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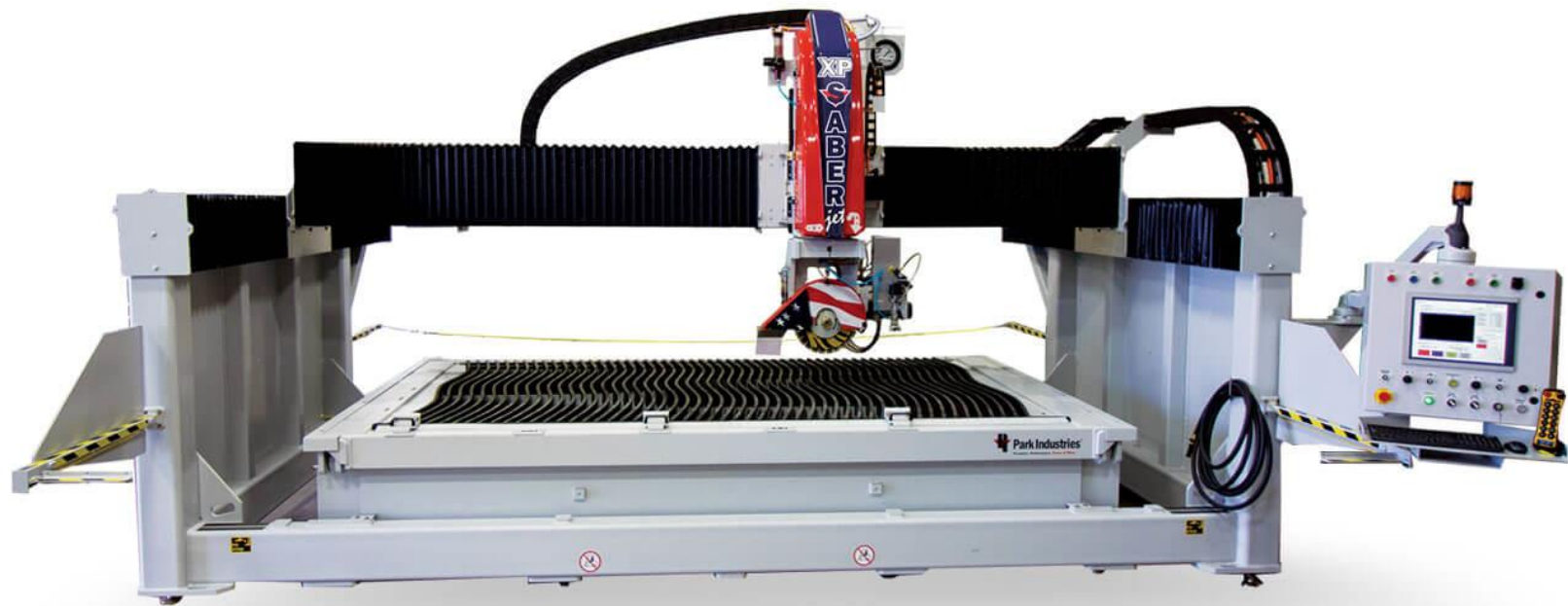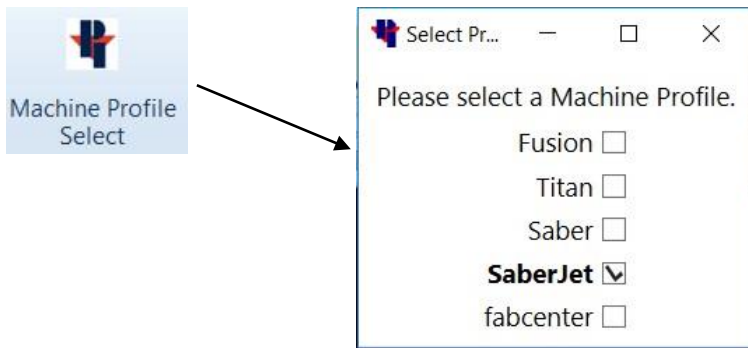St. Cloud, MN 56303 | parkindustries.com

FOLLOW US

SABER*jet*™ XP

CNC SAWJET

SABERjet Tab

If the commands under the SABERjet tab are greyed out or inactive, you may need to select the SABERjet as the active machine.

There are two ways to make the SaberJet as the active machine. The quickest way is to choose the Machine Profile Select icon from the SaberJet tab, and then check the SaberJet as the active machine.

Or

You can choose the **MyParkConfig** tab, click on **myMachineProfiles** in the ribbon, and then then select the SABERjet machine tab you want active. Check the box behind **Machine Profile Active**. *You may not have all machine tabs.

This window is also used to create a Machine Profile for programming instances of your machines.

**Machine Model=** the machine model that you are programming.

Name= Any name for you to identify that machine.

Table Template= the location of the machine table template drawing (.asd)

Post Processor= the location of post processor (.Alp) provided from Park Industries. Note: occasional updates may be available.

Default MPF/DXF File location= the "network path" to the G-code folder on the machine.

Material Thickness= Choose your default material thickness.

3
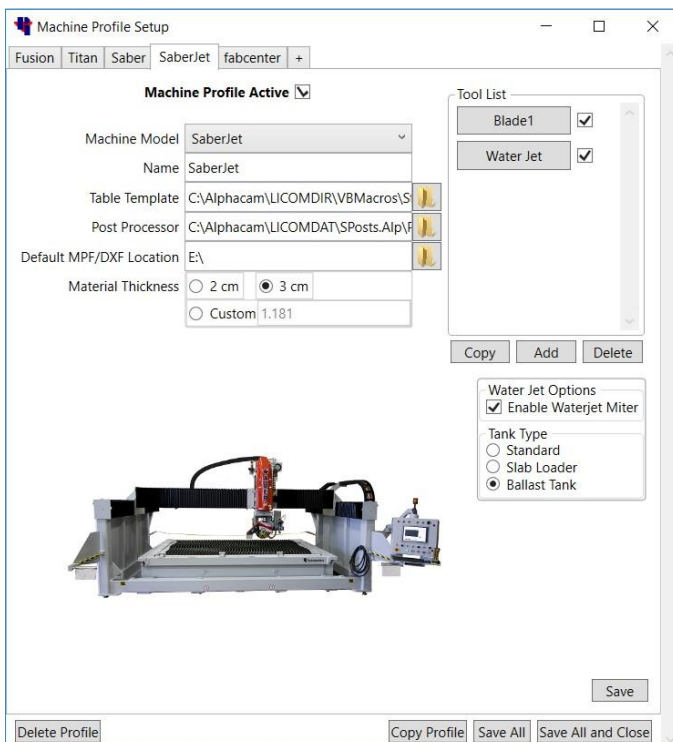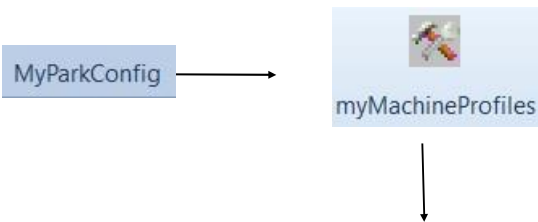
SABERjet Ribbon Bar

The SaberJet Commands are in the SaberJet tab on the ribbon bar. They have features for editing, layout, and programming the SaberJet. Below is a brief description of each function.

SABERjet Ribbon Bar

Continued

Insert Slab Photo

(Machine Option)

Inserts a Photo into AlphaCam from the over the tank camera.

You may set a default photo storage location by using the folder icon to browse to it, and then press save.

Insert Slab Photo

| Photo Attributes | Origin Point | Default Photo Location: |

Pixles(X):   Pixles(Y):   Offset(X):   Offset(Y):   C:

Table 1

4272   2848   0   0

Scale Fact: Select Orgin

0.0342

Choose Select/Insert Image to browse to and choose the slab photo.
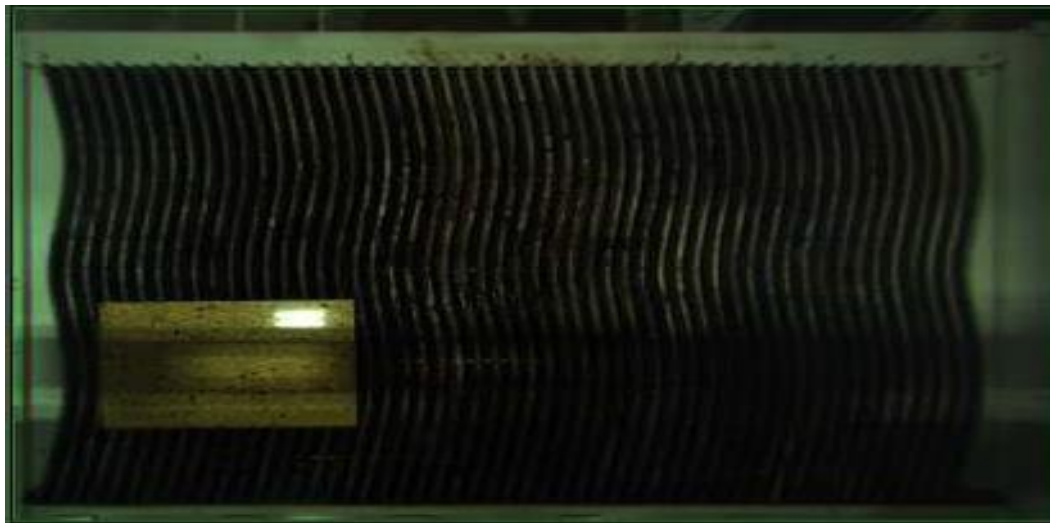
Part Geometries can be moved into the slab location to be programmed. This function can show you if pieces will fit into oddly shaped slabs (the purpose is

not to grain Match seams).

Insert Table Template

Inserts a drawing of the SaberJet table into the current AlphaCam session.

LineType	Boundary Purpose	Color
— — —	Blade Miter Toward Center	-Orange
- - - - -	45 Water jet Physical Limit	-Yellow
-·-·-·-	58 Water jet Physical Limit	-Pink
··············	58 Water jet Safety Limit	-Orange
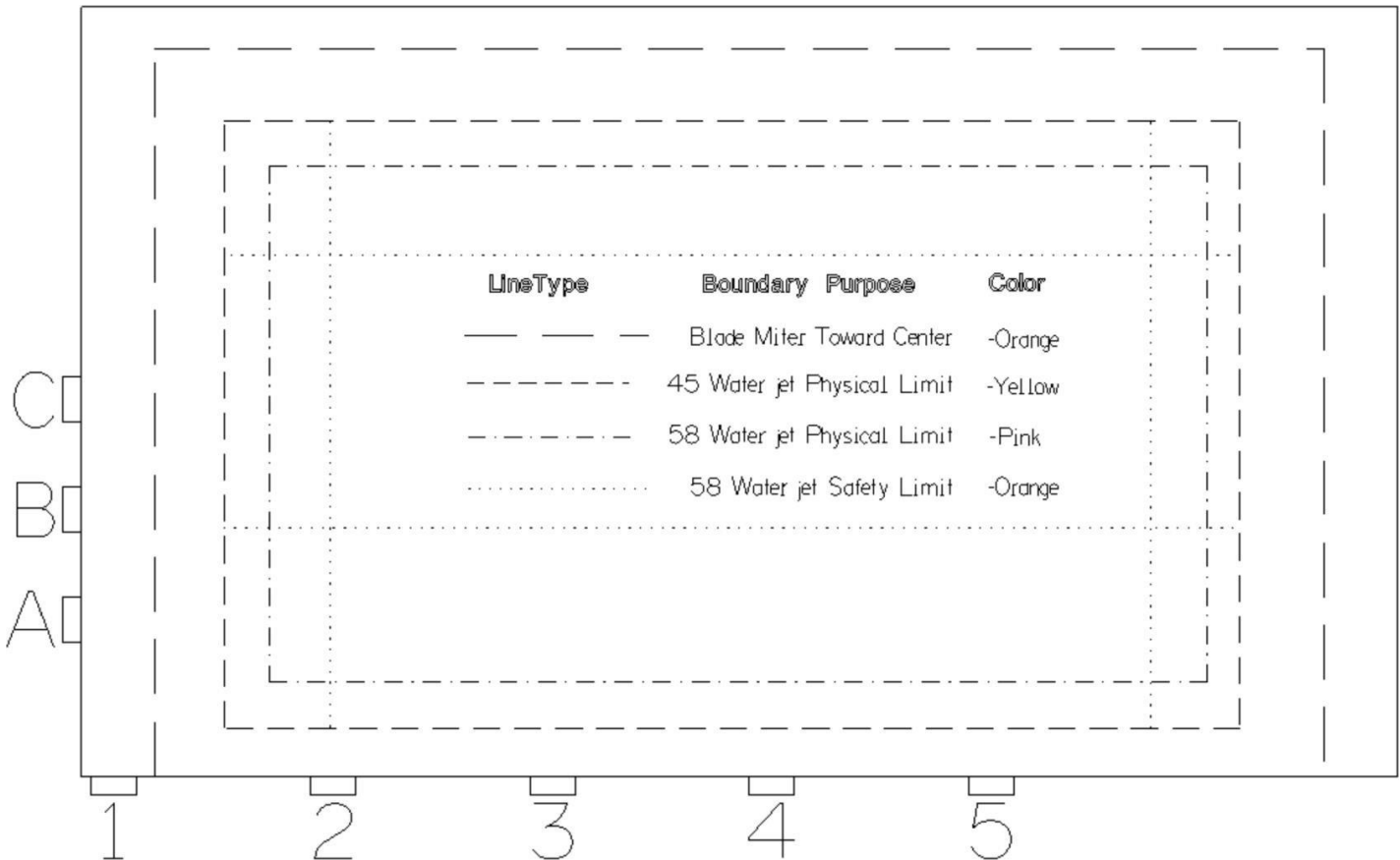
This Table Template gets inserted from the location of the path set in the Machine Profile Setup screen
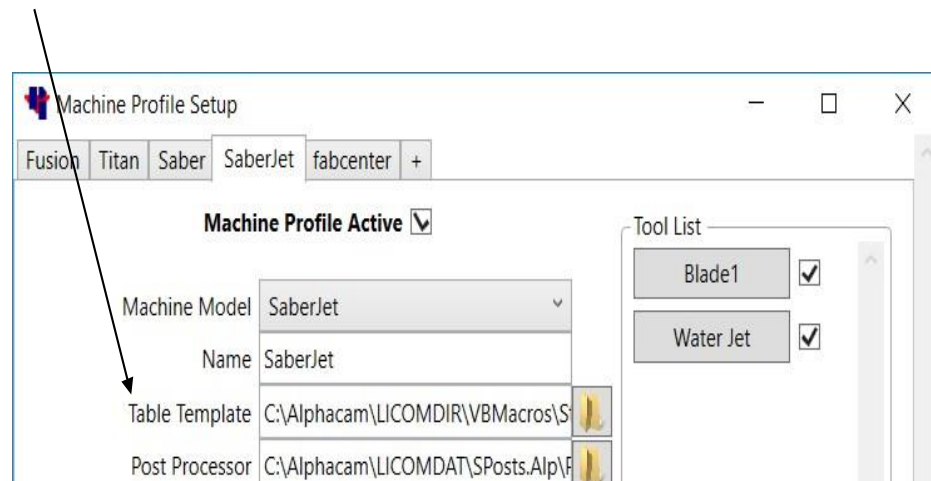
SaberJet Table Template Options

There are three table options available with the purchase of your SaberJet.

