Crystalmark Etching Tool



Tool Type: CNC Airjet Abrasion Cutter

Location: Elings 3430

Description: This is a dental tool meant for cavity prep, which has been repurposed for CNC cutting of glass and silicon. The airjet end of the CrystalMark has been attached to the head of a Sherline CNC mill.

Manufacturer: CrystalMark

About

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The CrystalMark Etcher is located in the Microfluidics Lab on the middle table by the Haas CNC in 3430. It is attached to the Sherline CNC Diamond Drill.

It uses air pressure and aluminum oxide abrasive to cut or etch patterns in materials such as glass or silicon. The kerf is about 800 microns wide.

Patterns and pre-programmed holes can be uploaded via .dxf files to a program which converts dxf patterns to g code, and holes can also be added manually. (See SOP for detailed instructions)

Safety Concerns

Inhaling large amounts of aluminum oxide can be hazardous. It is recommended to wear a mask and eye protection when using the CrystalMark.

Training Documentation

CrystalMark SOP

Example Cuts



Detailed Specifications

- Stepper motor mounts and couplers on X-, Y- and Z-axes
- Maximum CNC travel positioning speed: 22 in/min
- Max clearance (table to spindle): 8.00" (203 mm)
- Travel axes x,y,z: 8.65" (220 mm), 5.00" (127 mm), 6.25" (159 mm)
- CNC Stepper motor holding torque: 136 oz-in

Reference Documentation

Work in progress

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