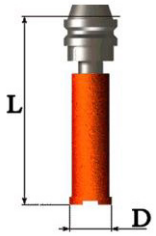
ESSENTIA
STONE ROUTER TOOLING MANUAL

BIG KAISER

INDEX

Author: Denis Phocas of Alpha Granite

DRILLERS AND ROUTERS (FLAT TOOLS)



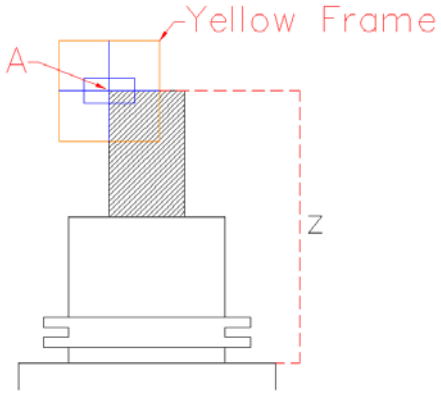
1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting “Adapter” on tab.

2) Place the appropriate cutting tool we want to use.

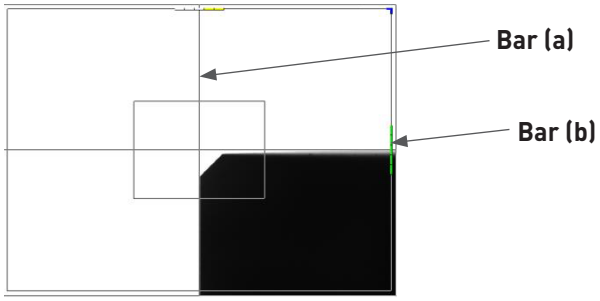
3) Go to “Manual Measure (caliper)” 

4) Click on “Auto Measure” function. 

5) Move the machine till you find the Point A.



6) Move the Grid in the “D”(Diameter) and “Z” direction until the Bars turn green. (In some cases you may only set a yellow bar).



7) Align the horizontal and vertical the lines as shown in the diagram and rotate the spindle so that the machine selects the highest point at the tool. (Use the putty to clean any microfibers that may affect the dimensions.)

8) Click “Z” and Freeze it by selecting  . Do the same for D or R.

9) Print using “Label Print”  to the left side of the screen.

FLAT ROUND EDGE (T SERIES: T20 / T30 / T40)

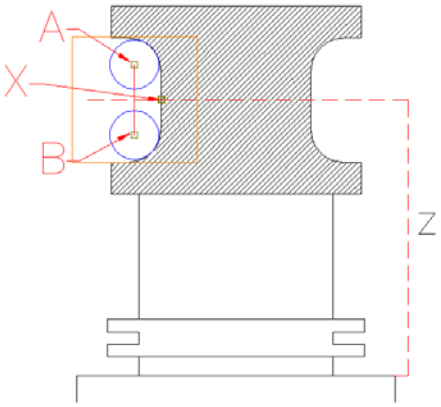
1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting "Adapter" on tab.

2) Place the cutting tool into the machine spindle.

3) Select the "SVS Macro" in the upper menu. 

4) Select "Macro" number #020 at the bottom side of the screen or type 020 in the search window. 

5) Move the machine to find Point "A" to create a circle inside the top radius as shown below.



4.1) Rotate the spindle till you find the tangiest Radius. (Use the putty to clean any microfibers that may affect the dimensions.)

4.2) Click inside the yellow frame and drag the box to the top left corner, then click  and it becomes  , drag the box to right corner. This will enlarge the yellow box to fill the screen.

4.3) Once the radius is determined, then left click on "Z" and select 0,0, to reset "Z" value.

4.4) Jog the machine down in the Vertical Mode only.

4.5) Determine point "B" in the same way you did "A".

4.6) Note the value of "Z" at point B.

4.7) "Z" will be a negative value, divide "Z" by 2 and note the value.

