

Quick Reference Card

- 1) Point
- 2) Radius
- 3) Line
- 4) Comp
- 5) Uncomp
- 6) Tool
- 7) Bar op
- 8) Face
- 9) Rough
- 10) Groove
- 11) Thread
- 12) Drill
- 13) Bore
- 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) Deadtap
- 30) Shift
- 31) Partoff
- 32) Scale
- 33) Tail
- 34) Pipe
- 35) Letter
- 36) Type
- 37) Mill
- 39) FGroove
- 40) Takeover
- 41) Peck

File Management

- File | Open Open an existing source file, OR start a new source file
- File | Save Save current source file
- File | Save As Create new source file with same data
- File | Backup Backup current file (to floppy disk)
- File | Export Macro Create macro file (.u) with selected source line codes
- File | Print | Print Source Print current source file directly to default printer
- File | Print | Print ToolList Print current tool list 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 EndView (Viewport)
- F5 Redraw SideView (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 ± 5+6/2 = 5+3 = 8
- 3rd priority: ! # P (5+6)/2 = 11/2 = 5.5
- 4th priority: Ž ! *Note: Different in version 3.x*
- 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

- Single step (space bar) Move viewport
- Ctrl+I Zoom In (Viewport) Dock viewport
- Ctrl+O Zoom Out (Viewport) Print View *(Portrait or Landscape: depends on shape of viewport)*
- Ctrl+P Zoom Previous (Viewport) Copy to Clipboard
- Ctrl+R Refresh (Viewport) Make graphical thumbnail *(works with G-ZERO WinLauncher incremental search)*
- Show Toolbar: Right click on viewport | System | Show Toolbar
- Show Title: Right click on viewport | System | Show Title *(undocked)*
- Full Screen: Right click on viewport | System | Full Screen *(undocked)*
- Sizeable Screen: Right click on viewport | System | Sizeable Screen *(undocked)*
- Resize viewport: Drag edge(s) of viewport

CAD Reader - G-ZERO CAD Import Interface

Zoom All

Zoom Window

Zoom Options

Pick

Origin

Birds Eye

Layers

Colors

Open file

Close CAD

Hide selected layer

Show selected layer

Make selected layer current

Sort layers

Short/long lists

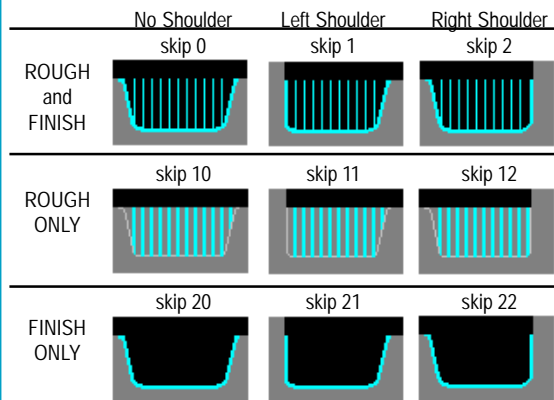
Other buttons not active in Lathe v4.1

TIPS:
ORIGIN. Use F2 to set origin every time a CAD file is loaded.
MATH CALCULATIONS. Pick value from CAD file before adding or subtracting other value(s).

Basic CAD Programming Sequence

1. Start new G-ZERO Lathe source program
2. Open CAD Reader
3. Open DXF, DWG, VCD, or GCD files
4. or **F2** to set new origin
- First, click a horizontal line for Z-axis origin
- Then, click a vertical line for X-axis origin
- New (0:0) will be at intersection of lines picked
5. Zoom to enlarge whenever needed
6. 17)Mat'l - Select Material
7. 6)Tool - Select Tool
8. Select what you are going to do with the tool:
 4)Comp, 8)Face, 9)Rough,
 10)Groove, 11)Thread, 12)Drill
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: *(only between Comp/Uncomp)*
click on arc for radius of arc
click on circle for radius of circle
10. Repeat steps 7 through 9 as needed
11. 5)Uncomp if in Comp
12. or **F9** Close CAD Reader

Groove



Example 1:
Make a groove (rough and finish)
.75" deep, 1" wide, with left edge in
10° angle and right edge against a
shoulder.

