

G-ZERO MILL Version 4.1

Quick Reference Card

- 1) Point
- 2) Radius
- 3) Line
- 4) Comp
- 5) Uncomp
- 6) Tool
- 7) Mill
- 8) Drill&Tap
- 9) Rect
- 10) Round
- 11) Boltcnc
- 12) Grid
- 13) Copy
- 14) Stock
- 15) Repeat
- 16) Rotate
- 17) Mat'l
- 19) Redraw
- 20) Post
- 21) Print
- 22) Alter
- 23) Insert
- 24) Delete
- 25) Move
- 26) UnEdit
- 27) Basic
- 29) Rough
- 30) Shift
- 31) Station
- 32) Scale
- 33) Z move
- 34) Curfit
- 35) Letter
- 36) Multiply
- 37) Fourth
- 38) +View
- 39) +Tilt
- 40) +Trim

File Management

	File Open	Open an existing source file, <i>OR</i> start a new source file
	File Save	Save current source file
	File Save As	Create new source file with same (COPY), rotated (ROTATE*), or mirrored (MIRROR*) data. [<i>*26</i>]UnEdit after rotate and mirror
	File Backup	Backup current file (to floppy disk)
	File Merge Sources	Combine 2 or more source files
	File Export Macro	Create macro file (.u) with selected source line codes
	File Print	Print current source file directly to default printer
	Edit Purge	Permanently remove deleted lines & Resequence source lines

Function Keys

	F1	Help
	F2	Redraw Part (Viewport)
	F3	Redraw Tool (Viewport)
	F4	Redraw Slinky (Viewport)
	F5	Redraw Iso (Viewport)
	F6	Redraw Solid (Viewport)
	F7	Show/Hide Viewport
	F8	Sketch
	F9	CAD / UnCAD
	F11	Mouse Rough
	F12	Post Process

Shortcuts

Ctrl+M	mm O in (Metric)
Ctrl+M	in O mm (' Metric)
Ctrl+T	Triangle (Mainwin Calculator)
Ctrl+F	Edit Find
Ctrl+S	Edit Find Next

Input Math Calculation

1st priority: R	Examples:
2nd priority: fl Ł	5+6/2 = 5+3 = 8
3rd priority: ! # P	(5+6)/2 = 11/2 = 5.5
4th priority: Ž !	<i>Note: Different in version 3.x</i>
Degree to Decimal: 35°10'30" O type 35.1030°	

Editing

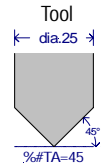
Click value - Type	O	Replaces with new value typed
Click value - Right click value	O	Changes sign (+ or -) of value
Alt+Click POINT	O	Converts to RADIUS type2
Alt+Click RADIUS type2	O	Converts to POINT
Alt+Click RADIUS type0	O	Converts to RADIUS type1
Alt+Click LINE unknown angle	O	Converts to LINE known angle

Viewport

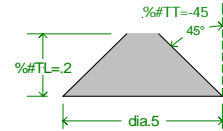
	Left view		Ctrl+I	Zoom In (Viewport)
	Front view		Ctrl+O	Zoom Out (Viewport)
	Top view		Ctrl+P	Zoom Previous (Viewport)
	Isometric view		Ctrl+R	Refresh (Viewport)
	Rotate view			Print View <i>(Portrait or Landscape: depends on shape of viewport)</i>
	Single step (space bar)			Copy to Clipboard
	Move viewport			SnapShot - make graphical thumbnail <i>(works with G-ZERO WinLauncher incremental search)</i>
	Dock viewport			
Drag edge(s) of viewport...		Right click System...		Show Toolbar
Resize viewport				Show Title <i>(undocked)</i>
				Full Screen <i>(undocked)</i>
				Sizeable Screen <i>(undocked)</i>

Tool Type (in TOOL comment only): %#TL (length), %#TT (taper), %#TA (angle)

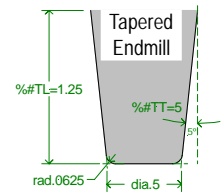
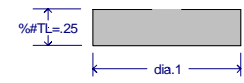
Chamfering Tool



Dovetail Cutter



Woodruff Cutter



Example: TOOL 4 dia.5 flutes4 type1=CARBIDE MILL rad.0625 *** %#TL=1.25 %#TT=5 REST OF COMMENT

CAD Reader - G-ZERO CAD Import Interface

- Zoom All
- Zoom Window
- Zoom Options...
- Pick...
- Origin Options...
- Birds Eye View
- Layers
- Colors
- Open CAD File
- Close CAD Window

Other options not available in Mill v4.0

Basic CAD Programming Sequence

1. Start new G-ZERO Mill source program
2. **F9** Open CAD Reader
3. Open DXF, DWG, VCD, or GCD file
4. or **F2** to set new origin
5. Zoom to enlarge whenever needed
6. **F7** Mill Select Material
7. **F6** Tool Select Tool
8. **F7** Mill or **F8** Drill&Tap Select what you are going to do with the tool
9. Program actual geometry elements:
 - POINT: click on line for closest endpoint
 - click on arc for center of arc
 - click on circle for center of circle
 - RADIUS: click on circle for radius of circle
 - click on arc for radius of arc
 - CONTOUR: **F8** Block Pick -- Pick 1st, 2nd, and last element (defaults climb cut)
10. Repeat steps 7 through 9 as needed
11. or **F9** Close CAD Reader