



TH zipper implemented 3D printers to provide quick prototype service

Linking the World

Accuracy is key. Everywhere. Most notably in zipper manufacturing, as each and every single part has to align perfectly in order for it to function as designed. This is something in which [Tai Hing Zipper Factory Company Limited \(TH Zipper\)](#), a favored vendor for many world-renowned clothing brands, has over 40 years of experience. With a majority of their clients in the fashion and apparel industry, production challenges include level of design detail, relatively short product development cycle, as well as fast lead times. This is why the TH Zipper team turned to 3D printing technology.

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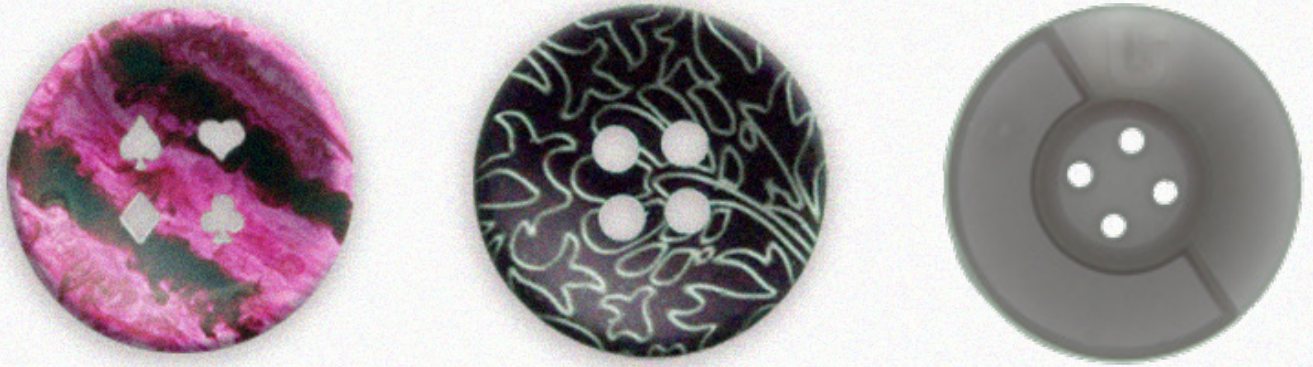
Patrick Wong

Director of TH Zipper



TH Zipper uses the Stratasys J55 to make pullers and buttons prototypes





Limitless design possibilities

Searching for Colors

TH Zipper’s journey with Stratasys began 8 years ago when they first purchased a single-colored printer. “Although the introduction of the first 3D printer had drastically sped up the production of samples, we now want something more accurate to the actual finished product, fully-colored, or even with the potential to take up into small-scale manufacturing,” Wong said. During their search for a full-color 3D printer, TH Zipper found few options in the market that fit their needs. SLA (stereolithography) machines are prevalent in the market. However, Wong explained, “Our products are so small that a few millimeters can make a huge difference, so accuracy and the quality of the printouts are of our foremost consideration. With SLA systems, you can see very obvious layers, so we went with Stratasys’ J55™ that uses PolyJet Technology.”

PolyJet 3D Printers for Faster and more Accurate Prototyping

Traditional prototyping processes take weeks. When TH Zipper received a design from a client, the production team would create a 2D technical drawing. Once the client approved that technical drawing, it was sent to the factory for

mold creation using a CNC machine to produce a sample. This process would take around two weeks for the sample to be made and sent to the client. Any design changes and adjustments in specifications would further hamper the production timeline as it meant that a new mold had to be made.

Now, TH Zipper uses the J55 printer to print zipper pulls and slider samples directly with Vero materials. A mold doesn’t need to be created until the 3D-printed sample is approved. “The Stratasys printer has allowed us to print a highly accurate, fully colored, and detailed puller sample within hours and have it sent off to the client within a few days, instead of the two weeks it took with the traditional method. We can obtain feedback and refine designs in a much faster cycle.” Wong said. The development team is also leveraging 3D technical drawings to ensure that as many details as possible can be shown to the client at an earlier stage. This enables the client to visualize the finished product better. Some design changes can be made a lot sooner, hence, minimizing the number of times for mold adjustment and reducing the wastage and costs in the prototyping stage. “3D printing is now an essential part of our work process,” Wong added.

