

Custom Bench Plane

U.S. Pat. No. 7,603,783

Your Veritas® bench plane has been assembled with the component options you selected when you placed your order.

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

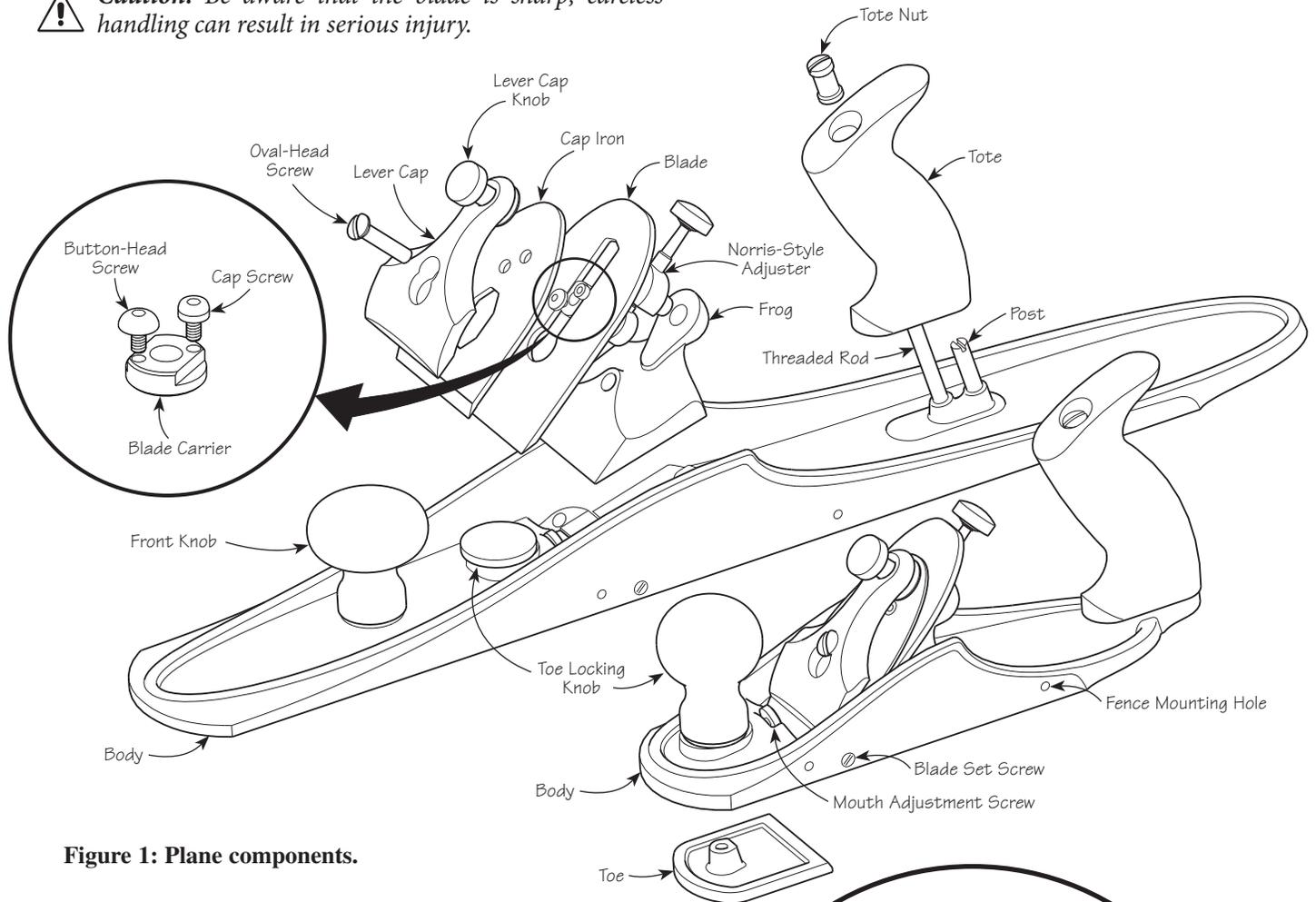


Figure 1: Plane components.