5) Then select the "Z" and press the lock to offset up, the machine will ask you to enter offset value, go ahead and enter offset value.

6) Click anywhere on the screen and move the machine up until the red (X) point intersects yellow line. It will turn green when it intersects.

7) Click on "Z" and unlock it.

8) Freeze the "Z" and record the value that appears on the screen.

9) Finally, select the "Manual Measure (Caliper)"  and print it using the "Label Print"  to the left. Make sure that the correct CNC Spindle has been selected.

FULL BULLNOSE (V SERIES: V20 /V30 /V40) & WIDE BULLNOSE (DM SERIES: DM30)

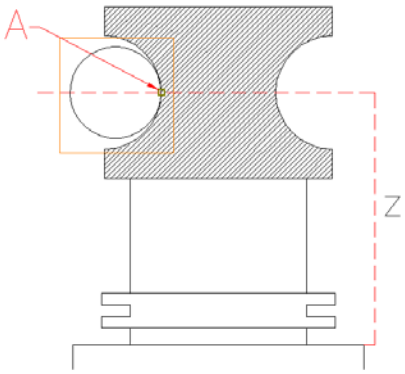
1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting "Adapter" on tab.

2) Place the cutting tool into the machine spindle.

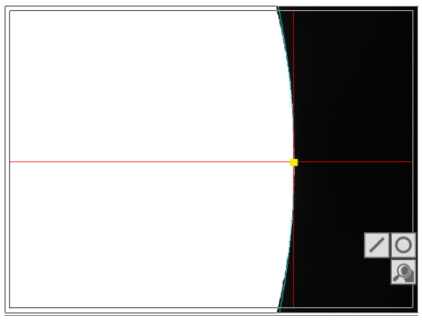
3) Select the "SVS Macro" in the upper menu. 

4) Select "Macro" number #565 in the bottom side of the screen or type 565 in search window and hit enter. 

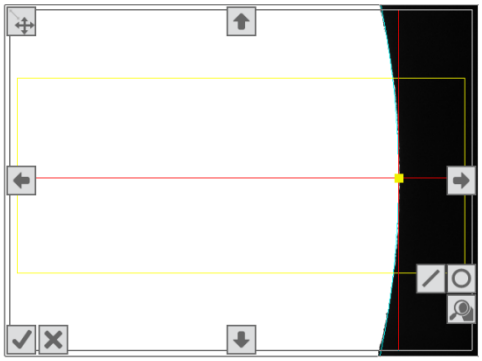
5) Move the Machine to point "A". (Use the putty to clean any microfibers that may affect the dimensions.)



Always keep the Line (Red Line) in the middle of the screen.



6) Click anywhere on the screen and select the yellow frame and drag the box to the top left corner, then click  and it becomes  , drag the box to right corner. Then enlarge the yellow box to fill the screen.



7) Click on “Z” and freeze it .

8) Click on “None”  . (Concept and Speed select Radius Option and for Maxima select Diameter).

9) Rotate Spindle until you find largest Diameter or Radius.

10) Freeze D or R.

11) Finally, select the “Manual Measure (Caliper)” and print using the “Label Print” to the left side of the screen.

HALF BULLNOSE (B SERIES: B30) & WATERFALL (A SERIES: A30)

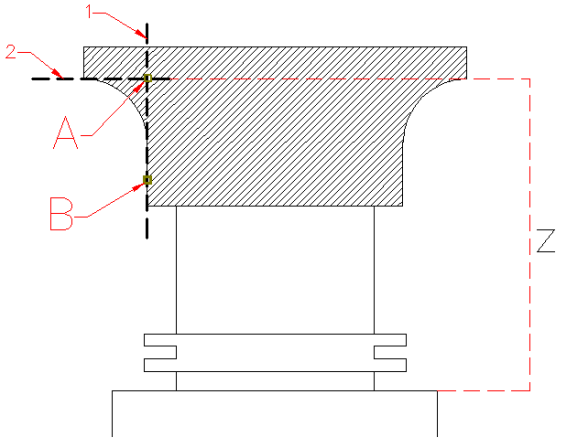
1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting "Adapter" on tab.