The three table types include: Standard, Ballast, Slab Loader.

Standard—Requires the use of a backer board.
Ballast—Material is submerged in water for cutting. Slab
Loader—Tilts table for ease of loading slab.

The type of table and the type of cuts will effect the area of table coverage.
All cuts made with Straight Blade and WaterJet cuts have full table coverage.

The SABERjet table Template shows areas where certain types of cuts may be restricted. Each boundary type is color coded to match the color of the cut type itself. The <mark>DASHED Orange</mark> line represents boundaries of the 45 degree miter cuts if the blade is angled towards the middle of the table. The picture below is showing that the blade cannot physically reach the edge.

The orange line is shown here on the table template drawing

SCALE 4:1
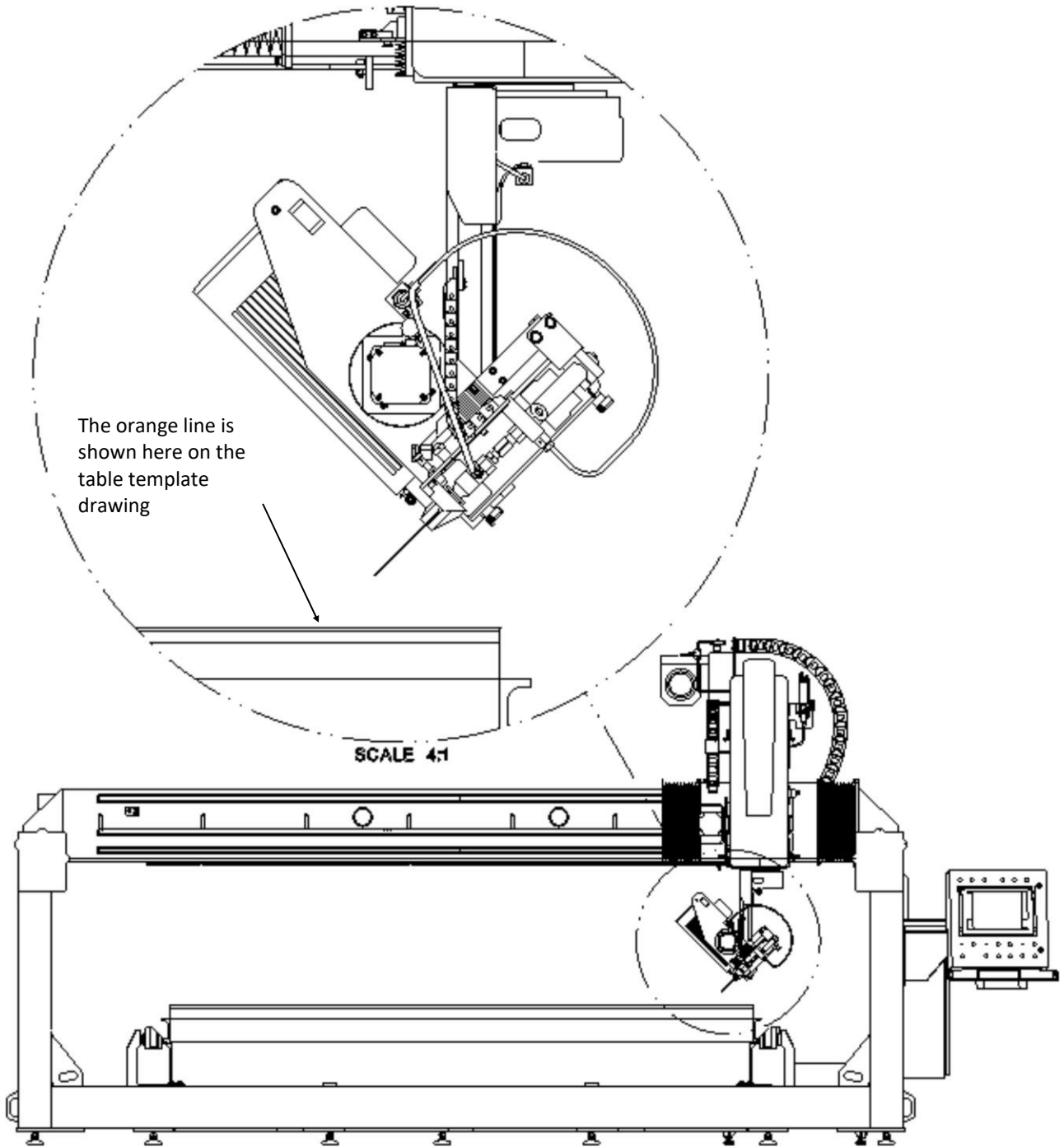
The Dashed Pink line represents boundaries of the 58 degree Water Jet safety limit. The picture below is showing the Water Jet mitering at a 58 degree angle.

When it is at an angle it must remain a safe distance away from the edge of the table to avoid the possibility of damage.

The Orange line is shown here on the table template drawing

SCALE 4:1
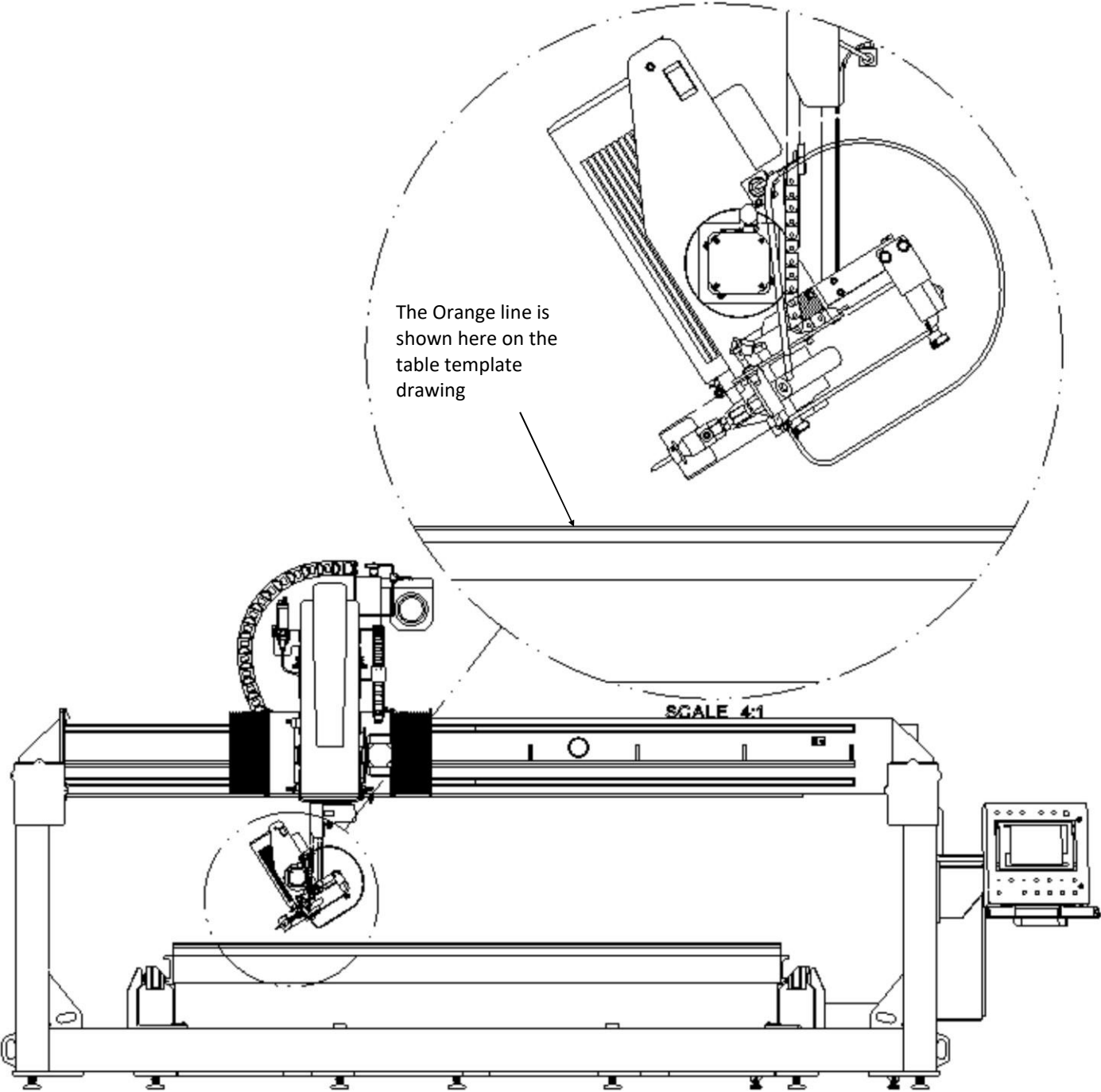
Boundary

Creates joined parts from existing lines and arcs.

Boundary is made up from three different commands: First **Auto-Close Contours** allows creating a shape from existing lines and arcs. The second action is to **Move** the newly created shapes off the top of the segments used to define it. Then **Delete** is used to remove the original components.
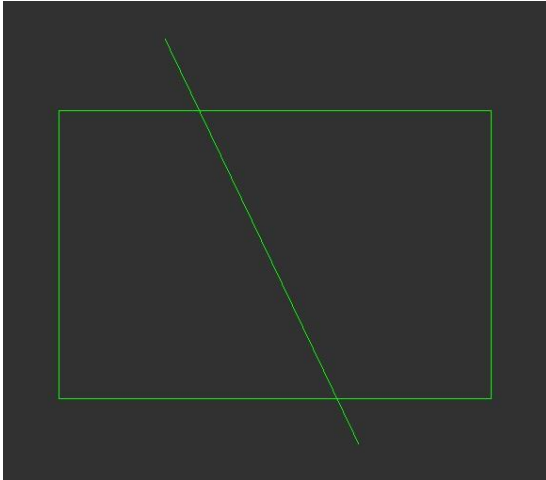
Starting with geometry to make   independent shapes from. Choose
the Boundary command.
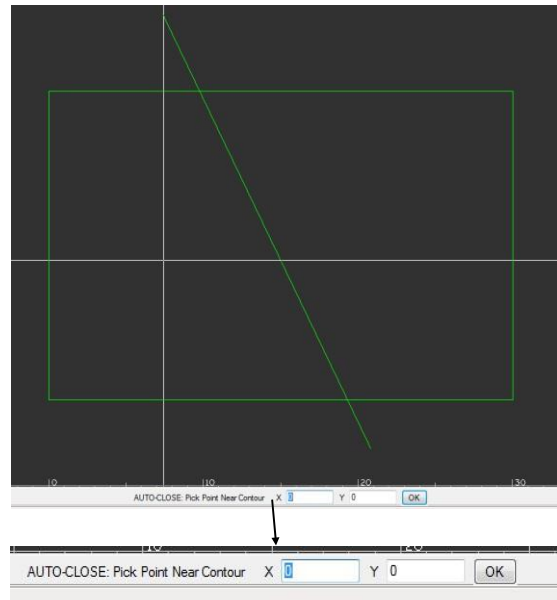
When prompted to "Pick Point Near Contour": Click in the middle of the space that you want to become a separate part. That shape will become out- lined in yellow.
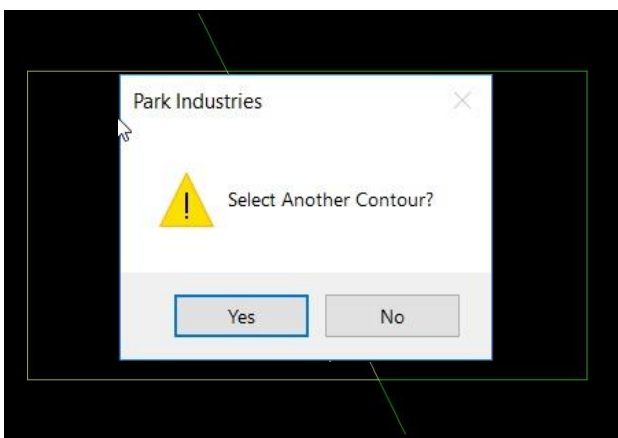
After creating the first piece part you are given the choice to make another part or choose "no" when finished. As parts are created they will be outlined in yellow

Boundary

(cont'd)

