

The **Block Text Machining Program** allows a name to be typed in and then machined in 2" by 2" wooden block style letters that are connected but appear as though they are separate. The thickness of the blank has no limit as long as your hold down will successfully hold the part. The largest part thickness machined in testing was 1" thick and as long as 4 perimeter passes were selected on names of 2 letters or larger, all worked well. The programs require full Tool Management.

History: The reason this program came about was because I (*your Advanced Support Administrator*) had made separate programs to cut four individual names in this style for my nieces and nephews for Christmas presents one year. I painted the fronts of each letter a different color and, well... they were a huge hit and really looked neat. After that I had countless people asking me if I would make one for their children and for adults as well. And me being the kind hearted man that I am (*opinions vary*), I could not say no to my friends. After programming several more names for people in my cad/cam software and spending too much of my time doing it, I decided to get creative and construct a program that would do the work for me. The result is this program that I give to you as a member of Thermwood's Advanced Support Program. Believe me if you make a few of these for people you will be the talk of the household. So have fun with this program, I sure have.

The following explains what needs to be done to successfully use this program. You will first need to perform the seal zone machining program on a spoilboard or fixture board. I recommend using a fixture board that is removable so that you can put it on or off the machine quickly and easily when you are ready to cut future names. It is required to have conventional vacuum for this program.

Seal Zone Machining Program: **BLK_SEAL.NC**

This program requires one 1/8" Dia. Tool to run. (*down spiral is recommended*)

Before running the BLK_LTRS.NC program it will be necessary to run the Seal Zone Machining Program. This program machines the 1/8" seal grooves into the spoil board or fixture board for the seal that will be needed to hold down the blanks. The seal used for this program is 1/8" x 1/8" closed sell foam (Thermwood part # FSE0131). Before running the Seal program it is required to define a few variables at the beginning of the program. Below is a copy of the programs header.

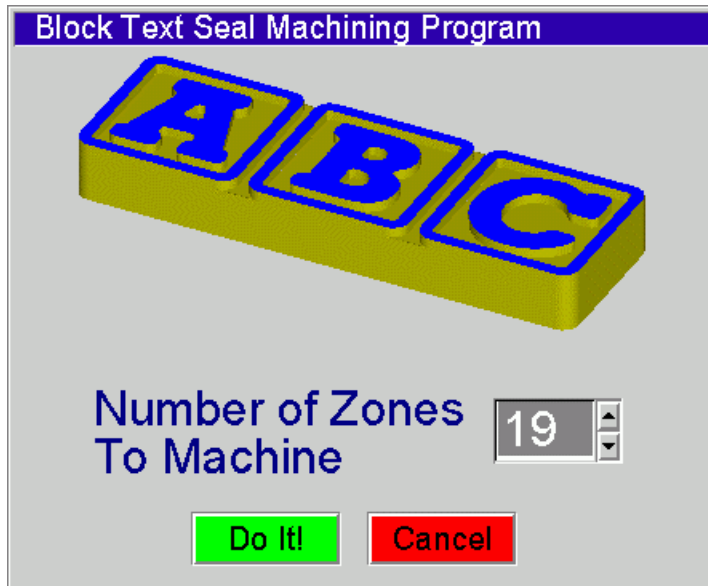
```
( ** "BLOCK LETTER" SEAL ZONE MACHINING PROGRAM ** )
( ! *** DO NOT ATTEMPT TO GRAPH THIS PROGRAM *** ! )
(****)
( * USER DEFINABLE VARIABLES * )
[FIRST_TOOL=?]          (Tool number To Use For 1/8" Dia. Tool)
[FIXTURE_NUM=?]        (Desired Fixture Offset Number To Use)
[GROOVE_DEPTH=.08]     (Desired Seal Groove Depth)
[SEAL_FEED=60]         (Desired Feedrate For Seal Grooves <1/8" Tool>)
(****)
```

[FIRST_TOOL=?] Is the variable that defines the tool number desired to use for the 1/8" Dia. tool. Simply change the "?" to the tool number desired.

[FIXTURE_NUM=?] Is the variable that defines the Fixture Offset number desired to use for the program. Simply change the "?" to the Fixture Offset number desired.

[GROOVE_DEPTH=.08] Is the desired depth for the seal grooves. The default depth is .08", and is the recommended depth for the 1/8" x 1/8" seal.

