

Use winding sticks to ensure flat stock

BY DOUG PETERMAN

Winding sticks are simplicity itself: a matched pair of sticks carefully made to be straight and parallel on all surfaces. Placed across each end of a board, they make it easy to see if there is any twist or wind. Although they've been around a long time, winding sticks have not outlived their usefulness, even in a machine-based shop.

They make twist visible

It doesn't take much twist to make your project go awry. In a 12-in.-wide frame-and-panel door, a twist of just 1° in the stiles can cause one corner of the finished door to stick out $\frac{3}{16}$ in. One degree of twist is fairly obvious in a wide board but can't be seen in a narrow one. Winding sticks placed across the ends of a narrow board make the board appear wider so that the twist is easy to see.

Using the sticks is straightforward. With the board on a surface at about waist height, place a winding stick across each end. The sticks should be at right angles to the length of the board and parallel to one another. From several feet away, crouch down to sight along the length of the board and examine how the top edges of the sticks line up. Aligned edges indicate that the ends of the board are in the same plane; any variation shows the direction and degree of twist. It helps if the edges of the sticks being viewed are contrasting woods.

A variety of uses

The key to dealing with twist is finding it, whether in the project stock or in finished assemblies like doors and drawers. If you flatten slabs or glued-up panels by hand—or



Where to use them

Winding sticks are great for checking for a consistent angle while handplaning the edge of a board (above). Use them to test boards for movement during milling (right) and to find the high spots in a board or a glued-up panel that's too wide for the jointer (below).





if you need to handplane a flat reference face on a board that's too wide for your jointer—winding sticks will show the high spots. If you use a handplane to dress or joint the edge of a board, frequent checking with the sticks will help you keep the proper angle along the length of the edge.

Winding sticks are also valuable insurance for anyone using modern milling machines. Jointers produce flat surfaces initially, but the exposed wood will exchange moisture with the air and may pull out of flat almost immediately. The best way to ensure flat boards is to rough-mill the stock slightly oversize, let it settle for a few days, and then mill it to final dimensions. After an initial milling, I randomly check several boards with winding sticks to see if the stock is twisting.

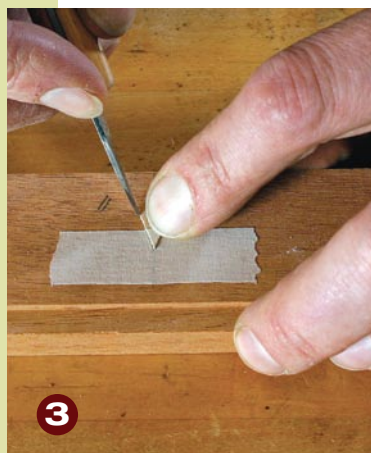
A few critical components like door stiles and drawer parts require even more checking. These assemblies move freely within a finished piece and won't be pulled into true and held there as part of the whole. Drawers and doors have to be square and true on their own to work properly.

How to make winding sticks

A few years ago I made a good set of sticks with two helpful variations. A contrasting edge strip improves visibility, and a centered diamond inlay allows easier balancing on narrow boards. The sticks are mahogany with a maple edge strip. They're about ½ in. thick by 1⅝ in. wide by 18 in. long.

Use stable stock with straight, regular grain. About a week after making the sticks, you should check that they're still straight. Lay the edges on a flat surface like the top of a tablesaw, or check the sticks against each other by mating the top and bottom surfaces in a number of different combinations (bottom to bottom, top to bottom, top to bottom with one stick flipped end-for-end, etc.). If the surfaces mate closely in every orientation, the sticks are straight.

I don't recommend applying a finish; it might make the winding sticks look nicer, but it's no guarantee against wood movement. If you find that the sticks need remilling later (you should check periodically), an unfinished stick can be machined and returned to service immediately.



Make a stable, stylish set

- 1.** Cut a shallow rabbet in each stick and inlay a contrasting strip of wood.
- 2.** When the glue dries, sand or plane the strip flush with the stick.
- 3.** Inlay a diamond to indicate the center point. Begin by taping down the inlay and scribing around it with a knife.
- 4.** After cutting the mortise, fill it with glue and set the inlay in place. Level the inlay after the glue dries.