Honing and Polishing the Blade

The blade is ground ready for 30° honing. You may change the bevel angle as required to suit the pitch of your plane, the nature of the woods you work with, and your own preference/experience. Additional sharpening need only involve honing and polishing a micro-bevel. The back of the blade has been lapped flat and does not need work.

Blade Carrier

The key component of your plane is the blade carrier (see Figure 2). The blade carrier is attached to the blade and links the cap iron and the adjuster. This arrangement lets you restore the cap iron without losing its position relative to the cutting edge.

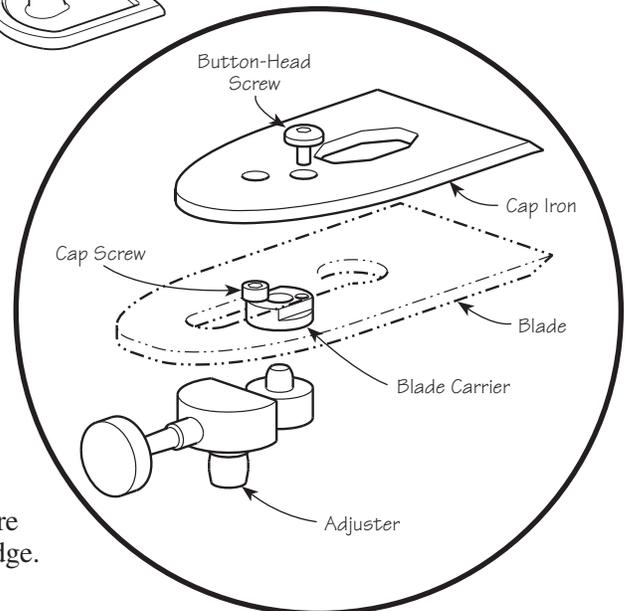


Figure 2: Blade carrier.

Although your plane comes with the blade carrier in the correct location, it will need to be removed and adjusted whenever you sharpen the blade. (For light honing, the blade carrier does not need to be removed.) Remove the button-head screw and the cap iron, loosen the cap screw, and then slide the blade carrier down the slot in the blade to take it out.

To reattach the blade carrier to the blade, nudge it through the hole in the blade, as shown in **Figure 3**, and slide the blade carrier about halfway up the slot. Clamp the cap screw just enough to prevent the blade carrier from sliding off the blade, but not so tight that it cannot move freely along the slot.

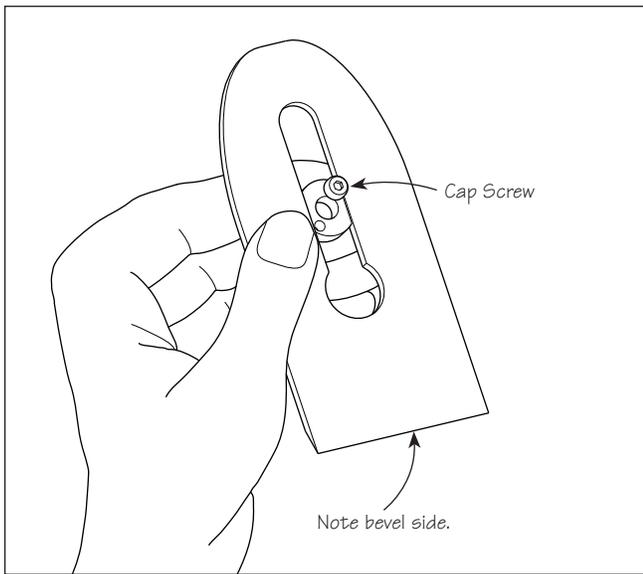


Figure 3: Locating the blade carrier.

Before reinstalling the blade assembly onto the adjuster, you will need to turn the adjuster knob until the tip of the adjuster shaft is concealed inside the traveller, as shown in **Figure 4**.

