

## Miter Plane

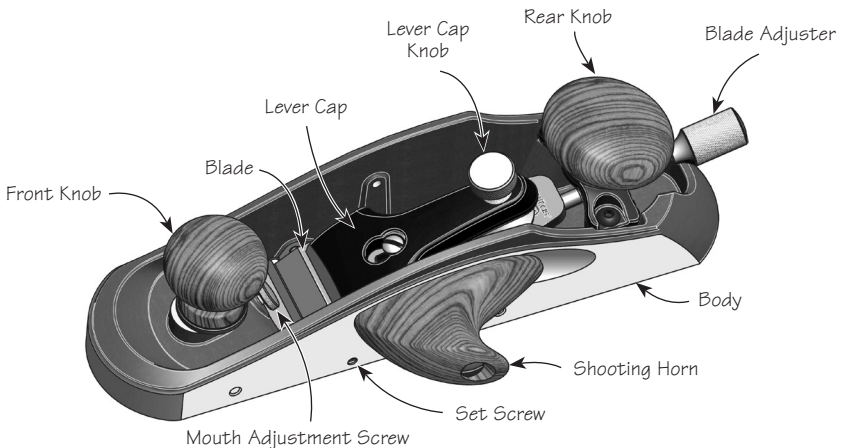
U.S. Pat. Nos. 7,603,783 and 7,117,602

The Veritas® Miter Plane is essentially a large block plane that can be used for end-grain work, such as chamfers, trimming and fitting moldings, as well as squaring or trimming on a shooting board or a miter jack. The blade is bedded at 12°, which results in an effective cutting angle of 37° with the supplied 25° lapped blade. Blades are available in O1 tool steel hardened to Rc58-60, as well as in PM-V11®, our proprietary high-performance powdered metal alloy. Hardened to Rc60-63, our PM-V11 blades offer superior edge retention, even at bevel angles below 25°, while still being sharpenable with conventional abrasives.

Made of fully stress-relieved, ductile cast iron, the plane is accurately machined and ground so that the sole is flat and the sides are square to the sole.


The large wood knobs allow for a comfortable grip, while the side scallops allow the plane to be used one-handed if desired. The removable shooting horn provides a secure grip when shooting. It can be attached on either side to allow the left-handed user to use it comfortably.

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.



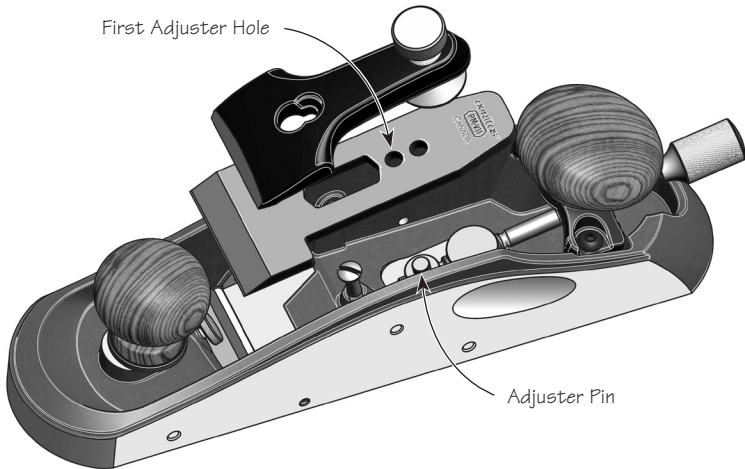
**Figure 1: Veritas Miter Plane components.**

## Installing and Setting the Blade

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

Position the blade (bevel up) on the blade bed such that the adjuster pin is in the first adjuster hole (see **Figure 2**).

Install the lever cap and lightly tighten the lever cap knob.



**Figure 2: Installing the blade.**

Place the plane on a board and slowly advance the blade by turning the blade adjuster clockwise (when viewed from the rear), and take a test cut. To retract the blade, turn the blade adjuster counterclockwise farther than required (to take up any slack in the adjuster), and then advance the blade to the new projection.

A skewed blade cuts more heavily on one side of the plane than the other. In a properly set plane, the cutting edge is parallel to the sole of the plane. If the shaving is not centered in the mouth, shift the blade adjuster (left or right) in the direction in which the shaving is thickest.

Close the mouth until it is approximately  $\frac{1}{32}$ " (0.8 mm) wide. Continue to advance the blade until it is taking shavings as required by the work. To prevent the blade from shifting sideways, adjust the set screws on either side of the mouth until they just touch the blade, not to clamp it, but to create a guide.

## Two Cautionary Notes

1. The lever cap knob has tremendous mechanical advantage. For normal use, it needs to be tightened only a quarter 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 do not run the blade against the adjustable toe. 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

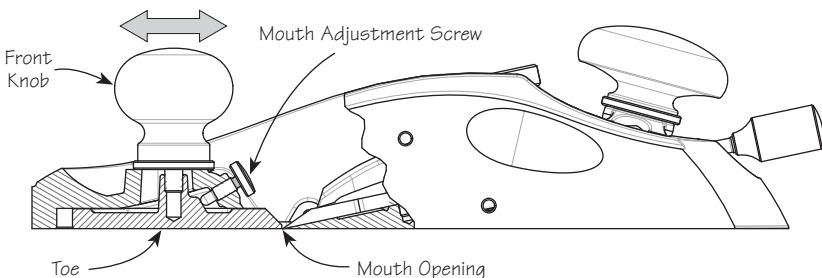
To eliminate the possibility of the blade shifting backward unpredictably as the backlash is taken up, the final setting should always be made with the blade being advanced by the clockwise movement of the thumbscrew. If you need to retract the blade slightly, retract it more than required, and finish 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 enables you to quickly set the mouth opening between the blade and the toe to suit the task. Generally, you will want a mouth as small as will allow the shaving to escape. A tight mouth supports the wood ahead of the blade, preventing tear-out.

