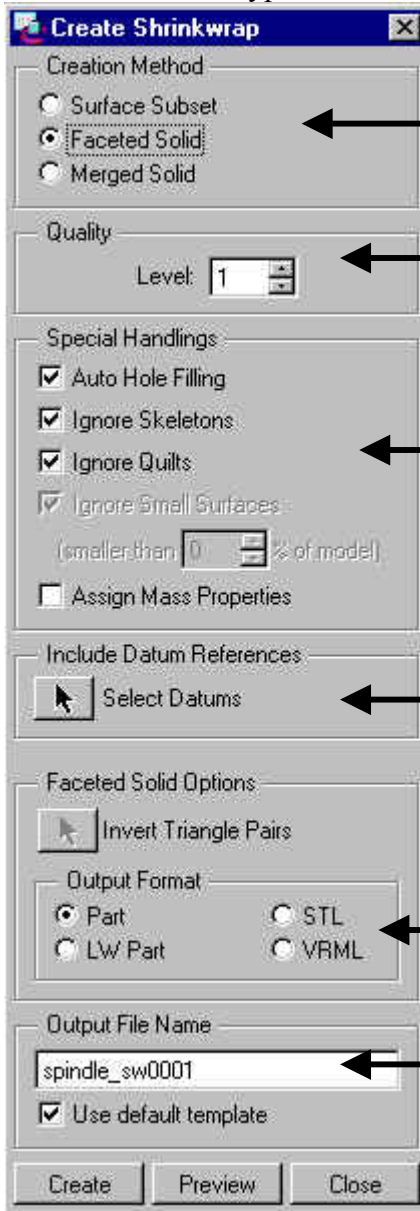
It is often useful to see which surfaces will be included in a surface shrinkwrap upon completion. When the Gray-Orange option is chosen, unselected surfaces are shown in orange. Desired surfaces which are not chosen by default can be added manually.

Name of resulting file

Create the new shrinkwrap part

Preview the resulting geometry from the current settings

For Faceted Solid types:



Shrinkwrap Type selection

Quality selection. Determines # of triangular surfaces created to represent the design. Scale is 1-10, 10 being the highest. Higher quality results in longer creation.

Holes, Skeletons, and Quilts can be automatically removed. The current Mass Properties of the parent assembly can be assigned to the resulting shrinkwrap part.

By default, no datums are included in the new part. Desired datums can be selected here for inclusion.