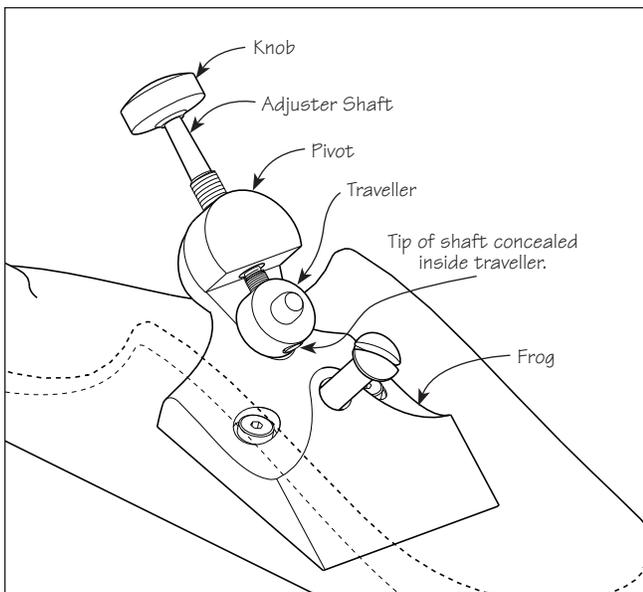


Figure 4: Zeroed adjuster.

With the plane sitting on a flat surface, place the blade carrier onto the traveller pin. Press the blade against the frog and slide it through the mouth until the cutting edge touches the flat surface. Tighten the cap screw, and install the button-head screw. See **Figure 5**.

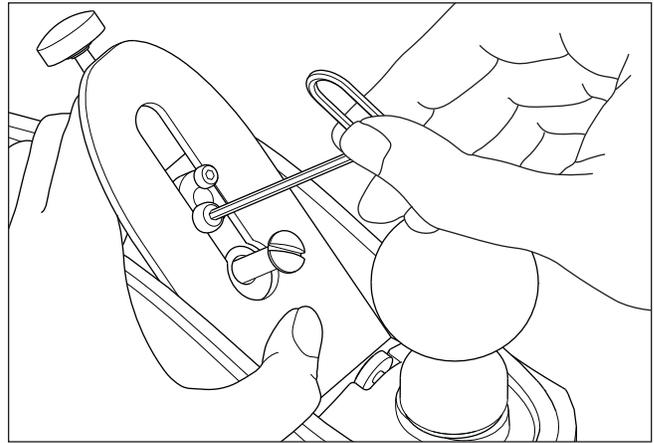


Figure 5: Securing the blade carrier to the blade in the plane.

! Important Note: Always use **both** the cap screw and the button-head screw to ensure the blade is secured to the blade carrier.

Cap Iron Setting

The cap iron is used when planing either reversing grain or wood that is prone to tear-out (e.g., when smoothing hardwoods). For other operations, such as flattening and jointing, the plane is used **without** the cap iron.

Note: You will need to adjust the projection of the oval-head screw in the frog when switching between using a cap iron and not using one to provide space for the lever cap.

To mount the cap iron, remove the button-head screw, place the cap iron onto the blade such that the top hole of the cap iron fits over the cap screw, as shown in **Figure 6**, and then secure the cap iron to the blade carrier with the button-head screw.

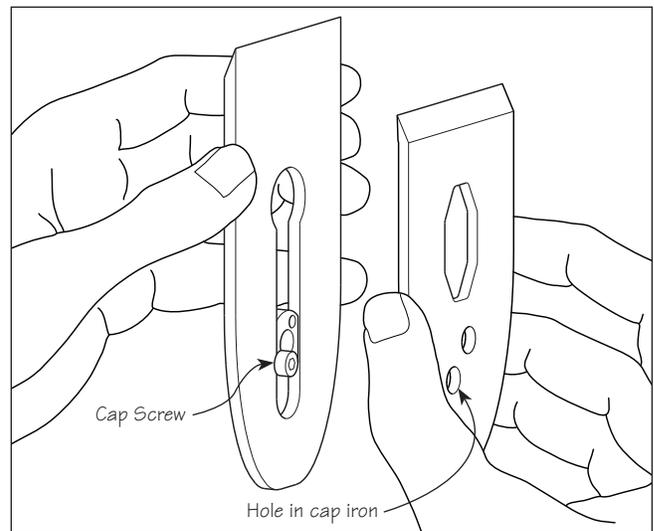


Figure 6: Mounting the cap iron.

