The Veritas® Bevel-Up Smoother Plane is a state-of-the-art smoothing plane. We have combined the generous width and weight of a dedicated smoother with the versatile inner workings of a low-angle bevel-up plane. The 12° bed angle, coupled with the 38° blade bevel, yields an effective cutting angle of 50° that is commonly known as a York pitch. The bevel-up blade configuration means that simply increasing the blade bevel results in higher cutting angles, thereby enabling the working of difficult grain patterns.

Weighing in at just under 5 pounds, with an exceptionally low center of gravity, this plane is dubbed 164½H. The coffin-shaped body has a sole length of 10”. The 2½” wide blade is ⅛” (0.187”) thick and made of A2 tool steel hardened to Rc60-62 and it is common to both this plane and the Veritas® Low-Angle Jack Plane.

The body is fully stress-relieved, ductile cast iron. It is accurately machined and the sole is ground flat. It features an adjustable mouth that can be closed to a narrow slit for fine shavings with minimum tear-out or opened for heavier cuts. All of this can be done quickly and accurately with the front locking knob and the unique mouth adjustment screw/stop. The adjustment mechanism, with its combined feed and lateral adjustment knob, makes blade setting easy and accurate. The set screws on either side of the blade prevent it from shifting in use, but allow full lateral adjustment.

Figure 1: Plane components.
Blade Adjustment

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

To initially set the blade, open the mouth fully and place the plane on a flat wood surface (e.g., a scrap of stock). Lightly clamp the blade with the lever cap knob and advance the blade until it just touches the wood.

Flip the plane to a sole-up position, then sight along the sole (front to back) to ensure the blade edge is parallel to the sole and advance or retract it as required. Clamp fully (1/4 turn should be ample – **do not overclamp**) and take a test cut. If all is well, advance the set screws on either side until they just touch the blade, not to clamp it but to create a guide so that you do not have to be concerned about the blade shifting sideways at the front. All lateral adjustment will now be governed solely by movement of the adjustment mechanism. This is a substantial advance over all other designs, which either have a milled slot at the front and no lateral adjust, requiring you to sharpen your blade to exactly 90° to the blade side, or have room for the blade to shift sideways at the tip every time you want to change your depth of cut.

You will quickly get accustomed to setting blade depth by sighting along the sole, but for setting very fine shavings, you will still need to take test cuts.

**Two Cautionary Notes:**
1. The lever cap knob has tremendous mechanical advantage. For normal use, it needs to be tightened only 1/4 turn after full engagement with the blade. **Never torque it down as hard as you can or you may damage the plane.**

2. Before advancing the blade at any time, check the mouth opening to be sure you don’t run the blade against the adjustable toe piece. It is a simple matter to close the mouth to the desired opening after you have reached the right blade projection. Better to dull the blade in use than when adjusting it.

**Backlash and How to Avoid It**

To eliminate the possibility of the blade shifting backward unpredictably as the backlash is taken up, the final setting should always be made with the blade being advanced by the clockwise movement of the thumbscrew. If you need to retract the blade slightly, retract it more than required, and finish by **advancing** it to its desired position. This takes up all the play in the forward direction, resisting the backward forces experienced by the blade.
**Mouth Adjustment**

The movable toe piece enables you to set the gap between the blade and the toe piece (this opening is called the mouth) to suit the task. Generally, you will want a mouth as small as will allow the shaving to escape. The reason for this is that a tight mouth supports the wood ahead of the blade, preventing break-out, a shaving propagating below the surface of the workpiece.

The mouth adjustment screw/stop allows you to accurately set this opening and, once set, ensures that you cannot inadvertently slide the toe backwards so that it contacts, and possibly damages, the blade. Loosen the front locking knob and, holding the plane vertical, adjust the position of the toe by turning the mouth adjustment screw/stop in or out as required. When the desired mouth opening is achieved, tighten the front locking knob firmly, but avoid overtightening.

**Blade Sharpening**

The high-angle blade supplied with this plane enables it to excel at smoothing woods with varying grain. The blade has been ground with a 38° bevel, yielding an effective cutting angle of 50° that is commonly known as a York pitch (a step up from the 45° bench plane). This is the ideal starting point for the least push resistance when working difficult wood. Higher cutting angles require greater force to push the plane. For woods with widely varying or reversing grain (e.g., bird’s-eye maple), the micro-bevel should be increased to yield an even higher cutting angle (e.g., a 48° micro-bevel will result in a 60° cutting angle) to produce what is known as a Type II chip (or shaving). With this type of chip, the wood shaving fails right at the cutting edge, eliminating tear-out and enabling the working of difficult grain patterns, including wood with otherwise nearly impossible reversing grain.

