



# Tuning a Japanese Plane

## Fitting the Blade

The craft of woodworking, regardless of the culture it has developed in, universally relies upon the relationship between timber and steel and how the craftsman manages it. Owning and tuning a Japanese plane is a wonderful way of learning about this relationship, whether the user be new to the craft or a woodworker of experience.

Japanese planes are fundamentally a metal blade held in a specific and controllable position within a wooden body. The body of the plane introduces the blade to the worksurface in such a way as to produce a smooth and uniform finish. Every Japanese plane needs to be tuned for initial use, and sometimes re-tuned to account for changes in environment. This not a defect in the plane but an integral part of its character.

To get the best results from your plane, the blade will need to be prepared and sharpened - see our other guides for these steps. This guide will focus exclusively on seating the blade correctly for use inside the wooden body (dai) of the plane.

While Japanese planes can also be used with their soles configured in several different ways, or with or without the chipbreaker, the blade needs to be positioned in such a way as to take fine shavings while retaining adjustability.

The aim of this guide is to help the user to seat the blade such that five firm hammer taps will position it very close to its final working position - protruding a fraction of a millimetre from the mouth of the plane - while allowing the craftsman to make fine adjustments by lightly tapping the blade or the body of the plane to tune the depth of cut during work.

### Tools Needed:

- A small hammer or mallet for gently tapping the blade or the plane body while adjusting the blade. A crowned striking face will remove the likelihood of damage to the wooden body, along with using only gentle, repeated taps.
- A fine tool for paring the sides of the plane that may constrict the blade. A small 3mm chisel or fine file are ideal
- A lead pencil
- A way of paring away timber in small increments from below the back of the blade. Either a flat file or a sharp chisel of about 12-18mm will both work well.

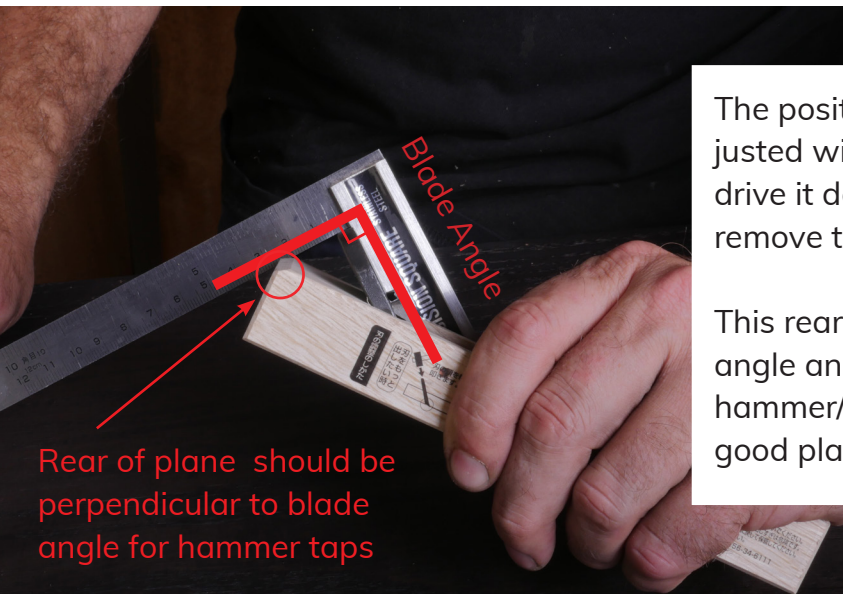
Before we begin, a note on the plane's sole. Most of the planes that JTA sells ship with the sole configured for use as a smoothing plane. That means that the very front of the plane (Point B in the picture on the right) and the area immediately in front of the blade (Point A) are in the same plane, and the highest areas of the sole.

Between these two points is an area of relief that does not touch the work surface. The same applies for the area behind the blade.



The position of the blade in the plane body is adjusted with mallet taps - on the head of the blade to drive it deeper, or on the rear of the plane body to remove the blade.

This rear edge should be perpendicular to the blade angle and large enough to distribute the force of the hammer/mallet without taking damage. This is a good place to begin the tuning process.

