

*veritas*<sup>®</sup>

# Small Scraping Plane



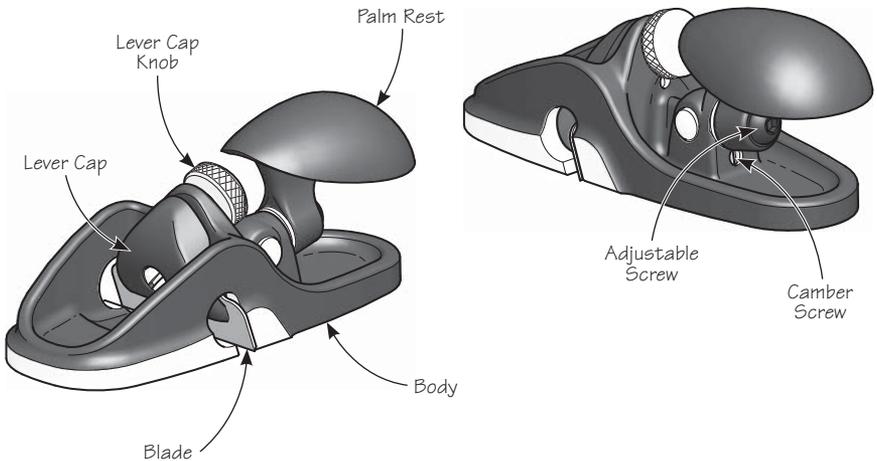
**05P29.50**

U.S. Des. Pat. D609,548

The Veritas® Small Scraping Plane is used for the final smoothing of small, flat surfaces, even if they are highly figured, or small areas of difficult grain within a larger surface.

Given the fine cutting action of the small scraping plane, it is used after the surface has been prepared as well as possible with a smoothing plane, not in place of the smoothing plane. What the scraping plane does replace, however, is the need for sanding prior to applying a finish. Because the scraping plane cuts the wood fibers rather than tears them, it will further bring out the wood grain, rather than mute it as sandpaper would.

The plane comes with a 2" by 0.040" thick high-carbon steel blade with the cutting edge ground at 45°. The pitch, or blade angle, is 20° forward from vertical. The full-width blade and adjustable palm rest (that can be pivoted to either side) allow the plane to be used right up to a vertical face. Depth of cut can be regulated by applying camber to the blade. By slightly bowing or arching the blade, you also eliminate ridges in the work surface caused by blade corners.

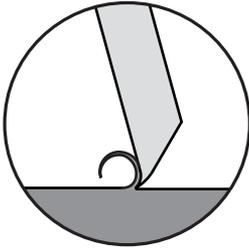


**Figure 1: Small scraping plane components.**

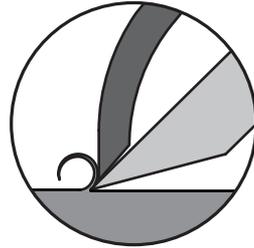
**⚠ Caution:** Be aware that because the blade is full width, its edges extend beyond the sides of the plane body. If you find these edges uncomfortable as you grip the plane, you may relieve or round over the square edges with a file.

## Scraping

At first glance, the scraping plane, or indeed even scraping itself, can appear odd or mysterious. Why would you scrape wood? Why is the blade angled forward? A closer look at where the actual cutting is taking place reveals the answers. The cutting geometry of the rolled edge on the scraper blade is not that much different from the cutting geometry of a bench plane with a well-set cap iron.



**Figure 2a:** Rolled edge of scraping blade.



**Figure 2b:** Bench plane with well-set cap iron.

Although the rolled edge on a scraper blade works much like a plane, the cutting action of a scraper is actually more like that of a high-angle smoothing plane (i.e., with a bed angle of  $55^\circ$  or  $60^\circ$  rather than the more common  $45^\circ$ ). This means the wood shaving curls abruptly and falls right at the cutting edge, eliminating tear-out and allowing for the working of difficult grain patterns.

