

Miller Dowels: Simple, Fast & Strong By Chris Alcorn

A friend of mine, a reptile enthusiast, recently asked me to build her a set of three tortoise tables. A tortoise table in its most basic form is just a big box, usually made from plywood that houses tortoises and their creature comforts. My friend asked me to build these because she wanted them to look like furniture.



With the exception of the box bottoms, construction was to be from all solid wood. I still wanted to apply some cabinet-making expedience to this project. I didn't want to spend a lot of time doing complex joinery and waiting for glue to dry with the project in clamps, but of course I didn't want to have exposed fasteners either. This is when I decided to try out the Miller Dowel (www.millerdowel.com). Miller Dowels differ from traditional dowels in two major ways: they have a stepped and tapered shape and they are inserted from the outside of the joint like a screw or nail.



All you need to use the dowels are a Miller TruFit drill bit, which is a stepped bit similar to the Kreg pocket hole bit, and of course, Miller Dowels. The bits and dowels are sold together as a kit or can be purchased separately. There are three sizes available; 1X for pieces up to 1 1/8" thick, 2X for pieces up

to 1 5/8" thick, and a Mini-X for joining 1/2" materials. There are also Miller Dowel boring bits available for CNC machines to use in panel processing. The dowels are offered in 10 species; Red Oak, Black Walnut, Birch, Cherry, Ipe, Purple Heart, Teak, Mahogany, White Oak and Black Locust. This variety allows the woodworker to choose between a more concealed appearance of the dowels or have them be a contrasting detail.

The basic method of Miller Dowel joinery is to drill with the TruFit bit through the two pieces of wood you want to join, apply glue to the ribbed sections of the dowel, and then drive them in with a hammer or mallet. The portions of dowel left protruding can be flush trimmed with a dovetail saw and sanded. I tested this method with scrap material prior to using the dowels on my project. I just set the pieces of wood up to be butt joined at the corner, drilled my holes, applied glue to the ribbed areas of the dowels and tapped them in until they were seated. Immediately following, I tried to break the joint by pushing the pieces towards each other (like folding a piece of paper in half). At this time, I could detect only a minuscule amount of flex in the joint. After 10 minutes, the joint was solid.



To join the corners of the box portion of the tortoise table, I chose to rout rabbets on the ends of the front and back pieces in addition to using the dowels. I did this to aid in registering the pieces, to add a bit more surface area for glue, and to minimize the amount of end grain showing. When I drilled my dowel holes, I used clamps and a squaring jig to keep my work pieces aligned. I then applied glue to both the rabbet and to the dowel prior to driving them in. I found that the pieces re-aligned well when I inserted the dowels and the two pieces came together as a tight joint without re-applying the clamps.

Miller Dowel joinery is definitely not as fast as a screw gun, but is much faster than clamping up assemblies for several hours and it produces a strong, attractive joint.

