

# ShopBot Operation Checklist (v1.0)

## Starting Out

Pull gantry into the stops (on the north end of the machine) using the yellow handle  
Turn on the red power switch on the silver control box (vertical position).

If the machine does not turn on, make sure both emergency switches (near the control box and near the CPU) are “out”. They can be released by twisting clockwise.

Wait until you hear the fan on the spindle (about 5 seconds) and then press the blue RESET button on the control pendant (near the CPU). You should hear the motion system engage in the control box.

Start the ShopBot3 program

On the Red Control Panel turn the switch to the Move/Cut position

Type K into the ShopBot command line of the ShopBot Console Window. (K is the command for keyboard control.) To move the gantry/spindle:

Press and hold the right arrow until the gantry hits a limit switch (about 2 inches)

Press and hold the right arrow again until the gantry is clear of the limit switches

Press the *ESC* key to exit the keyboard control mode

Type *TR* into the command line to open the Spindle Control Window

Warm up the spindle bearings by typing *C5* into the command line. Press green start button on the control pendant. Press enter on the screen. Warm-up will take approximately 12 minutes.

## Setting Up Material and Bit

Mount your material on the spoil-board as appropriate. Make sure the bit is clear of any area where you will be mounting the material so that you don't accidentally cut yourself. Double check to make sure your material is securely held down!

Remove the key and wrenches from the interlock on the control box

Clean out the collet

Mount the bit  $\frac{3}{4}$ " into the collet and tighten the wrench with about 5 pounds of pressure

Replace the key/wrenches into the interlock on the control box

Insert your USB drive containing the *.sbp* file that you are going to cut into the USB slot on the control computer. DO NOT plug in the USB drive anywhere else.

## X-Y Zero

*Remember that you can press ESC in the ShopBot3 program if you ever need to return to the normal command mode. Multiple presses may be required.*

Perform the X-Y table zero routine using the command *C3* in the command line

Optional: If a different X-Y zero location is desired use the *K* command to move to the new location

Use the *K* command to enable the keyboard controls and move the bit over your desired X-Y zero. (Right/Left Arrow Keys move X. Down/Up Arrow Keys move Y. Page Up / Page Down Keys move Z. Or enter the coordinates into the readouts of the yellow dialog.

Use the *Z2* to zero X and Y at the new location (or use *ZX* or *ZY* to zero one of the

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axes)  
Press ESC

## Z-Zero

Attach the alligator clip (on the right side of the gantry) to the bit  
Check for continuity by touching the Z-Zero plate to the bit and see if *Indicator 1* illuminates. If not, DO NOT PROCEED!  
Locate the Z-Zero plate under the bit and on the base or material top surface, determined by how your toolpaths were generated. BE CERTAIN.  
Execute the command C2 to use the Z-Zero plate to get the Z zero  
Press Enter when prompted and ready for motion  
Hold the plate under the bit with your fingers clear of the motion of the bit. You need to be able to get your hands away rapidly while staying clear of the bit in case of unexpected motion.  
Optional: If you need Z to be higher than its starting value to clear clamps or other obstacles, type *MZ* <space> <new value> <enter>  
Replace the Z-Zero plate in the holder on the right side of the gantry  
Remove the alligator clip from the bit and place it on the Z-Zero plate in its holder  
Attach the dust skirt to the spindle using the magnetic mounts  
If it has been over 30 minutes since the previous cut, run the warm-up routine again

## Loading the File

Press *Load Part File* on the Red Panel Window  
Select the file on the USB drive that you wish to cut  
You will see a property sheet. Change nothing. Press Enter  
You will see a command line. Change nothing. Press Enter.  
A dialog will pop up. Make sure everyone is a safe distance away from the machine with proper eye and ear safety before proceeding.

## Starting Cutting

FIRST, press the Green START Button on the Control Pendant (near CPU)  
SECOND, turn on the dust collection system  
THEN press *Enter* on the dialog pop-up to begin cutting. Cutting begins after about 2 seconds

## During Cutting

If you need to pause the ShopBot, press the left mouse button, Spacebar, or Enter  
You can abort, resume, etc. from the dialog  
You can monitor progress on the SB3 program console

## After Cutting

*When cutting finishes the spindle will shut down automatically. Gantry will move to the home position.*  
Shutdown the dust collection system  
Remove the cut material as appropriate  
Remove the key-wrench from the interlock on the control box

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Remove the dust skirt for access to the collet and bit

Remove the bit as appropriate. Mount next bit, or leave collet empty when finished.

Replace the key-wrench into the interlock on the control box

## **Shutting Down**

Exit the ShopBot3 program on the control computer. Wait for all windows to close on the SB3 program.

Turn off the red power switch on the control box (horizontal position)

Remove the collet and return it to its proper storage

## **Cleaning Up**

Remove Your Material. Toss Any Waste. Recycle Reusable Pieces.

Put Up the Clamps

Vacuum and Sweep the Spoilboard and the ShopBot Work Area

Remove the Bit and Collet

Clean the Work Area

Organize the Work Area