Crystal Clear Solution

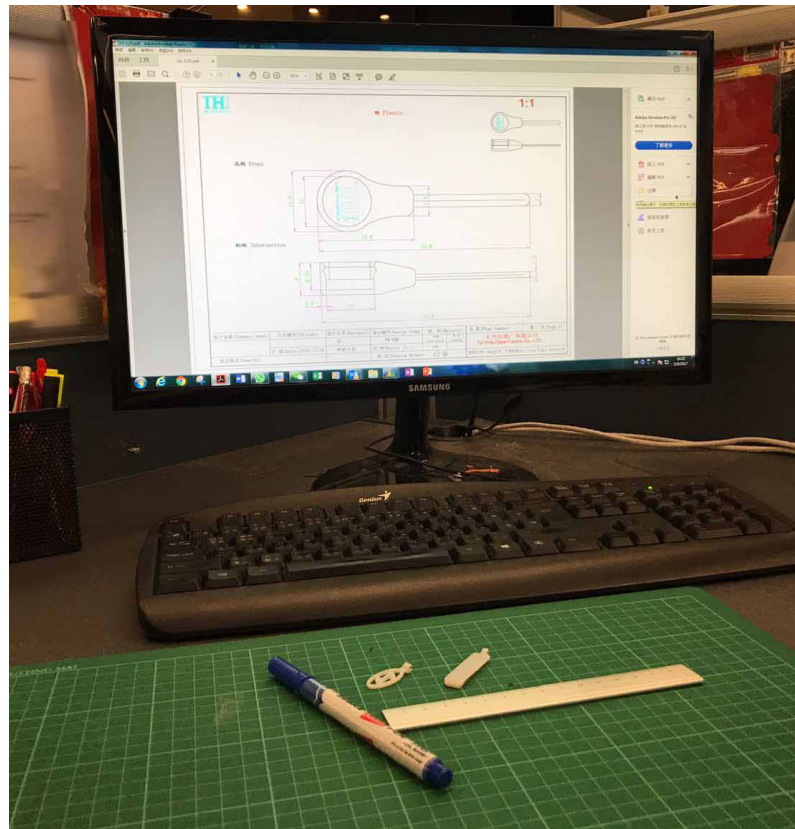
“The usage of 3D printing has revolutionized the way we work but the material used is equally important,” Wong said. During the development stage of a bag design, the TH Zipper team searched for ways to improve a slider design so that it would grab the teeth optimally in order for the zipper to close smoothly. The technical team used VeroUltra™ClearS, a transparent material that can simulate glass and plastic in a range of tints, to print the slider. The transparent slider allowed them to see clearly how the structure and parts were coming together, thus pinpointing what exactly was stopping it from gliding smoothly. From there, the team modified the drawing specifications to successfully overcome the challenge.

A World Beyond Zippers

“Having the full-color J55 printer has enabled our team to experiment and explore ideas beyond zipper parts,” Wong said. With nearly 500,000 unique color combinations, including Pantone Verified colors to choose from, the team is able to not only experiment with patterns and materials but also their application to other products. So far, the development team has printed haberdasheries like buttons and logo tags. In fact, TH Zipper was once tasked by a client to make keychains for children. By using the J55 printer, the team combined a metal base with a 3D-printed casing that goes on top of the base, creating a sturdy yet colorful design that appeals to children.



The transparent puller and slider allowed them to see clearly how the structure and parts were coming together



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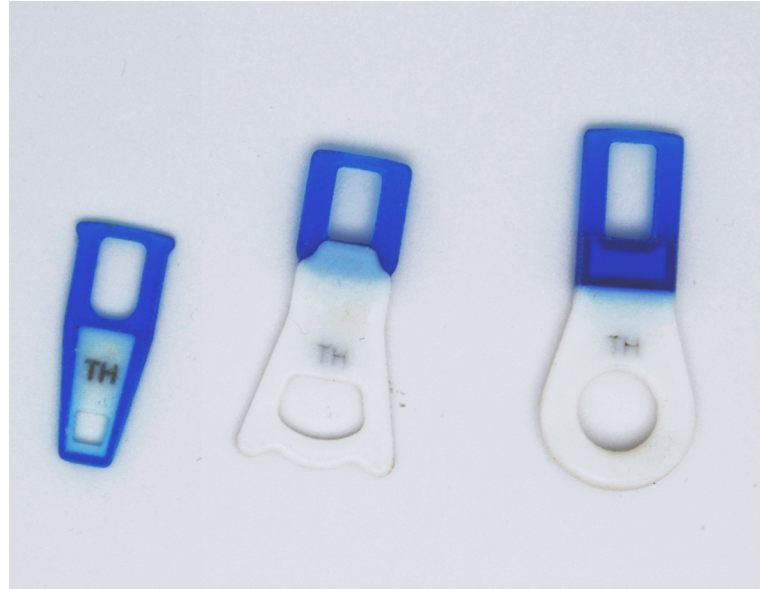
Director of TH Zipper

Standing out in the Industry

“Stratasys 3D printing systems have given us a competitive edge in our industry as most of our competitors may not even know what 3D printing is or how it can be applied to what we do. At exhibitions and trade shows, we are able to show our customers a wide range of quality, full-color product samples and the capabilities of the technology for our industry. The intricate mechanisms and detailed designs we are able to print with the J55 printer pique the interest of our customers and inspire our client’s designers to come up with ideas that were once thought too complicated to produce.” Wong continued, “The use of 3D printing technology fortifies TH Zipper as a brand that is committed to innovation and keeping up with the times. It has also established us as a forefront in the industry and gained the trust from our customers.”

Currently, TH Zipper is looking into the possibility of manufacturing small-scale batch orders using only 3D printers. “We are also hoping to be able to 3D print the whole zipper, including the tape, in the future,” Wong added.

To learn more about TH Zipper, please contact Belinda Lau at belinda@th-zipper.com.hk or +852 2122 5912.



Pullers with clear “TH” logo



TH Zipper first invested in Stratasys’s 3D Printer back in 2013

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