## Sharpening



**Caution:** Be aware that the blade is sharp; careless handling can result in serious injury.

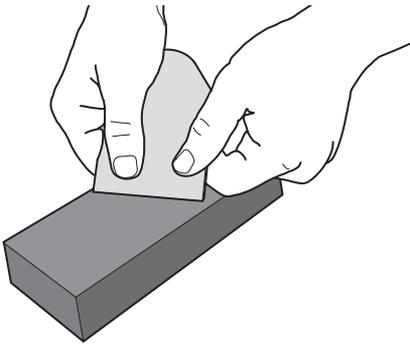
Sharpening the scraping blade is the most critical and difficult part of learning to use a scraping plane. Understanding how a scraper cuts (see above) and knowing what a properly burnished cutting edge looks and feels like are the key concerns when learning how to sharpen the blade.

The bevel angle on the blade is ground at  $45^\circ$ , rather than square as found on card (cabinet) scrapers. This makes it easy to burnish or deform the metal of the bevel into a relatively aggressive burr or hook.

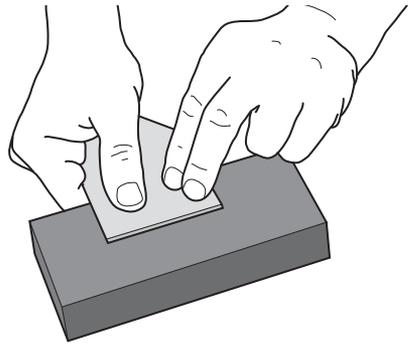
The burnishing angle should be about  $15^\circ$ . An angle of  $20^\circ$  or more will result in too much scraping and not enough cutting (producing dust, not shavings). The higher angle also increases the likelihood of blade chatter. Smaller angles (closer to horizontal) may not cut at all as no cutting edge is introduced to the wood, or there may be no relief angle and the blade will just slide along the surface of the workpiece.

**Step 1 — Preparation:** This step is not necessary with a new blade. Before you start honing, the blade should be shaped to maintain a straight cutting edge and a 45° bevel. Hold the blade in a vise and use a 6" or 8" bastard cut mill file to prepare the blade. Check the bevel periodically with a straightedge and a protractor (or sliding bevel set to 45°) as you work. The Veritas Jointer/Edger (05M07.01) is ideal for this process. A bench-top belt sander with a 80x or 120x abrasive belt may also be used for this step.

**Step 2 — Honing:** Start with an 800x or 1000x stone to remove the marks from filing. Either an oil stone or water stone is suitable. Hold the blade as shown in **Figure 3** with the bevel flat against the stone. Stroke it back and forth, covering the whole stone. Check the bevel often to evaluate your progress. Continue until all file marks are gone. Using the same technique, transfer to a 4000x water stone or hard Arkansas oil stone to finish honing. As shown in **Figure 4**, lap the face of the blade near the cutting edge to achieve the same finish as on the bevel. A sharp edge can only be achieved by creating two intersecting surfaces honed to the same degree. The Veritas Power Sharpener or a bench-top belt sander with 320x (40μ) followed by 1200x (9μ) abrasive will provide the same results a bit faster.

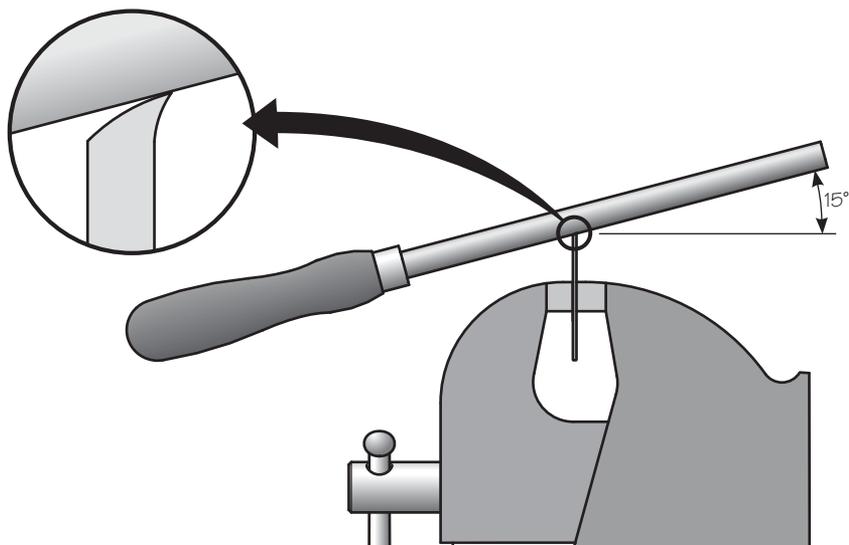


**Figure 3: Honing.**



**Figure 4: Lapping.**

**Step 3 — Burnishing:** With the blade held firmly in a vise, use a burnisher (the Veritas Tri-Burnisher 05K32.01 is well suited) to create a hook as shown in **Figure 5**. Use three or four even firm strokes across the entire edge of the blade at the same angle as the bevel. Raise the burnisher handle slightly and take three or four more strokes. Finish by taking three or four strokes with the burnisher 15° from horizontal, as shown in **Figure 5**. The first few times you do this, sight against a reference tool such as a sliding bevel or engineer's protractor set to the desired angle.



