



# 3D PRINTING SOLUTIONS in the Packaging Industry

## Industry Challenge

Before every jar of peanut butter, shampoo bottle, or toothpaste tube made it to the grocery store shelf, a carefully choreographed sequence of production machines, labeled, filled and sealed each container for distribution.

In the packaging industry, change happens fast. Shifting consumer needs and brand priorities call for customization at a rapid pace. Current industry trends signal a move towards more limited production runs of half a million bottles to even 5,000 – 10,000 bottles at a time.

And with every alteration in the size or shape of the container, the packaging machinery requires retooling. Using traditional CNC retooling methods, the packaging machines could be down for one to two weeks, cutting deeply into the production schedule and profit margins, not to mention the added cost of producing the CNC parts. The financial impact of these interruptions is a great burden for most businesses.

## MakerGear in the Mix

Three to four years ago, leading engineering companies introduced 3D printing to prototype parts. Now, with advancements in printable materials, they are able to use 3D printed tooling in place of traditional CNC produced parts. And they use MakerGear to get it done.

We have a long relationship with MakerGear," says the President of a leading engineering service firm, "We have tried other machines, but things get moved around on the production floor and it is important to have rugged machines. MakerGear is our standard."

Working in an industrial environment, durability is crucial. 3D printers used for part production must be capable of withstanding factory conditions for the long haul. "The benefit of using MakerGear is their accuracy and reliability. MakerGear has the ability to work with new materials and their machines are rugged."



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- President of Leading Engineering Service Firm

## New Business Models

As the opportunities to serve new customers abound, engineering firms are adapting and using new business models to accelerate tooling production. Now, in some cases, design files are sent directly to customers who have MakerGear printers on location, allowing them to print on demand on their own production floors. If a part breaks during production, a new one can be printed on the spot. And in the rapidly changing packaging industry, rapid printing options can make all the difference.



## Meet Our Precision Machines.

Round holes, smooth surfaces, clean layer changes, and sharp corners, MakerGear printers have been called the workhorses of 3D printing.

Excelling in precision, consistency, and durability over the long-haul, MakerGear printers deliver outstanding dimensional accuracy on both external and internal features.

Join the thousands of other users who have grown or strengthened their businesses by incorporating MakerGear into their workflows. Let us help you pivot quickly and competently as an innovator in your industry.



## Ready to Run. Built to Last.

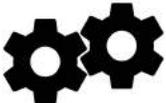
- MakerGear printers are crafted out of Powder Coated 11 gauge Stainless Steel, providing superior rigidity compared to the acrylic or lighter gauge frames on the market.
- Linear rails and bearings on independent X and Y axes mean smooth, true linear motion for precise prints. All moving parts move with respect to precision CNC machined cast aluminum components.
- MakerGear printers are capable of printing in a broad range of materials including polycarbonate, nylon, flexibles, PET, HIPS, metal-filled composites, wood-filled composites, carbon-filled composites and many more.

# Meet MakerGear

Founded in 2009 in Beachwood, Ohio, MakerGear empowers thousands of users in all 50 states and more than 75 countries, ranging from Fortune 500 companies to small businesses, medical researchers, government agencies, and educators. The company recently opened a new R&D facility in Northeast Ohio and is committed to expanding the use of technology and manufacturing in the region.



**MADE IN THE USA** Our factory is located in Beachwood, Ohio where all of our machines are built and individually tested before shipping. Many of our components are manufactured within 25 miles of the factory including the fabricated steel frame and steel parts, machined cast aluminum alignment components, extruder parts and the wiring harness. Off the shelf components (motors, power supply, etc.) are sourced from domestic and foreign suppliers.



**INDUSTRIAL PRECISION** MakerGear products are tools, not toys. MakerGear printers are designed, engineered, manufactured, and inspected according to standards that ensure optimal performance for professionals and innovators— from designers, engineers, and architects to teachers and business owners, as well as hobbyists, DIY enthusiasts, and costume designers — in dozens of industrial applications.



**REAL CUSTOMER SERVICE** If you ever need to contact MakerGear for support, our team is staffed with the most knowledgeable and responsive MakerGear experts. We have an established record of providing prompt, friendly, and expedient technical support, by phone and email.



**THRIVING COMMUNITY** When you purchase a printer from MakerGear, you become part of the thriving MakerGear community - an enthusiastic, engaged, and helpful group of 3D printing experts — particularly designers, engineers, educators, and hobbyists. Whether you are 3D printing industrial parts, architectural models, DIY quad-copter drones, or your favorite cosplay props, the MakerGear Forum offers a wealth of guidance and information about 3D printing. Join our vibrant network of makers and professionals, and contribute to our ever-growing community in which designs, inspiration, and advice are freely shared.



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