

Perfect Profiles on the Router Table

Shims are the secret to clean, accurate profiles and joinery cuts

BY ALAN TURNER

3 SITUATIONS WHERE SHIMS MAKE SENSE

On a tabletop edge (top right), the round profile needs to align perfectly. Use a test piece to dial in the fence's final setting, but then add fence shims to make the actual cut in a series of passes, for cleaner results. Shims also ensure that joinery cuts, like a raised panel (middle), will fit perfectly. When making narrow moldings (bottom), you get a better cut if you rout the profile on a wide board. Shims let you rout in a series of passes, rip the molding away, and then repeat, without losing that perfect fence setting.



PRECISE PROFILES



ACCURATE JOINERY



MULTIPLE MOLDINGS

This short article is a follow-up to “Speed Up Your Work with Spacer Blocks” in *FWW* #226. The basic concept is the same: You set your fence and/or stop block just once, and then use precisely sized wood blocks to make subsequent cuts in other positions. It works great for joinery, especially when doing a number of identical parts. In this case, your ultimate goal is just one good cut—a clean, precise profile on the router table—and instead of blocks, you use shims.

Because this technique is a little different, and because it is so helpful for a wide variety of routable work, *FWW* decided to give it its own showcase here.

Router profiles are deceptively difficult. Router bits don't do well at removing a lot of material at once, so for cleanest results you need to make several passes, moving the fence each time and leaving just a light cut for the final pass. The trouble is that you are often trying to end up at a precisely sized profile. So you dial that in on a scrap piece, and then proceed to move your fence for the preliminary passes, losing that perfect final setting.

Shims are the answer. You set the fence for the perfect profile, and then add the fence shims you need for the preliminary passes and a light final one. I use various materials for fence shims, including 3mm ($\frac{1}{8}$ in.) and 6mm ($\frac{1}{4}$ in.) Baltic-birch plywood, taking heavier cuts at first and then lighter ones as I near the end. Your final pass should be about $\frac{1}{16}$ in. This is especially important if you are working with a wood that is prone to tearout, such as oak. So make that last shim from a piece of thin plastic laminate. If you are still getting tearout on the final pass, try a climb cut (holding the workpiece firmly) followed by a normal push cut to clean up any bumps. □

Alan Turner teaches at Philadelphia Furniture Workshop.

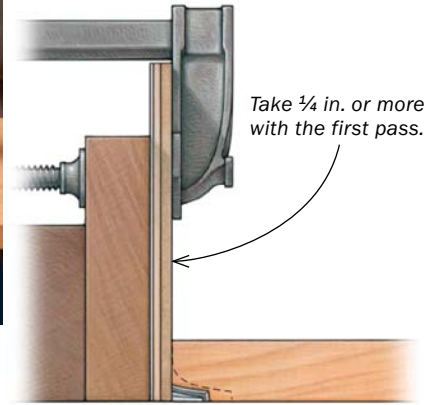
FIRST PASS



Pile on the spacers. After making test cuts on a scrap piece and finding the perfect final fence setting, clamp on the spacers for the preliminary passes.



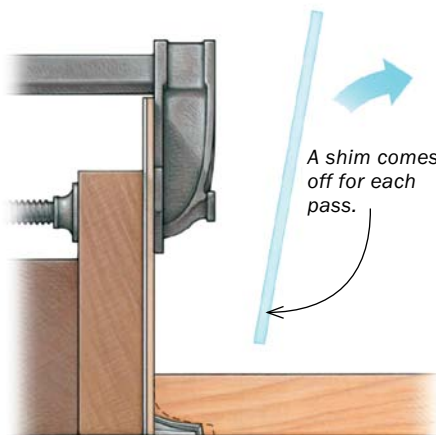
Heavy lifting. On most profiles, you can take a full $\frac{1}{4}$ in. or more on the first pass, since any vibration or burning will be removed later. But with some, like rabbets, you want to just nick the edge on the first pass, to prevent chipout there later.



INTERMEDIATE PASSES



Quick change. Different profiles will require different amounts of shims, but they go on and off quickly.

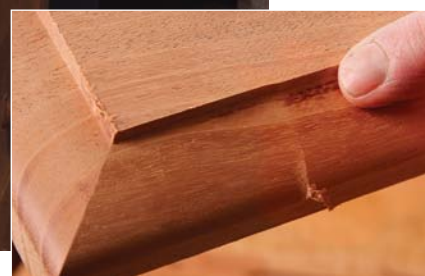
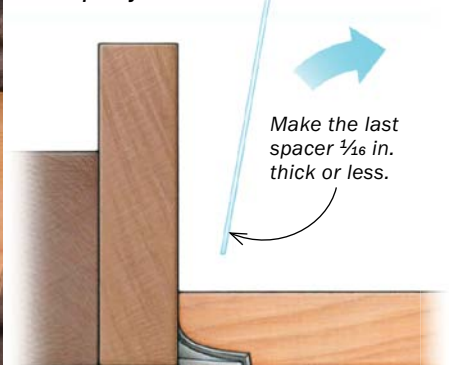


Thick to thin. The basic idea is to go from heavier cuts to thinner ones as you get close to your final profile. The shallower the cut, the cleaner, and you don't want to leave behind any deep burns that the final pass won't remove. This is a $\frac{1}{8}$ -in.-deep cut.

FINAL PASS



Last pass is against the fence. Since you dialed in the final fence setting right at the start, your last pass will be exactly as deep as you want it.



Perfect finish. If you leave a very shallow cut for the final pass, you'll be surprised at how clean the surface will be. The goal is to avoid heavy sanding, which is slow and tends to blunt a profile's crisp edges.