Checklist for CNC Project

If using your own computer, ensure you have the BARN tool library and Laguna HHC post-processor installed.

Review the CAM operation for the part.

Review the Work Coordinate System in CAM

- Ensure axis and location are correctly oriented (see machine X, Y, and Z orientations).
- Ensure size makes sense and units are correct.
- Ensure actual stock meets or exceeds the CAM model stock in the X and Y.
- Ensure the actual stock is measured and is equal to the CAM model in the Z.
- Review bits, spindle speeds, cutting feed rate and, cutting depth to ensure they are < maximum.
- The bits in the BARN Tools bit selection have been created for hard wood.
- There will be a chart of feeds and speeds provided for hard and soft wood and there is a link to them as part of the tool selection in Fusion 360.

Review Geometry to ensure it's correct.

Review heights.

- Ensure Clearance height is > clamp and any interference height.
- Ensure Retract height is at least 13 mm/ 1/2" > stock top.

Run a simulation on Fusion 360 with stock turned on.

- Ensure the bit doesn't crash.
- Ensure the cut is within the model and won't interfere with the hold-down plan.

Run the post-processor. Ensure g-code units are set to millimeters. Ensure g-code is generated without errors.

Ensure area around and under the CNC are clear of debris.

Ensure the bucket has water in it and the submersible pump is plugged in.

Best practice is to install the bit prior to powering up the machine.

Note: If at any time there appears to be a problem the machine can be turned off/stopped by pushing the red button on the control box or pushing stop cancel button on the pendant.

Ensure the machine is “Homed” as the first operation after it has been powered up.

Ensure the user has set the X, Y origin for the machine in the same location as the model in Fusion 360.

Ensure the user has set the Z origin above the part to perform an “air cut”

> The Z origin should be sufficiently high that the air cut won’t interfere with the stock or clamps.

Ensure the user has loaded their CAM onto the pendant.

Run an air cut on the part.

> Watch to ensure the cut looks like you pictured it from the simulation in Fusion 360.
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> Look specifically to ensure the bit won’t contact any hold down devices, the bit doesn’t go outside of the intended envelope and the cutting depths appear to be correct.

Once the air cut is complete the Z origin can be reset to the stock top and the part cut out.

Watch the cutting operation and be prepared to turn off the machine if at any time it appears something is wrong stop the machine.

When the part is cut ensure the user turns off the machine, cleans up the area, removes their part, removes the bit and returns it to the tool box.

When the machine is no longer needed ensure the following:

> Machine is turned off at the red switch on the side of the controller.
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> Submersible pump is unplugged (cord stowed).
>
> Dust collection gate closed.
>
> Bits, hold-downs and tools returned to the drawer and drawer locked.
>
> Machine table stowed against the wall with cheesecloth cover.