

ProCAST Production Tooling

A unique approach to short-run manufacturing

About

ProCAST Production Tooling from GKN Additive (Forecast 3D) combines the precision and accuracy of a CNC (computer numerical control) machined master pattern with the repeatability of our nationally renowned urethane casting process. This combination is a manufacturing solution for short-run products when time constraints are a factor.

Using this process, high-quality features are incorporated with color and textures cast in, avoiding the pitfalls of scratches and adhesion issues that often plague painted parts. Due to the design flexibility of soft tooling, many conventional tooling design constraints become obsolete. Production tools are guaranteed to endure the life of the product or GKN Additive (Forecast 3D) will reproduce at no cost.

Benefits

- **Scale:** Optimal for low- to mid-volume production, especially low-volume applications (50 to 10,000 parts) where hard tooling is too costly and lead times are lengthy
- **Appearance:** High-quality aesthetics
- **Accuracy:** Castings meet dimensional requirements consistently, compared to traditional RTV solutions.
- **Guarantee:** Production tooling is a one-time nonrecurring engineering (NRE) charge guaranteed for the life of the program.
- **Sustainable:** Manufacturing is 100% U.S.-based for supply-chain reliability and security.
- **Certified:** ITAR compliant: ISO 9001:2015 and AS9100D-certified facilities

Applications

- Complex and functional prototypes and end-use parts
- Low-volume solutions for medical, aerospace, and transportation
- Functional enclosures, panels, bezels, and housings
- Consumer products
- Silicone keypads, buttons, and elastomeric options, from soft to hard Shore A durometers



Deburring/prepping for paint



CNC machining production tooling from CAD data

Lead time	1-3 weeks
Accuracy	+/- .007" first inch plus .002" per inch thereafter
Wall thickness	Parts designed with injection mold best practices
Feature size	Feature size typically limited to cutter size
Order size	50 to 10,000 pieces batch production
Finishes	Custom colors, custom hardware installation, component assembly, pad printing, laser etching, over-molding supplied substrates

Process

1. CNC machines and finishes two individual halves of tool.
2. Silicone mold of both halves is created.
3. The GKN Additive (Forecast 3D) Casting Department assembles and processes both halves.
4. Material of choice is injected into the silicone cavity mold under vacuum.
5. Molds are placed in oven or autoclave to cure.
6. Parts are reviewed for aesthetic and dimensional quality.
7. Gates and flashing are removed.
8. Secondary operations are performed.
9. Parts undergo final quality check and are packaged for shipment.

Compared to traditional cast urethane silicone tools that have a limited life, ProCAST Production Tools provide a lifetime guarantee.

Materials

- Rigid epoxies & urethanes
- Silicone & urethane rubbers
- Water-clear urethanes
- Eco performance resins
- Special-application plastics
- ABS, PC, and HDPE-like production grade urethane
- UL 94 V-0 flame rated materials



ProCAST Production Tooling cast urethane (material: UABS 83)

Find out how GKN Additive (Forecast 3D) can take your product from prototype to production. Visit forecast3d.com today or contact us directly at (877) 835-6170 or hello@forecast3d.com to learn more.