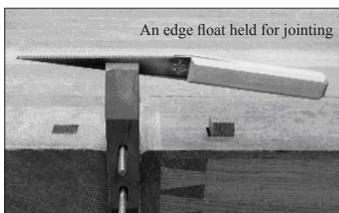


After jointing, mark the created flats of the teeth with machinist's layout fluid or a felt tip pen. For visibility, red Dykem brush-on layout fluid is our preferred coating. Remnants of the fluid clean up easily and safely with alcohol. The first stroke or so with the file will remove the marking from the face of a tooth leaving a visible bright flat. The goal is to 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 so it is supported close to the area being sharpened. This limits vibration, offers better control, helps the file do its job and limits noise.



**The first tooth:** 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. 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 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.



**WARNING:** This product can expose you to lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov). Wash hands after handling.

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## Floats

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

### JOINERY FLOATS

**Cheek Floats** are available in push or pull. These are ideal for working recessed areas like mortise cheeks. Large Cheek Floats are 1" (2.54cm) wide at their widest taper to allow seeing past the handle when working corners.

**Face Floats** are available in push and pull. They're 1" (2.54cm) wide and designed for accurately trimming tenons, tongues or other such surfaces. The cranked-neck design gives good access to recessed surfaces.

**Mortise Floats** come in five sizes: 1/2" (1.27cm), 3/8" (9.52mm), 5/16" (7.93mm), 1/4" (6.35mm) and 1/8" (3.17mm). They're excellent for squaring up mortise ends, fitting wedges in tusk tenons and other trimming jobs. All have 1/4" (6.35mm) thick bodies.

### PLANEMAKER'S FLOATS

**Bed Floats** are used for fitting the iron to the bed of the plane. The 1/8" (3.17mm) is best for this; the 3/16" (4.7mm) is great for trimming and final surfacing of chamfers and other woodworking tasks. 1" wide.

**Edge Floats** are used to open and size molding plane wedge mortises: 1/8" (3.17mm) for the narrowest wedges and 3/16" (4.7mm) for the 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 the planes.

**Side Floats** work the sides of wedge mortises to open them from the initial sinking. 1/8" (3.17mm) thick. 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.

Lie-Nielsen  
**TOOLWORKS**<sup>®</sup>  
INC.

*Heirloom Quality Tools*<sup>®</sup>

## Floats

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*Made in Maine, USA, since 1981*

**Small Cheek Floats** allow easy sizing of the mortise to match standardized wedges, and are useful for a number of other fitting and clean-up jobs. Cheek Floats are used for working through the mouth of the molding planes to clean the breast and bed the iron. 1/8" (3.17mm) thick.

### SHARPENING

Your floats arrive sharp. Additional sharpening will improve performance; like saws, they will require sharpening after some use. 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 which appears 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 in the photo labeled *jointing float teeth*. A shallow 1" (2.54cm) wide rabbet in a board will do. The back wall of the rabbet needs to sit 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. Joint teeth by draw filing with a 6"-10" single cut mill bastard file. Hold the file at a right angle to the float's edge and lightly push the file forward. All that's needed is to create the slightest flat on each tooth, which brings them to the same level.