

## Boston Engineering

Boston Engineering Speeds Prototyping by Using Their Rize One 3D Printer

### CHALLENGES

Boston Engineering wanted to reduce process bottlenecks and the high operating costs of their lab printers.

### SUMMARY

BE engineers produce functional parts with Rize™ One in an office cubicle to reduce the bottlenecks created from their lab printer.

### RESULTS

- Produce 10-12 prototypes a week
- Get parts same day vs. potentially waiting 2 or 3 days
- Material costs are less than half the cost of the FDM materials
- More effectively sell designs to clients

*Driven by making meaningful impact.* That's the philosophy of Waltham, Massachusetts-based [Boston Engineering](#). Since 1995, the company has provided comprehensive product design and engineering consulting services spanning the entire product development process, from concept through commercialization, across consumer products, defense and security, medical devices, robotics and industrial and commercial products. Whether designing the most innovative products and technologies or getting to market faster, Boston Engineering thrives on solving their clients' challenges and making a lasting difference in the way people work and live. to launch a new product. This can take months or even years.

## The Lab's 3D Printer Creates Bottlenecks

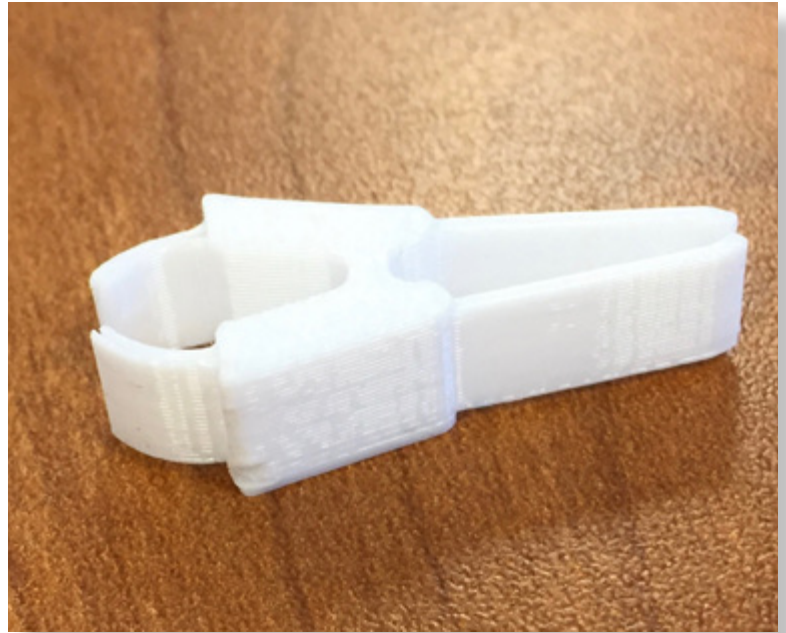
Developing the best products and technologies and beating the competition to market requires fast and frequent iteration.

The company's engineers work in a typical cubicle office environment, while their FDM 3D printer operates in specially-equipped additive manufacturing lab. The lab's FDM printer is far from their offices due to the system's

post-processing method, which requires 3D printed parts to be soaked in a chemical bath for several hours following 3D printing to remove support material from the parts.

Constantly looking for ways to increase his clients' speed to market, John DePiano, Director of Product Development at Boston Engineering, recognized that reducing the time it takes to develop parts for his clients would alleviate the existing process bottlenecks experienced by his team of engineers who can wait as long as two to three days for each of their parts to come back from the additive manufacturing lab.

Put simply, the second Rize system that resides in the office environment, alleviates potential bottleneck concerns from the lab.

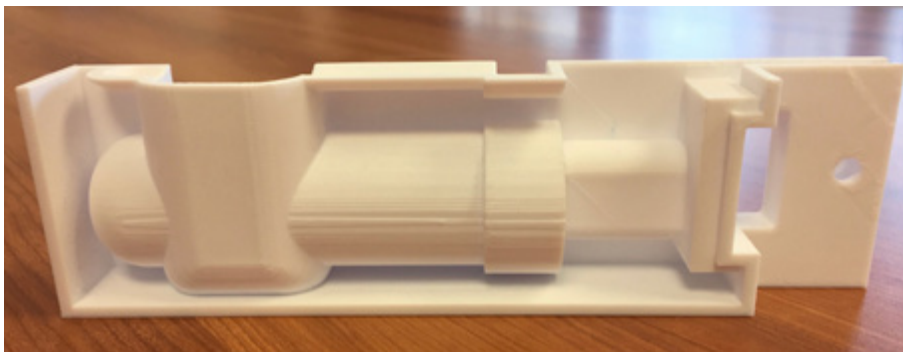


On top of the time delays, the high operating costs inherent in their existing FDM system in the form of materials, facilities, handling and labor costs associated with post-processing after 3D printing impacts their bottom line.