[SEAL_FEED=60] Is the desired feedrate for machining the seal grooves with the 1/8" Dia. Tool. The default is 60 IPM, and is the recommended feed rate.



When running the Seal Zone program the dialog box at the left will appear. Select the number of zones that is desired to be machined into the spoilboard or fixture board. Remember that it is required to have at least enough zones to have capacity for the longest name you intend to machine. Each zone will take up approximately 2-1/8" of space. After the seal grooves are machined it will be required to drill a hole in the center of each zone for vacuum (1/4" Dia. Recommended). Simply plug the holes that are not needed and unplug the ones that are required for each name that is cut. Since the size of the finished part is only 2" wide, vacuum hold down alone will not

typically keep the blanks from moving while machining. This problem can be resolved by cutting some 80-grit adhesive backed sandpaper into small pieces that fit inside the seal zone areas. The program is designed to run with the length in the "X" axis direction (*this cannot be changed*). Below is a picture of a working fixture board showing the installed seal, sand paper, vacuum plugs, and a finished part (*which happens to be the creators name*).



Block Letter Name Cutting Program: **BLK_LTRS.NC**

This is the main program that machines the letters and cuts out the perimeter of the part.

This program requires two tools to run, a 1/8" Dia. and a 1/2" Dia.

(for the 1/8" tool, a down spiral is recommended)

(for the 1/2" tool, a compression spiral is recommended)

Before running this program for the first time, it is required to setup a few variables at the beginning of the program. Below is a copy of the programs header.

```
( ** "BLOCK LETTER" NAME CUTTING PROGRAM ** )
( ! *** DO NOT ATTEMPT TO GRAPH THIS PROGRAM *** ! )
( * 04/25/2000 * <S.G.V.> * )
( * USER DEFINABLE VARIABLES * )
[FIRST_TOOL=?]          (Tool number To Use For 1/8" Dia. Tool)
[SECOND_TOOL=?]        (Tool number To Use For 1/2" Dia. Tool)
[FIXTURE_NUM=?]        (Desired Fixture Offset Number To Use)
[SUB_FEED=70]          (Desired Feedrate For Sub-Programs <1/8" Tool>)
[PERIMETER_FEED=125]  (Desired Feedrate For Perimeter Passes <1/2" Tool>)
( The Tool # Chosen For SECOND_TOOL Above, Must Have Dia. Set to .1" )
(****)
```

[FIRST_TOOL=?] Is the variable that defines the tool number desired to use for the 1/8" Dia. tool. Simply change the "?" to the tool number desired.

[SECOND_TOOL=?] Is the variable that defines the tool number desired to use for the 1/2" Dia. tool. Simply change the "?" to the tool number desired. This tool must have the diameter set to .1" in the tool setup screen.

[FIXTURE_NUM=?] Is the variable that defines the Fixture Offset number desired to use for the program. Simply change the "?" to the Fixture Offset number desired. Remember, the fixture offset must be the same as the one used for the seal program.

[SUB_FEED=70] Is the desired feedrate for the Sub-Programs that machine the letters with the 1/8" Dia. Tool. The default is 70 IPM, and is the recommended feed rate.

[PERIMETER_FEED=125] Is the desired feedrate for the perimeter Passes that are machined with the 1/2" Dia. Tool. The default is 125 IPM, and is the feed rate recommended.

When running the Block Text Machining Program the dialog box to the left will appear. Type in the name that is desired. Now tab to the Enter Material Thickness field and enter the thickness of

the stock that is ready to be machined. A value of .75" is the default material thickness. Next tab to the Number of Perimeter Passes field. When machining the perimeter the material thickness will be divided by this number (*Example: if the material thickness is set to 1" and the number of passes is set to 4, then it will make 4 passes each taking only .25 off*). When cutting the perimeter pass it will leave .05 of an inch on the perimeter until it machines the final pass and then it will take the final depth and the .05 off on the last pass.

Selecting the Status button will display the dialog box seen at the left. This shows the minimum blank size needed, number of vacuum zone needed to be open, and the number of passes and the amount of material per pass that will be machined for the information entered in the main field.

Selecting the Machinable Characters button will display the dialog box to the left. This field simply shows all the characters that are supported by this program. It includes the entire alphabet, all the numbers, and 21 of the most common special characters.