3D SYSTEMS
Additive Manufacturing Solutions

What You Win When You Lose The Tools

The benefits of digital molding with 3D Systems' Figure 4™ Technology

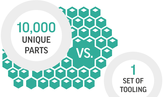
Digital molding refers to the Additive Manufacturing (AM) production process enabled by 3D Systems' Figure 4™ technology that delivers an end-use product or final component without traditional tooling.

For decades tooling has been the leading method for quickly achieving accurate and repeatable, high quality parts in high volume. Until recently, no other manufacturing process could compete, which has been problematic in cases where high volumes are not needed, or when tooling constraints restrict design options.

With continual advancements in additive manufacturing technology, new benefits are available through digital molding that bypass the extra time, cost, and minimum order quantities (MOQ) of the tooling process. To better understand these benefits, where they come into play, and how they can advance your manufacturing goals, explore the illustrations below.

Manufacturing Without Tools

Digital molding with Figure 4 offers an alternative to tooling that is compact, affordable, mobile, and relatively immediate when compared to traditional tooling. Instead of taking the extra steps to design and manufacture tooling to bring your product into production, digital molding allows you to go directly into production once your product design file is ready. Six Sigma repeatability (Cpk > 2) across all Figure 4 materials makes Figure 4 the most accurate 3D printing technology available.



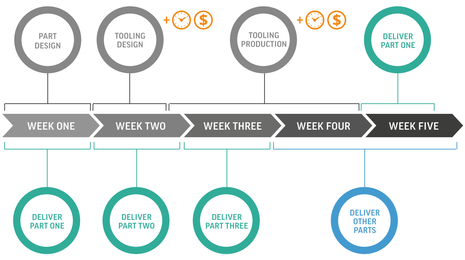
Produce 10,000 unique parts in the time it takes to deliver one set of production tooling

Digital Molding Accelerates Time-to-Market

Bringing new products to market faster is a significant competitive advantage of digital molding. The ability to update designs on the fly with immediate impact introduces new agility and flexibility to an otherwise fixed or costly process.

Shrink time to first part to 92 minutes or less

TIME-TO-MARKET WITH INJECTION MOLDING



TIME-TO-MARKET WITH DIGITAL MOLDING

The Benefits of Digital Molding

Digital molding with Figure 4 technology can do more than save time and money in production – it enables previously impossible products, timelines and capabilities. When you use additive manufacturing to go directly from a design file into production, new doors open.

PRODUCTS

- Mass customization for personalized and one-off goods
- High complexity parts with unconventional features such as internal lattices for lighter weights, conformal channels for increased performance, etc.

TIMELINES

90% LESS TIME

- Immediate availability of parts
- Ideal for low volume production
- Effective bridge to production to begin filling orders before tooling is ready

COST

- Cost-effective option for low volume production
- No cost penalty for design updates or customized goods

CAPABILITIES

- Consolidate components into a single build
- No minimum order quantities
- Produce replacement parts on demand without inventory
- Flexibility to update part design without equipment overhaul
- Mass manufacture without a production line

Digital Molding as a Bridge to Production

Digital molding is ideal for low volume production, and can also be used as a cost-effective and productive bridge to production while waiting for final tooling to be manufactured.

30+ Years

What You Need to Succeed

Getting the most out of any additive manufacturing solution requires the right materials, software, and hardware, connected by the right people. With over 30 years leading the additive manufacturing industry, 3D Systems' experts can help you reach your next manufacturing goal with end-to-end products, services and support.

Figure 4 Solutions for Digital Molding

EXPERT SERVICES

Multi-disciplinary consultation with expertise across design and manufacturing as well as On Demand Manufacturing services for high quality, high speed outsourcing.

MATERIALS PORTFOLIO

A broad range of functional plastics with minimal post-processing requirements and diverse material properties.

3D SPRINT™ SOFTWARE

All-in-one software for preparing and optimizing CAD data and managing the additive manufacturing process.

FIGURE 4 TECHNOLOGY

Scalable, modular solutions offering ultra-fast speed for up to 15x throughput improvement and up to 20% lower parts costs.*

*Throughput improvement compared other 3D printing systems based on various use cases on Figure 4 models; parts cost compared to traditionally manufactured parts and operations.

Find out more

Learn more about how to implement high speed digital molding in our white paper.

Download now