2) Place the cutting tool into the machine spindle.

3) Select the "SVS Macro" in the upper menu. 

4) Select "Macro" number #536 in the bottom side of the screen or type 536 in search window. 

5) Move the Machine to point A, this specific macro gives the exact distance from point A to the spindle, the "Z" value. (Use the putty to clean any microfibers that may affect the dimensions.)



6) Click anywhere on the screen and select the yellow frame and drag the box to the top left corner, then click  and it becomes  , drag the box to right corner. Then enlarge the yellow box to fill the screen.

7) Click on "Z" and select the lock.

8) Offset down -0.0625".

9) Click anywhere on the screen to call up the green target.

10) Move the machine down until you align the green target on yellow dot.

11) Once the desired point is located, then click on "Z" and unlock it and then freeze it  .

12) Jog down to point B (whilst leaving Z Frozen). B is the midpoint of the flat surface of the tool.

13) Click on "None". 

14) Rotate Spindle and find largest diameter.

15) Unlock "D" by click on it and then Freeze it  "D".

16) To Change from Radius to Diameter just click. 

17) Finally, select the "Manual Measure (Caliper)"  and print using the "Label Print"  to the left side of the screen.

DUPONT H: H30

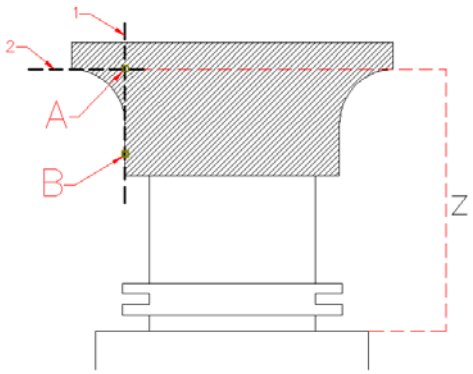
1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting "Adapter" on tab.

2) Place the cutting tool into the machine spindle.

3) Select the "SVS Macro" in the upper menu. 

4) Select "Macro" number #536 in the bottom side of the screen or type 536 in search window. 

5) Move the Machine to point A, this specific macro gives the exact distance from point A to the spindle, the "Z" value. (Use the putty to clean any microfibers that may affect the dimensions.)



6) Click anywhere on the screen and select the yellow frame and drag the box to the top left corner, then click and it becomes , drag the box to right corner. Then enlarge the yellow box to fill the screen.

7) Click on "Z" and select the lock.

8) Offset up 0.1875".

9) Click anywhere on the screen to call up the green target.

10) Move the machine up until you align green box on yellow dot.

11) Once the desired point is located, then click on "Z" and unlock it and then freeze it .

12) Jog down to point B (whilst leaving Z Frozen). B is the midpoint of the flat surface of the tool.

13) Click on "None". 

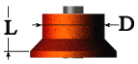
14) Rotate Spindle and find largest diameter.

15) Unlock "D" by click on it and then Freeze it "D".

16) Change from Radius to Diameter just click. 

17) Finally, select the "Manual Measure (Caliper)" and print using the "Label Print" to the left side of the screen.

BEVEL 3/8 (H SERIES: ZS30)



1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting "Adapter" on tab.

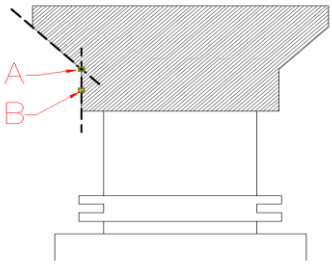
2) Place the cutting tool into the machine spindle.

3) Select the "SVS Macro" in the upper menu. 

4) Select "Macro" number #041 in the bottom side of the screen or type 041 in search window. 

