prototypeprojects
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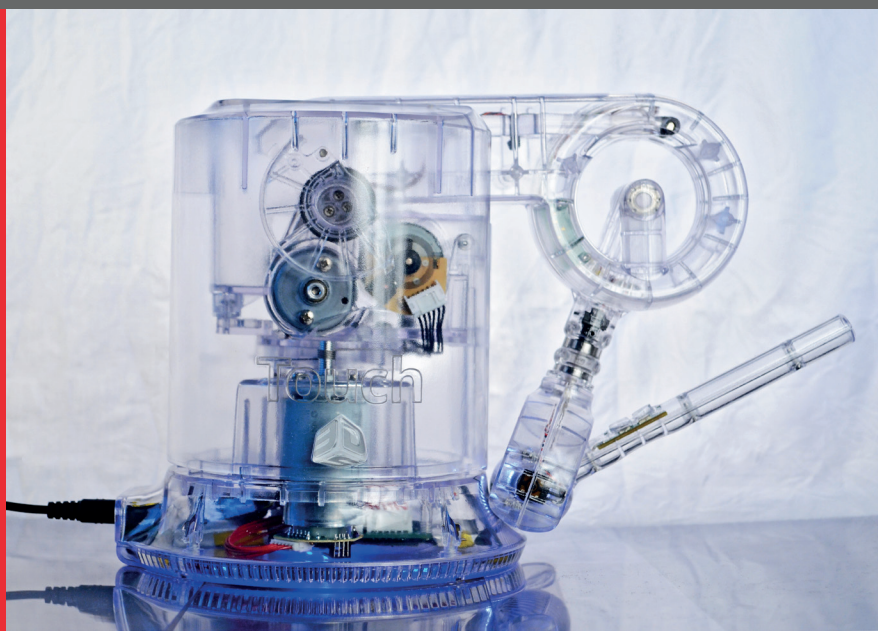
PROTOTYPE PROJECTS PROCESS GUIDE

Stereolithography (SLA)

If you need low or single run production of prototype parts for concept models, presentation models or tooling masters and you need them delivering quickly, it's likely that Stereolithography (SLA) is the prototyping process you require.

SLA is ideal for the production of prototype parts that are required fast (hence rapid prototyping) and,depending on your exact requirement,parts can typically be produced overnight for delivery next day.

This process guide describes the Prototype Projects approach to producing prototype parts using SLA.



What is SLA?

SLA is a rapid prototyping process that is typically used early in the product development process. It produces parts with a quality and surface finish that is usually very good. The range of materials that can be used allows for a range of tolerances and property resilience.

Our SLA capacity and flexibility enables you to move quickly onto the next design iteration, saving you valuable time.

We have eight SLA machines, all manufactured by 3D Systems, with build volumes (XYZ mm) and material options as follows:

Pre-production applications for which SLA is ideal include:

- 4 x Projet 6000: 250 x 250 x 250 (Accura Xtreme, Accura 25, Accura ClearVue)
- 1 x Projet 7000: 380 x 380 x 250 (Accura Xtreme)
- 1 x Viper: 250 x 250 x 250 (Accura ClearVue)
- 1 x 3500: 350 x 350 x 400 (Accura Xtreme)
- 1 x 5000: 508 x 508 x 534 (Accura ClearVue)

Ultra High Definition build mode is used as standard, with a dual-spot intelligent scanning laser: fine point scanning for borders and small features, and broader scanning for infill hatching.

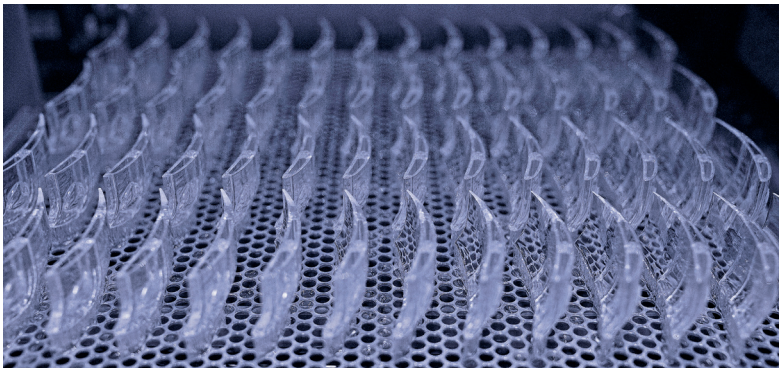
Benefits

SLA is one of the most popular prototyping processes among product designers and is widely regarded as the first rapid prototyping process. It enables product designers to get their designs off the drawing board and on to the table quickly.

Benefits include:

- Speed:The principle benefit. Depending on exact specifications, SLA models can be turned around overnight
- Time saving: this prototyping process can save you valuable time because of the ability to move quickly onto the next design iteration
- Low runs: Single parts can be produced quickly and easily
- Tight tolerances: parts can be produced to very specific requirements

In the overall product design and development cycle, SLA is a vital process for helping your get your products to market fast.



SLA Summary

PROCESS FEATURES

- Ideal for small runs or single runs of highly accurate prototype parts
- Useful for concept or one-off presentation models and masters
- Very fast lead time; same day or overnight depending on exact requirement
- Time and money savings

PROPERTIES

- High temperature resistance
- Moisture resistant
- Clear,white or translucent;colour finishing available
- High level of feature complexity
- Excellent surface finish
- Range of model sizes
- Lathing and drilling options
- Flexible polyurethane casting resin grades range

MATERIAL SIMULATIONS

- Polypropylene
- PC
- High temperature, high durability plastic
- ABS

PRE-PRODUCTION APPLICATIONS

- Concept models
- Presentation models
- Investment castings
- Master patterns