The distance from the leading edge of the cap iron to the cutting edge of the blade should be about $\frac{1}{64}$ " (less than 0.5mm). A smaller offset will yield better results, but the plane will be more difficult to push. A larger offset will have the opposite effect: easier to push, but possibly more tear-out. Only you know which wood you will be working and how you will be working it. Experience will tell you what offset will work best for the planing task at hand.

To adjust the position of the cap iron relative to the blade, loosen the cap and button-head screws, adjust to the required position, tighten the button-head screw to lock the carrier and cap iron in place, then tighten the cap screw to prevent the cap iron from shifting.

*Note: The leading edge of the cap iron has been ground to 30°. Our research indicates that this is the best general-purpose angle for a cap iron. Should you desire a higher angle, you can grind a micro-bevel to the leading edge of the cap iron, as shown in **Figure 7**. Grinding anything more than a micro-bevel is unnecessary, as the chip contacts the cap iron at its leading edge. Also, shortening the cap iron more than 0.050" will consume all of the adjuster range, causing the adjuster knob to bottom out against the heel of the blade.*

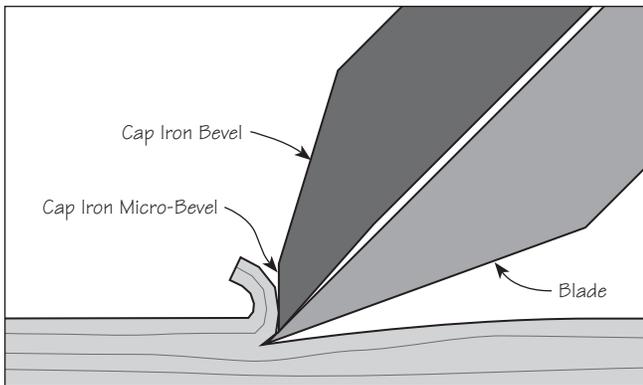


Figure 7: Using a cap iron with a micro-bevel.

How to Make Fine Shavings

The quality of the shavings is determined by the blade projection, the blade skew and the mouth opening.

Adjusting the Blade Projection and Blade Skew

With the plane assembled, but the blade not cutting, loosen the lever cap knob. Place the plane on a board and slowly advance the blade by turning the adjuster knob clockwise (when viewed from the rear; see **Figure 8**), and take a test cut. To retract the blade, turn the knob counterclockwise farther than required (to take up any slack in the adjuster), and then advance the blade to the new projection.

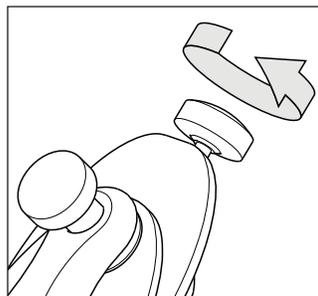


Figure 8: Adjusting the blade projection.

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 adjuster knob (left or right) in the direction in which the shaving is thickest.

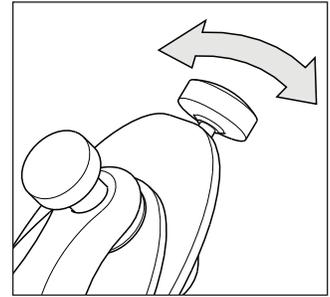


Figure 9: Adjusting the blade skew.

Close the mouth until it is approximately $\frac{1}{32}$ " (0.8mm) wide. Continue to advance the blade until it is taking shavings as required by the work.

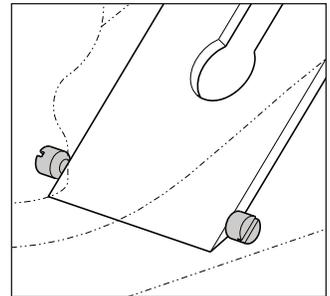


Figure 10: Blade locating set screws.

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.

Blade Clamping

Clamp the blade into position with the lever cap knob.