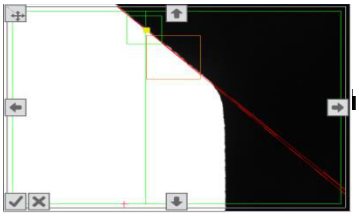
5) Move the Machine to point "A". This specific macro calculates the exact point "A" which is the point, where the 2 tangent lines intersect, as shown in the diagram below. (Use the putty to clean any microfibers that may affect the dimensions.)

6) Click anywhere on the screen and select the yellow frame and drag the box to the top left corner, then click  and it becomes  , drag the box to right corner. Then enlarge the yellow box to fill the screen.

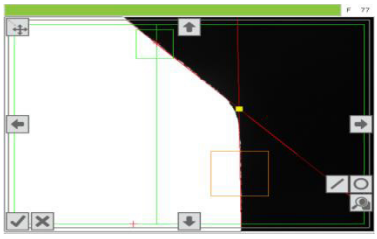


7) Click on rectangular boxes and drag them into the area indicated in the diagram below.

Wrong Place Boxes

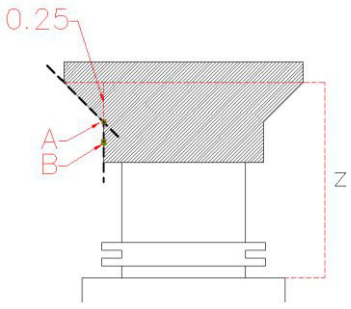


Correct Place Boxes

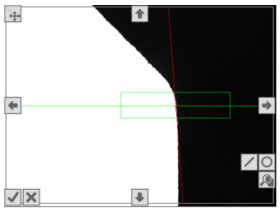


8) Select "Z" and click 0,0 to reset it. Then press the lock to move up by a 1/4" (0.25").

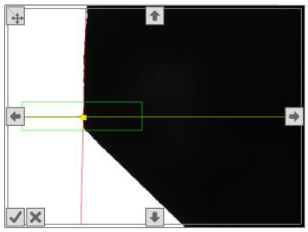
Tools	Offset
Bevel Edge 3cm	0.25mm (1/4 in)
Bevel Edge 2cm	
Dupont 3cm	0.1875mm (3/16 in)
Dupont 2cm	



9) Click anywhere on screen and this Appears.



10) Move the machine up and find the new yellow DOT, Align the image on it. That new offset point is the final value of "Z".



11) Click on "Z" and unlock it.

12) Record and Freeze the "Z" value.

13) Move the machine down to point B where the tool is flat.

14) Click on "none".

15) Rotate spindle to find largest Radius or Diameter.

16) Finally, select the "Manual Measure (Caliper)" and print using the "Label Print" to the left side of the screen.

COVE DUPONT (O SERIES: 030)

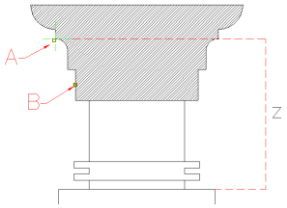
1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting "Adapter" on tab.

2) Place the cutting tool into the machine spindle.

3) Select the "SVS Macro" in the upper menu. 

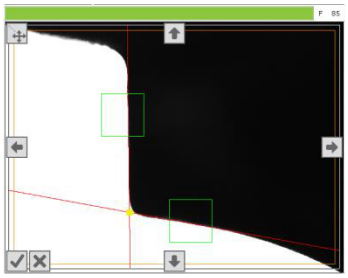
4) Select "Macro" number #021 in the bottom side of the screen or type 021 in search window. 

5) Locate point A by moving the machine up towards it. (Use the putty to clean any microfibers that may affect the dimensions.)



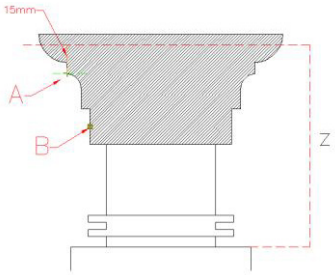
6) Click anywhere on the screen and select the yellow frame and drag the box to the top left corner, then click  and it becomes  , drag the box to right corner. Then enlarge the yellow box to fill the screen.