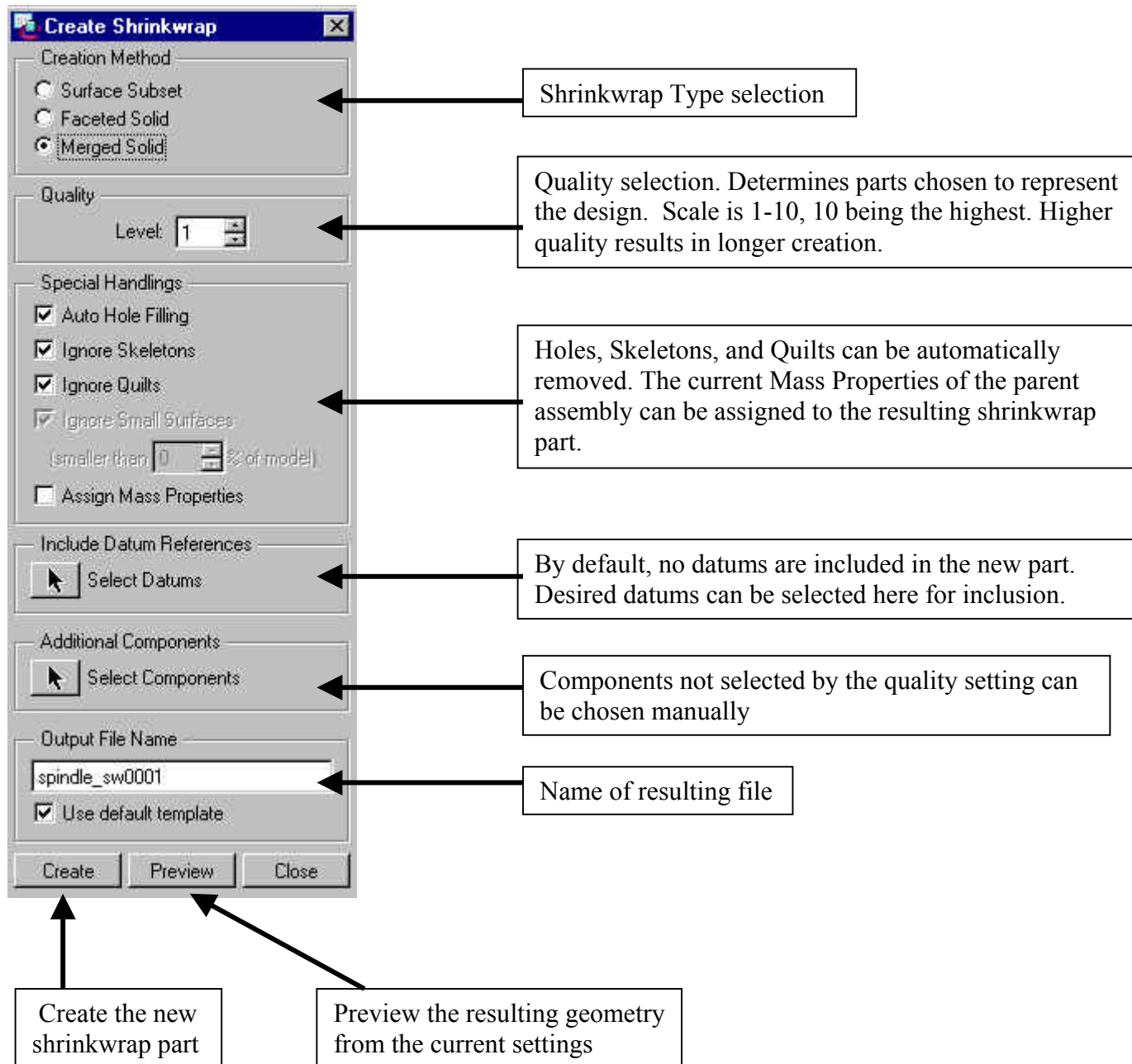
Choose your desired output type:
Pro/ENGINEER part
Stereo Lithography file (STL)
VRML

Name of resulting file

Create the new shrinkwrap part

Preview the resulting geometry from the current settings

For solid subtypes:



The **Data Sharing Shrinkwrap** method is covered in the Data Sharing Tutorial document. It has the added benefit of being **associative**. Even better, the user has the capability to toggle between associative and independent at will.

Some uses:

This functionality can be used any time a model needs to be simplified prior to use. Some benefits:

- The files are smaller
- No vendor hardware needs to be maintained in INTRALINK
- Retrieval time is very fast.
- When sharing data with suppliers, proprietary data can be masked

Be aware of the following.

- Cross sections will not fill for the surface subset method
- The exported types are not associative. Changes to shrinkwrap parts will need to be handled manually (except for the “data sharing shrinkwrap” covered in the data sharing paper). Use the data sharing type where possible.

Tutorial Evaluation:

Title:	<input type="checkbox"/> Engineer <input type="checkbox"/> Designer <input type="checkbox"/> Draftsmen <input type="checkbox"/> Mfg. Engr. <input type="checkbox"/> Tech. Pubs. <input type="checkbox"/> Analyst					
PTC Products Used:	<input type="checkbox"/> Foundation <input type="checkbox"/> Advanced Assembly Extension <input type="checkbox"/> Advanced Surface Extension <input type="checkbox"/> Behavioral Modeling <input type="checkbox"/> Intralink <input type="checkbox"/> Modelcheck <input type="checkbox"/> All					
Time using Pro/E:	<input type="checkbox"/> 0-6 months <input type="checkbox"/> 6-12 months <input type="checkbox"/> 1-2 years <input type="checkbox"/> 2-5 years <input type="checkbox"/> 5+ years					
1 – Strongly Disagree 3 – Agree 5 – Strongly Agree						
1. This tutorial content met my expectations:	1	2	3	4	5
2. The exercise was easy to understand:	1	2	3	4	5
3. This tutorial will help me on current projects:	1	2	3	4	5
4. These techniques make Pro/E a more effective tool:	1	2	3	4	5
5. These techniques will increase my speed using Pro/E:	1	2	3	4	5
What concepts/techniques learned from this tutorial will you apply on the job?						
1)						
2)						
3)						
What would you like to see as a future tutorial at your company?						
1)						
2)						
3)						
What can be done to improve these tutorials for your company?						
1)						
2)						
3)						

Additional Comments: