

Exporting Models for 3D Print

The Objet printers accept STL geometry data, which can be exported from most CAD packages.

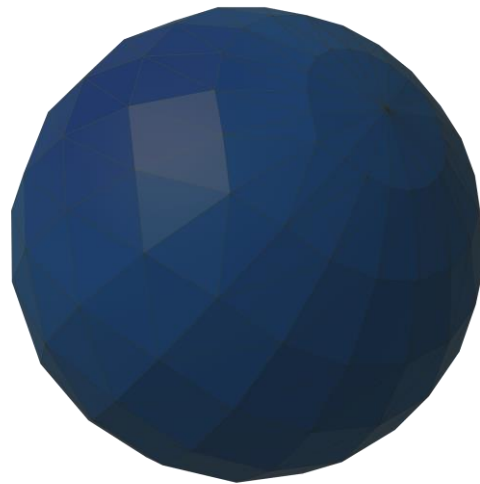
The STL format approximates the surface of a solid model by reducing it into flat triangles, so it is important to use the correct export settings to ensure an accurate representation of your model. The printed part cannot be any smoother or detailed than the supplied data – if it appears coarse or faceted this will also be seen in the print.

To export successfully your model must be completely closed and solid. Surfaces with zero thickness will not be seen by the printer. If presented with the option to save in ASCII or Binary, please choose Binary to reduce file size.

Alternatively, if your CAD package supports the export of surface data in STEP or IGES format, we can accept these and export STLs at optimal settings.



Original Geometry



Low Resolution STL

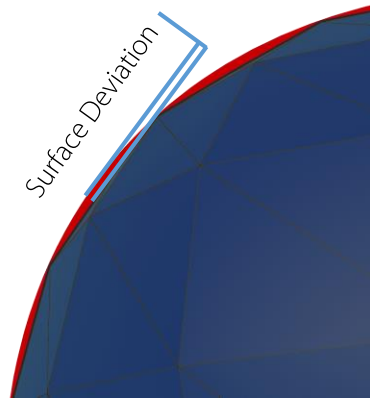


High Resolution STL

Resolution Settings

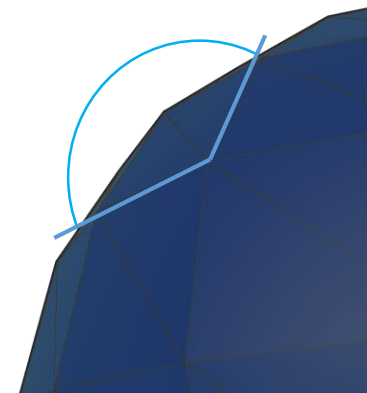
Most CAD packages use similar settings to control the resolution of the STLs, as explained below.

For specific instructions relating to your particular software, please visit <http://www.stratasys.com/customer-support/cad-to-stl>



Surface Tolerance / Deviation / Chord Height

This setting has the greatest effect on the resolution of the STL. The surface tolerance controls the maximum distance allowed between the edge of a facet and the original surface. This is typically set to a low figure.

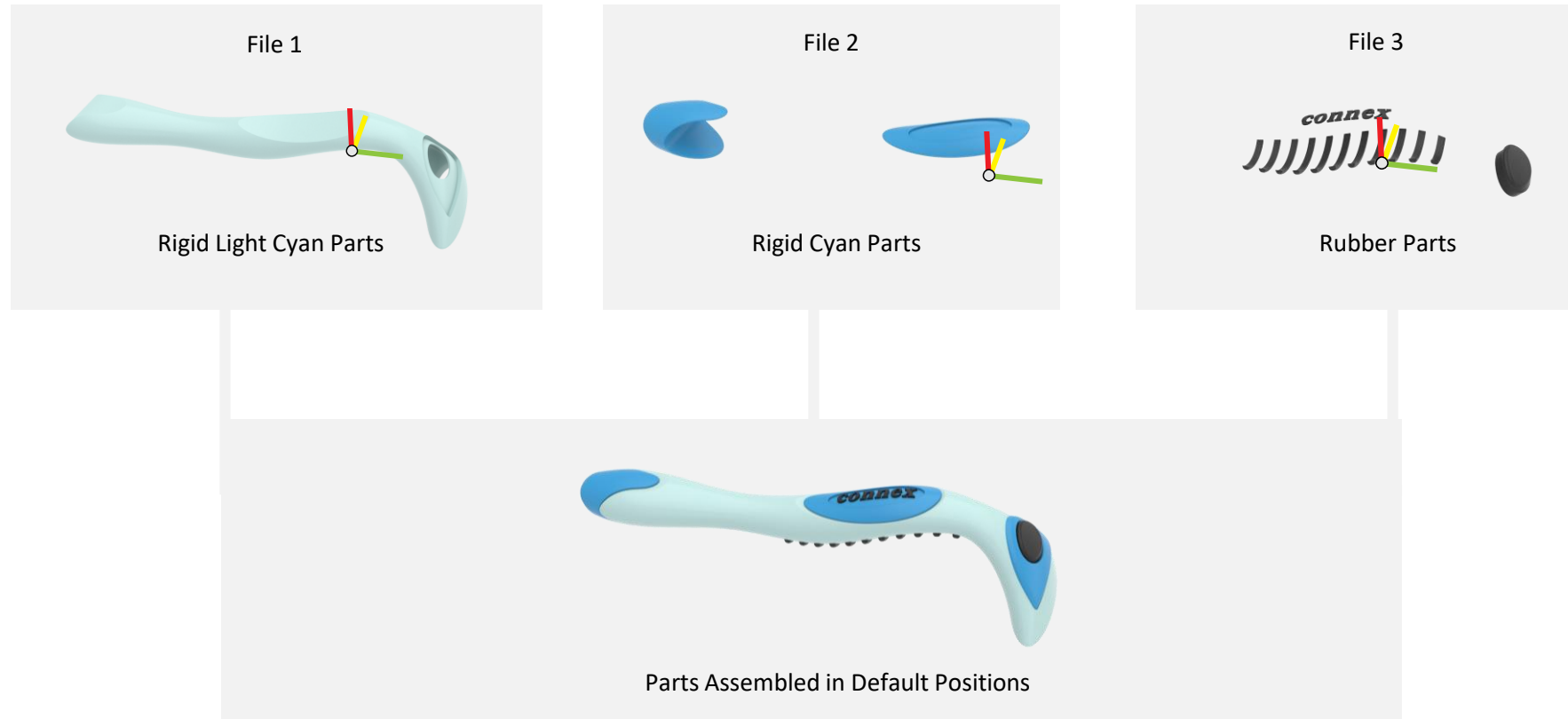


Angular Tolerance

The surface normal of a facet is compared to the surface normal of each adjacent facet. The angle between these normals is not allowed to deviate more than the set amount. This is typically set between 0.5 and 1 degree.

Multi- Material **Model Export**

If your model contains parts intended for co-printing in a multi material build, the material groups must be exported as separate STL files, sharing the same origin point. This ensures the parts align correctly when imported to the build software. This can be achieved by exporting groups of parts from your assembly file.



Geometry Consideration

The 3D print process offers the ability to produce parts that cannot otherwise be made, however there are still limitations to consider when producing models:

Thin wall sections can be produced down to a thickness of 0.6mm. The materials are mainly intended to simulate plastics, therefore have good strength at wall sections of 1.3mm to 3mm.

Parts intended to be printed together, such as overmoulds or contrasting text, should have zero offset from their parent parts. Parts intended to be mechanically separate should have a clearance of 0.5mm to allow for removal of support material.

The printer encases the parts in a solid support material which is cleaned away after printing is complete. If your parts have any closed volumes, it may be necessary to include an access hole in order to properly remove the support material.

The printer's bed measures 500mm x 400mm, with a possible build height of 200mm. Parts larger than this will be required to be split into smaller segments, with features to attach the parts back together after printing.