After choosing "No" to selecting another contour you will be in the **MOVE** com- mand. Click somewhere to "Pick Base Point"
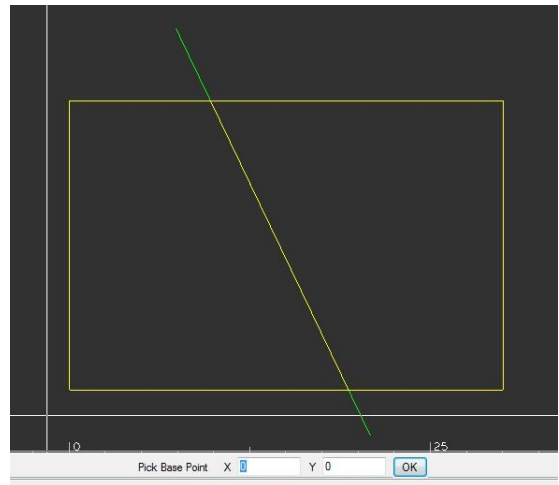
"Move new Geometries" is the second part of the **MOVE** command. Move your cursor and parts to an open space in the screen and click to set them down.
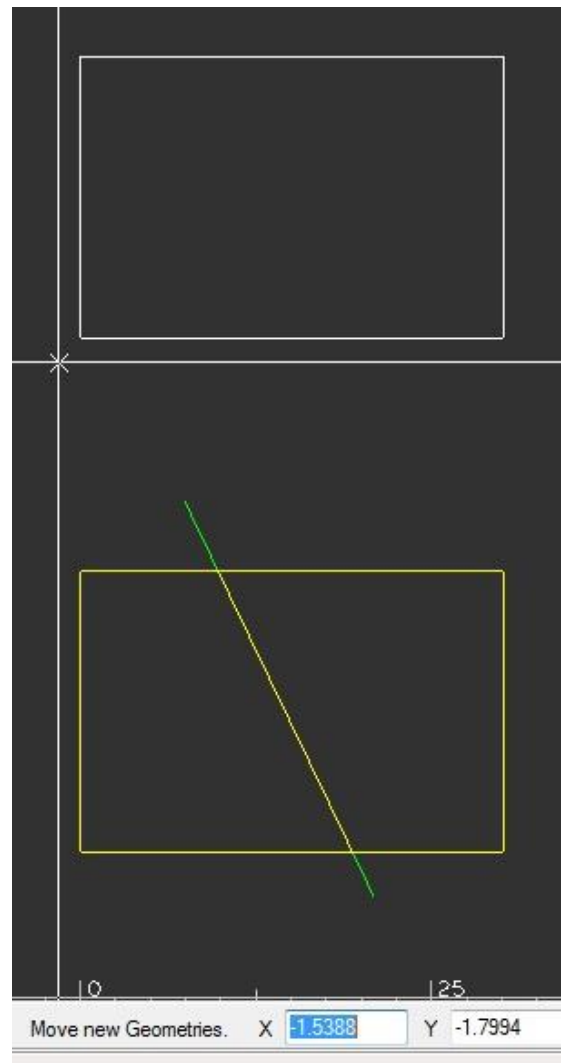
Boundary

(cont'd)

When moving is finished you are given the opportunity to **Delete** the original geometry. Select geometries to delete and Finish.
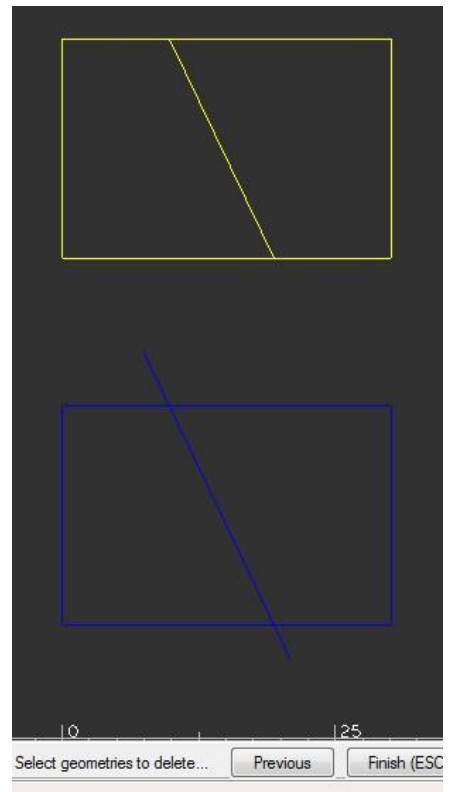
With the completion of the Boundary command all new geometry is converted to the geometry layer.
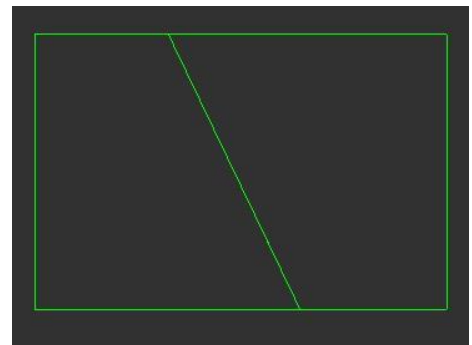
You may choose to Move your piece parts away from each other for layout or processing.
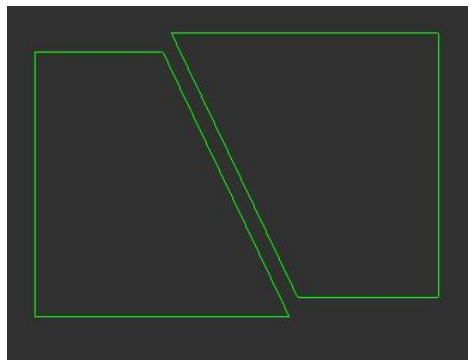
Align
Aligns and rotates to existing geometry.

Align process allows the edge of one part to be joined and aligned with the edge of another part. The first point selected in the part to-be-moved is joined and aligned with the first point selected in the move-to part. Some practice is required to become efficient at using this command.   Before the Command

In this example, line 1-2 of Part A will be joined with line 3-4 of Part B. Since point 1 is the first point selected in Part A and point 3 is the first point selected in Part B, the parts are joined at points 1 & 3 and
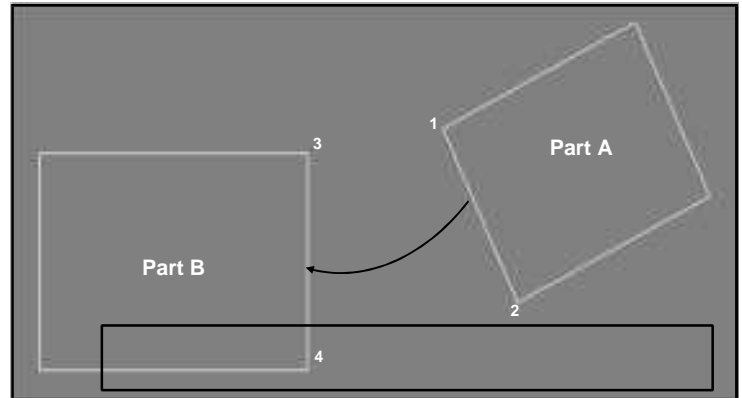
Steps to align and join the two parts are:

1. select the **Align and Join Pieces** command

2. select the geometry of the part <u>to-be-moved</u> and then press **ESC** or click **Finish (ESC)**; Part A in this example

3. select join point on the part to-be-moved ; Point 1

4. select end point of the line on the part to-be-moved; Point 2

5. select move to point on the move-to part; Point 3

6. select end point of the line on the move-to part; Point 4

When the last point is selected, the parts are joined & aligned and the command is terminated.
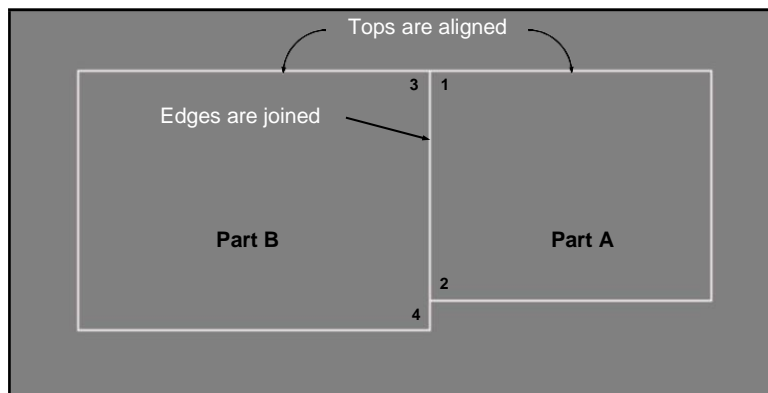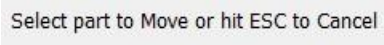
Move Parts

Pick and move a part.

Move - Allows a part to be moved.

After pressing the button, the basic steps are:

- select part to move   Select part to Move or hit ESC to Cancel
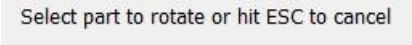
- use either drag & drop (mouse) or select X & Y coordinates and then

  press **OK**.   Drag   X 29.6912   Y 0   OK

- press **ESC** to cancel command or select another part to move.

Rotate Parts

Pick and rotate a part.

Rotate - Allows a part to be rotated around a center
point. After pressing the button, the basic steps are:

- select part to rotate   Select part to rotate or hit ESC to cancel

- use either freehand rotate (mouse) or select a rotation
  degree amount and then press **OK**.

  Rotate or enter angle   0   OK

- press **ESC** to cancel command or select another part
  to rotate.

Join Parts- Common Line Cuts

Moves and aligns a part to another with a specified distance in between.

Join - Allows a edge of one part to be aligned with the edge of another part. The spacing between the parts is equal to the blade kerf. This command is used before applying automatic tool paths.

The basic steps are:

- select edge of part to be moved   Select edge of part to be moved.

- select edge of part to align to   Select edge of part to align to.

- press **ESC** to cancel command or select another part to move.
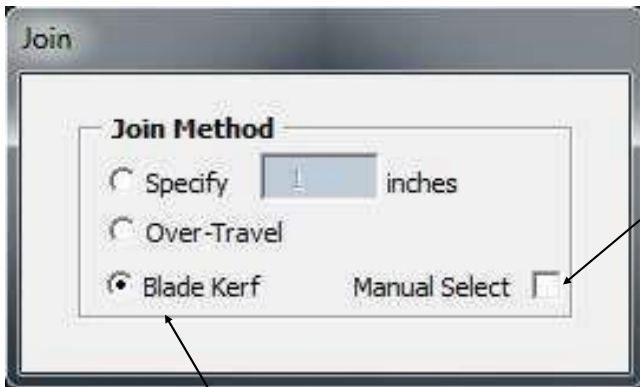
The **Manual Select** setting deter- mines where the parts are joined.

If disabled (not checked), the corner closest to the point selected on the first part is aligned to the corner closest to the point selected on the second part.

If enabled (checked) the point selected on first part is aligned to the point selected on the second part.

There are three choices to specify the distance between parts in the **Join Method**.

With Specify checked - The value input in the box is used.

With Over-travel checked - The value used will be a combination of "Blade diameter", "Cut Depth", and "Safety Distance" values set in the myMachine Tool Setup section.

With Blade Kerf checked - The Kerf value will be used that is set in the myMachine Tool Setup section.

Add Labels

Add Labels will apply the chosen label to the selected edge

To apply a label on a <u>Closed Shape</u>: Choose the label name, Then click on the edge to label. Label is placed on the inside.

To apply a label to an <u>Open Shape</u>: Choose the label name, Then click on the edge to label, And click to one side of that edge to place label.

Seam and **Wall** are set labels.

Profile and **Other** allow for user input
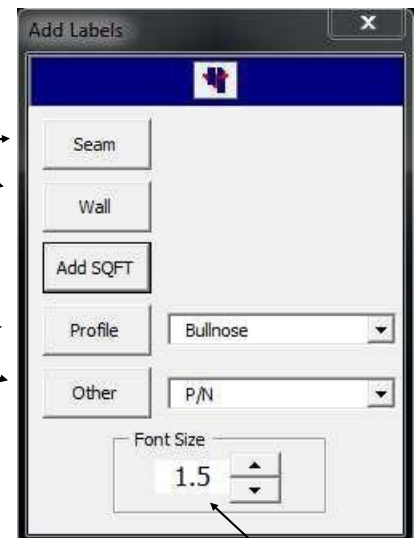
Profile allows the user to type a name into or choose name from the dropdown. Then choose the **Profile** button and select the edge as instructed at the bottom of the screen.   label

Other allows the user to type a name into or choose name from the dropdown. Then choose the **Other** button. The **Other** button will allow you to select a location anywhere in the drawing area to place the label as instructed at the bottom of the screen.

Change **Font Size** Before applying the

Select edge to label...

Select Location for Text or esc to cancel   X 0   Y 0   OK

Add Labels

(cont'd)
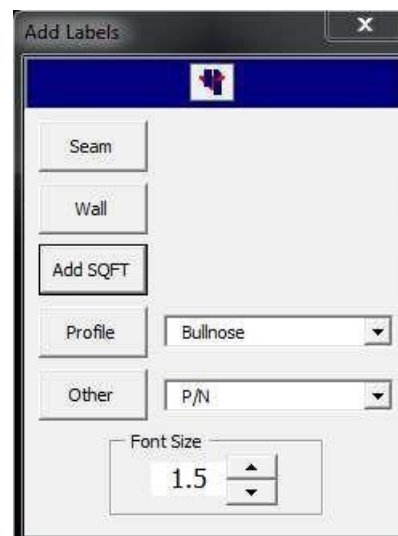
Add SQFT - computes square footage of a selected part and places the area la- bel on the drawing.

Steps to add square foot label are:

1. press the **Add SQFT** button

2. select a single closed geometry or all edges of an open geometry and then
   press **ESC** or click **Finish (ESC)** button
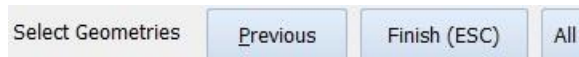
3. select label location on the drawing by
   using the mouse (position & click)
   OR
   enter X & Y coordinates and
   then press **OK**

Backsplash

Creates backsplash drawings on existing countertops.
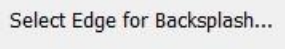
Selecting this command opens the **BacksplashTools** window which provides the user with an easy-to-use function to create backsplash.

The window also provides the user with the ability to edit **Backsplash Height** and **Oversize Length** parameter values, select **Creation Method** and whether to enable/ disable the **Label** option.

