

Joinery & Planemaker's Floats

These floats have evolved from years of wooden plane making experience at Clark & Williams.

General Usage Information:

Floats, like files, work best with controlled light pressure. Good control and efficient material removal with floats is a matter of touch. With very light pressure floats become excellent finishing tools removing small amounts of material. A little more pressure and they cut aggressively but too much pressure will cause difficulty – let them do the work. The first tooth on your floats is the most important. It leads the cut establishing where the other teeth will follow. With a slight upward tilt, the first tooth can act as a scraper capable of heavy stock removal. The most aggressive cutting can be done with the first tooth alone. These floats come sharp enough for use but sharpening will improve performance. The oxidized black coating will make initial sharpening easier because it will allow you to get a feel for how much filing is necessary and how to control the file. See the sharpening instructions for more information.

The Floats and Their Uses:

Edge floats: These are one of the two basic plane making floats, available in 3/16" and 1/8" thicknesses. Both are used to open and size molding plane wedge mortises, 1/8" for the narrowest wedges and 3/16" for the majority of thicker wedges. The 1/8" edge float also serves as a mouth and abutment saw in making bench planes and can work from the sole through the mouth of bench and molding planes. They're great for working into escapement corners.

Side floats: The second of the basic plane making floats. These work the sides of wedge mortises to open them from the initial sinking. They make easy work of the lower blind side of the escapement on molding planes. Widening of wedge gains behind abutments in bench planes is another job for these useful floats.

Bed floats: A critical feature of bench planes is the bedding or fitting of the iron to the bed of the plane. Bed floats make this task easier. The 1/8" bed float is best for this and rapid stock removal. With a slight upward tilt, the first tooth can act as a scraper capable of heavy stock removal. Bed floats also make excellent general trimming and fitting tools for all kinds of woodworking tasks. For trimming, final surfacing of plane chamfers and other general work the more rigid 3/16" thick float is a good choice.

Small cheek floats: While it is easy to plane wedges to fit mortises, it's better to use a uniform wedge sizing system in molding planes. This will result in a more professional looking set of planes as the plane maker accumulates more finished planes. Cheek floats allow easy sizing of the mortise to match the standardized wedges. Cheek floats working through the mouth of molding planes to clean the breast and bed the iron. These versatile floats are useful for fitting bench plane abutments to wedges and final clean-up of bench plane escapements. A plane maker will quickly appreciate the advantage of having the teeth configured for both push and pull work. Don't miss their capabilities in general mortise and tenon work.

Sharpening:

Your floats arrive sharp enough to use but sharpening will improve performance. We suggest a six inch double extra slim taper file for sharpening. These come very close to fitting the gullets which serve as guides to maintain the cutting geometry. Start with light pressure on the file and very quickly the proper pressure for a good cut will become evident.

Initial sharpening: The black oxide coating of the floats is an aid in the initial sharpening. Simply file away the black coating to shiny metal for the first sharpening. Use care to apply a slight even pressure on the file to maintain the cutting geometry. On wider sections you may notice some very slight distortion showing as slightly low spots on the faces of the teeth. This is normal and is the

result of volumetric changes and stresses of heat treating. It's not necessary to remove the hollow, establishing a good cutting edge on the teeth is the goal.

Sharpening floats: It is helpful to make a sharpening jig similar to what is shown *jointing float teeth*. A shallow one inch wide rabbet in a board will do. The back wall of the rabbet needs to set below the gullets of the teeth to allow clearance for the file.

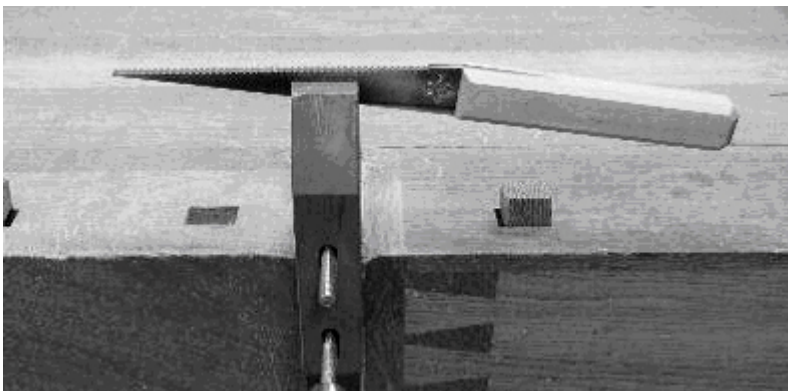
Sharpening floats is much like sharpening hand saws, jointing is necessary after the first few sharpenings to maintain even tooth height. Perhaps the quickest way to joint teeth is draw filing with a single cut mill bastard file. Sizes from six inch to ten inch are suitable. Hold the file at a right angle to the float's edge and lightly push the file forward. All that's needed is create the slightest flat on each tooth which brings them to the same level



Jointing float teeth.

After jointing, mark the created flats of the teeth with machinist's layout fluid or a felt tip pen. For visibility, red Dykem brush-on layout fluid is our preferred coating. Remnants of the fluid cleans up easily and safely with alcohol. Layout fluid is also necessary for making profiled plane irons. The first stroke or so with the file will remove the marking from the face of a tooth leaving a visible marked flat. The goal is to just barely file away the marked flat on each tooth. Keep in mind you are filing the face of one tooth and the gullet of the next at the same time. Experience will tell you how much flat to leave before moving to the next tooth. Go carefully for the first few teeth.

Edge floats can easily be held in a hand screw clamped in a bench vise. Like other bench tasks, it's easier to control results if the work is held plumb and level or parallel to the bench top. It is advisable to move the float in the hand screw to be supported close to the area being sharpened. This limits vibration, offers better control, helps the file do its job and limits noise.



An edge float held for jointing.

The first tooth: The first tooth of a float is important, it sets the cutting tone of the following teeth. The end of the float should be sharpened at 80° to the face of the float. This matches the rest of the teeth and allows the first tooth to be used as a scraper. Obviously this doesn't apply to escapement floats or floats which cut on a pull stroke. Maintaining the first tooth of a bed float can, over time, lower it compared to the other teeth. It is easier, faster and advisable to grind that tooth off than to lower the faces of the rest of the teeth.