

Low-cost scraper plane

CONVERT A LOW-ANGLE PLANE SIMPLY BY CHANGING BLADES

BY BRIAN BOGGS

sharp and well-tuned bench plane can handle the vast majority of surfaces, but every now and then you run into an area of wood so ornery that only a scraper can deliver a good finish. However, I've found it difficult to prevent chatter on some commercial scraper planes, so I came up with a way of converting lowangle planes to work as scraper planes. No modifications are made to the body of the plane; the only investment is the price of a replacement blade. The conversion from one mode to the other is quick and requires no tools.

Regrind a replacement blade

Any type of low-angle plane can be converted to a scraper plane. Jack planes allow you to apply more power and work on a large area quickly, but block planes work fine. Because you will be turning a very small and delicate burr, I urge you to buy an A2 cryogenically treated blade rather than a regular steel blade. A2 blades are available from Hock Tools (www.hocktools.com;

MODIFYING A PLANE BLADE FOR SCRAPING



110 FINE WOODWORKING

Photos: Mark Schofield; drawing: Michael Pekovich

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SHARPEN THE BLADE



Establish the bevel angle. Use a sliding bevel to set the blade at the correct height in the vise for grinding a 75° bevel.





Grind the bevel.

Guided by the edge of the bench, use a coarse diamond stone to establish the new bevel on the blade (above left). Clear tape protects the bench from wear. Polish the back of the blade with a fine diamond stone (below left). Finally, use a very fine stone such as a translucent Arkansas stone to polish both the bevel and the back of the blade.

888-282-5233) and Lie-Nielsen (www.lienielsen.com; 800-327-2520).

Determine the grinding angle—I find that scraper planes leave the cleanest surface when the blade is angled slightly back from the vertical, say around 87°. With the angle of the plane's bed at 12°, the blade's bevel must be ground at 75°.

Using a sliding bevel to establish the correct angle, grip the blade in a bench vise. Wrap tape around the bench to protect the edge from the sharpening stone, and, starting with a coarse diamond or oilstone, carefully hone an even bevel. You need to remove only a small amount of metal to leave a bevel just shy of ¹/₆₄ in. wide. I follow up with a fine stone and then a hard, translucent Arkansas stone, polishing both the bevel and the back of the blade. If you use waterstones, be careful not to gouge them, and try using the sides of the stones.

Turn the burr on glass—Because the burr is so small and the steel so hard, I have found that the easiest way to turn it is by rubbing the blade on a sheet of flat ¼-in.-thick float glass. I place a ¼-in. drill bit under the blade about a third of the way back from the tip, put a few drops of oil on the glass, and then roll the blade backward and forward

about an inch. Keep the pressure firmly on the bevel at all times. After a dozen or so strokes, see if you can feel a burr. Your finger should feel just a small amount of resistance, but the burr won't be visible.

The pros and cons of using a scraper plane

Converting a low-angle plane to a scraper plane is a quick process, and a well-tuned scraper pretty much guarantees no tearout. But there is a





Roll a burr. Place a few drops of oil on a piece of float glass and roll the blade to and fro on a ¼-in. drill bit with the tip of the blade pressed firmly on the glass. After a few strokes, you should start to feel a burr.

AND TURN A BURR

