

Flashcut / Sherline CNC Mill

Haley Holcomb 9/12/22

Flashcut / Sherline CNC Mill



Tool Type: "CNC"

Location: "mFL 3430"

Supervisor	Tool Lead
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Description: "CNC Diamond Drill"

Manufacturer: "Sherline"

About

CNC diamond drill used to drill holes in glass slides. Uses FlashCut CNC software to interpret G-code and drill holes in programmed locations.

Detailed Specifications

- Stepper motor mounts and couplers on X-, Y- and Z-axes
- 70-2800 RPM continuously variable by electronic speed control
- Maximum CNC travel positioning speed, X-, Y- and Z-axes: 22 in/min
- Max clearance (table to spindle): 8.00" (203 mm)
- Travel axis x,y,z: 8.65" (220 mm), 5.00" (127 mm), 6.25" (159 mm)
- Motor: 90 volt DC with electronic speed control that accepts any incoming current from 100VAC to 240 VAC, 50 Hz or 60 Hz
- CNC Stepper motor holding torque: 136 oz-in

Safety Concerns

Eye injuries can result from flying chips or broken bits. Cuts can occur from contacting sharp tools or broken glass. Burns can result from hot cutting tools or parts. Serious injury can result from pinching

or entanglement in moving parts. Poor housekeeping creates tripping and cutting hazards for other users. Do not leave machine running unattended. Eye protection, closed toe shoes, long pants, and protective clothing must be worn when using this machine to prevent injury. Long hair must be tied back and jewelry must be removed before operating this machine to prevent entanglement.

Sample G-code

(Sample program to drill six holes on the Microfluidics Lab Drill)

(Dave Bothman, 2 July 2012)

(Change x,y coordinates of G73 commands for your hole coordinates)

(Setup blocks)

G21 (select mm units)

G49 G80 G90 (cancel offsets, cancel cycles, absolute coordinates)

G98 (Move the drill away from the part when drilling is finished)

G00 X0 Y0 Z5 (move to the lower left corner of slide, 5mm above)

(Hole drilling blocks)

G73 X22.5 Y12.5 Z-1.2 Q.1 R0.5 F5

G73 X29.5 Y4.5 Z-1.2 Q.1 R0.5 F5

G73 X45.5 Y4.5 Z-1.2 Q.1 R0.5 F5

G73 X52.5 Y12.5 Z-1.2 Q.1 R0.5 F5

G73 X45.5 Y20.5 Z-1.2 Q.1 R0.5 F5

G73 X29.5 Y20.5 Z-1.2 Q.1 R0.5 F5

(Closing block)

M30

Reference Documentation

[Drill Bits Information](#)

[FlashCut CNC 4.0 Tutorial](#)

[FlashCut CNC 4.5 Tutorial](#)

[CNC Drill Users Manual](#)

[Sample G-Code](#)

Training Documentation

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