*Note: Having multiple blades with different bevel angles gives you the option of quickly changing the cutting angle without having to rework the blade.*
Honing the 38° Micro-Bevel

You can sharpen the high-angle blade as you would any other blade; however, a honing guide will greatly ease the task of accurately setting the micro-bevel angle before stoning. If you have the Veritas Sharpening System (05M02.10), you can use it to set and maintain the high-angle bevel on the blade. With the guide-setting knob positioned so the indication mark is pointing up, set the blade in the angle jig for a 35° bevel. To achieve a 38° micro-bevel, adjust the roller to the highest setting by pulling out the guide-setting knob and rotating it so that the arrow points downward, then transfer the honing guide to your finishing stone. When the honed blade is installed on the 12° bed of the low-angle smooth plane, this achieves an effective cutting angle of 50°.

Honing Higher-Angle Micro-Bevels

As you increase the cutting angle, you will quickly become aware that it is noticeably more difficult to push the plane. We therefore recommend beginning with the 38° micro-bevel and gradually increasing it until the tear-out is eliminated or minimized.

Begin by setting the blade in the guide for a 35° bevel with the guide-setting knob at 12 o’clock (arrow pointing upward). To obtain the desired micro-bevel angle, use the appropriate spacer block (see chart) underneath the roller. The spacer can simply be a block of hardwood. It is important that the top surface of the spacer block be parallel to the top surface of the honing stone or plate. If not parallel, the micro-bevel will have a skew to it. Once set, mark and save the block for future use. The guide-setting knob, when moved to the 3 o’clock setting, will increase the micro-bevel angle by 2°. Therefore, simply adjusting the guide-setting knob will allow you to increase the micro-bevel angle by 2° using a given spacer. The spacer will limit the travel of the honing guide, allowing only short strokes; however, this is not an issue as a micro-bevel of 1/16” is sufficient.
Chip Formation

Type I

This is the type of chip (or shaving) that is formed when the wood splits ahead of the cutting edge, then rides up along the front of the cutting tool until the bending force breaks the chip. It is the type of chip that is typical of bench planes with bed angles of 50° or 55°. Such a chip gives a very smooth surface when cutting with the grain (or exactly parallel to the grain, as shown in Photo 1), but it gives a very rough surface when cutting against the grain (as shown in Photo 2), because the chip repeatedly breaks below the intended cutline.

<table>
<thead>
<tr>
<th>Spacer Thickness</th>
<th>12 o'clock</th>
<th>3 o'clock</th>
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<tr>
<td>1/8&quot;</td>
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<td>41° (53°)</td>
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<tr>
<td>1/4&quot;</td>
<td>43° (55°)</td>
<td>45° (57°)</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>47° (59°)</td>
<td>49° (61°)</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>51° (63°)</td>
<td>53° (65°)</td>
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</tbody>
</table>

Figure 4: Blade in honing guide with spacer.

Photo 1: A Type I chip produces a very smooth surface when cutting parallel to the grain.

Photo 2: When cutting against the grain, the same chip produces a very rough surface (as shown in Photo 3).
Type II

With this type of chip, the wood fails in a plane (extending from the cutting edge to the work surface) that roughly bisects the angle between the bevel (or rake face) and the direction of travel (as shown in Photo 4). This is the type of shaving that you could expect from a scraping plane or other tools with a high cutting angle.

If you take very light cuts, such a high cutting angle allows you to work very difficult grains with virtually no tear-out.

Some of this material is extracted from The Complete Guide to Sharpening by Leonard Lee, reprinted here with permission of the publisher, Taunton Press of Newtown, CT.

Care and Maintenance

Keeping your plane working and looking like new is pretty straightforward. The body of this plane is ductile cast iron and comes treated with rust preventative. Remove this using a rag dampened with mineral spirits. Clean all machined surfaces, including the area under the nose and the toe itself.

We recommend that you initially, then periodically, apply a light coat of paste wax to seal out moisture and prevent rusting; this also has the added bonus of acting 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
soft cloth. At the same time, the solvents in the wax will remove any harmful oils left from your fingers that can lead to corrosion. This is especially important with planes that are gripped on the machined surfaces.

Keep in mind that paste wax contains silicone that, if transferred to your workpiece, could cause finishing problems such as "fish eyes". To avoid this problem, use silicone-free products, such as Waxilit® sliding agent and glue release, or a tool surface sealant. Either is an excellent alternative to regular paste wax. However, 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 and cheeks.

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, take the plane apart to clean and lubricate it where necessary. Remove the lever cap, blade, adjustment mechanism and toe from the body. Clean all parts with a cloth dampened with a dab of light machine oil. The blade bed and machined contact surfaces between the body and toe, as well as the adjustment components (pivot, threaded shaft and traveller), will benefit from a light coat of oil to keep them working freely. 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**

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>05P34.03</td>
<td>38° Blade, 0.187” × 2¼”</td>
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<tr>
<td>05P34.04</td>
<td>50° Blade, 0.187” × 2¼”</td>
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<tr>
<td>05P34.06</td>
<td>38° Toothed Blade, 0.187” × 2¼”</td>
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