

Plane blades and chisels need a flat and polished back

DO THE HEAVY WORK WITH SANDPAPER GLUED TO GRANITE

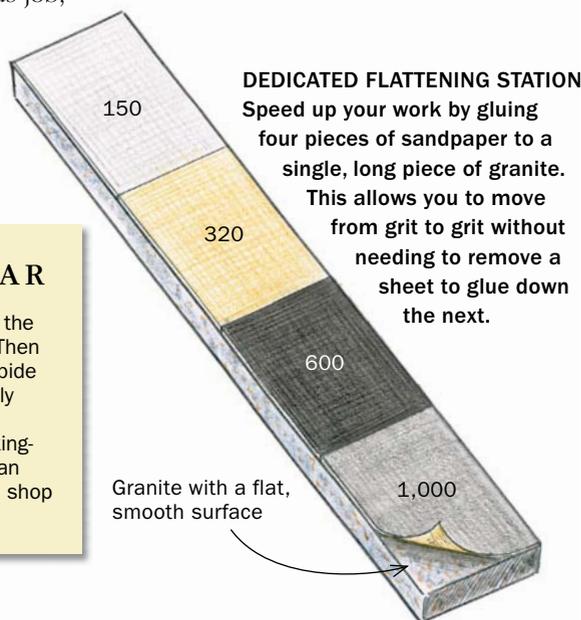
BY CHRIS GOCHNOUR

You surely have heard it before: A sharp cutting edge is the meeting of two flat, polished surfaces. That's why you need to give as much attention to the back of a plane blade or chisel as you do to its bevel. You must first flatten and smooth it, and then polish it to remove all the scratches. When you're done, it should be as clear and reflective as a mirror.

I wouldn't be surprised if the prospect of flattening and polishing a blade or chisel's back kept you out of the shop for a while. It can be a boring and tedious job, but it doesn't have to be. My technique is fast and gives perfect results. I use sandpaper for the heavy

THE RIGHT GEAR

Use aluminum oxide paper for the coarsest grits, 150 and 320. Then switch to wet-or-dry silicon-carbide paper (check automotive-supply stores). For the granite, use a surface plate (many woodworking-supply retailers sell them), or an offcut from a stone fabrication shop (check the yellow pages).



DEDICATED FLATTENING STATION
Speed up your work by gluing four pieces of sandpaper to a single, long piece of granite. This allows you to move from grit to grit without needing to remove a sheet to glue down the next.



Clear as a mirror, sharp as a razor. The high polish means that the back—and the cutting edge—is truly flat and without blemishes. When it meets a bevel that's just as polished, the blade will be truly sharp.

Get ready

You need coarse grits to flatten a blade back efficiently, but coarse waterstones are soft and go out of flat very quickly. A better way is to use sandpaper, which cuts quickly, is cheap and easy to find, and when glued to a flat piece of granite, never goes out of flat.



Easy on. Use spray glue, which is easy to apply and can be removed easily when it's time to replace the paper.



Easy off. To pull off the sandpaper cleanly, use a heat gun or hair dryer to soften the adhesive. Mineral spirits cleans up the leftover glue on the granite.

Flatten and smooth the back

This stage is a lot like preparing a wood surface for finish. You want to get the surface flat first and then smooth it with progressively finer grits until it's ready to be polished.



Start with 150 grit. Apply pressure with fingers from both hands within about $\frac{1}{2}$ in. of the cutting edge (left) to ensure that the blade is flat on the sandpaper. Move the blade from side to side along the length of the paper, not in and out. Stay at this grit until there is a consistent scratch pattern extended back an inch or two from the cutting edge (above).

work, gluing a progression of grits to a piece of granite. Sandpaper is inexpensive and easy to find, and because the granite never goes out of flat, the sandpaper doesn't either.

How far to flatten

I flatten the first 1 in. to 2 in. of the blade behind the cutting edge. That's essential on a chisel, but some say that it's unnecessary on a plane blade, that only the cutting edge needs to be flat and polished. But for a plane to cut well, you need more than just a sharp edge. On bench planes, for example, the chipbreaker must mate perfectly with the back of the blade. Any small gaps between them are opportunities for shavings to get stuck and eventually clog the throat. By flattening a larger area of the back, I create a perfectly flat mating surface for the chipbreaker. Also, working a bigger area makes it easier to hold the blade flat on the sandpaper.

Flatten, smooth, then polish

Preparing the back is really a three-step process. But before you start, polish the back a bit on your highest-grit stone or sandpaper. This will give you an idea of how flat the back is. Blades and chisels from high-end makers might already be flat and just need polishing.

The first step is to flatten it (on some blades and chisels you might also be removing machine marks at this point). This is work for the coarsest sandpaper (150 grit).



Work up through the grits. On the second grit, move the blade in and out until the side-to-side pattern from the previous grit is gone. Then you can move up to the next grit. Continue to alternate between side-to-side and in-and-out movement as you change grits.



TIP

CLEAN THE PAPER OFTEN

If it gets clogged with metal filings, it will cut slowly and be less efficient.

Two ways to polish

Now that the hard work is done, all that remains is to polish the back to a mirror shine. Here's how to do it without ruining the flatness.

Don't move up in grits until you've created a consistent scratch pattern and an even sheen. After the back is flat, use the grits from 320 to 1000 to create ever-smaller scratches. This stage of the process is like sanding a flat surface in preparation for a finish.

Then, after the back is smooth, you can literally polish off the last of the scratches with your 4000- and 8000-grit waterstones or 1500- and 2000-grit sandpaper, moving the blade side to side on both grits. □

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Use sharpening stones. Start with a medium grit, like 4000, and finish up with a polishing stone (8000-grit or higher). Make sure the stones are flat before you begin.



Or stick with the sandpaper. Extrafine grits of sandpaper can produce a polish just as well as sharpening stones. A second granite surface plate for polishing is nice, but not necessary.



The payoff. The back is now ready for work, and you won't need to flatten it again. Removing the burr on the polishing stone (or 2000-grit paper) when you hone the blade is all the maintenance the back needs.