

Get safer, cleaner cuts on your tablesaw

ZERO-CLEARANCE INSERTS ARE A SMART UPGRADE

BY TOM BEGNAL

The throat plate supplied with your tablesaw likely has a blade opening that's much wider than the blade. This allows you to easily set the blade at an angle, but it also has some serious drawbacks. First, because there's no support under the workpiece near the blade, tearout often occurs along the edge of the cut. Second, narrow offcuts can get wedged in the gap and then thrown back at you.

To overcome these problems, make a plywood insert that fits into the throat. Then raise the blade through the insert to create a zero-clearance opening. Because the opening fits the blade, tearout is eliminated and offcuts can't get wedged.

Making a zero-clearance insert isn't difficult. You can make several at a time, so you can have one ready for any blade setup. Before you begin, a word of caution: Tablesaw throat design varies by model. So check yours and adjust the steps as needed. Make the inserts from 1/2-in. birch plywood. It's stiff and strong, and it won't change in width as

INSERTS FOR ANY SETUP

Shopmade inserts are inexpensive and easy to make. So there's no reason not to have one for common blade setups, like the dado widths you use most often.



Good



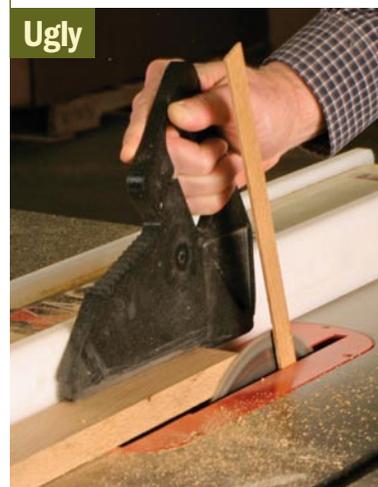
Clean cuts. A zero-clearance opening eliminates tearout because the workpiece is supported next to the blade.

Bad



Rough cuts. One cause of tearout on the lower edge is a lack of support directly under the workpiece. Most of the throat plates supplied with tablesaws have a wide gap around the blade.

Ugly



Dangerous cuts. Narrow offcuts can fall into the gaps on either side of the blade. If you're lucky, the blade won't launch a trapped offcut back at you.

Make the blank

Once you have an oversize rectangular blank, you'll need to bandsaw it to rough shape and then rout it flush to the throat plate supplied with your saw.



Throat plate becomes template. Attach the throat plate to the blank with double-sided tape.



Round the ends. A bandsaw does this best, but a jigsaw also works. Leave about $\frac{1}{16}$ in. of extra material.



Trim the blank. Rout the insert flush to the throat plate with a bottom-bearing, flush-trimming bit.

the shop's humidity fluctuates. This means it won't get stuck in the opening in the summer or become too loose in the winter. Also, many saws are designed for a $\frac{1}{2}$ -in.-thick throat plate, or very close to that.

Make a blank with round ends

Use the tablesaw and rip fence to cut a piece of plywood $\frac{1}{8}$ in. wider than the saw's throat plate. Then use the miter gauge to crosscut it 1 in. longer than the plate.

Center the throat plate on the blank and attach it with double-sided tape. Next, using the throat plate as a guide, round the ends of the blank with a bandsaw or jigsaw, leaving about $\frac{1}{16}$ in. of waste. Trim the waste with a router and a bottom-bearing, flush-trimming bit. A router table makes this

easier, but a handheld router can be used. In either case, the bearing runs against the throat plate as the bit trims the waste.

On the router table, feed the insert into the bit from right to left. Keep the bearing on the throat plate and work your way around. Skip over the blade-guard opening, or the bearing will fall into it and cause kickback. You'll get rid of that waste when you cut an opening for the guard assembly.

With a handheld router, rout from right to left. After you rout the first side and end, rotate the blank 180°. Then rout the second side and end.

Cut the blade and splitter openings

You're now ready to cut an opening for the blade. Crank the blade to its lowest position and insert the saw's throat plate into

Cut the openings



Don't remove the blank. Even at its lowest height, a 10-in. blade prevents a blank from dropping into the throat. So you'll want to cut the blade opening while the blank is taped to the insert.



Two openings to cut. Hold down the blank with a push stick (left), staying away from where the blade will come through. Raise the blade slowly. Afterward, mark the opening for the blade-guard assembly (above) and cut it with a bandsaw or jigsaw.

Shim a low insert



Check for level. The insert should be flush with the saw table. Use a steel ruler to check for high and low spots.



Easy fix for low spots. The plate is supported by a lip or tabs in the saw's throat opening. Apply tape to the low spots to raise the insert flush with the saw table.

the throat. Slowly raise the blade until it's roughly 1/2 in. above the insert blank.

Now, cut an opening for the blade-guard assembly. Use the throat plate as a template to mark the opening on the insert, separate the insert blank from the throat plate, and then remove the waste with a bandsaw or jigsaw. Next, bore a finger hole with a 1-in.-dia. Forstner bit. This hole makes it easier to remove the insert.

Check for level

Typically, the throat plate is supported by a small lip or tabs inside the tablesaw throat. Your insert should be flush to the saw table when it rests on that lip.

throat plate. A fender washer attached in a recess on the underside of the insert makes a good lock. The washer slides under the throat's edge and prevents it from pulling up.

This may not work for your saw. Some throats require a pin-sized arm that sticks out the back of the insert. If yours does, then use either a brad nail or screw as a lock.

Add a few coats of shellac or varnish to give the insert a smooth surface and some wear protection. □



Two types of locks. On some saws, a fender washer fits under the throat's edge. Others need a brad or screw.

Rabbit an insert that's too high

Lowering an insert is a three-step process: Determine the depth, mark the depth, and cut the rabbet.



A precise measurement. With the blank in the throat, use a combination square to find how deep the rabbet needs to be.



Lay out the cut. Slide the square against the bottom of the insert and mark a line around its edge.



Cut to the line. Take 1/16-in. passes with a rabbeting bit, and check the insert in the throat after each pass. If you take off too much, just use tape to raise it up.