The mouth adjustment screw can be used to limit the rearward motion of the toe, allowing you to open the mouth to remove wood chips and then return the toe exactly to where it was. It also ensures that you cannot inadvertently slide the toe backwards so that it contacts, and possibly damages, the blade.

Loosen the front knob and adjust the position of the toe by sliding the knob forward or backward, as required. Tighten the knob firmly, but avoid overtightening. Rotate the mouth adjustment screw clockwise until it stops turning.



**Figure 3: Mouth adjustment.**

## Blade Sharpening

The 25° bevel blade is ideal for fine trimming work on end-grain softwood and some hardwoods. Ring-porous hardwoods such as oak may require a 30° bevel to prevent blade edge failure. Simply hone the micro-bevel to the required angle.

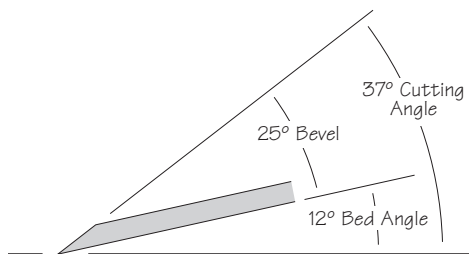


Figure 4: 25° blade geometry.

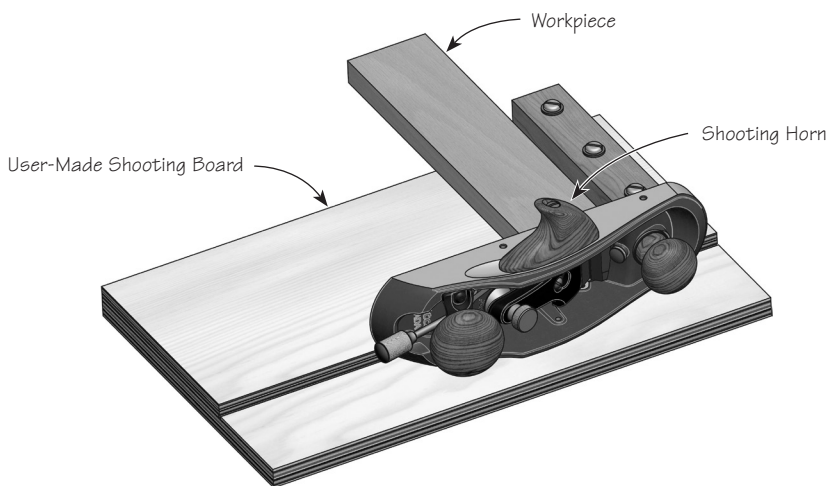
It is difficult to be definitive about bevel angles. Some people never skew a plane in use; other people always skew it. If you normally use a plane in a skewed position, you can get away with lower bevel angles. If you are always working clear pine, you can get away with very low bevel angles. Only you know which wood you will be working and how you will be working it. Experience will tell you what you can and cannot do.

You can sharpen the blade as you would any other blade; however, a honing guide will greatly ease the task of accurately setting primary and micro-bevel angles.

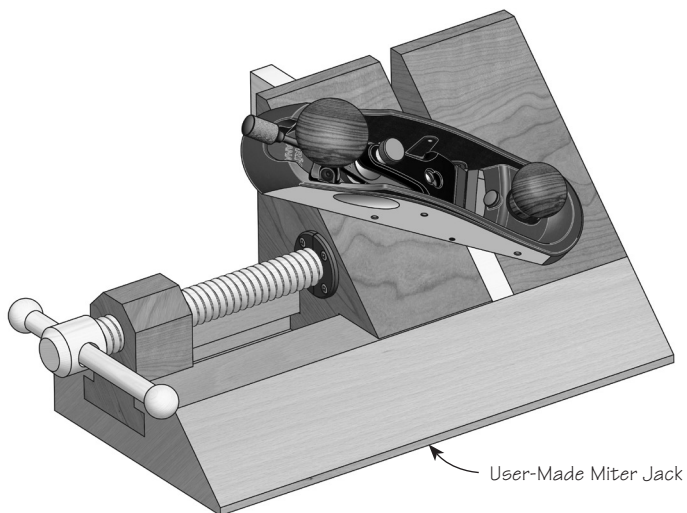
## Cutting End Grain

The low 12° bed angle together with a 25° bevel on the blade results in an effective cutting angle of 37°, which is ideal for end-grain work. Cutting end grain differs from planing with the grain; it calls for a lot of pressure and control. In fact, cutting end grain requires nearly three times the force that it takes to cut parallel to the grain. It is therefore important to have the workpiece firmly clamped in position; otherwise, it is highly recommended that you use a shooting board or a miter jack.

**Tip:** To make end-grain cutting easier, keep the edge of the blade as keen as possible, take lighter cuts, keep the bevel angle of the blade as low as possible and consistent with edge retention, and skew the plane (instead of cutting directly across the grain).



**Figure 5: Shooting with a user-made shooting board.**



**Figure 6: Shooting with a user-made miter jack.**

## Care and Maintenance

The body of the miter 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 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 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.

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.

## Accessories

**05P56.52** O1 Blade

**05P56.72** PM-V11® Blade