



TECHNOLOGIES, LLC

PLASTIC PROTOTYPE TECHNICAL INFORMATION

The Acu-Cast Process

Master Model

The **Acu-Cast** Process begins with creating a master model. These models can be created in a variety of ways. We can build models from furnished prints or by utilizing your solid modeling capabilities via STL files.

Inspection

Upon completion, the master model is inspected and documented, using blue print or STL file dimensions, to insure accuracy.

Silicone Casting Tooling

The master model is then placed on a parting board to establish direction of pull. A silicone rubber negative is then made of the master model. This silicone rubber tooling makes it possible for us to duplicate prototypes or short-run multiples. After removing the master model from the silicone tool the tool is assembled.

Plastic Prototypes

Vacuum Casting Resin is measured precisely into Cup A and Cup B. Place both cups into the top chamber and the silicone tool in the lower chamber. Automatically de-gas, mix and pour the resins with the pre-programmed casting cycle. As the resin flows into gates or runnels the tool is pressurized to ensure void free parts. Remove the cured part from the mold after oven curing.

Trim

Finish the replica of the master by trimming off gates and runners.

First Article Inspection

Check for dimensional accuracy to the initial master model.

Prototype Run

Continue producing consistent quality parts with material and color versatility in the vacuum casting system.

Tolerance Requirements

Whenever a master model is needed to create plastic prototypes, an accumulative tolerance scheme is required. This is a brief description of the tolerance requirements used by the **Acu-Cast** Process.

The Creation of a Master Model

Master Models built using customer furnished STL files and built require additional tolerance due to warp and surface finish. Due to the short shelf life of the material used in these models, only one production tool* can be produced. If long-term production is required, a permanent tool can be manufactured. Contact us for further details.

.000 to 1.000 \pm .008
1.000 to 3.000 \pm .010
3.000 to 6.000 \pm .012
6.000 to 12.000 \pm .015
Each additional inch requires \pm .0015
Angles \pm .5 degree

Customer furnished master models will be our starting guideline to determine tolerances for our castings.

Silicone Tooling & Casting Requirements

.000 to .500 \pm .005
.500 to 1.000 \pm .010
1.000 to 6.000 \pm .015
6.000 to 12.000 \pm .020
Each additional inch requires \pm .002
Angles \pm .5 degree
Across parting lines and core
require an additional .010

In some cases secondary machining operations can be performed to maintain closer tolerances if needed.

These are guidelines established by **Acu-Cast Technologies**. Each job can be discussed on an individual basis*. Please feel free to contact any of the management staff for details.

*Number of Prototypes produced from tooling depends on style and configuration of design. On an average 10 to 20 prototypes or 3 months shelf life can be maintained.

*Design and style of prototypes may require additional tolerance.

*A closer tolerance can be negotiated.