

### Rotary Jig Basic Instruction

## ROTARY CARVING!

## Rotary Jig and Material Setup

### Rotary Carving Accessory for CarveWright™ CNC Machines



Congratulations on your purchase of the Rotary Jig accessory for your CarveWright machine. We hope you will enjoy your new capability of carving in the round!

This document outlines the basic setup and use of the Rotary Jig for rotary carving. Visit [carvewright.com](http://carvewright.com) to view "how-to" video tutorials for creating your own custom rotary projects using the Designer software and software add-on enhancements. You will need the Designer 2 software, have the rubber traction belts installed on your machine, and own the CarveWright 1/8" Long-Reach Carving Bit for use with your Rotary Jig. This bit is specifically designed for rotary and deep carving "flat" projects. (fig. 1)



fig. 1 1/8" Long-Reach Carving Bit

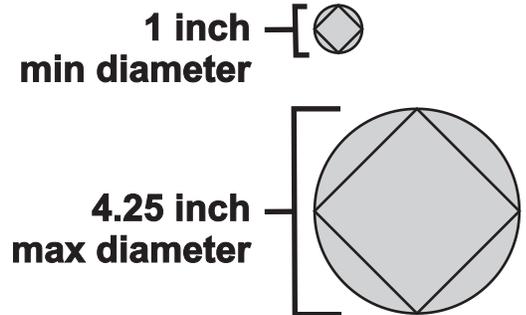
### Jig Material Size Requirements

#### Material Diameter Specifications

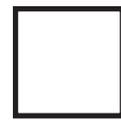
The jig requires material with a minimum diameter size of 1" up to a maximum of 4.25" diameter. (fig. 2a, 2b)

#### Material Length Specifications

The jig requires material with a minimum length of 5.5" to a maximum length of 13" (fig. 2c)



Stock shape can be:



Square

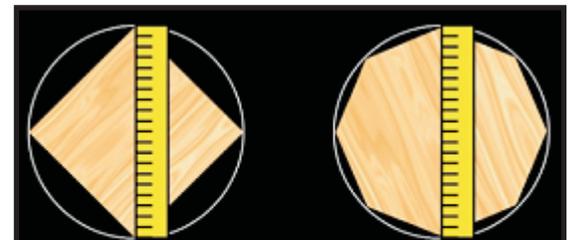


Corner Cut



Round

fig. 2a



For outer diameter, measure from the corners

fig. 2b (outer dia. never to exceed 4.25" nor be less than 1")

### IMPORTANT:

Measure across the widest diameter of your stock. This OUTER diameter is what you will need to remember when it comes time to input the diameter measurement at the machine during project runs.

(cont.)

# Rotary Jig and Material Setup

(cont.)

## Jig Material Size Requirements (cont.)



fig. 2c

## Mounting the Material Into the Jig

Cut your material to the appropriate length, then mark the center-point on both ends. A clear plastic center marking template is handy for this (especially for round stock), but not absolutely necessary. (fig. 3a, 3b)

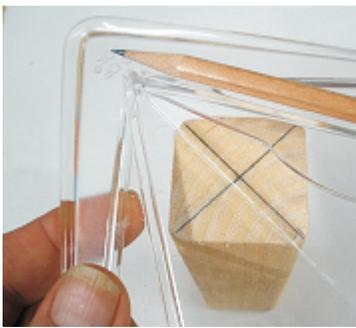


fig. 3a



fig. 3b

Drill holes at the center mark on each end about  $\frac{1}{2}$ " deep using a  $\frac{7}{32}$ " drill bit. (fig. 3c)



fig. 3c

Thread the stock onto the screw chuck. (fig. 3d)

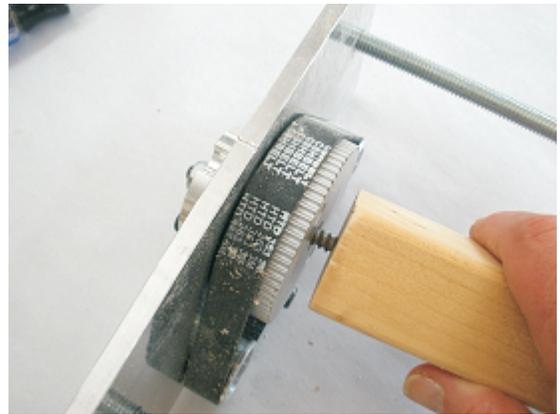


fig. 3d

Slide the end panel to the stock and align the tailstock point into the drilled hole. (fig. 3e)