Caution: 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.*

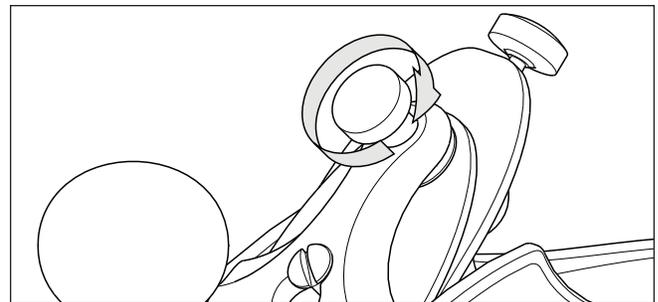


Figure 11: Clamping the blade.

Mouth Adjustment

The movable toe enables you to quickly and accurately 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 toe locking 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.

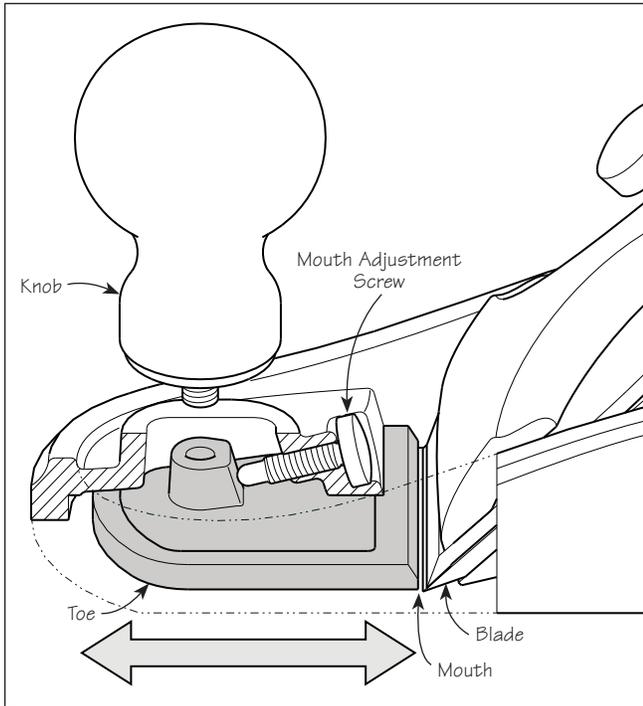


Figure 12: Mouth adjustment.

Fence Mounting Holes

A fence is effective for planing accurate and consistent square or bevelled edges on a board. There are integral holes tapped in either side of the body of the plane so you can mount a fence (not included) to better register the plane to the workpiece. Simply make a wooden fence, as plain or as fancy as you wish, and attach it to the plane using #10-32 machine screws. These holes are spaced 4 1/2" (114mm) center to center to match the holes in the plane fences available from Veritas.

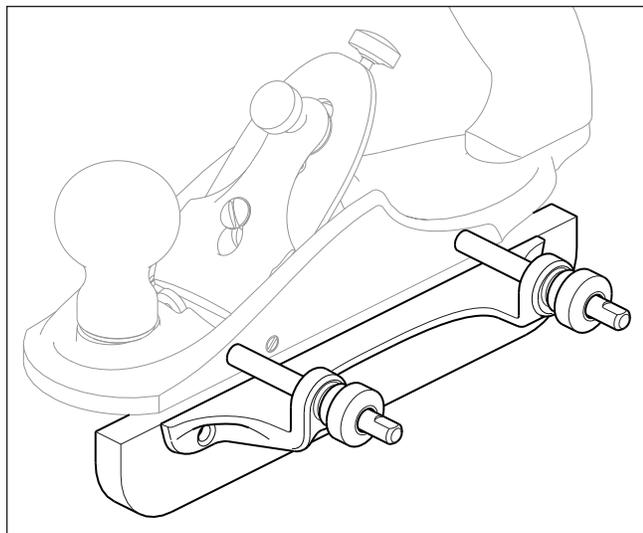


Figure 13: Mounted fence (not included).

