

# ShopBot CNC Router Certification



**Student:** .....

**Trainer:** .....

**Date:** .....

Certification for: ShopBot (Wood Shop)

## Training Check-Off List:

### Tool Anatomy

- Parts of the Shopbot are identified properly
  - Spindle
  - Gantry
  - Rails
  - VFD (variable frequency drive)
  - Control Box
  - Spoilboard
  - X, Y & Z axis directions

### Pre-Operation

- Student can explain general safety protocol:
  - Safety glasses, hair tied back, no flowing clothes
  - Ear protection is recommended
- Student can identify 2 ways to stop ShopBot:
  - Control Software
  - Emergency Stop switch
- Student can identify location of nearest fire extinguisher

### Set Up and Control Software

- Start Shopbot from cold (control box and VFD)
- Run warm up routine
- Select and install appropriate bit/tool - explain general uses of primary ShopBot router bits at CMS: [http://www.shopbottools.com/Training/Videos/Info\\_on\\_bits.pdf](http://www.shopbottools.com/Training/Videos/Info_on_bits.pdf) (<http://www.shopbottools.com/Training/Videos/Info%20on%20bits.pdf>)
  - Compression
  - Spiral Up

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- Spiral Down
- Straight flute
- V-Flute
- Planer
- Zero X and Y axis using proximity switches
- Zero Z axis (to bed or material)
  - Student imparts difference between zeroing Z to bed and zeroing to material
- Explains how to zero X & Y to specific, alternate location
- Student fixes workpiece to table bed using screws
  - Checks for clean bed first
  - Keeps screws clear of planned tool paths

## Operation

### VCarve - Design and File Prep

- Set job dimensions and selects correct location (bed vs material) for Z-zero
- Uploads a file

### VCarve - Toolpaths

- Pocket
- Profile w/ tabs
- Calculates Chip Load using ShopBot Chip Load calculator
- Communicate role of tabs, ramp, climb vs conventional milling
- Calculates toolpaths and notes proper order
- Saves toolpaths to desktop - include user name in file name

## Cutting

- Opens file for preview in ShopBot Control
- Opens file for cutting in ShopBot Control
- Turn on dust collector
- Cuts piece
- Use oscillating multi-tool (or razor) to cut tabs

## Post-Operation

- Turn off VFD
- Turn off Control Box
- Remove bit and return to bit holder
- Remove leftover materials from spoilboard
- Vacuum spoilboard

## ShopBot CNC Router Certification

- Sweep or vacuum floor surrounding work area
- Close VCarve and ShopBot software - save your files to a personal thumb drive if you don't want them deleted!
- Close computer

### Problems with the ShopBot CNC Router

Student explains proper steps to take when/if there is a problem with the ShopBot:

- Double check work - if easily fixable (ie. general user error), then fix it.
- If not easily fixable or obvious: Turn machine off, place "Out of Order" tag on spoilboard, notify Front Desk immediately (if during Staffed Hours) and email Woodshop Lead at [woodshop@claremontmakerspace.org](mailto:woodshop@claremontmakerspace.org)

**Pass/Fail:** .....

**Comments:**

.....

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**Student Signature:** ..... **Date** .....

**Certifier Signature:** ..... **Date** .....



Certifier: Please scan this QR Code to email [info@claremontmakerspace.org](mailto:info@claremontmakerspace.org), and include a list of students who have passed this test.

Then, return this form to the front desk (even if the student failed!).