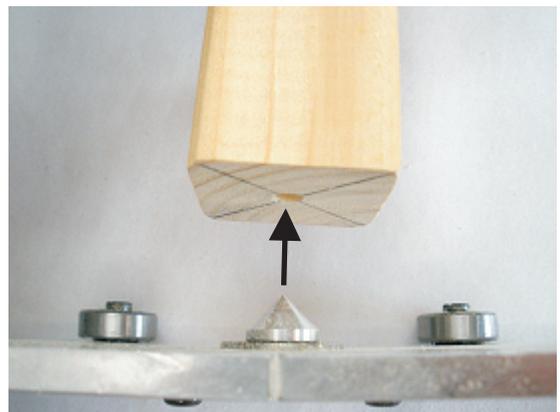


fig. 3e

Tighten the wing nuts "finger tight" so it holds the stock snugly, but can still rotate freely. (fig. 3f)



fig. 3f

# Rotary Jig and Material Setup

(cont.)

## Mounting the Material Into the Jig (cont.)

On the belt drive end of the jig, you will see a trough on the outside metal hub. This allows access to two countersunk holes and the end of the material. Rotate the material to line up with one of the holes. (3f)



fig. 3g

Drive a #8 x 1 1/4" coarse-thread screw through this hole and flush with the countersink. (fig. 3h)

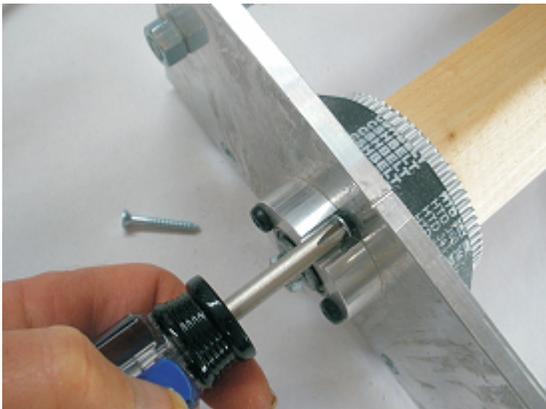


fig. 3h

Rotate the material again to line up the second hole. Drive in another screw. These screws secure the material from slipping during the carving process. Check that the material rotates with no binding of the screw heads against the plate.

Confirm the secured stock and mechanism rotates with no binding after driving in both screws

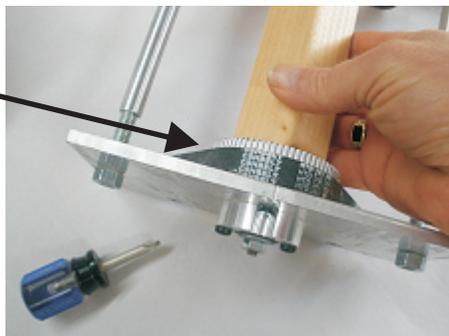


fig. 3i

## Placing the Jig Into the Machine

The jig has two tabs extending from the bottom of each end panel. These tabs fit into the U-shaped slots of the stationary squaring plate (keypad side of the machine) and the sliding plate on the opposite side. (fig. 4a)

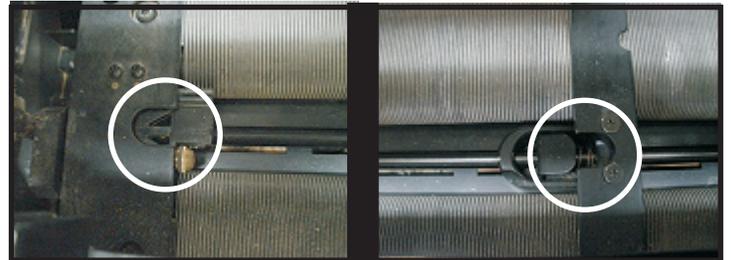


fig. 4a The jig's tabs fit into the two plate slots

Move the sliding plate all the way to the right, then raise the head just enough to be able to maneuver the jig into the machine. Don't raise the head too high or it will lock in place and you'll need to manually lower it. (fig. 4b)

