



Woodsmith **PLANS**

CUTTING PERFECT TAPERS



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With the right jig, cutting tapers on the table saw is a snap.



Most of us spend a lot of time tuning up our table saws to get dead-on straight cuts that are perfectly parallel with the rip fence. So the idea of using a table saw to make a tapered cut might seem a little strange. But in reality, tapered cuts are just straight cuts at an angle, and it makes a lot of sense to use the table saw. The trick is to hold the workpiece at the correct angle for the taper you want. And all you need to do this is a taper jig.

ADJUSTABLE JIGS. When it comes to taper jigs, the first thing many woodworkers think of is a jig with two arms that are hinged at one end. You simply adjust the spread of the arms to suit the taper your project calls for, and lock the arms in place. The rip fence is used to guide the jig past the saw blade.

The advantage of this style of jig is that it's adjustable, so you can use it over and over to cut tapers of different angles. But there are

few drawbacks as well. Since the workpiece isn't fastened to the jig, you have to hold it against a stop at the back of the jig while pushing the entire assembly forward. So you're pushing and pulling at the same time, which can feel awkward.

But the main reason I don't care for this style of jig is that if you're tapering a leg or narrow workpiece, it's hard to hold onto the workpiece and keep your fingers a safe distance away from the blade.

FIXED ANGLE JIGS. Most of the time I prefer to just make a simple, one-time-use taper jig that is suited to the task at hand. (Take a look at the jig in the photo on the previous page for an example.)

The design of the jig you use will depend on the size and shape of your workpieces. But it doesn't have to be complicated. All it has to do is hold the workpiece at the correct angle while you cut the taper.

Usually, I just make a simple sled with a fence and a stop (see drawing at right). The fence holds the workpiece at the correct angle, and the stop prevents it from moving. Since the workpiece rides on top of the jig, all you have to do is push the jig forward.

CONSTRUCTION. There are a couple of tips to follow when making taper jigs. First, I like to make the base of the jig wide enough so that I have a safe place to put my hands while using the jig to make a cut.

Second, when making the jig, I position the fence so the taper on the workpiece lines up with the edge of the jig. This way, the bottom of the workpiece is supported as the blade exits the cut.

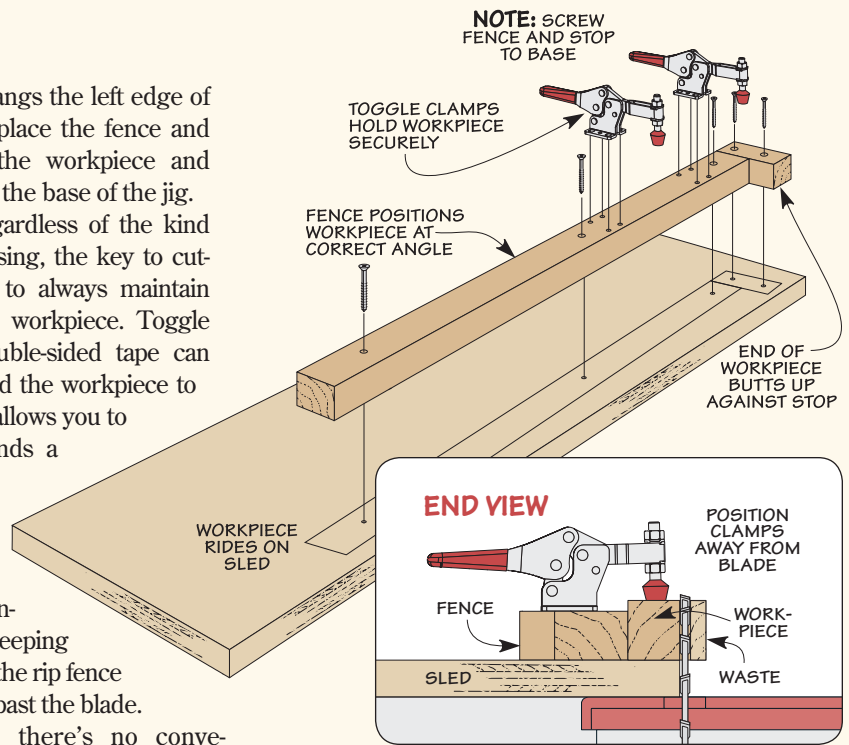
To do this, simply lay out the taper on your workpiece and then place it on the base of the jig so the waste

portion overhangs the left edge of the jig. Then place the fence and stop against the workpiece and screw them to the base of the jig.

CONTROL. Regardless of the kind of jig you're using, the key to cutting tapers is to always maintain control of the workpiece. Toggle clamps or double-sided tape can be used to hold the workpiece to the jig, which allows you to keep your hands a safe distance from the saw blade. This way, all you have to concentrate on is keeping the jig against the rip fence as you push it past the blade.

Sometimes, there's no convenient way to secure the workpiece to the jig. You simply have to hold it against the stop. In these cases, I usually prefer to locate the stop at the leading end of the jig. That way, you are pushing the workpiece against the stop as you slide forward past the saw blade. This feels safer to me than trying to hold the workpiece against a stop.

Finally, if you're tapering a workpiece on all four faces, you'll need to take some extra steps, as shown in the box below.

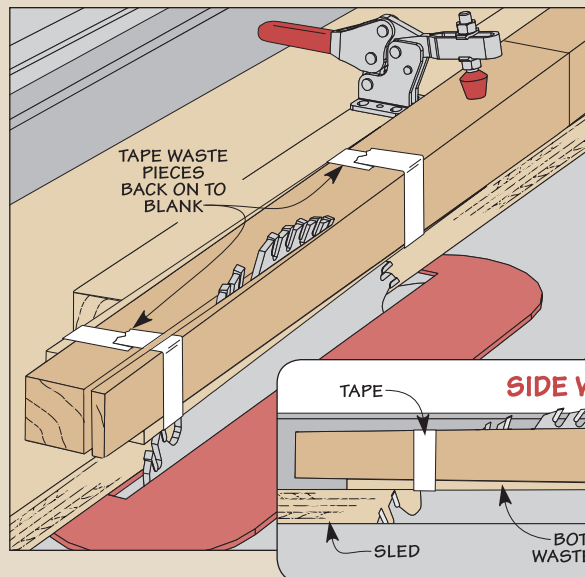


◀ **Hold-Down.** Toggle clamps hold the workpiece securely, allowing you to keep your fingers away from the blade.

TECHNIQUE: FOUR-SIDED TAPERS

Cutting a taper on one or two faces of a workpiece is pretty straightforward. But if you're cutting tapers on all four faces (like on a table leg, for example), you have a bit of a challenge. After cutting away the waste on the first two faces, you no longer have a straight edge to place against the fence of the jig to cut the remaining two tapers.

Depending on the type of jig you're using, there are a couple of ways to deal with this problem. One of the simplest is to first tape the wedge-shaped waste pieces back onto the two tapered faces of the workpiece. Then cut the remaining two tapers. (Because of the kerf, you will have to move the wedges down a bit on the workpiece, as shown in the drawings.) This way, you maintain the original square shape of the blank.



◀ **Four-Sided Tapers.** After cutting tapers on the first two faces, tape the waste pieces back in place to create a square face for cutting the remaining tapers.