Steps to create a backsplash are:

1. select **Backsplash Tools** command; this opens the **Backsplash Tools** window

2. on the **Backsplash Tools** window change **Backsplash Height** and **Oversize Length** fields to the desired values select the appropriate **Creation Method** & **Label** option

3. click on the backsplash icon; **Backsplash Tools** window disappears

4. select part or edge Select Edge for Backsplash...
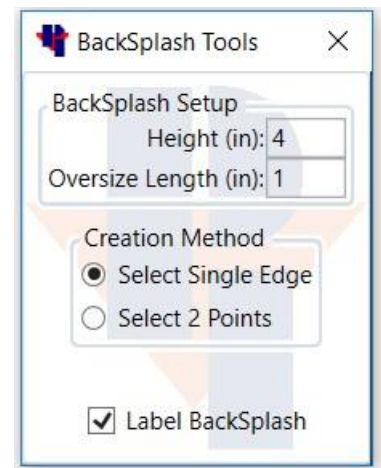
5. if a closed part was selected, a select edge message appears; select the edge

6. backsplash is created, label added (if option was enabled) and **Backsplash Tools** window appears

To end this command, click the red X in the Back- splash window.

Workspace after backsplash was created.

Backsplash ⟶ BS-25.5in

Apron and Overcut/Undercut Miters

Using the **Apron** feature, both creates the parts and applies Miter reference lines. Manual **Undercut** and **Overcut** Miters only apply the reference line to existing parts. These commands must be used before applying the toolpaths.

The **Miter Angle (deg)** field value determines the angle assigned to the selected part for all three Mitering functions.

Miter Angle (deg): 46

Apron - This command creates an apron and assigns a miter degree to both edges (apron and original part). **Apron Height** field value determines the apron size.

Apron Setup
Height (in): 4

After pressing the button, the basic steps are:

- select the part

- select part's edge to add the apron to Select Edge for Apron... ▯ press **ESC** to cancel command or select another part.

Undercut - Assigns an undercut miter at the **Miter Angle** degree value to the selected edge.

After pressing the button, the basic steps are:

- select the part

- select part's edge Select Edge of Miter ▯ press **ESC** to cancel command or select another

Overcut - Assigns an over cut miter at the **Miter Angle** degree value to the selected edge.

After pressing the button, the basic steps are:

- select the part

- select part's edge Select Edge of Miter

- press **ESC** to cancel command or select another part.

Auto Tool Path

Automatically applies Saw and waterjet cuts to prepared geometry. Choosing this button opens the window shown below.

Material Thickness is set to the thickness of material being processed. This a key parameter used by the software to determine blade cuts to prevent over cuts into adjacent parts. Ensure this value is set to actual material thickness be- fore applying tool paths.

Tolerance and **Simplify Wall Scans** - If a digitized wall scan swings are within a ± distance (<u>Half</u> of the **Tolerance** value) of a line drawn through the scan's midpoint, the software generates a single straight line tool path instead a path with multiple coordinate points. This field enables/disables the simplify wall scans feature.
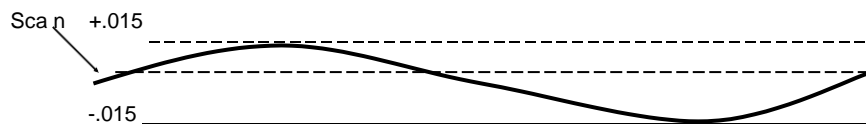
Combine Common/Colinear cuts - A common line occurs when the edges of two parts are nested (using the Align & Join feature) one blade width apart. Only one blade tool path is required to cut the two edges. This field enables/ disables the common line cutting feature.

If the **Auto Tool Path Undo** is enabled, changing the **Apply** button from the pressed state to the not pressed state un- does/removes the automatically generated tool paths.
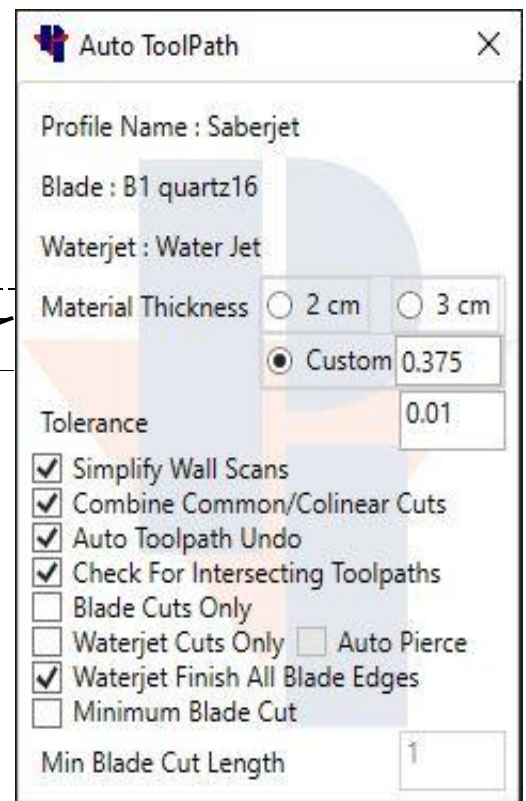
Check for Intersecting Toolpaths - When checked will show all instances of toolpaths cross- ing, by encompassing them with green circles. Not all intersections are bad- but sometimes they will show pieces that are stacked on top of each other.
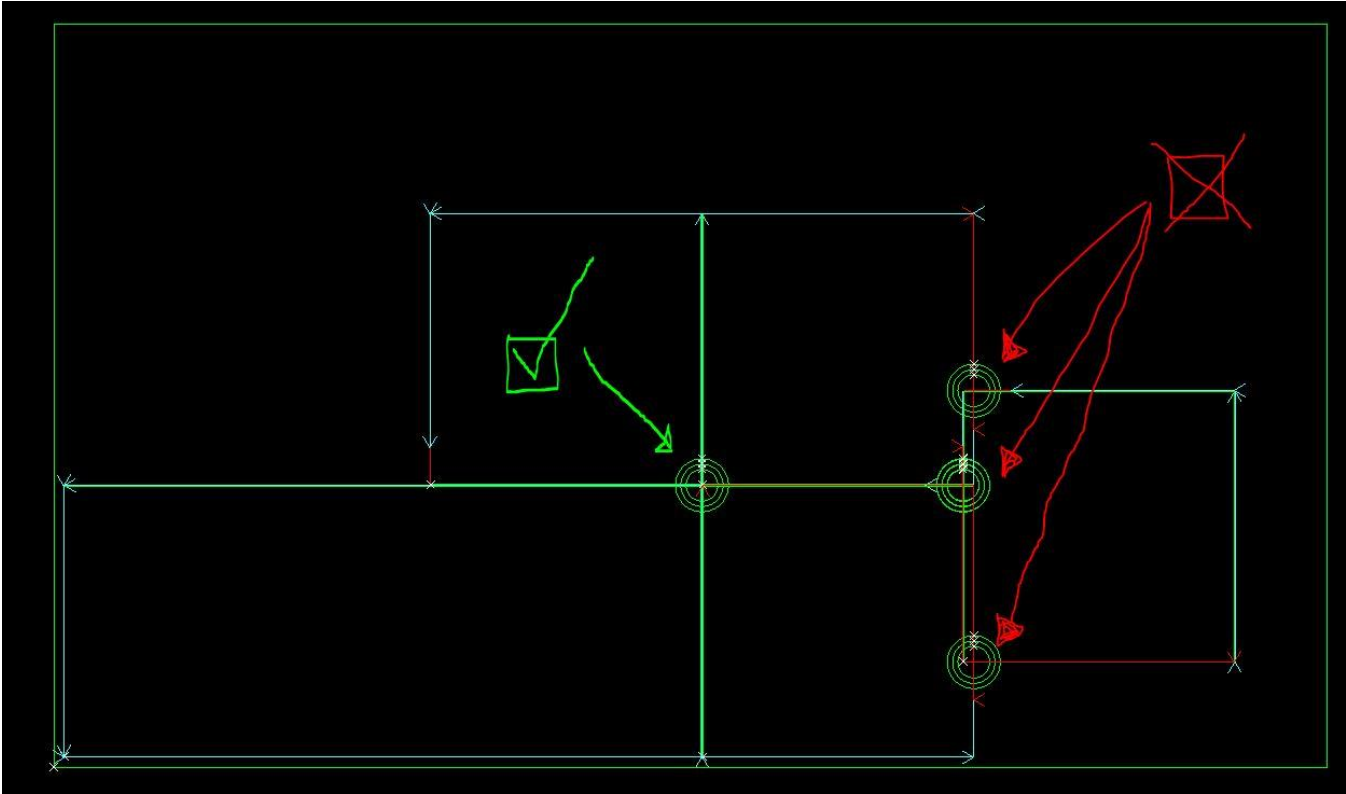
Waterjet or Blade Cuts only can be checked if you choose to only make that cut type.

Waterjet Finish all Blade Edges can be checked if you want all edges that were placed a blade width apart, but the blade could not finish, to have the waterjet finish both pieces. With out a check mark – only one part will be finished to the correct size but the part next to it will have a small amount of extra material (about half a waterjet kerf) when taken off of the saw.

Minimum Blade Cut when checked will not make any blade cuts that are less than the value set in the **Min Blade Cut Length** field.

Blade Segmented Arc

Applies multiple straight blade cuts around an arc.

First apply toolpaths to the part using the Auto Toolpath button. The Auto Toolpath function will apply cuts to all sides of the shape as it see's possible. In this example the three straight sides have cuts applied.

Select the Blade Cut Segmented Arc Icon.

Blade Cut Segmented Arc   ✕

Profile Name : SaberJet

Tool Name : Blade1

Material Thickness: ◯ 2 cm   ⦿ 3 cm
◯ Custom 1.181

Number Of Blade Cuts: 8
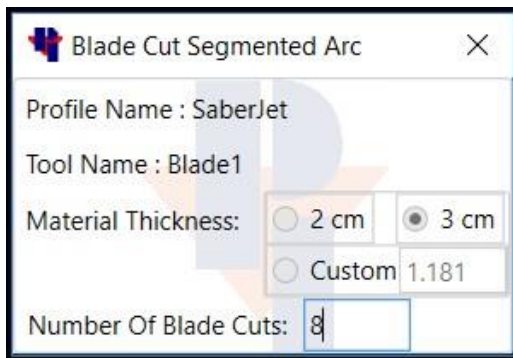
Enter the Material thickness and how many blade cuts to make the Arc. Then choose the arc and Finish.
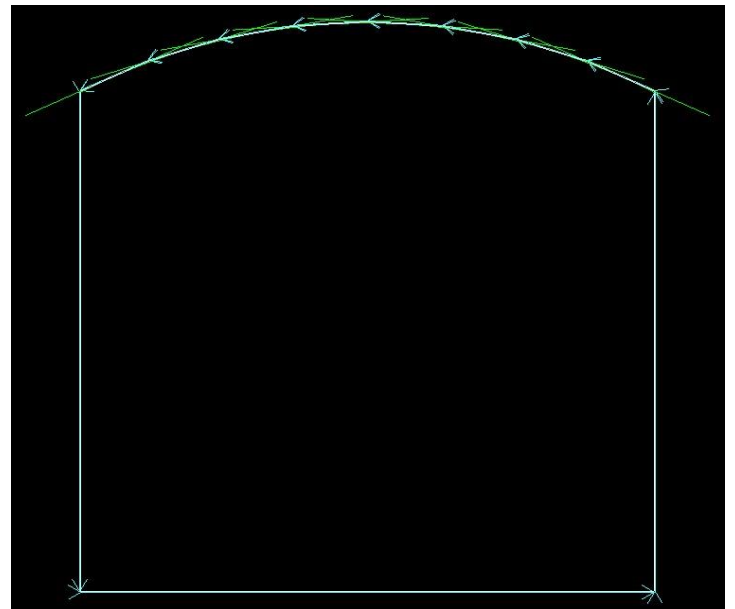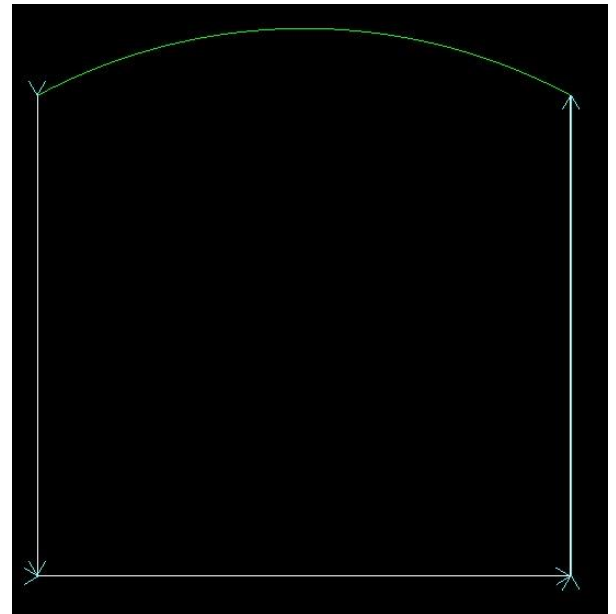
The result is eight straight blade cuts make up the shape of the Arc.

Cook Top Depth

Changes a cook top's saw cuts to a depth specified by the **Cooktop Depth** field.

The steps to change the cook top depth are:

- press the **Cook Top Depth** button

- Change the value in the Cooktop Depth field if needed.

Cooktop

Material Thickness (in): 1.181

Cooktop Depth (in): .25

- Select the cook tops blade tool paths
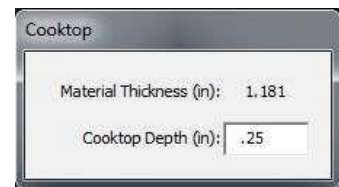
Note: You may either pick each blade cut individually or window the entire top.

Select Cooktop | Previous | Finish (ESC) | All
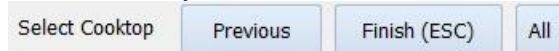
(Waterjet toolpaths will not be effected.)

- press **ESC** or click **Finish (ESC)** button Applies a manual Saw blade cut.