GROOVE
...dp=.75 w1 skip2 r.05 ir.1 a10...

Example 2:
Make a dovetail groove (rough only)
.75" deep, 1" wide, with left and right
edges in 10° angle.

GROOVE
...dp=.75 w1 skip10 r.05 ir.1 a-10...

SuperRough

Multiple Undercut Roughing

One SuperRough comment line and one ROUGH command to cut up to 99 subpocketed areas.

SUPERG71 for horizontal roughing
SUPERG72 for vertical roughing

Options:

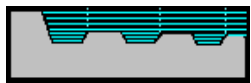
DEPTH - to change depth of cut in sub-pockets
FACE - to rapid away from the part in Z before X

Example 1:

SUPERG71 DEPTH.05
ROUGH...

Example 2:

SUPERG72 DEPTH.055 FACE
ROUGH...



Rest Area Roughing

Stack **two tools** and **one comment** line before the ROUGH command to rough the "unreachable" areas



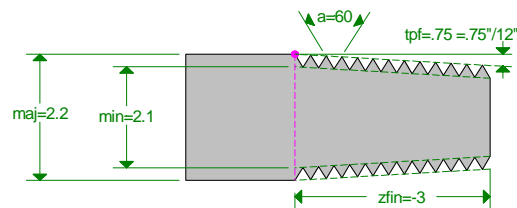
TOOL 1 _____ First roughing tool
TYPE _____
TOOL 2 _____ Second tool for "rest area"
TYPE _____
SUPERG71 _____ SuperRough comment line
ROUGH
COMP _____
.....
.....
UNCOMP _____
UnROUGH

Roughing boundary

Pipe Threading - Reading your blueprint

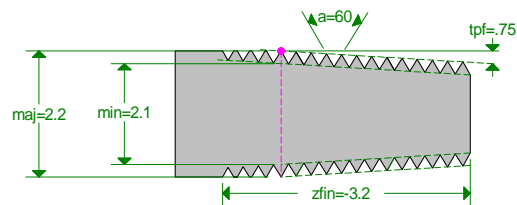
Major and minor OD as the thread ends:

PIPE ret0 tpf.75 x2.2 z-3
THREAD maj2.2 tpi8 min2.1 S300 z.2 zfin-3 num5 a60



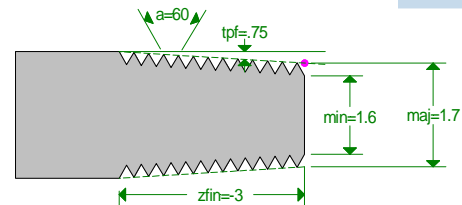
Major and minor OD slightly past where the thread ends:

PIPE ret0 tpf.75 x2.2 z-3
THREAD maj2.2 tpi8 min2.1 S300 z.2 zfin-3.2 num5 a60



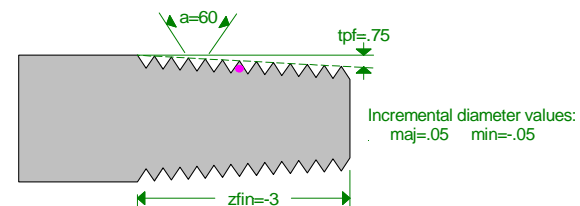
Major and minor OD at start point:

PIPE ret0 tpf.75 x1.7 z0
THREAD maj1.7 tpi8 min1.6 S300 z.2 zfin-3 num5 a60



Major and minor OD inside the thread: Incremental values:

PIPE ret0 tpf.75 x1.85 z-1.5
THREAD maj.05 tpi8 min-.05 S300 z.2 zfin-3 num5 a60



Program a PIPE command just before the THREAD command

34) PIPE

- ret: 0=straight retraction, 1=chamfer (45°)
- tpf: taper inches per foot (angle of a thread)
- X: pitch diameter
- Z: gauge length
- clr: clearance as tool pulls away (how far away in x)
- leads: number of leads for a multi-lead thread

11) THREAD

- maj: major diameter of the thread
- tpi: threads per inch
- min: minor diameter of the thread
- S: rpm - spindle speed
- z: z start point
- zfin: z thread end point
- num: number of passes to cut the thread
- a: thread angle