7) Rotate the spindle and move the rectangular box to find the best results.
Please note that due to the shape of this tool you will need to jog the machine both left and right to capture point A and point B.



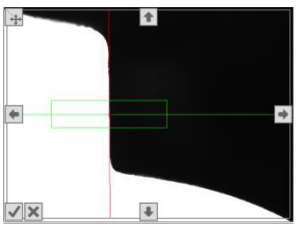
8) Locate the point A, click on "Z", and then select lock.

9) Enter the offset value of 0.60" in.



10) Move the machine up till you find the yellow dot.

11) Click anywhere on screen and the green target appears. See diagram below.



12) Align the green box on the yellow dot. This will determine the new “Z” value

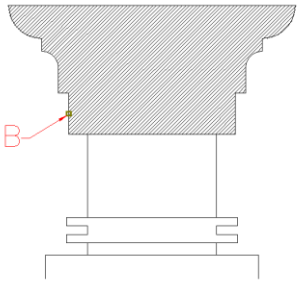
13) Click on the “Z” and freeze it .

14) RADIUS: First disable the macro by selecting “X” on the screen.

15) Move the machine down to point B, where the tool is flat.

16) Click on “none”. 

17) Rotate spindle to find largest Radius or Diameter.



18) Freeze R or D .

19) Finally, select the “Manual Measure (Caliper)”  and print using the “Label Print”  to the left side of the screen.

OGEE & SMALL OGEE

1) Select spindle option for appropriate CNC Machine. Enter Speed or (Maxima/Concept) by selecting "Adapter" on tab.

2) Place the cutting tool into the machine spindle.

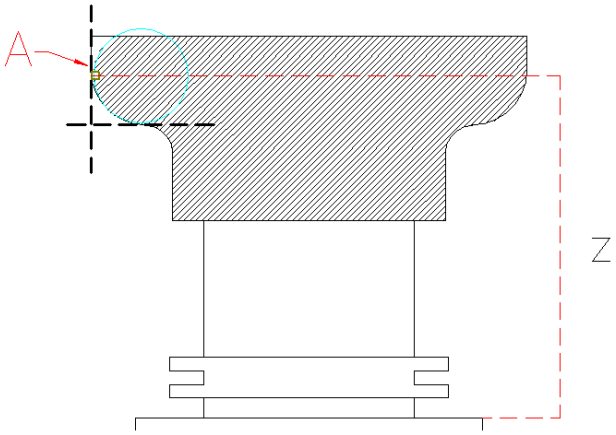
3) Select the "SVS Macro" in the upper menu. 

4) Select "Macro" number #545 in the bottom side of the screen or type 545 in search window. 

This macro enables you to measure the height "Z" from point A.

5) Move the machine till you find the point A. (Use the putty to clean any microfibers that may affect the dimensions.)

6) Click anywhere on the screen and select the yellow frame and drag the box to the top left corner, then click  and it becomes  , drag the box to right corner. Then enlarge the yellow box to fill the screen.



7) Freeze "Z"  .

8) Turn macro off by selecting "X" on the screen.

9) Move the machine to point B so as to align the blue vertical line with the bottom vertical surface of the tool. See diagram for clarity.

10) Click on “none”. 

11) Rotate the machine to find a better diameter if that is possible.

12) Click “D” and freeze it .

13) Finally, select the “Manual Measure (Caliper)”  and print using the “Label Print” to the left side of the screen  .

BIG KAISER Precision Tooling Inc.
A Member of the BIG DAISHOWA Group

2600 Huntington Blvd | Hoffman Estates, IL 60192 | P: (224) 770-2999 | F: (224) 770-2997 | bigkaiser@us.bigkaiser.com | www.bigkaiser.com