Mastering the card scraper

THIS SIMPLE TOOL TRANSFORMS THE WAY YOU PREPARE SURFACES

BY MATTHEW TEAGUE

Of all the tools in my shop, my favorite is the basic card scraper. It's nothing more than a thin piece of steel that costs a few dollars, but it greatly reduces my least favorite part of woodworking: sanding.

The scraper cleans up tool and milling marks, levels glue-ups, and smooths surfaces. It removes material as efficiently as sandpaper but doesn't leave scratches in its wake. A scraper is easier to control than a handplane and can surface tricky grain where even a well-tuned plane does more harm than good.

Tuning a card scraper is relatively easy using only a mill file, sandpaper, and a screwdriver. Using a card scraper takes practice, but only a little. In a very short time, you'll be able to cut continuous shavings akin to those you get with a handplane.

Tune-up starts with a mill file

New scrapers need a tune-up, and you'll have to repeat it from time to time, but the good news is that the process only takes three or four minutes.

First, file the long edges flat and square to the faces of the scraper. You can clamp the scraper in a vise and work the edge freehand with a standard mill file, or lay the file flat on the bench and work the scraper across it. Take full-length strokes until you feel and hear the file cut continuously.

Next, flatten the scraper's faces. Use a flat sharpening stone or 180-grit wet-or-dry sandpaper attached to a flat surface. Don't work the entire face, just the leading ½ in. or so. Use all eight fingers to apply even pressure, and work until you see a smooth surface with fresh steel exposed all the way to the edge. Then move to 320-grit paper to achieve a cleaner surface. If I'm trying to achieve a very fine,

Uses

REMOVE MILL MARKS

A scraper is ideal for cleaning up light tearout and marks from jointers, planers, and handplanes.

CLEAN GLUE

Dried squeeze-out comes off easily. Avoid an aggressive cut, which can dish the glueline.

TRIM EDGING

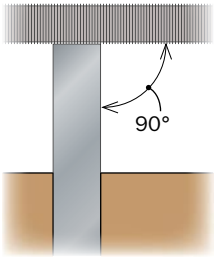
The cut is adjustable enough to trim solid edging flush and avoid damaging the plywood veneer.

WORK TRICKY GRAIN

The scraper works lightly, taking clean shavings despite treacherous changes in grain direction on this walnut-burl board.

Photos and drawings: staff

Tune-up



FILING AND HONING

Before you can form consistent burrs at the edges, it is crucial that the edge and sides are smooth and meet at 90°.

Sharpening starts with a file. *Secure the scraper in a vise and use a mill file to remove hardened steel and square the edge. Be sure to keep the file at a 90° angle to the faces of the scraper.*

Next hone the faces. *Work the scraper back and forth on a sharpening stone or sandpaper set on a flat surface. Use eight fingers to apply even pressure (top). A mirror finish isn't crucial, but a smoother surface (bottom) yields a more uniform burr.*

finish cut, I sometimes move on to 400 or even 600 grit.

These filing and flattening steps build up a "wire edge" of thin and brittle waste material that must be removed. To do this, hold the face of the scraper at 90° to the stone or sandpaper and work the edge using light pressure. It's easier to maintain the 90° angle if you skew the scraper. After a few strokes, the wire edge should fall off. If not, give the faces of the scraper a few passes across the sandpaper.

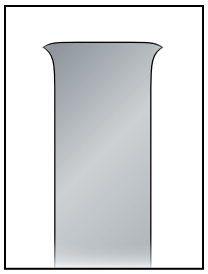
Draw and turn the burr

To create a tough burr for cutting wood, you need a burnisher—a rod of highly polished steel that is harder than the soft steel in the scraper. I've owned several commercially made burnishers over the years and they all worked fine. My favorite now is an old screwdriver.

Creating a burr begins with the scraper flat on the edge of the bench. Hold the burnisher flat against the face while pushing it away from you for several strokes along the length of the edge. Concentrate downward pressure on the cutting edge to draw out the burr. Some woodworkers like to angle the burnisher down on the edge, but this angle should be very slight, only a degree or so. Work until you feel a slight burr when you carefully touch the edge with your fingertip. Draw the burr along each of the scraper's four long edges.

Now clamp the scraper upright in a bench vise with the edge to be burnished parallel to the benchtop. You can turn the burr with the burnisher held freehand or, to ensure a consistent angle, let the handle of the burnisher ride on the benchtop during each stroke. Following this second approach means that adjusting the scraper's height in the vise will alter the burnishing angle and, as a result, the cutting angle of the finished burr. The steeper the angle, the more aggressive

Remove the wire edge. *A few light strokes on edge should accomplish this. Skewing the scraper to the direction of cut helps keep it square to the sanding surface. This also hones the edge, removing any rough file marks.*

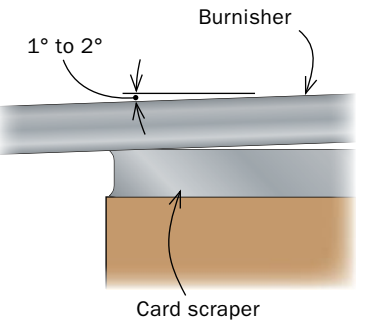


RAISING A BURR

Burnishing each edge forces the metal into a hook shape, creating a cutting burr.