**Figure 5: Burnishing.**

***Note:** Before burnishing, touch your fingertip to the side of your nose or behind your ear (two natural oil sources) and transfer that minute amount of oil to the blade. It reduces friction and avoids galling.*

## **Blade Installation**

The blade comes packaged separately from the plane body and must be installed. With the blade prepared, you are now ready to set up the plane. Ensure that the camber screw is backed off such that it does not protrude beyond the frog face. Hold the plane upside down and insert the blade between the bed and the lever cap with the bevel facing the rear of the plane. While holding the blade in position, tighten the lever cap knob enough to clamp the blade in place. Set the plane on a smooth, flat and clean work surface. Loosen the lever cap knob just enough to allow you to slide the blade up or down into position so the cutting edge is resting on the work surface. Tighten the lever cap knob to secure the blade. The blade will now be flush with the sole.

## **Blade Camber**

With the blade installed as described above, turn the camber screw until it just contacts the blade. Sighting along the sole of the plane, begin to tighten the camber screw in small increments that will put a slight curve in the blade. The blade should appear as a slight curve, projecting in the middle, with the corners not visible. Take a few test strokes and adjust the camber screw as desired. The more pressure applied with the camber screw, the more aggressive the cut.

## Adjustable Palm Rest

The palm rest is connected to the body in such a way as to allow it to pivot side to side, as well as to tilt up and down, so that you can adjust it to suit your requirements. Loosen the screw just enough for the palm rest to move and, as you grip the tool, pivot and tilt the palm rest in the position that feels most comfortable for you. Secure the position of the palm rest by tightening the screw with the hex key provided.

## Troubleshooting

<b>Problem</b>	<b>Solution</b>
Hard to push. Cut too aggressive.	Blade projects too far. Reposition blade and/or back off camber screw.
A ridge or step is left on one side of the cut.	Blade is unevenly set (too low on one side). Re-clamp blade.
Cutting action produces dust instead of shavings.	Blade is dull. Resharpen. Or hook may not be burnished far enough. Burnish blade.
Scraped surface appears rough, covered with ridges and scratches.	Cutting edge not properly honed – scratches from coarse abrasive or file not removed in final stage of honing. Resharpen.
Blade will not cut.	Hook may be burnished too far. Re-hone and burnish.

## Care and Maintenance

The body of this plane is ductile iron and comes treated with rust preventative. Remove this using a rag dampened with mineral spirits. Clean all machined surfaces.

We recommend that you initially, then periodically, apply a light coat of silicone-free paste wax to seal out moisture and prevent rusting (as well as act as a lubricant for smoother planing). Wipe off any wood dust from the surfaces that you will be waxing, apply a light wax coating, let dry, then buff with a clean cloth. At the same time, the solvents in the wax will remove any harmful oils left from your fingers that can lead to corrosion.

Keep in mind that typical paste wax contains silicone that, if transferred to your workpiece, could cause finishing problems such as “fish eyes”. Before treating a plane with a sealant, wipe off any fingerprints with a cloth dampened with a small amount of light machine oil. Remove any residual oil; then apply the sealant to the plane’s sole.

If storage conditions are damp or humid, the plane should, in addition to the treatment outlined above, be wrapped in a cloth or stored in a plane sack. This precaution will also guard against dings and scratches.

Every so often, clean all parts with a cloth dampened with a dab of light machine oil. For corroded plane bodies, we recommend you first remove the rust with a fine rust eraser, then treat as described above.

The bright finish on the brass components can be maintained as above. If a patina finish is preferred, simply leave the brass components unprotected until the desired level of oxidation has occurred, then apply a sealant. If you want to make them bright and shiny again, you can revitalize the surface with a brass polish.

# Accessories

05P29.51 Replacement Blade (0.040")

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