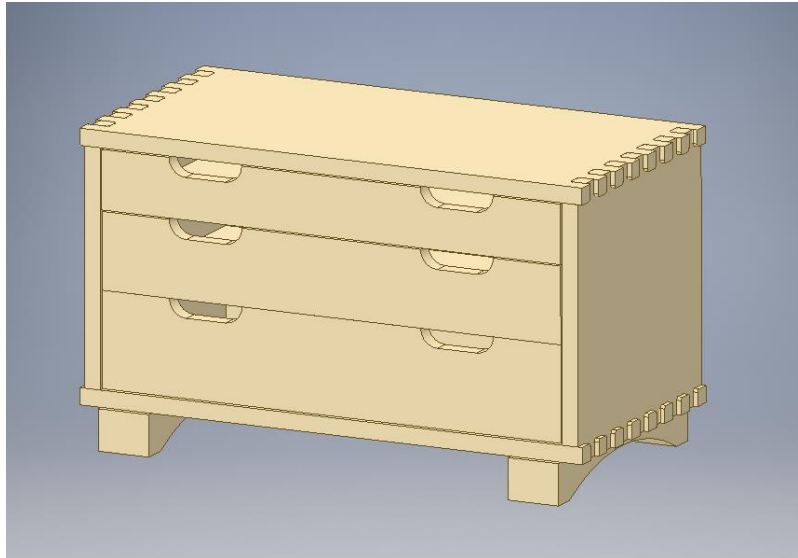


## Episode 2 CNC Basecamp toolbox Project

This handy toolbox is a great addition to your digital workshop. It is sized to be cut entirely on a desktop (24" x 24") CNC router and all parts are cut from one side only. By changing the dimensions of the project you can easily create a toolbox that is tall and narrow, leave off the feet and it's a wall hung unit. Be creative and have fun with the basic design if you like.

- 1) Download the DXF files for the project and set up your machine's cutting routines based on the machine's format size and the material thicknesses.
- 2) Remember to set your toolpaths for the actual thickness of the materials that you are using. Any flat,



- void-free plywood will work for your toolbox. I chose  $\frac{3}{4}$ " Baltic Birch because it's attractive, strong and generally flat. The parts in the DXF files have been draw for  $\frac{3}{4}$ " Baltic Birch plywood which is an actual .7086" (18mm) thick. The drawers are set up for actual  $\frac{1}{4}$ " bottoms.
- 3) The pockets that are cut for clearance on the box joints are cut to a depth of  $\frac{1}{4}$ ".
  - 4) The drawer joinery is a simple tongue and groove. To ensure accurate sizing of the tongue you may want to have the z axis zero out on the table rather than the top of the material otherwise you will need to accurately measure the plywood thickness to find the cutting depth required to produce .25" tenons. Note- this also applies to the cabinet back which has a  $\frac{1}{4}$ " thick tongue.
  - 5) A  $\frac{1}{4}$ " compression bit is an ideal bit to cut the  $\frac{3}{4}$ " plywood for this project with its ability to leave clean, chip-free edges on both the top and bottom layer of the plywood. When cutting the  $\frac{1}{4}$ " material for the drawer bottoms and the drawer slides use a straight bit.
  - 6) Fire up your CNC router and cut the  $\frac{3}{4}$ " and  $\frac{1}{4}$ " parts.
  - 7) In order to have the box joints in the top, bottom and sides fit the mating edges will need to be radiused. A solid pilot  $\frac{1}{8}$ " round-over bit in a handheld router or a router table will make quick work of this task.

- 8) Assemble the case by gluing up the sides, top, bottom and back. Be careful with the placement of the glue as the fingers of the top and bottom extend past the sides.
- 9) Clean up any excess glue carefully as the exposed and extended joinery is hard to work around.
- 10) Once the glue on the case is dry install the ¼" drawer slides into the case sides.
- 11) Now it's time to make drawers. Note that the top two drawers are different than the lower drawer. The top drawers have lower lip on the front to fill the space occupied by the drawer slides.
- 12) Drawer assembly begins with gluing the front, sides and back making sure that the top edges are flush.
- 13) When the side, front and back assembly is dry the drawer bottom is glued in place. The drawer bottom can be held in while the glue sets with a brad-nailer, clamps or weights.
- 14) With the drawers complete take the time to carefully sand them and make sure they fit and operate smoothly.
- 15) Glue up the three plywood layers of the feet. Once dry sand thoroughly and glue on the bottom of the case.
- 16) Final sand, apply a few coats of finish and put the toolbox to work in your digital workshop.