This dialog box appears when complete and labels are added to each saw cut.

Alphacam

Cooktop is now set to cut 0.25 deep

OK

0.25 DEEP

0.25 DEEP
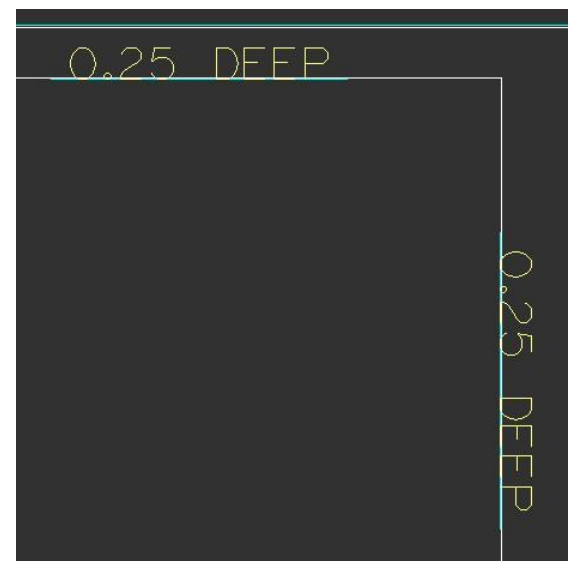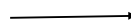
Blade Cut by 2 Points

The steps to assign a two point blade cut are:

- press the **Two Points Blade Cut** button

- Set the Material Thickness

- Select the blade side

- Select starting point - use either mouse or enter X & Y coordinates
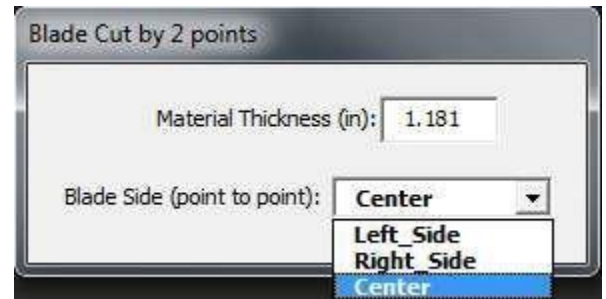
and then press **OK**.

- select end point - use either mouse or enter X & Y coordinates and

then press **OK**.

Note: The distance between the points selected must be long enough to allow the blade to cut at full depth or you will get the following message.
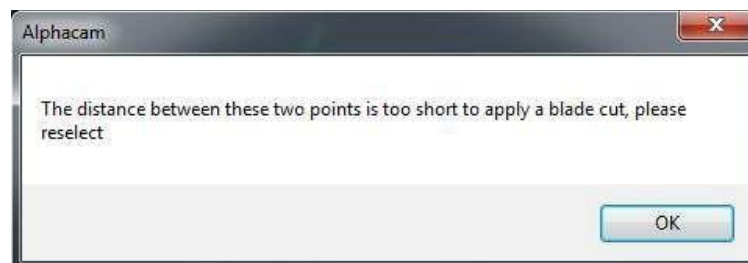
Extend/Trim to point or Distance

Changes the length of a toolpath

First apply toolpaths to the part using the Auto Toolpath button. Then you may use one of the following commands to change the length of the toolpaths.

Extend/Trim to

point

First select the Extend/Trim to point icon.

Then select the toolpath to change.

Select Path To modify

You can either click on a location for a different length, or you may type X and Y

values in. Select   X [0]   Y [0]   OK

Extend/Trim

By Distance

Extend/Trim By Distance ✕

Distance: .25   Apply

First select the Extend/Trim by distance icon.
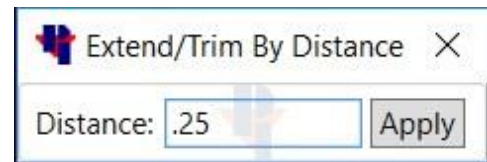
The window below will open on your screen.

- Enter a distance into the window.
- If the value is a positive you will get the prompt to extend.
- If the value is a negative, you will get the prompt to Trim.
- Select the Toolpath towards the end that you wish to change the distance of.

Please Select Toolpath to Extend by 0.25 inches.   Please Select Toolpath to Trim by 0.25 inches.

![icon] Reverse Cut Direction

First apply toolpaths to the part using the Auto Toolpath button. Then you may change the direction of the cuts.

Show Tool Path Arrows   Turn on Tool Path Arrows to display the current direction.

![icon] Click on the Reverse Tool Direction icon.
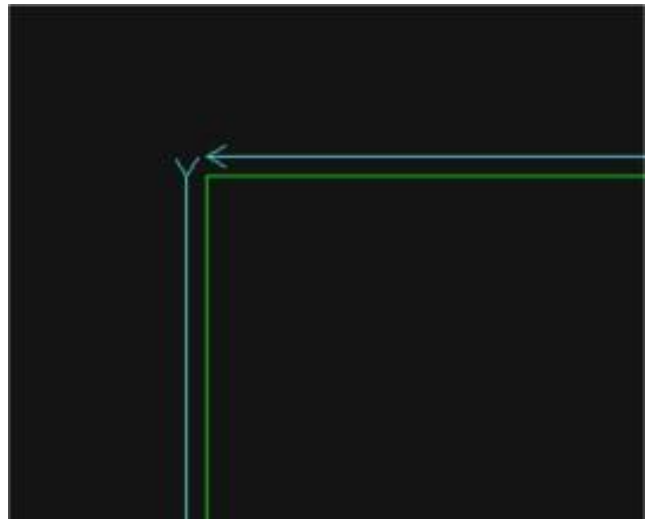
Select each tool path to change the direction on.
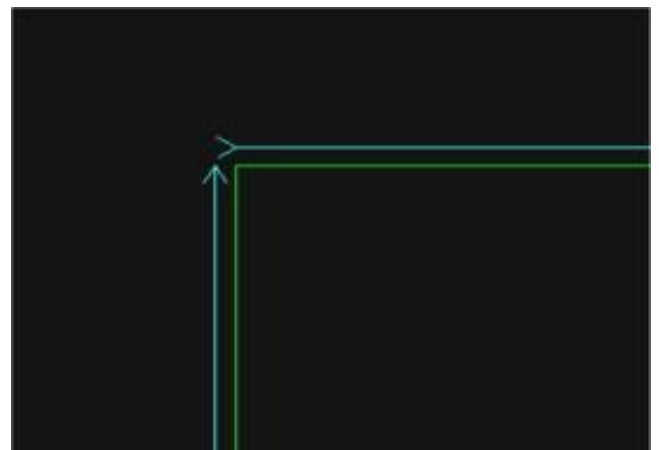
Show/Hide Direct Inputs

Shows the location of direct inputs in the drawing area.

Direct inputs are options imbedded into the drawing/program. Most common is a Park/Pause option in a program. They will always show in the Operations pane whether they are displayed in the drawing area or not.
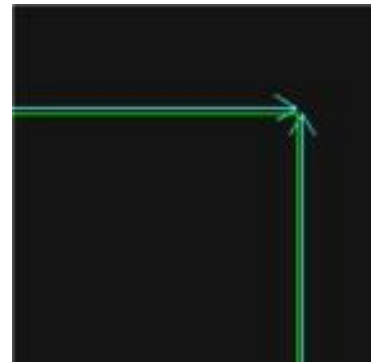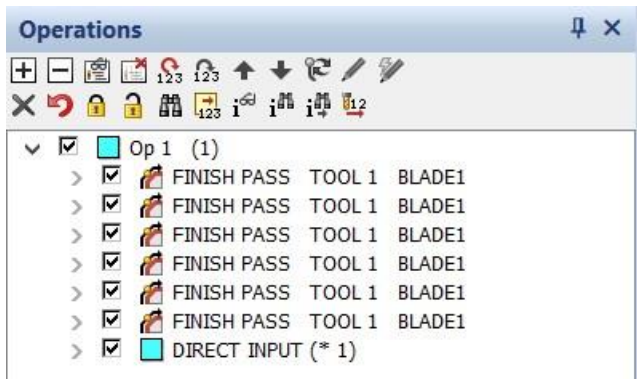
Press the Show/Hide Direct Inputs Icon to toggle the display on or off.

The direct input will be displayed on the toolpath that it was attached to.
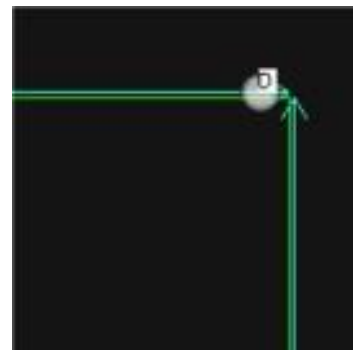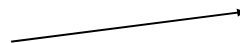
Order of Cuts

Opens the Operations window to view or to change the sequence of cuts.

To view the order of the cuts: Click to select the first (top) operation in the window. Use your up and down arrow keys (on the keyboard) to see the corresponding operations highlighted in the drawing window.

To change to order of cuts: Click to select an operation in the operation window. Use the red arrows at the top of the operation window to move the selected operation up or down.

Selected operation is
highlighted in both widows

Red up and down Arrows
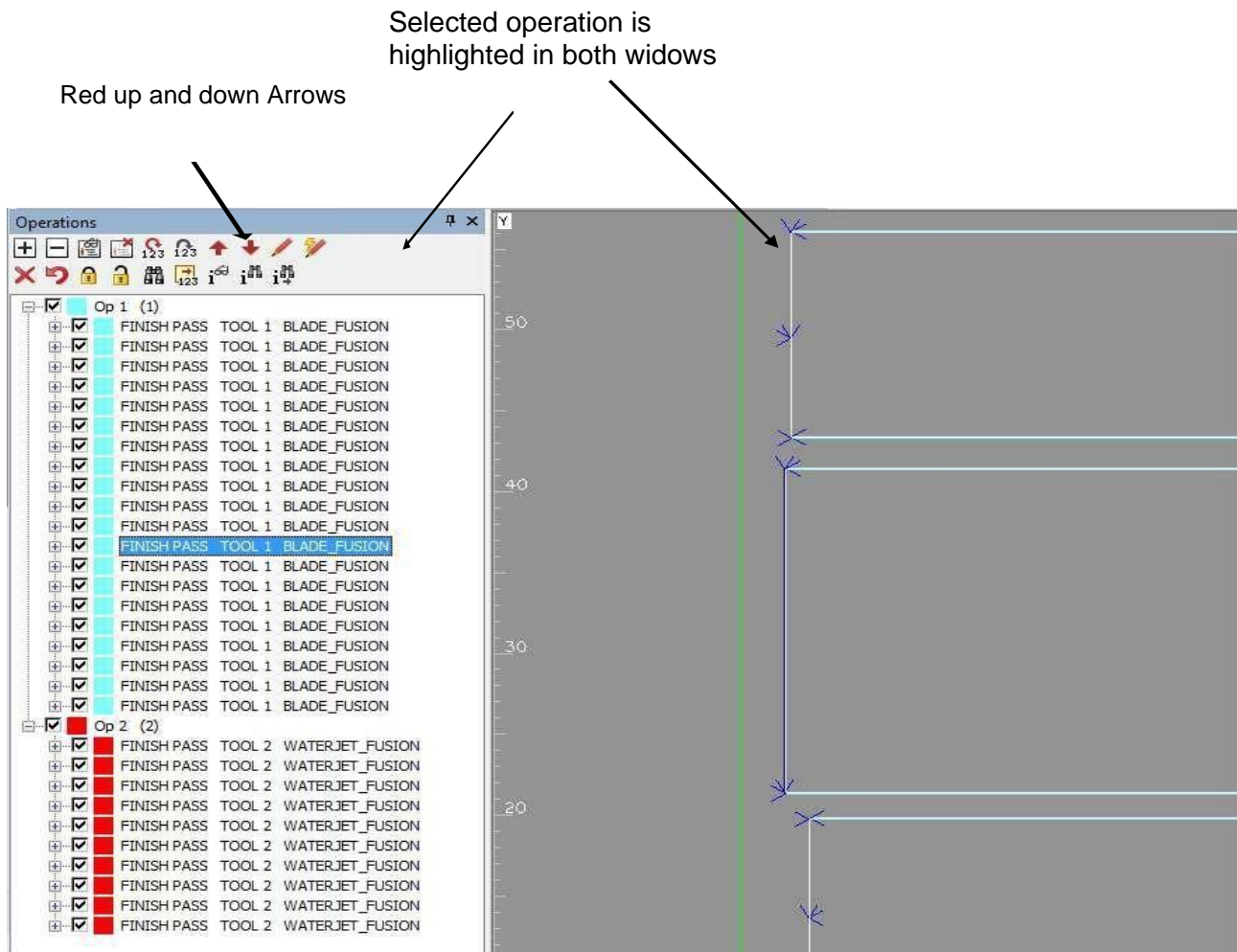
Delete Toolpath

Deletes only toolpaths without selecting the geometry.

The Delete Toolpath command may be easier to use than AlphaCam delete. It allows the user to simply click on toolpaths and they are removed.

The steps to Delete a cut are:

- press the **Delete Toolpath** button

- Select the toolpath
- Select another or ESC to finish

Extend Cuts to Border

Extends Saw blade cuts to the edge of the material border after all cuts have been applied.

Extend Cuts - The command extends blade cut tool paths to the slab boundary and starts the cut from the boundary line.

The steps to extend cuts are:

- press the **Extend Cuts** button

- select slab boundary   Select Border To Extend To...

- select tool path to extend pick at the end to be extend- ed   Select ToolPath to Extend...

