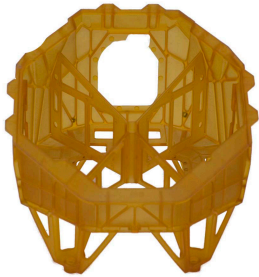




# Reducing lead time with Rapid Prototyping



## Shellcast is a leading producer of Rapid Prototype aluminum investment castings

SHELLCAST has been providing Rapid Prototyping since 1989. We are able to produce castings in as little as 4 weeks by converting patterns using the Stereolithography (SLA) Rapid Prototyping method and eliminating the delays required to manufacture traditional metal tooling. Geometry is virtually limitless and allows for such details as fins, pins and complex, integrally cast cores. This process is extensively used by design engineers in the development of new products, allowing designers to go directly from a CAD file to a fully functional aluminum casting. The method is flexible and allows the use of different RP patterns from a variety of processes.

### Traditional Lost-wax Process

vs

### Rapid Prototype Process

The traditional lost-wax process involves the manufacture of a metal tool (die) which typically takes 6-14 weeks depending on part complexity.

The rapid prototype pattern is built from a CAD design and substituted for the wax pattern. This takes from 1-2 weeks

Wax is then injected into the die to produce the wax pattern which is subsequently gated and coated with ceramic shell to build a ceramic mold.

The RP pattern is subsequently gated and coated with shell material. After shelling the RP pattern is eliminated from the mold using special procedures.

The wax pattern is melted out (hence lost wax) and aluminum is then cast into the empty mold resulting in the casting.

The remaining production stages follow the traditional lost-wax process, producing a finished casting with the exact geometry of the rapid prototype pattern.

Finished Casting in 10-18 weeks

Finished Casting in 4 - 5 weeks