An easy guide
to whether you should be pushing, paring or pounding your chisels, in any given situation.

by Jim Stuard

Chisel

Photo by Al Parrish

Use

Back when I started as an apprentice cabinetmaker, a chisel was something to be beaten with a large hammer. That was before I learned how to properly sharpen and use these tools. Since then it's become apparent there are three distinct chisel operations that every woodworker should know: paring, light chopping and heavy mortise chopping.

There's a right way and a wrong way to make these cuts. This article will show you how to use your chisel with the least amount of effort, damage to the chisel and damage to your work.

Before I begin, there are a couple things to mention about safety. One nice thing about chisels is you don't have to wear hearing protection. But there are safety issues. Wear safety glasses when chopping or mortising, and I mean that. A chisel breaking can send pieces of metal flying, possibly causing an eye injury.

Second, if you have any reservations about using the sharp end of a chisel while paring, consider using a Kevlar protective glove, which is routinely used by carvers. The glove will dull the impact of a slipped chisel and reduce your chance of injury. Finally, never use a chisel that's pointing toward your body. Always be mindful of the direction a chisel is going and where your hands are. This is the first thing to check before making a cut of any kind. The last thing you want to do on a Sunday afternoon is explain to an emergency room physician how you almost gave yourself a DIY appendectomy while working on Aunt Betty's blanket chest.

Paring

The one thing that amazes most beginning woodworkers is how seldom you really need to hit the chisel to get it to work right (the exception to this is, of course, mortising). Paring is a process of using the knife edge of a sharp chisel to slice small amounts of wood off. With a little technique and a sharp chisel, you can get into places inaccessible to a plane or knife.

Paring is basically the finest work you can do with a chisel. Some examples of paring include:

- Trimming the cheeks of a mortise to fit a tenon that's too large.
- In the absence of a shoulder plane, par-

Paring: One Hand Steers, the Other Pushes
To do this properly, you need to use both hands on the chisel to get the most control. One hand is on the chisel blade as close as you can get to the edge. The other hand is firmly on the handle. How much you push down on the blade as you push forward determines the amount of wood removed. You can also angle the chisel into the wood to get a more aggressive cut. That is where having a flat face on your chisel is important.

ing the tenon to fit the mortise.

• When you lay out a hinge mortise, after chopping the mortise sides, you basically have to pare the waste out to the edges of the hinge layout.

• If the space between dovetails is large enough (i.e. the pins) for a chisel, they can be pared, on their sides, to fit.

Before beginning, make sure your work is secured on your bench or in your vise. This will impart more of the force of your pushing into the work, thereby giving you more control of the cut. Paring requires pushing a chisel while it lies flat on a surface, slicing into the wood grain. This can be either with or across the grain. When you pare, you're generally not taking off large amounts of wood. Just gently slicing little shavings off.

To pare well, the chisel needs to have a flat face and a sharp edge. See the story at right on flattening for more about this. You can generally tell when your edge isn't cutting the way it should when paring end grain. If the grain starts to collapse and bend over from the chisel pushing through, the chisel needs sharpening. I won't go into a long diatribe on sharpening here, but suffice it to say that if your chisels are coming up dull, you either need to increase the frequency or quality of your sharpening.

Light Chopping

At some time you'll have to do some chopping with a bench chisel. A half-blind dovetail joint is a good example of how to use chopping to remove wood. Other uses for chopping are defining a hinge mortise, low relief carving and through-dovetails.

When chopping, you can use the same force you would use when mortising — just not as often. Bevel-edged bench chisels shouldn't be used for mortising. They aren't designed for this purpose. Mortise chisels have a steeper cutting angle ground on them: 30° compared to 25° for bench chisels. Their blades are thicker with square flat sides to stand up to a pounding. Bench chisels are thinner and beveled on the sides to get into tight spaces.

Most bench chisel chopping consists of light tapping of the chisel to define a cut line or remove a small amount of waste. Chopping is the most vigorous use that a bench chisel should see. Upon reading our reviews of 20 different bench chisels, only about half stood up to repeated medium/heavy chopping. If you plan on heavy use for your chisels, consult our review to get an idea of what to look for in a bench chisel.

Before beginning, make sure your work

Light Chopping
After defining the pins with your dovetail saw, start chopping the waste out by chopping to a line approximately 1/32" away from the actual marked line. What happens when you chop with a chisel is the bevel will push the chisel toward the line as it's struck. You have to compensate for this by starting in a little from the line, then remove the waste.

Use a combination of paring and light chopping technique to remove the waste. The procedure is to chop a line, across the grain, then remove the waste by pushing into the end grain down to the cut line. Depending on the wood, you may or may not need to tap the chisel with a mallet. Re-cut another line and repeat till you get down to the marking gauge line.