- continue to select paths to extend

Before

Tool Paths

Slab Boundary

Extended Tool Paths

Slab Boundary

Cut Direction
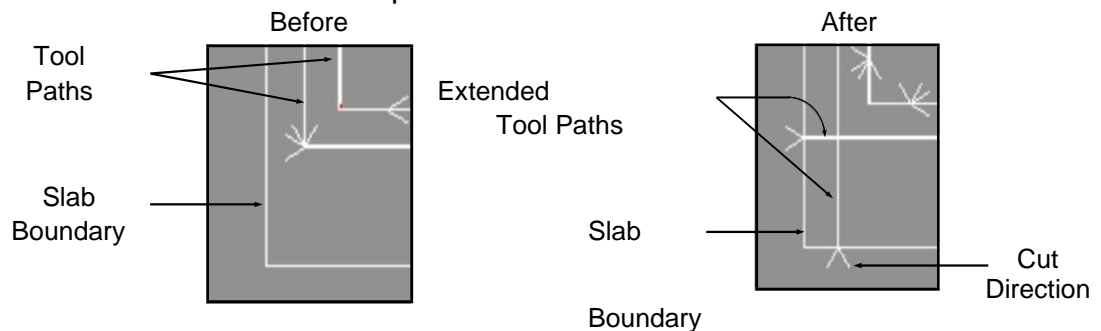
After

Note: You may also pick the edge of a part as the slab boundary.

Before

Selected as the Slab Boundary

Tool Path to be extended.

After

Extended Tool Path
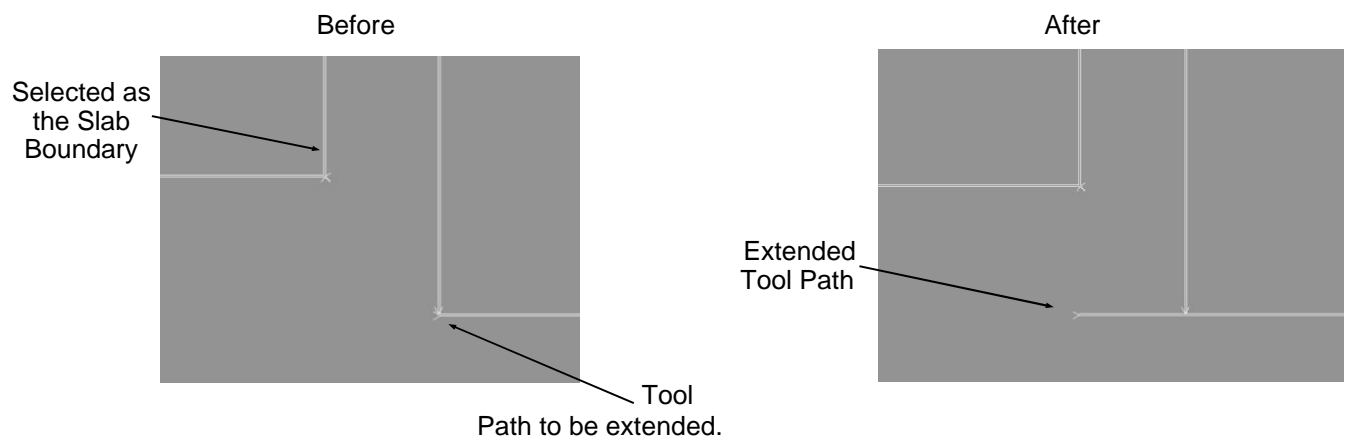
Park / Pause Machine

Allows the programmer to have the machine stop and park after a cut

Selecting this command allows the user to create G-Code commands which park-
 and-pause the machine after a cut. The command is assigned to a tool path
and then executed after the cut is made. The following message is also
displayed in the machine's message center: "Press Cycle Start to Continue".

The steps to use this tool are:

1. Change the message and/or click on the
   park and pause icon

2. Select the Toolpath to Pause and Park after

3. click **OK** on the message window
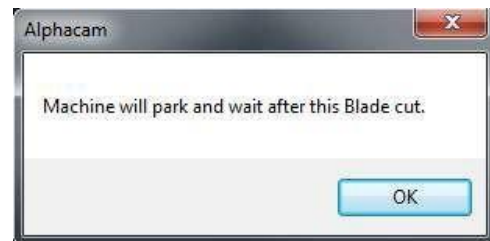
4. A marker (letter "D" and a fuzzy white dot) is placed at the end point of the selected
   tool path and "Direct Input" appears after the tool path in the Operations Project
   Manager.

   Note: **User Defined Code** (View-Display Options) must be enabled to see the "fuzzy white
   dot"Program G-Code listing after Park & Pause was created.

Marker (Alphacam Direct Input Symbol)
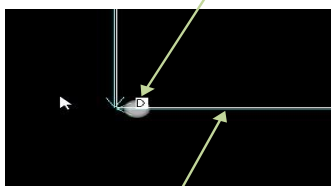
Displayed
Message

Tool Path

Manual Cutting

Manual Saw and Waterjet Commands

These two commands allow a user to apply a blade or waterjet tool path to either an individual part or geometry. They are referred to as "manual" because the user (not the software) is build- ing each operation required to complete the job.

The commands are generally used in special situations when straight cuts are being made or a part requires only one cut type (blade or waterjet).
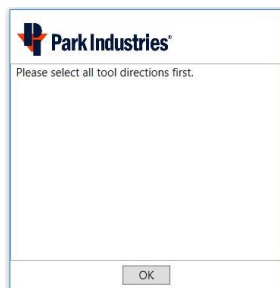
Alphacam generates this message if attempting to applying a tool path without first selecting tool direction.

Before using either of these commands the user must first select tool direction (**Tool Directions** in **Machine** pull-down menu).
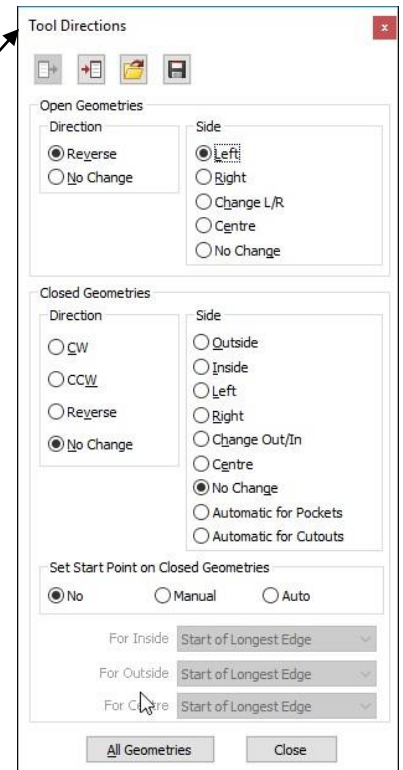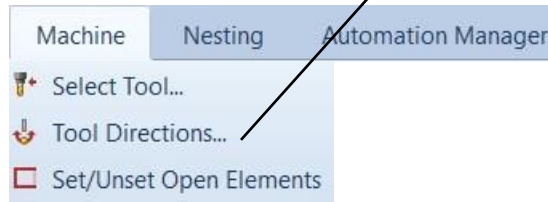
Besides taking more time, the chance for errors (like blade over- run) is much greater.

Manual Cutting

(Continued)

Manual Saw Cut - Use to manually apply a blade tool path to a geometry or part. Once the tool directions are set, the basic steps are:

- press the **Manual Blade** button
- select geometries (all the required blade cuts) ⬚ press **ESC**
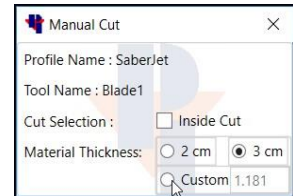
Pressing ESC generates the tool paths which are listed in the **Operations** window.

Manual Waterjet - Use to manually apply a waterjet tool path to a geometry or part. Once the tool directions are set, the basic steps are:

- press the **Manual Waterjet** button
- select geometries (all the required waterjet cuts)
- press **ESC**
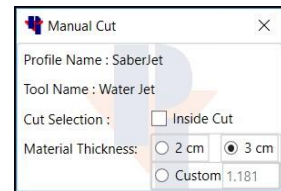
Pressing ESC generates the tool paths which are listed in the **Operations** window.

Manual WaterJet Miter Cutting

There are a few different ways to make miter cuts with the waterjet. The Manual Waterjet Miter Cut can be used to apply a waterjet cut to all geometries, including arcs.

Note: This top section must be filled out **before** selecting an Operation type below or the settings will not take effect.

Select Miter Indicated Edge — Will apply a Waterjet cut path to geometries with assigned miter edges.

Water Jet Manual Cut

Profile Name : SaberJet   ○ 2 cm   ● 3 cm
Tool Name : Water Jet   ○ Custom 1.181
            ☑ Pierce
Miter Angle: 45

Operations Selections
○ Select Miter Indicated Edge : ☐ Inside Edge
○ Select Geometry
○ Select Geometry, Select Start and End

Close

Select Geometry - is used to apply a continuous miter around the entire geometry.

Select Geometry, Select Start and End — Can apply a Waterjet miter to a user defined portion of geometry.

Check this box if the miter is to be applied to the inside of a shape that has miter attributes applied.

Note: The command prompts will start as soon as you choose one of the three Operation Selections.

The part shown below only has blade cuts applied to the straight edges from the Auto Tool Path function. Steps are shown below how to apply a **Waterjet Miter Cut** to the arc using the **Select Geometry, Select Start and End** choice.
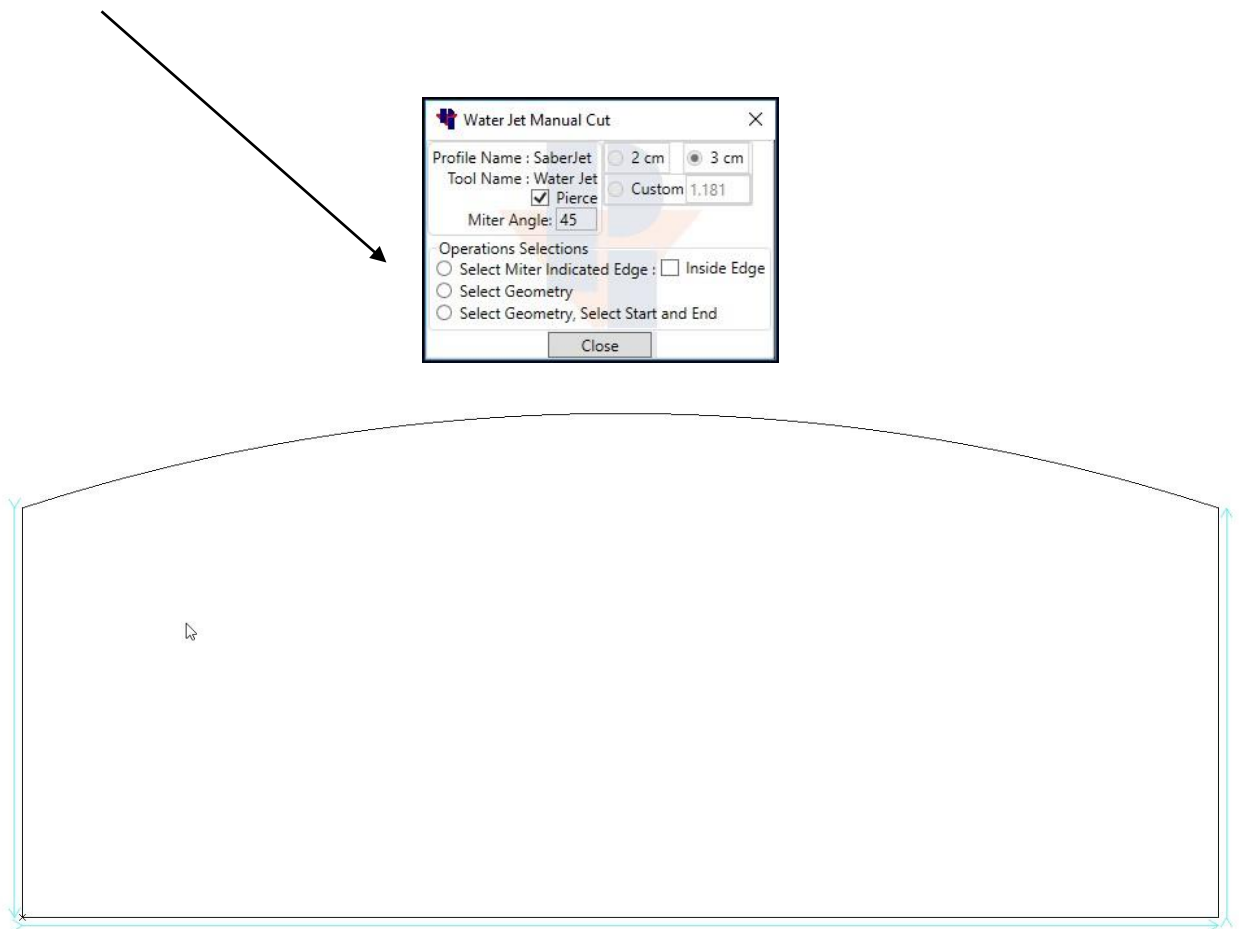
1. After choosing the "Operations Selection" from the menu you are first prompted to "Select Start Point", Click a point on the Geometry to start the Waterjet cut. I am using an end point snap to select a start point on the geometry.
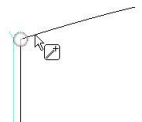
2. Then "Select Point Between the Start and End and On a Geometry". I am clicking on the arc towards the midlle of it. This step defines the direction or travel of the cut.

3. Next ![Select End Point X 0 Y 0 OK] "Select End Point", Choose a point on the Geometry where the Waterjet cut will end. I am using an end point snap to select this location.

4. Now ![Select Side to Apply Water-Jet Path X 0 Y 0 OK] "Select Side to Apply Water-Jet Path". I am clicking to the outside of the arc, so the cut will be applied to that side of the geometry.
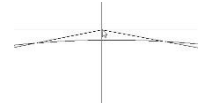
5. Then ![Select Side to Apply Miter X 0 Y 0 OK] "Select Side to Apply Miter". This means
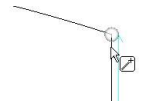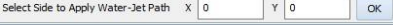   to choose which direction do you wish the Waterjet to point. I am selecting to the inside, so I will get an undercut miter.
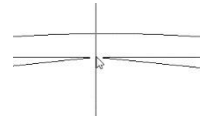
6. You may choose a new point for a lead in with ![Select Start Point for Lead-in Or Cancel X 0 Y 0 OK] "Select Start Point for Lead-in Or Cancel". You can click on a spot where you would like the cut path to start its lead in. If the lead in location is OK, you can right click of ESC to except the given location.