Raise head and place the jig into the machine with the gear drive on the keypad side of the machine

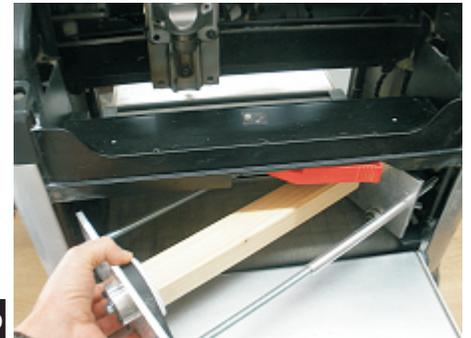
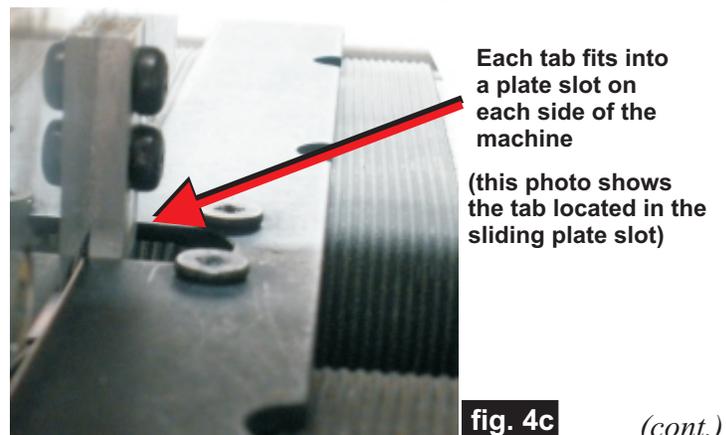


fig. 4b

Position the jig so the tab rests in the stationary plate slot. Move the sliding plate against the jig so that the other tab rests inside that slot, as well. The sliding plate edge should be right up against the jig roller bearings which rest on the traction belt. (fig. 4c)



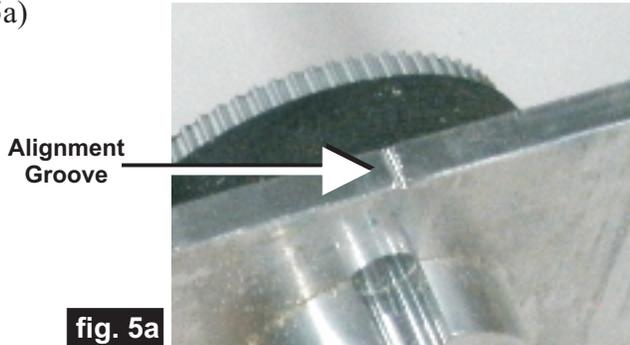
Each tab fits into a plate slot on each side of the machine  
(this photo shows the tab located in the sliding plate slot)

fig. 4c

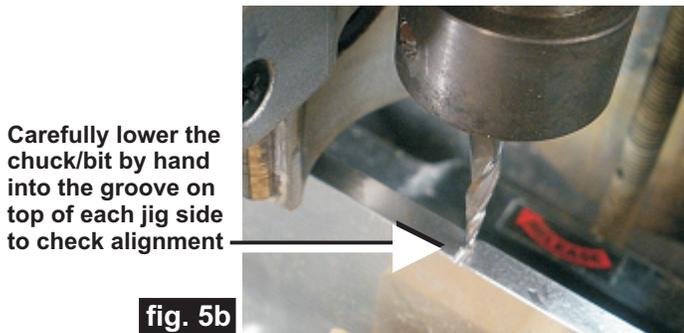
(cont.)

## Aligning the Jig

With the jig properly placed (the jig side panels are elevated slightly ABOVE the guide plates of the machine) crank down the head of the machine to hold the jig securely. You will notice a groove on top of each side panel of the jig. These are alignment references. (fig. 5a)



Insert a bit into the chuck. To check alignment, carefully lower the chuck/bit to each mark on both sides of the jig by hand. The tip of the bit should be in alignment with both grooves. (fig. 5b)



If the bit doesn't line up with the marks, take note of how much it is "off" and remove the jig. Adjust one or both of the metal tabs on the side panel(s) by loosening the screws and repositioning the tab(s). Reinsert the jig into the machine and check alignment again. Repeat the process, if necessary, until the jig marks are aligned with the tip of the bit. (fig. 5c)