To remove the rest of the waste up to the gauge line, start by pushing a series of angled cuts into the waste up to the line. Yes Virginia, you can pare end grain but only with sharp tools. Proceed to pare or gently chop out the waste, cutting across the end grain. Some light paring is required to get into the corners along with a sharp, pointy knife.

has a direct connection with the ground. That is, place the work directly over the leg of a bench or table. This imparts all the force of the blow directly into the cut and not into flexing your bench's top.

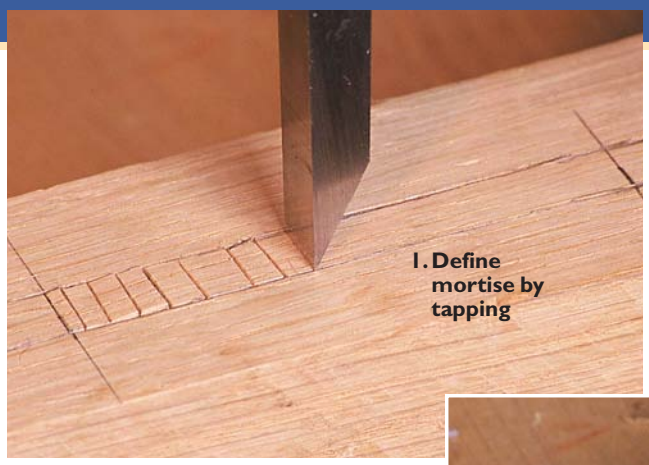
Mortising

I'm sure that back in the days when all mortising was done with manual labor, there were large muscular blokes all hammering and chopping away. This is certainly the woodworking equivalent of heavyweight boxing. The chisel and the wood both take an incredible pounding.

Mortising has one purpose: to make a square flat-sided hole in a piece of wood to receive a tenon. To that end, mortising chisels are the beefiest chisels you can buy. They have a steep grind (30°) and high flat sides to take a beating and guide the chisel while mortising. A bench chisel, with its thin profile, is likely to wander in your cut, ruining your mortise. Not to mention that if you hit a bench chisel as hard as you hit a mortising chisel, especially the small sizes like ½" and ⅜", they might actually fracture. Also, repeated pounding of a bench chisel will either roll or collapse the cutting edge.

If you own only one mortising chisel, I recommend a ⅜" tool. Tenons are typically half the thickness of your stock, and most stock is ¾" thick. Make sure the mortising chisel you buy has a long handle because you're going to hit it pretty hard. If the handle is too short, it's your hand that will take the abuse.

Mortising has three parts. One, light tapping. This defines where the mortise will go and begins the mortise. Two, heavy pounding, which is what most of us think about when we talk about mortising. Three, paring. This is the only time you should use a bench chisel while mortising: to pare the sides of a mortise after chopping. **PW**



Mortising
First, lay out a mortise and start by lightly chopping a series of lines, inside the layout lines, across the grain (left).

Next, using the bevel side of the chisel, remove the waste and repeat (right). After you get the first couple of layers knocked out, it's easier to just wail away and start taking large amounts of waste out of the mortise. When you get to the bottom of the mortise, start checking the depth with a combination square. When you get towards the finished depth, it's easier to just reach into the mortise with the chisel, bevel side down and pare out fine amounts of wood till you get to the finished depth. If necessary, use a wide bench chisel to pare the cheeks of the mortise.

Here's the finished results of using a mortising machine (left) and a hand cut mortise (right). The hand-chopped mortise is prettier, right?

In Defense of a Flat Chisel Face

Did you ever wonder why sharpening experts tell you that your chisel face has to be flat? Well, if your face isn't flat, one of two things will occur. If the chisel face is bowed you'll start digging into the wood; if the chisel face is bellied, you'll need to lift the chisel to get it to start cutting.

Either condition requires lapping. I like to use a coarse diamond stone, and then work up to a couple of finer grits. There's lots of other lapping equipment out there, but one of the cheapest alternatives is to use dark gray wetsanding paper (start with 150 grit and move up gradually to 400 or 600) on a flat surface. A thick piece of glass does nicely. Just soak the paper in water before use. Lay it down on the flat surface and the surface tension of the water will adhere it to the surface fairly well. Rub the chisel until it is flat at least two-thirds of the way up. This might take a while. Consider it paying your dues before you get into the high-falootin' chisel-use party. Get as fine a polish on your chisel face as you can to eliminate catches or nicks. It also helps to finely sand the edges of the chisel face. If you pinch your finger between a piece of wood and the edge of the chisel, you'll stand less chance of scissoring a cut on your hand.