Frog

The frog provides the bed for the plane's blade and determines its cutting angle. Every now and then, you may want to remove the frog for cleaning or, at some point in time, replace it with another frog that provides a different cutting angle.

To remove the frog, loosen the lever cap knob, then remove the lever cap and the blade. (The blade carrier does not need to be removed from the blade.) Also remove the oval-head screw from the frog.

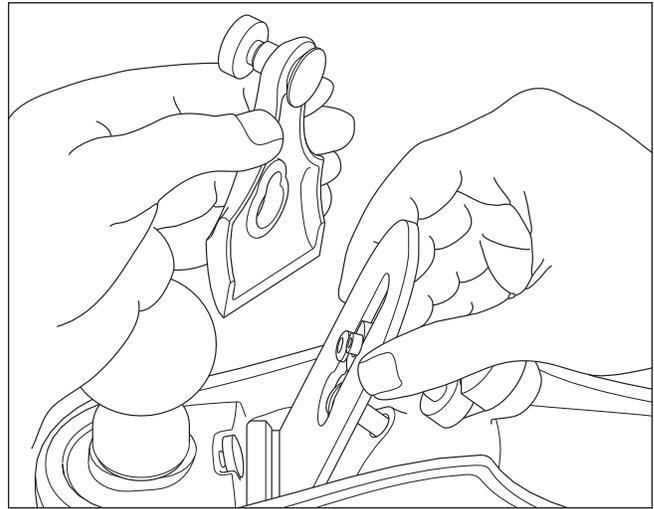


Figure 14: Removing the lever cap and blade. (Cap iron not shown.)

Using the hex key, loosen then remove both of the cap screws holding the frog to the body. Lift the frog/adjuster assembly out of the body.

To release the adjuster, turn it 90° to the frog, then press the button on the underside of the adjuster (see Figure 15). Hold the adjuster by the pivot to take it out; avoid pulling on the shaft of the adjuster, as this could bend it.

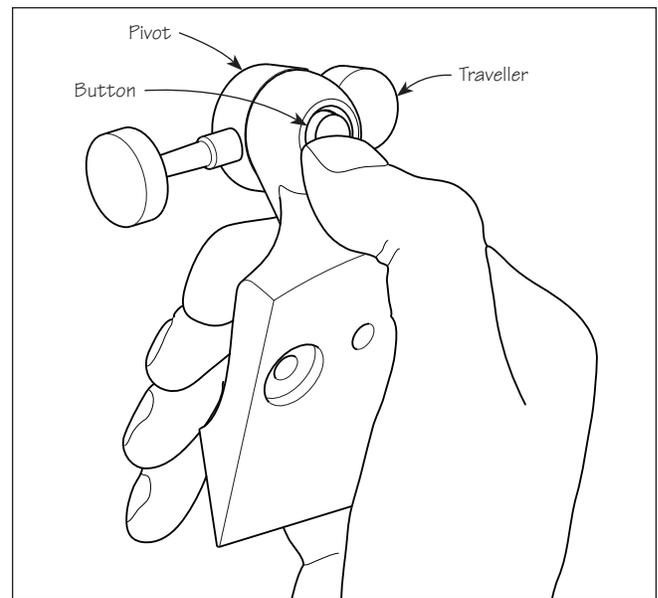


Figure 15: Pressing out the adjuster.

To put the pieces back together again, press the post on the adjuster into the hole in the frog, making sure the pin on the traveller faces out. Place the frog and adjuster assembly into the body of the plane, and install the two cap screws but **do not** tighten them.

Retract the mouth adjustment screw until about 1/2" (13mm) of thread is visible.