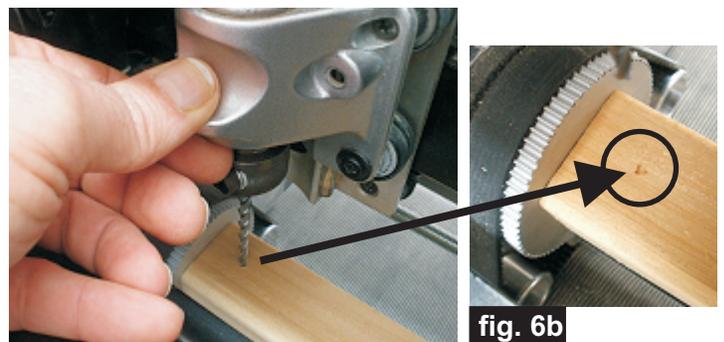
## Calibrating the Jig

The jig must be calibrated before each rotary carve. Load your stock into the jig and insert the jig into the machine, check alignment, then follow these steps:

- Insert the carving bit and close the cover.
- Turn on the machine and press "0" on the keypad to access the Options Menu, then press "6" to access the Configuration Menu, then press "7" to access the Rotary Cal
- To begin calibration, press the green "Enter" button (there will be a brief Homing routine, then the Jog To Touch menu appears on the LCD panel)
- Use the arrow keys on the keypad to jog the bit to your chosen location on the stock. The side-to-side arrows rotate the stock. The up/down arrows move the bit across the stock. (fig. 6a)



- Now, open the cover, then "jab" the chuck/bit up and down by hand into the stock to create a visible divot mark. After a clear divot mark is made, raise the chuck/bit back up out of the way of the jig. (fig. 6b)



This divot mark will be used for the next step of the calibration.

## Calibrating the Jig (cont.)

- Now that you've made your reference divot mark and raised the bit up out of the way, go ahead and press the green "Enter" button. The machine will rotate the stock three times and then stop. You should see your divot mark. Lower the chuck/bit by hand to see whether the tip of the bit is still centered with your mark. (fig. 6c)



fig. 6c

If they do not line up, use the arrow keys to reposition the bit to match the reference mark (and lower the bit by hand, to confirm alignment). Once aligned, press the green "Enter" button again. The LCD screen will now display the "old" and the "new" settings, and the option to 1) **Keep** or 2) **Abort**. You want to press "1" to keep the new setting. The stock will rotate again and you can observe if the bit aligns with the mark this time. (6d)



fig. 6d

It is advised to run the calibration at least twice in order to ensure a consistent result. If the results are still inconsistent (i.e., the bit and mark won't align), then it's most likely the machine's head pressure is too low or the jig is not positioned properly. Sometimes a little extra "push" with your hand while cranking down the head can increase the head pressure enough to get a good calibration, so try that first.

Once calibrated, you are now ready to run your project.

## Running A Rotary Project

- From the Project Menu, select your rotary project, then press "Enter"
- The machine will measure the length of your stock to make sure it is long enough for your project
- Next, the machine will prompt you to input the stock's diameter (the initial number displayed is simply the minimum diameter required for the project). The stock's OUTER diameter is what you need to specify. (see pg. 1, fig. 2b)
- Use the up/down arrow keys to select the stock's OUTER diameter. Select the next higher diameter if there is no exact match. Aside from the initial diameter display, the diameter choices are in .25" increments. Press ENTER after making your selection.



fig. 7a

- You will then be prompted for the bit, as usual. Insert the bit and press ENTER. The machine will proceed with Homing/Bit Find and then run your rotary project!



For additional information and resources, please visit: <http://www.carverwright.com/support-page/getting-started/tutorials/>

There are also several Rotary sections available at the CarveWright Community Forum you may find helpful. Please visit: <http://forum.carverwright.com/forum.php>

# Additional Resources

## RESOURCES...

There are numerous resources for the CarveWright/CompuCarve owner to make their experience with these machines much more enjoyable.

Every owner should join the CarveWright User Forum (<http://forum.carviewright.com/forum.php>) where fellow users share their experiences and knowledge with these machines on a daily basis. It is a FREE service that you will surely appreciate. A handy Search Feature helps you find answers to any questions you may have.



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picture of June's Project



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