



CNC Engraving Aluminum Components

The efficient, accurate and cost-effective process that reduce set up and cycle times.

Challenge

Marking a small batch of aluminum non-standard components is no doubt a challenge for product suppliers and designers. They require special jigs, and a lot of expensive efforts thus the final price is often unprofitable. The work can be either outsourced or made with custom solutions like ZMorph VX Multitool 3D printers. Thanks to a product that is both a 3D printer and CNC engraving machine the subject has means to quickly 3D print the unique jig for a particular component and then CNC engrave the desired design.

Solution

To lower production time and labor cost the engineer used Fusion software to design a special fixture for the aluminum parts. The fixture was 3D printed with PLA and it's used to hold the parts while they are being engraved. It can store up to 9 parts, it's easily mountable on the CNC worktable and thanks to the grooves parts removing is very easy. Next, the engineer changed the toolhead to the CNC PRO and used it to mark the sign on each part on the same run.

Result

With a multitool 3D printer, the product supplier or designer doesn't have to use additional expensive CNC engraving machine or marking equipment. It's possible to 3D print a custom jig to hold almost any custom part and engrave it with the same machine within a desktop space. It's a great solution for in-house low-volume production. Each button engraved on ZMorph VX costs 10 cents total while outsourced \$1.50. It's also a useful resolution for product suppliers as a way to cope with small batch orders that reduce risk, allows for flexible design and saves the production costs.