   7.If you have chosen to pick a new "Start Point", you will asked if you would like to "Select End Point for Lead-out Or Cancel". You can click on a place where you would like the cut path to end its lead out. If the lead out location is OK, you can right click or ESC to except the given location.
   ![Select End Point for Lead-out Or Cancel X 0 Y 0 OK]
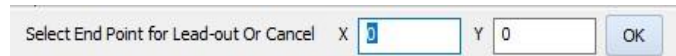
8. After completion of the cut, this command will continue (at step one) to allow you to apply a cut on another piece of geometry. You can finish the process by right clicking or ESC, and then close out of the command menu.

If you've chosen to pick a new "End Point", it will be shown.

The yellow cut path is shown on the side of the geometry the you've chosen to cut on.

The white lines are representing the direction that the WaterJet is pointing.

Blade cuts should be applied first.

If you've chosen to pick a new "Start Point", it will be shown.
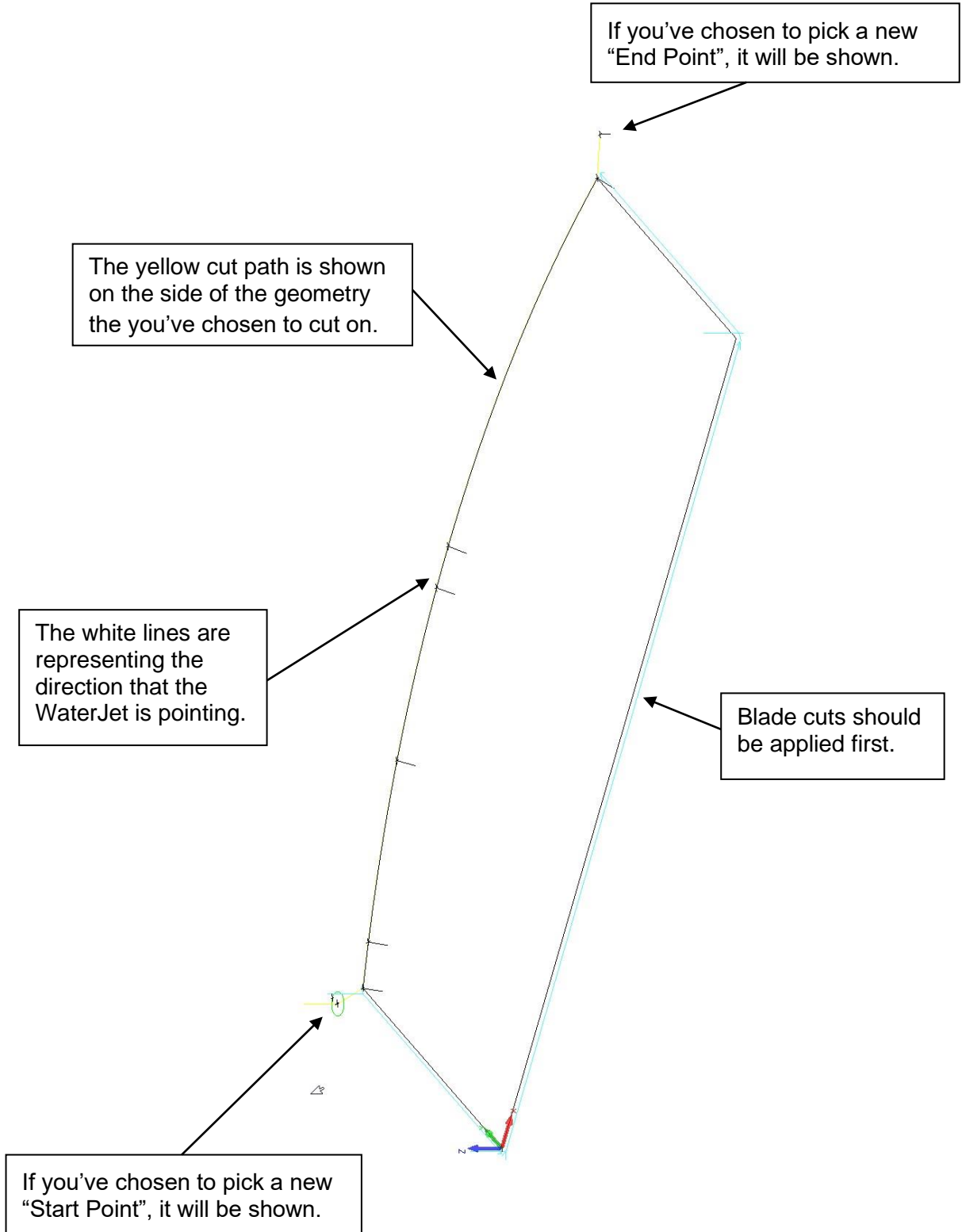
Blade Continuous Arc

Rotates the C axis of the blade following the arc.

First apply toolpaths to the part using the Auto Toolpath button. The Auto Toolpath function will apply cuts to all sides of the shape as it see's possible. In this example the three straight sides have blade cuts applied and the arc has a waterjet cut applied.

 Select Delete Toolpath and select the waterjet cut on the arc to delete.

 Select the Blade Continuous Arc.

"Select the Arc"   Please select an arc to apply blade to.

"Click to the side of the arc that you want the

blade to cut on.   Select Side to put Tool Path On
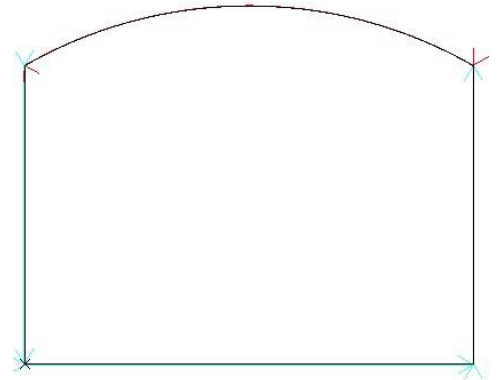
The result is a continuous cut path rotating around the arc. The incremental depths will only be visible in a 3D or Isometric view. The cuts will appear as the height of the arbor.
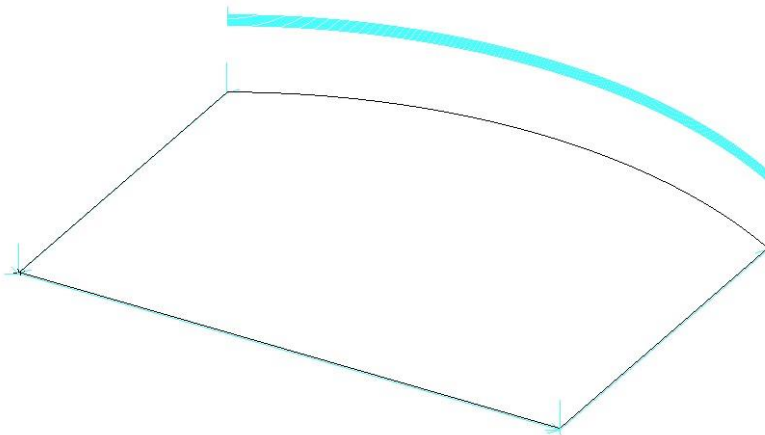
*Note: Blade overtravel is <u>not</u> considered when using this command. You may need to modify the arc geometry <u>before</u> applying toolpaths to avoid cutting into other parts**. Check Overcuts!**

Ultra-Compact

The Ultra-Compact command will apply predetermined Ramp In and Ramp Out feed rates and distances to blade cuts. Ultra-Compact also has a feature to make Tension Band relief cuts. Choosing this button opens the window below.

- You must first define a blade as an Ultra Compact blade in the Tool Select window.
- Apply toolpaths as normal using the AutoToolPath command with an Ultra Compact blade selected <u>prior to</u> choosing the Ultra Compact command button.

Use Relief Cut is a cut that will start at the opposite end of the cut and will travel into the cut by the amount set as the Distance value in the Ramp In field/box. See figure A.

Set As First Operations will move all the relief cuts to the beginning of the operations.

Extend Cut Options gives you the opportunity to **Extend Path Start** (see figure B) or **Extend Path End** (see figure C) by the **Blade Over Travel** distance, or a **Custom** value you enter in the **Distance** field.

Tension Band applies blade cuts on a closed geometry. It is demonstrated in the following example (see figure D) on a rectangle that was offset in from the edge of the slab. It uses the ramp in and ramp out properties of the blade. **Do not select the Tension Band geometry when tool-pathing**.

Compact cut is a cut that will use the ramp in and ramp out properties of the blade on the cuts that you selected. Must be applied after creating the toolpaths.

*These settings are for example only. Use settings that are best suited for your application.

Commands:

Selecting the play button on the **Tension Band** or the **Compact Cut** command will enter you into the command. Verify the correct settings prior to choosing either command. Follow the prompts in the Alphacam message bar.

Tension Band

Figure B

Figure C

Figure A

Tension Band
Figure D

42
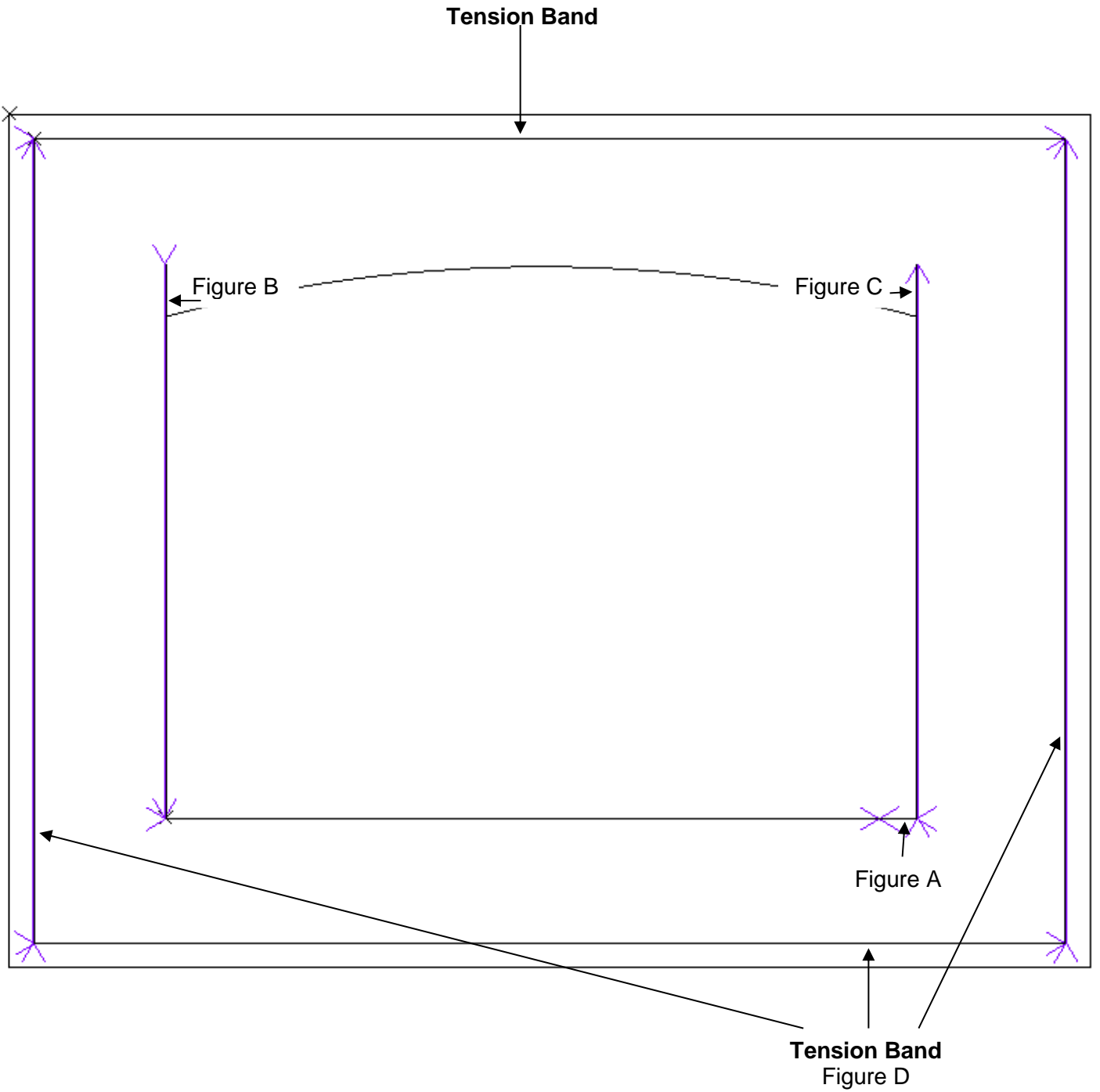
Modify Lead In / Out

Changes the waterjet paths lead in and out location. Have Pierce enabled in the Tool Setup window to avoid blowout in an area that is not sawn through.

Lead In/Out - The command allows the user to change the lead-in/out point for Waterjet tool path. After pressing the button, the basic steps are:

- Select the waterjet path. The position that you choose becomes the start point.

- Select new lead-in by positioning crosshair at lead-in point on the drawing then left click OR enter X & Y coordinates then click **OK**

  Select Waterjet Path or hit ESC to Cancel

- Select new lead-out by positioning crosshair at lead-out point on the drawing then left click OR enter X & Y coordinates then click OK.

