

Dovetail Master, LLC

6837 Groveland Road, Pipersville, PA 18947
215-297-9722, terrybeitl@tjbcabinetry.com

Using The Dovetail Master to create handmade looking dovetails

The Dovetail Master is a new mortising tool used to make dovetail joints. The following information is provided with the assumption that you have made dovetail joints or understand the technical process of making dovetail joints. The other assumption is that you have a mastery of a mortising machine and its limitations.

When using the Dovetail Master, first, lay out the tailboard in the way that you would when you hand-cut dovetail sockets. The spacing should be to your preference and the sockets then must be transferred to the pin board for processing.

Some advantages of the Dovetail Master System over router-based systems are: less noise, dust, and tear out. There is greater speed in cutting sockets with the Dovetail Master over hand cut dovetail sockets. You may cut any wood, plastic, or other material from 1/8" to over 3" thick. The sockets can be enlarged on their sides, back, or both by using a nibbling process. You can cut sliding dovetails in both the socket and pin by cutting in from the edge using a jig to hold the parts in their desired position. You may cut fine pins using a 1/4" Dovetail Master chisel & bit and finishing the cut to the edge with your favorite hand dovetail saw.

In order to make good tight dovetail joints, you must be very precise in marking all pieces. Use a knife or a pencil with a finely sharpened point and keep it sharp throughout the lay out process. It is difficult to cut a tight dovetail joint if your pencil lines are 1/16" thick. Practice on some scrap wood to hone your cutting skills before trying to do the joints on a project that you are working on.

To make dovetail joints using the Dovetail Master, you must make two jigs. One is for the Dovetail Master chisel and bit and the other, if you care to, is for square chisels to make the pin boards. The jig for the tailboard is a three-piece unit. For the bottom layer, use a scrap piece of plywood because it will stay flat. It must be big enough for your drawer sidepieces to clear left and right and have room to clamp to your drill press or mortising table. Layer two is extra drawer side stock so that there is no play in the jig. I make all my drawer sides the same thickness, but if you make different side thicknesses, then you have to change the middle layer for each thickness. The top layer has an overhang big enough for the bit you are using and a 1/8" to be cut off later and also enough to support behind the back cutting edge. When setting the jig to the table set the jig parallel to the straight edges of the bit. When you cut the initial hole with the bit, raise the table before you pull the chisel back, so that the chisel remains trapped in the top layer of the jig. This step is very critical to ensure a nice tight joint. It is also important to bring lines from the chisel to the front and down the edge to align the Dovetail Master chisel with your desired cutting location. As you proceed in the cutting process, use an air gun or brush to keep the jig clear of chips.

Cut through as you would using a standard mortising set-up with the show face up to limit any minor tear out. To prevent any tear out, cut through ½ way, then using concise markings as your guide, finish cutting your sockets. If after a lot of use, the holes become enlarged, then just drop the table and move to a new location and start again with a new hole through the top layer of the jig.

Pin Boards made with the mortiser

Cut a 9-degree wedge out of a 2 ½ inch wide by 2 inch thick block of wood. On the top of the angle sides, cut a dado 1 inch in and the thickness of the material to be cut, leaving a ½ inch wide protrusion in the center. Center and screw down a strip of wood equal to ½ inch x 2 inches x the width of the chisel. This will allow you to see where the chisel is entering the sidepieces as you are cutting. Clamp down the assembled block to the worktable, parallel to the straight front and read edge, as to cut a 9 degree angle cut side. Drop the chisel through this block to create a guide hole.

When the chisel has been aligned, trap it in perfect cutting position by raising the table to keep the chisel in the top strip of wood and to ensure perfect alignment. As holes wear out below, move the jigs up and down the line for fresh guide holes.

Mark and cut to precise marks on the pin board. If your pins turn out too loose, leave more of your pencil marks as you cut. If your pins are too tight, cut away more of your pencil marks. Cut all of the pins on the left slope, then reverse the block on the table and go through the same guide hole process to cut the right slope.