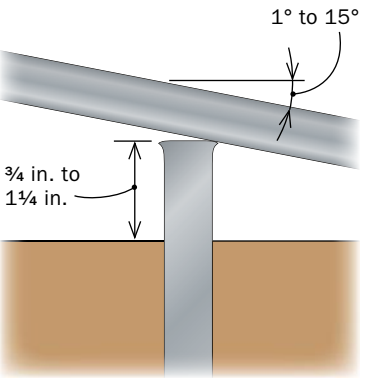
1 ***Draw the burr.*** *Apply firm downward pressure with the burnishing rod at the scraper's edge. Take several strokes, always pushing away from you. Skew the burnisher to help force material past the edge of the scraper.*

Drawing the burnishing rod over the flat face at a very slight angle extends the corner of the edge out into a ridge.



2 ***Turn the burr.*** *Use a piece of scrap as a reference to set the scraper's edge at a consistent height. Then ride the burnisher's handle along the bench to maintain a consistent angle, and make several firm pushing strokes away from you.*

Use the burnisher at an angle of 1° to 15° to flatten this ridge and create a hook-shaped cutting burr. A steeper angle yields a more aggressive cut.



the cut, but any angle between 1° and 15° works well.

Turning the burr should take only two or three passes. Once you feel a turned burr along the entire edge, test the cut. If you're making only dust, burnish some more. Once you're making shavings with both sides, you're ready to start scraping.

Two ways to take a shaving

A scraper can either be pushed or pulled. I usually push the scraper to make aggressive, slightly concave cuts when removing tearout or smoothing tricky grain. For finer cuts, I pull the scraper to flatten any dished areas and leave a surface ready for finishing.

To push the scraper, hold it with your fingers on the short edges and your thumbs together in the middle of the back, about ½ in. or so above the cutting edge. Use your thumbs to create a slight bow along the bottom edge. The deeper the bow, the more aggressive the cut. Conventional wisdom says to start by holding the scraper vertically and angling it forward until you feel the burr bite into the wood. It works, but in my experience, it's easier for beginners to start with the scraper held at about 60° and, while pushing, slowly increase the angle until the burr begins to cut the wood. Then push forward in one smooth motion to get continuous, paper-thin shavings.

To pull the scraper, place your fingers on the far side and your thumbs on the face closest to you. Unlike when pushing, your thumbs should be positioned higher on the face of the scraper and your fingers lower. A pulled scraper is held with the edge bowed only enough to prevent the corners from digging into the wood. Some woodworkers avoid this problem by rounding the corners with a file or grinder.

A scraped surface that's finish ready

In my shop, a card scraper touches virtually every surface of a project, and is almost always the last tool to do so before the finish goes on. If I'm working easily planed, straight-grained

Making shavings

TIP

An inexpensive heat shield. *A flat refrigerator magnet helps protect your thumbs from the heat generated in use.*

stock, I typically clean up jointer and planer marks on larger surfaces with a handplane, then use the scraper to remove plane tracks and clean up tearout. To ensure a uniform appearance under a finish, I give all the surfaces at least a light scraping. In general, I scrape the entire surface using a push stroke, then flatten the slightly dished area using a pull stroke.

For stock with trickier grain, such as bird's-eye or burl, I skip handplaning altogether. A scraper is much easier to control than a handplane, and there is almost no chance of tearout.

In any case, if the milling marks are especially heavy, I usually start by power sanding to 120 grit. I prefer the way a scraped surface looks under a finish, so at this point I thoroughly brush or vacuum away the sanding dust and scrape until the entire surface is uniform.

Two thumbs down. *Grasp the scraper with your fingers wrapped around each side and your thumbs together on the back, near the bottom edge. Push forward with your thumbs, applying enough pressure to create a slight bow. The more pronounced the bow, the more aggressive the cut.*

Restore the edge

A dull scraper takes more effort to push and a steeper cutting angle. It also creates dust instead of wide shavings.

Fortunately, it's possible to restore the burr several times simply by reburnishing the face and then the edge in the same way you initially turned the burr. After four to six burnishings, the metal becomes brittle and you need a new surface. Return the scraper to the vise and start over with a file, removing any nicks along the edge that you've created by scraping. Then burnish the faces and edges to draw and turn new burrs.

Because each tune-up removes so little steel, I still use the first scraper I bought a dozen years ago. Sandpaper, however, usually wears out in minutes. □

Pulling leaves a flatter surface. *Align your fingertips behind the cutting edge to apply uniform pressure.*

Use caution near edges. *Avoid letting the scraper dig into the workpiece edges and leave them ragged. Here, Teague bows the scraper enough to concentrate cutting pressure in the center of the workpiece.*