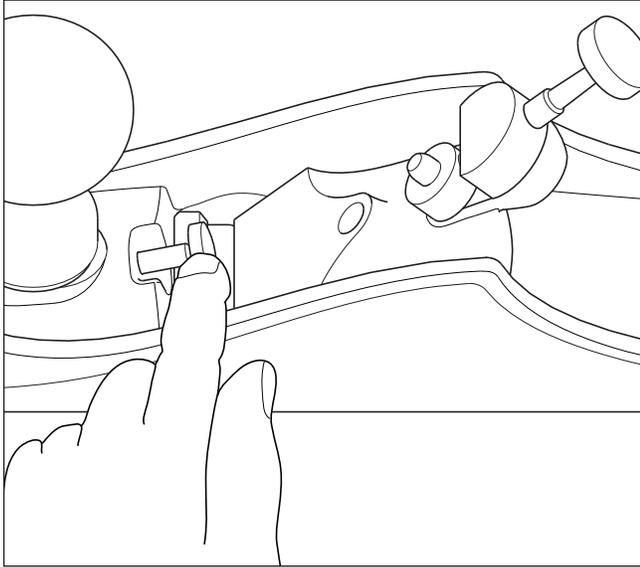


Figure 16: Retracting the mouth adjustment screw.

Loosen the toe locking knob. Slide the toe into the frog as far as it will go. (This will, in turn, push the frog back slightly.) Lock the toe in this position.

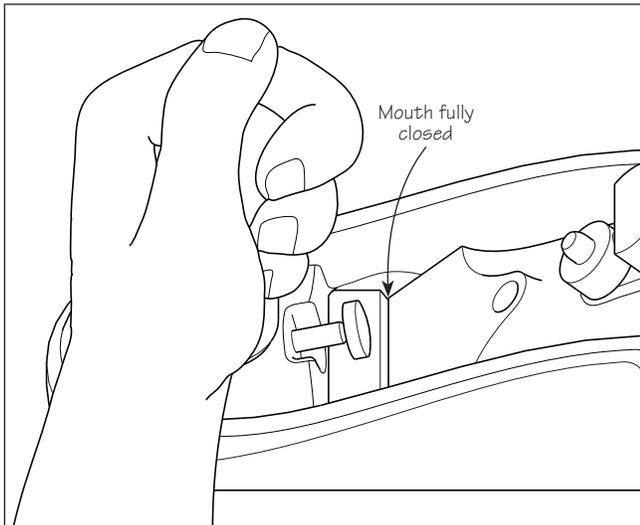


Figure 17: Sliding the toe into the frog.

While pressing the frog against the toe, first tighten the right cap screw (see **Figure 18**), then the left cap screw. (This sequence will prevent the frog from skewing as the cap screws are tightened.)

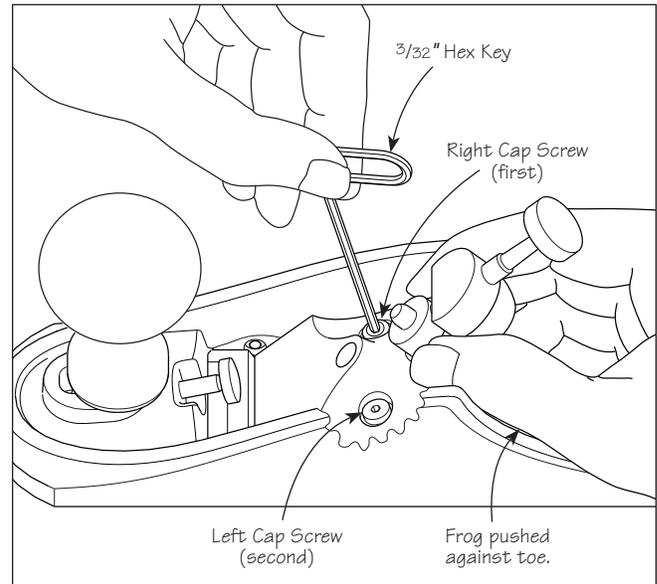


Figure 18: Locking the frog.

Open the mouth, then thread the mouth adjustment screw back into the body of the plane until it bottoms out. Reinstall the oval-head screw, the blade and the lever cap.

Care and Maintenance

The body of your Veritas plane is ductile cast iron and comes treated with rust preventative. Remove this using a rag dampened with mineral spirits.

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.

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.

The maple knob and tote have a buffed wax finish and should require nothing more than a wipe with a clean cloth from time to time. If desired, you can apply a light coat of silicone-free paste wax to rejuvenate the finish.

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