Select Start Point for Lead-in   X [0]   Y [0]   OK

Selected Toolpath and where you would prefer it to start

The lead-in

The lead-out
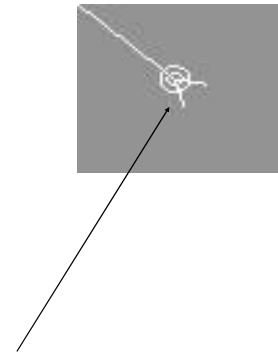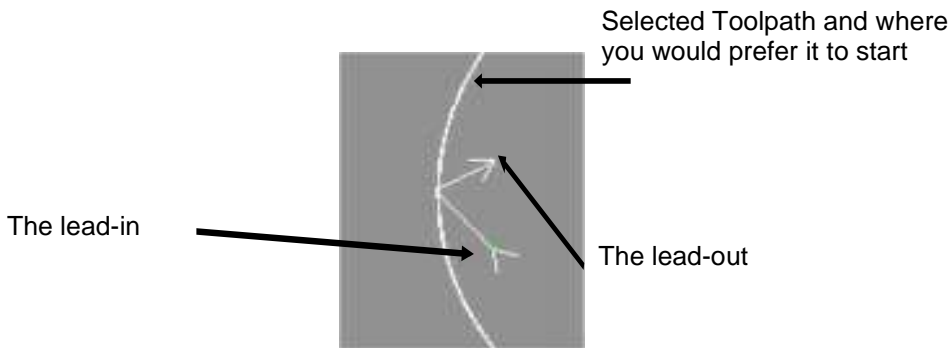
If pierce is enabled in the Tool Setup window (**MyParkConfig** - **myMachine**) you will see a piercing path (two green circles)

Waterjet Feedrate Calculator

Waterjet Feedrate - Pressing this button launches the **FR Calculator** window which can be used to determine Waterjet Feedrate based on Waterjet and Material Properties. To use the tool:

- press the **FR Calculator** button

  ▢ complete the property fields on the **FR Calculator** window

  ▢ press **Feedrate (ipm)** button to calculate rate

  ▢ press **Apply** to load the new feed rate to FUSION Tool Bar window

Send G-Code to the Machine

Creates and sends the program to the machine and can also create a job report.

After a layout and all cut paths are completed, clicking this button will send the program to the machine or to the location that is set in the configuration. You will then have the option to generate a printable Job Report. The Send G-Code command will also do an automatic save on the file.

Information window for job sheet →

The program name cannot contain spaces or symbols if using a bar- code reader.

In the PI Reports page you can choose settings and type in optional Job Notes that the operator will see on the report page. Click on OK to finish and create the Job Report. You may print the Re- port so the Operator can scan the Bar code at the machine.

Machine Profiles

Machine Profiles are a way to save and use specific settings for different cutting conditions. Profiles must be created for each machine. You may also create a profile for different types or thickness of material. You are allowed to setup 8 profiles, each profile may have up to 20 tool configurations.
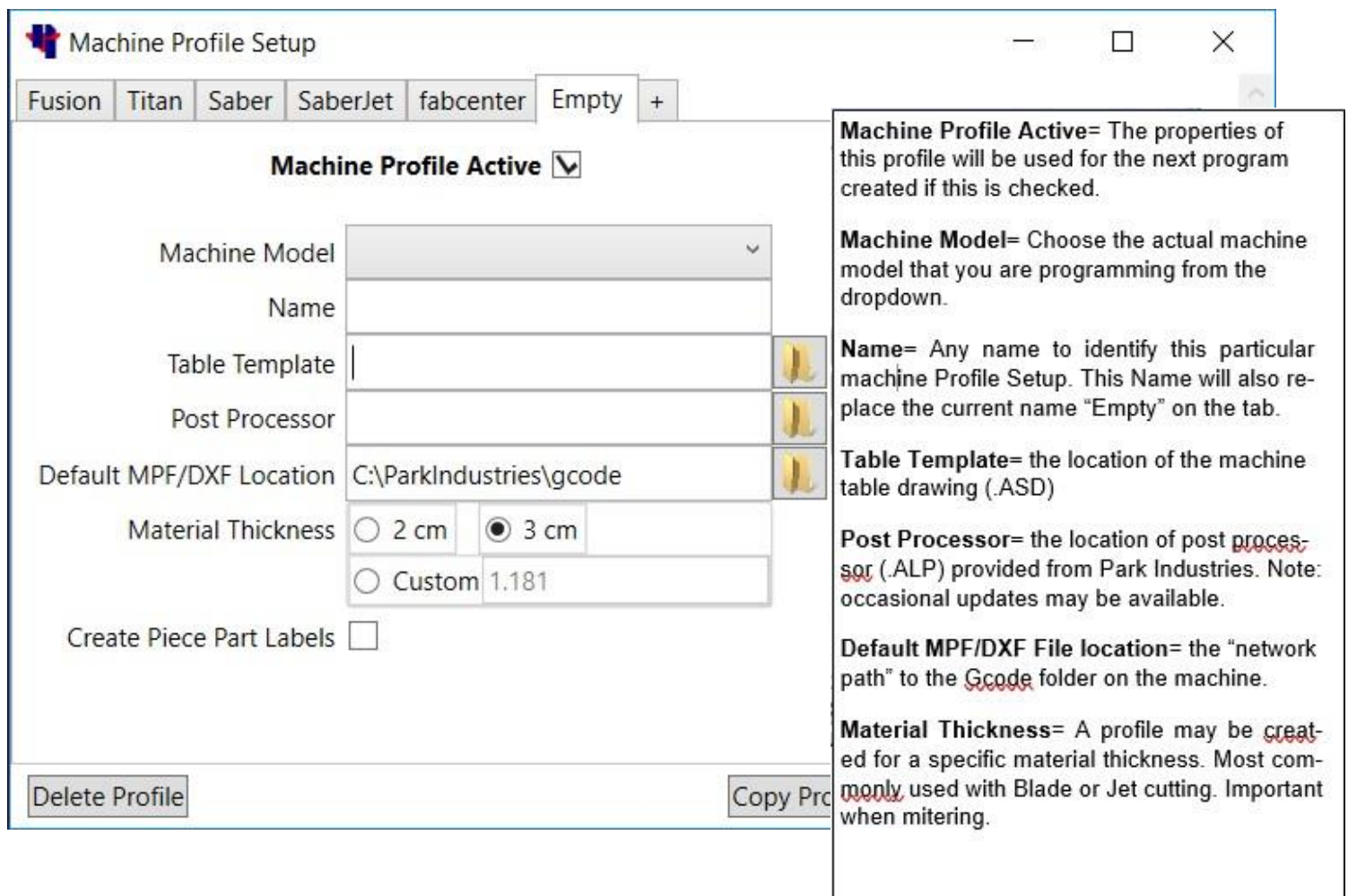
Setting up Machine Profiles

(Continued)

Input the proper information into the fields of the setup window.

SABERjet Tool Examples

Setup the tool and parameters for every tool type. Each SABERjet Machine Profile may have up to 20 tools saved in Alphacam, but there can only be ONE BLADE and ONE WATERJET active at a time. You may add tools in the **Machine Profile Setup** window, or you may also add tools in the **SABERjet** tab by pressing the **Tool Select** button.

On the SABERjet - **ALL BLADES** must have a **tool number of 1**

Blade

Ultra Compact Blade

On the SABERjet - **ALL Waterjets** must have a **tool number of 2**

Safety Distance detail

Safe Distance Explanation

In the example below, as the blade finishes cut 1 of part 1 it approaches cut 2 of part 2. The blade motion must stop before reaching the intersection point.
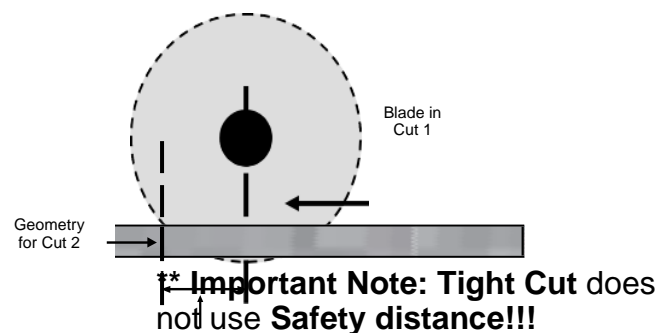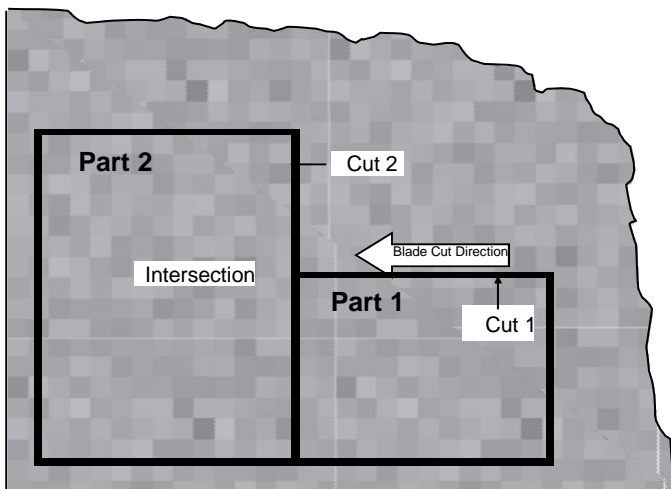
Given the correct tooling parameters, the software computes the distance required to prevent the blade from cutting into an intersecting geometry shown as computed distance in the top figure. If the machine tool parameters match the program tool parameters, and the correct material thickness is used, the blade will always stop before entering the next geometry. But since this does not always happen in the real world, a safety buffer can be used. (See bottom figure).

** Important Note: Tight Cut** does not use **Safety distance!!!**
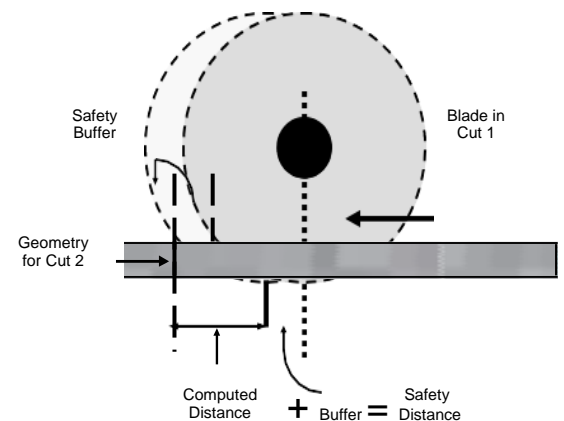
Safety Distance is a value added to the computed blade over travel stop distance to help prevent the blade from cutting into an intersecting geometry. This compensates for varying stone thickness, blade diameter, and other factors.

F1	F2	F3	F4		F5	F6	F7	F8		F9	F10	F11	F12
Unknown/ Help	Various	Ortho On/Off	Close & Finish		Quadrant	End of	Middle of	Center of		Intersect of	Tangent to	Perpend to	Parallel to

F1	F2	F3	F4		F5	F6	F7	F8		F9	F10	F11	F12
Unknown/ Help	Various	Ortho On/Off	Close & Finish		Quadrant	End of	Middle of	Center of		Intersect of	Tangent to	Perpend to	Parallel to

F1	F2	F3	F4		F5	F6	F7	F8		F9	F10	F11	F12
Unknown/ Help	Various	Ortho On/Off	Close & Finish		Quadrant	End of	Middle of	Center of		Intersect of	Tangent to	Perpend to	Parallel to

F1	F2	F3	F4		F5	F6	F7	F8		F9	F10	F11	F12
Unknown/ Help	Various	Ortho On/Off	Close & Finish		Quadrant	End of	Middle of	Center of		Intersect of	Tangent to	Perpend to	Parallel to

F1	F2	F3	F4		F5	F6	F7	F8		F9	F10	F11	F12
Unknown/ Help	Various	Ortho On/Off	Close & Finish		Quadrant	End of	Middle of	Center of		Intersect of	Tangent to	Perpend to	Parallel to

F1	F2	F3	F4		F5	F6	F7	F8		F9	F10	F11	F12
nknown/ Help	Various	Ortho On/Off	Close & Finish		Quadrant	End of	Middle of	Center of		Intersect of	Tangent to	Perpend to	Parallel to

Keyboard Shortcuts

Geometry		View		Action	Hotkey
Arc	A	3-D	V	3-D	V
Circle	Ctrl+C	Ghost Tools	Ctrl+G	Add-Ins	`
Common Line Removal	Shift+R	Zoom All	Z	Apply Style	Shift+S
Enclosing Rectangle	Alt+R	Zoom Previous	Ctrl+B	Arc	A
Line	L	Zoom Window	W	Break	B
Rectangle	R			Change	Shift+C
Text	Ctrl+T	**CAD**		Circle	Ctrl+C
		Dimension	Ctrl+D	Clear Memory	Ctrl+Delete
Edit		Distance/Angle	U	Common Line Removal	Shift+R
Break	B	Hide Parts	H	Copy	C
Change	Shift+C	Show All Parts	Alt+H	Cut	Alt+C
Copy	C	User Layers	Ctrl+U	Delete	D
Cut	Alt+C			Dimension	Ctrl+D
Delete	D	**File**		Distance/Angle	U
Explode	X	New	Ctrl+N	Enclosing Rectangle	Alt+R
Extend	E	Open	Ctrl+O	Explode	X
Extend By Distance	Ctrl+E	Save	Ctrl+S	Extend	E
Fillet	F			Extend By Distance	Ctrl+E
Join	J	**Add-Ins/Macros**		Fillet	F
Keep	K	Add-Ins	`	Ghost Tools	Ctrl+G
Mirror	I			Input CAD	Ctrl+I
Move	M	**Machine**		Insert	Shift+I
Offset	O	Apply Style	Shift+S	Join	J
Redo	Ctrl+Y	Tool Direction	Shift+T	Keep	K
Rotate	Ctrl+R			Line	L
Scale	S	**3D**		Mirror	I
Trim	T	Project 3D to 2D	P	Move	M
Undo	Ctrl+Z	Set Material	Shift+M	New	Ctrl+N
				Offset	O
Home				Open	Ctrl+O
Clear Memory	Ctrl+Delete			Project 3D to 2D	P
Input CAD	Ctrl+I			Rectangle	R
Insert	Shift+I			Redo	Ctrl+Y
				Rotate	Ctrl+R
				Save	Ctrl+S
				Scale	S
				Set Material	Shift+M
				Text	Ctrl+T
				Tool Direction	Shift+T
				Trim	T
				Undo	Ctrl+Z
				User Layers	Ctrl+U
				Zoom All	Z
				Zoom Previous	Ctrl+B
				Zoom Window	W
				Hide Parts	H
				Show All Parts	Alt+H