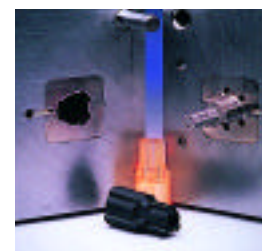
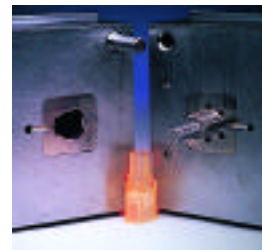
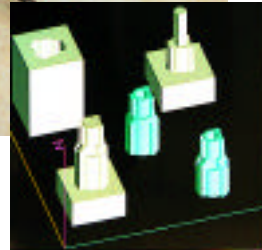


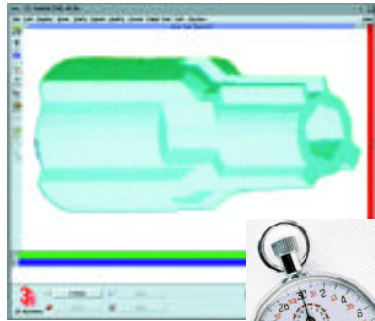
3D Systems SL Toolkit™



*The right tool for
the right job*



The right tools for the right times



As organizations everywhere discover the benefits of rapid prototyping, modeling facilities are increasingly being tasked with producing more complex models. Larger prototypes. More prototypes. With faster turnaround. And even to take designs directly to production tooling. Now there's an easy way to increase the productivity of your modeling process from prototype through production — SL Toolkit from 3D Systems.



Use repair and verification tools to bring models to a buildable state.



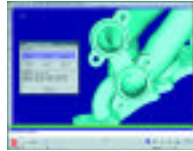
SL Toolkit gives you productivity tools at every step in the modeling process. Tools that let you do things you've never been able to do before. Tools that make rapid prototyping even faster. And speed that takes you all the way to tooling.

STL verification and repair
Translation errors can be a problem because every CAD package writes STL files differently. Overlapping or degenerate polygons, gaps, and inverted normals can make an STL file harder to build.

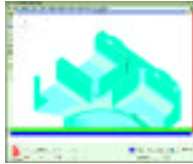
And these errors are often difficult and time consuming to fix. If the original CAD file is not available to the prototyping facility, the job may even have to be returned to the designers for repair. SL Toolkit not only makes these errors easier and faster to find, they can actually be repaired from within the STL file. Run SL Toolkit verification before you run 3dverify™ and you could cut your verification and repair time by as much as a factor of 10.

Alternate file formats
SL Toolkit allows you to import, verify and repair almost every type of IGES file, as well as ASCII, VDA-FS, ISO G-code, DXF, OBJ, STL, SLC and even data from reverse engineering scans.

Review the critical dimensions of your part.



As one modeling service bureau reports, "Because of the import and repair features in SL Toolkit, we can accept and build files that a lot of shops just couldn't handle. That means we get business that others have to turn away."



Create offsets or shells to reduce build volume.

STL functional tools
In the past, design changes could only be made to the CAD file. A difficult situation for service bureaus and for design groups with off-site modeling facilities. SL Toolkit changes that. Now, working with STL files, you can measure models, move them within a representation of your build area, and cut large models to fit your vat — even make cuts for dovetail joints.

Perform Boolean operations to add models to each other, subtract one from another or define the intersection of two models.

Create mold plates from a polygon model.



Cores and cavities
Automatic mold generation tools allow you to create injection molds directly from your RP dataset. Create cores and cavities from verified STL files of models, including all appropriate draft angles.

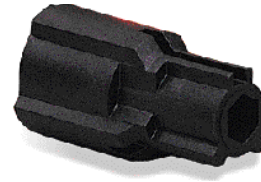
This is quite helpful in tooling functions such as designing gating systems.

And to make your prototyping even more rapid, SL Toolkit has an automatic offset feature which allows you to create a "shell" prototype. This feature not only saves build time and resin, it can also increase the accuracy of your model.

A major aerospace manufacturer reports this feature speeds his build time 10-15%.

Creating a uniform wall thickness also eliminates non-linear distortion — accuracy is so good, the models are used to conduct airflow testing.

The offset feature also lets you accept files from surface modelers and create the volume you need to build models.



Define internal geometries for sand casting applications.

Internal core definition
This tool takes the guesswork out of defining internal geometries for sand casting. It allows you to isolate internal cores, which you can build on your stereo lithography apparatus (SLA) as cores, or as molds for making sand cores.

Design Time

A range of visualization tools let you see your STL file before you even go to prototype. Highlight model properties by changing colors and using multiple moveable light sources. See your models as points or wireframe polygons with flat or smooth shading to check polygon orientation. Or rotate models to position them within the build space and verify fit. All before you ever build.

Prototype Time

Faster verification of STL files also helps you get to a prototype more quickly. Visual and statistical verification tools identify flaws such as overlapping or degenerate polygons, gaps, inverted normals — and you can fix them right in the STL file — without going back to your CAD file.

An automatic offset capability enables you to create a "shell" that can replace a solid build when internal detail is not present or important. This saves prototype build time and material costs. And because model walls are a uniform thickness, non-linear shrinkage is minimized. Or use this automatic offset to create volume so you can build from surface modeling files. Even create drain holes and plugs to simplify handling of trapped volumes.

Time to Market

SL Toolkit saves you time all the way from design through production. Or go directly to core and cavity tooling right from your STL models. Select an orientation, and SL Toolkit automatically creates parting lines and mold plates — even non-planar cuts. Adjust for shrinkage with powerful scaling options. Or define and isolate internal cores to speed tooling design for sand casting.