## Rize 3D Printer Installed in The Engineering Office

After a visit to the Rize headquarters to see a demo of the Rize One near zero-post-processing industrial 3D printer, John knew he had found a solution that would complement Boston Engineering's 3D printing capabilities.

Given its unique zero-post-processing capability, safe and environmentally-friendly process and portable size, John placed Rize™ One in an office cubicle, right in the midst of the engineers who need to print parts, rather than in the additive manufacturing lab.



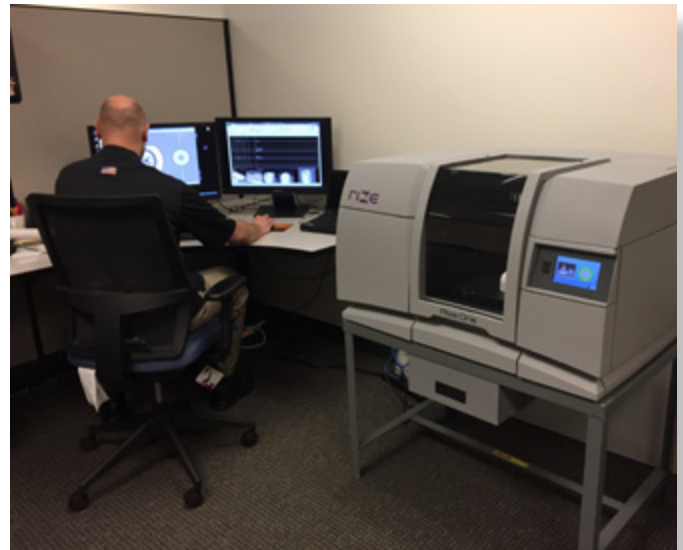
Using Rize One, the company's engineers produce 10-12 prototypes per week, mainly components of larger systems for clients to help explain their designs. Many prototypes are for medical testing equipment, but they could be for virtually anything, including functional parts for submersible vehicles, thanks to Rize's low water absorption uptake of <.01%. Rize One even enables Boston Engineering's

team to 3D print version numbers or client logos directly onto their best-in-class, thermoplastic parts.

A picture might be worth a thousand words, but a 3D printed part is worth a million pictures. "Rize One helps us get the idea across," said John. "It gives us a faster and more effective way to communicate and sell our designs to our clients. Recently, one of our clients took a Rize 3D printed part back to his office to show his team. It was far more useful than asking him to try to explain what he saw in a file."

## Rize One Delivers Parts in One Day

With Rize One, Boston Engineering's engineers get their parts the same day vs. potentially waiting two or three days when using their FDM system. That's because Rize parts are usable almost immediately after printing.



There is no waiting for supports to dissolve in a chemical bath and no bottlenecks. Engineers can easily remove the Rize part supports in seconds with their bare hands right at their desks. This capability enables them to build and evaluate parts the same day they were sent to the Rize One 3D printer. The design approval process can happen much faster. *"It's so convenient,"* adds John,

***"Whenever we need to print a part, the printer is right here.  
We just print it and we have it. We don't have to wait for the lab"***



Boston Engineering is also realizing a significant cost savings with Rize. Not only was the purchase price of the Rize 3D printer a fraction of the cost of the FDM system, the Rize material costs are less than half the cost of the FDM materials, and there are no labor, facilities, disposal and material costs associated with post-processing that must be incurred with the lab's FDM printer.

Rize One is quickly gaining popularity at Boston Engineering. As engineers located one floor above John see their first floor colleagues printing right in their office and delivering parts in the same day vs. two or three days, they too have begun to take advantage of the convenience and part turnaround speed offered by Rize One. John looks to add another Rize 3D printer upstairs to serve his second-floor engineers as the team expands.

John anticipates moving an increasing number of functional parts, fixtures and one-offs to his Rize One 3D printer, given the best-in-class Z-strength of its material, Rizium™ One. The Rize material is robust enough to actually fold a part from a flat into a unique shape. He also envisions taking advantage of Rize's upcoming full CMYK color capability for enhanced detail design studies and even 3D printing finite element analyses (FEA) to easily describe and depict what needs to be enhanced to his clients.