

Reliable, Rapid Prototyping with Realize, Inc. – Neo Stereolithography 3D Printer Upgrade Yields **Better Parts and Cost Savings**



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The Neo800 is the finest SL system I've encountered in my 30 years in the industry.

Todd Reese

Owner, and President, Realize, Inc.



Legacy Maintenance Challenges and the Upgrade to the Neo[®]800

Since its founding in 1999, [Realize, Inc.](#) has established itself as a leading 3D printing and rapid prototyping service provider. Its veteran team provides tooling and product development support and serves a wide range of clients, from aerospace, automotive parts, electronics, and more, for manufacturing engineers on the shop floor. Over the past 12-18 months, Realize has seen an increase in customer requests for prototyping large parts that are best suited for stereolithography (SL) processes. Due to ongoing maintenance costs and reliability issues with its legacy machines, Realize needed a larger, reliable, open resin SL 3D printing solution that would allow for greater throughput, reduced build times, and increased sidewall quality compared to the legacy SL systems in its fleet.

Realize understood that they needed to invest in a dependable and larger stereolithography 3D printer capable of printing high-grade parts with accurate sidewall quality, reducing any long finishing times. And in the world of being a service bureau, lost time is one of the most significant pain points for clients. Enter Stratasys and the Neo[®]800 3D printer.

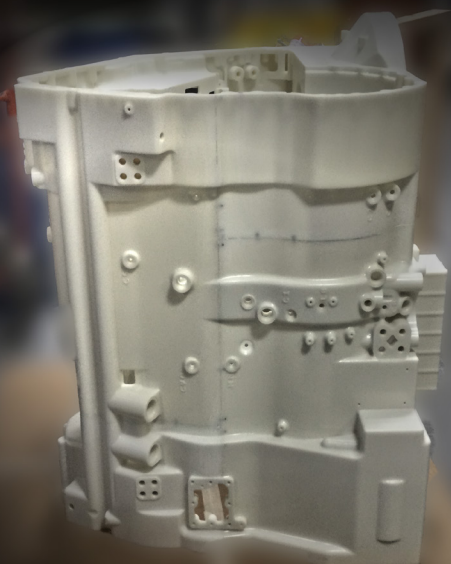
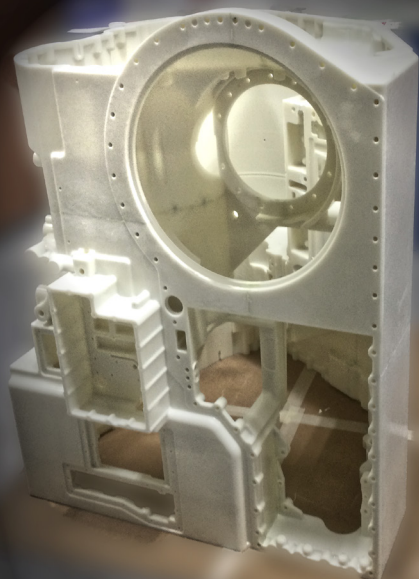
Realize added the Neo800 for additional capacity due to its larger build envelope, speed, and printing quality to complement their existing fleet, which contains many legacy machines. While the legacy machines can handle standard printing requests, with the Neo800's larger envelope, there is less cutting and pasting, building in sections, and reassembly, enabling shorter lead times than ever before.

A Game-Changing, Open-Source Solution

Stereolithography technology has advanced dramatically over the last few years, and the flagship Neo800 system from Stratasys clearly illustrates what next-gen looks like.

First, it's been a game-changer for handling higher volume orders. Realize can now reliably print more significant parts on the 800 x 800 x 600 mm platform (31.5 x 31.5 x 23.6). It's also an open-source solution for materials, still enabling Realize to use their preferred resin that ran on previous legacy machines: Somos[®] EvoLve 128. Running Somos[®] EvoLve 128 through the Neo800 has improved throughput to better meet client demands. Ultimately, Realize wanted to get parts to their clients as quickly as possible. Given the Neo800's accuracy, finish quality right out of the machine, and the speed of the machine itself, Realize has been able to shorten the delivery of specific projects using the Neo800, as compared to other printers.

In addition, Realize purchased the machine for its time-saving post-processing of parts, allowing the team on the floor to do minimal finishing, moving directly from print to primer and paint. For example, Realize's customer developed a tradeshow model electronic propulsion system to replace parts on an engine for the Association of the U.S. Army (AUSA) tradeshow. With the Neo800's massive build envelope, sectioning this mammoth prototype into six pieces that required reassembly was necessary. The total print time was approximately 400 hours.



The accuracy of the parts produced on the Neo800 allowed the production team to flawlessly produce each section. In the case of Realize's client, it would have taken more builds to complete due to the smaller build envelopes of legacy machines. In addition, all the parts fit perfectly together, resulting in much less labor from a finishing and assembly standpoint. Furthermore, with the Neo800, this process only took a couple of hours to put holes into bond joints and metal pins into each bonding joint. There was minor rework on the back end, and minimal sanding and gluing were required, making the assembly and bonding process incredibly easy and efficient. The sidewall quality was excellent, resulting in significant time savings.

In Realize's words, timing and efficiency are very important to reliably meet their customers' demands requiring high quality and fast turnaround times with less downtime. The quality and efficiency of parts printed off the Neo800 printer resulted in fewer crashes of the machine and less need for rebuilds, repairs, and finishing. That mark of excellence has resulted in significant cost and time savings, ultimately creating better service for their customers.

Reliability and Ease of Use

For Realize, the Neo800 is the ideal SL-based solution to 3D print more and larger parts reliably and easily for their rapid prototyping needs. Using the open-source materials platform, Realize continues running their preferred resin on a machine with greater throughput and speed than their previous legacy equipment. Upon completion of the installation, Realize did not encounter any major hiccups with the Neo800, and maintenance has been minimal. Now, Realize continues to use a more reliable solution, dramatically reducing downtime to better meet their ever-changing demands from clients.



The Neo800 is now our go-to machine for large parts using the Somos Evolve resin. We develop many wind tunnel models, larger fixtures, prototype models for consumer products, and big automotive panels for clients. It works extremely well for these applications, and it is a great overall machine for throughput and speed.

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