

CNC Milling – Creating Objects from Wooden Blocks Using the Rotary Attachment www.FredricRaab.com

The largest block of wood the Attachment can handle is 14.96 inches (380 mm) length by 4.33 inches (110mm) wide by 1.58 inches (40 mm) thick. This allows the use of a 2x4 which is actually 1.5 inches by 3.5 inches.

1. Open the SRP Player application.
2. Open your STL file: *File > Open > .stl file*
3. Change orientation of model such that the body is along the red axis.
4. Note the size of the model:
 - X = length of object
 - Y = width
 - Z = thickness
5. You will need a block that is at least 70mm longer, 4mm wider and 4mm thicker.
6. Click on the *Type of Milling* bar.
 1. Select *Better surface finish*.
 2. Select *Model with many curved surfaces*.
 3. Select *Block workpiece*.
 4. Check *Add support to model*.
 5. Click *Edit support*.
 1. Change support size to 3mm by 3mm.
 2. Drag supports to the bottom and top of model.
 3. Click *Apply*.
 4. Click *Close*.
7. Click on the *Tool Path* bar.
 1. Set material to *Wood (hard)*.
 2. Set X value to length of your block.
 3. Set Y value to the width and Z value to the thickness
 4. Click *Create Tool Path* button.
8. Click on the *Preview Results* bar.
 1. Note the estimated cutting time is displayed.
 2. Click *Preview Cutting* to verify that the result is as expected.
 3. Once processed, clicking the *Show Model / Preview Cutting* button toggles between the views. NOTE: that holes and gaps may not be cut through as expected. This is a limitation of the machine and may require manual milling with a Dremel drill.
9. Save your project: *File > Save As > filename.spj*
10. Click on the *Perform Cutting* bar.
 - Verify that the tools are in the current tool stocks (locations) as shown in the tool list.
 - Verify that the tool length (in mm) is greater than the length (L) shown in the tool list
 - If neither condition is met, click the cancel button and ask the staff for help.

11. Draw a line down the middle of the width of the block. (For example when using a 2x4, draw a line 44 mm from the block's side at each end of the block.)
12. Open the MDX-50 cover. Place the block in the middle of the material clamp, thumb screws facing upwards. Align the line (drawn in the previous step) with the groves in the clamp. Then tighten using the thumb screws.
 1. Verify the block is against the holder's stops.
 2. Verify both thumb screws are facing up.
 3. Lock in place using the black lever.
 4. Verify the length is as expected using the scale (see black arrow).
13. Close the MDX-50 cover. Press the ENTER button on the MDX-50 control panel.
14. On the MDX-50 display, press the MENU button once or twice to display the Tool Menu.
15. Press ENTER to select and load tool #1.
16. Press the MENU button to display the Coordinate System. Be sure the system is set to USER. If not, press the COORD. SYSTEM button multiple times until User is displayed.
17. Using the X, Y, Z buttons and the rotary controller, carefully position the tool above the right end of the block.
18. Press the X button, then press and hold the ORIGIN button until the X value changes to zero.
19. Back at the computer, click the *Start Cutting* button. Then click *Next, Next, Next*.
20. The machine should start. Watch carefully that the cuts stands near the center of the dowel. If not, press the PAUSE button on the MDX-50 control panel and ask for help.
21. Press the red EMERGENCY STOP button if the tool hits the material clamp.
22. NOTE: The software will display a window showing the cutting is finished. Clicking the *Finish* button will close the window and allow use of the computer. But you can NOT start another project.

When the milling is finished, wait until the green lamps are lit. Remove the piece from the clamps. Carefully saw the piece from the supports. Sand as required.

Use the dust brushes to brush the sawdust into the bottom pan. DO NOT use a blower or a vacuum.