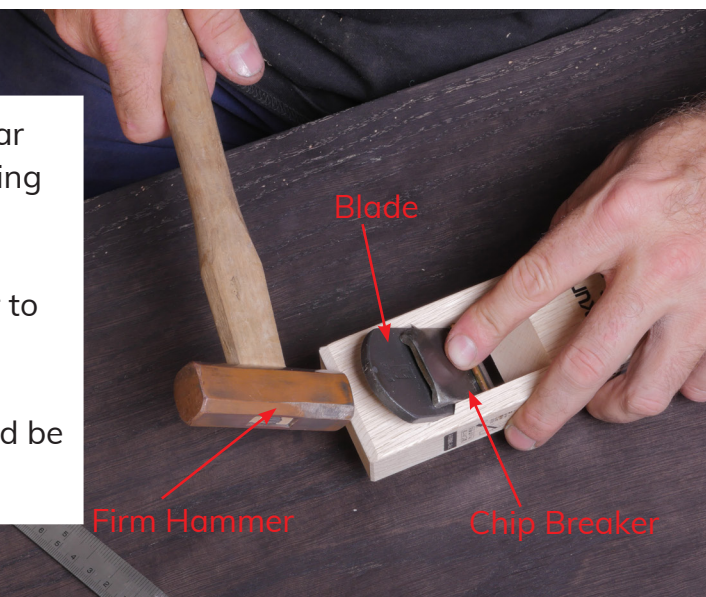


Rear of plane should be perpendicular to blade angle for hammer taps

Remove the blade and chipbreaker by tapping the rear edge of the plane with your chosen hammer (something light is best - framing hammers are unnecessary).

Hold the blade and chipbreaker in place with a finger to prevent them from jumping out of place.

After a few firm taps they should be worked loose and be easily removable from the plane body.

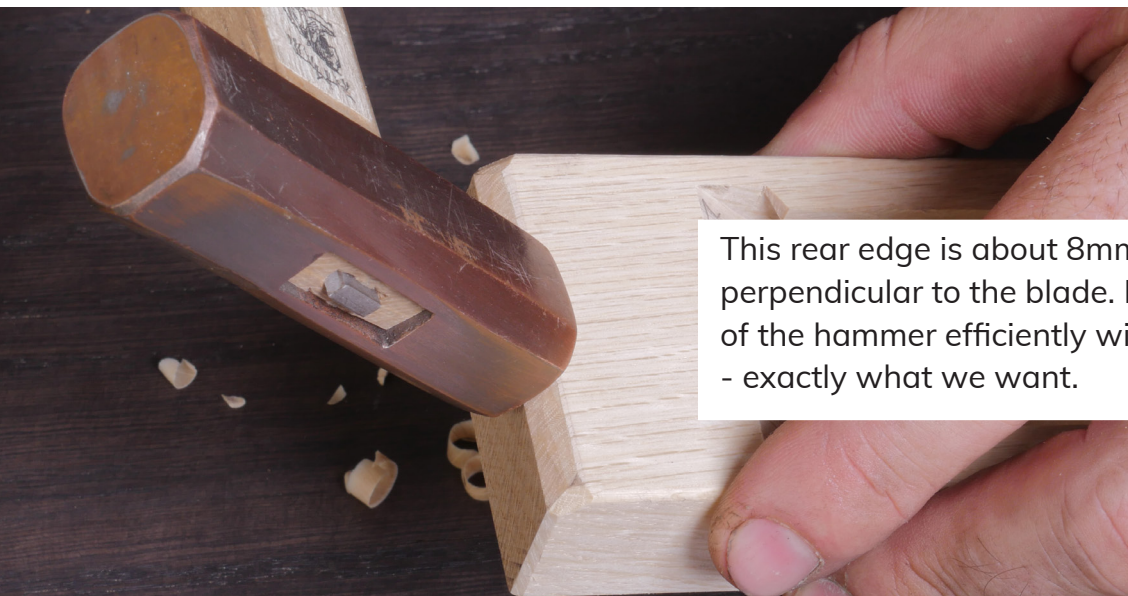




Pare away the rear edge to adjust its angle and width. There is no hard and fast rule here - keep the width between 5 and 10mm, and bring the angle to as close to 90° to the blade angle as you can.



Once the rear edge is adjusted to your liking, pare some material off each corner to protect them from stray mallet taps or other misadventures.



This rear edge is about 8mm wide and close to perpendicular to the blade. It will transfer the force of the hammer efficiently without suffering damage - exactly what we want.





At this point, the new plane's blade is reinserted with five firm taps to establish where it is seated. This plane's blade is about 2mm short of protruding. We are aiming for the blade to protrude enough that it can just be felt with a careful thumb, but will still be hard to see when sighting down the plane.

It is worthwhile checking every plane individually. Tolerances can vary manufacturer to manufacturer, but we have seen blades as far as 5mm from the mouth and some that arrive almost ready to work. These tolerances are remediable.



Remove the blade with firm taps to the rear of the plane on your tuned bevel. Note that a finger remains on the blade to prevent it from jumping out.



Use a pencil to cover the beveled side of the blade with graphite. This is the side that will be inserted down. We recommend covering as much of the surface of the blade as possible.





Reinsert the graphite-covered blade with five firm taps.

Once the blade has been seated, check that it is still not protruding from the mouth and remove it once more.

The graphite applied to the blade has now transferred to the timber of the dai (plane body). The graphite has rubbed on the high points where the blade and body are squeezing each other.

These high points will need to be removed systematically to reduce the friction on the blade and move it towards the mouth.



Pare away the topmost graphite-coloured material with a chisel or file. Work systematically, taking small slices at a time. Remove a small section, reseat the blade, check its progress, and if it is not yet seated at the mouth, remove the blade again and continue the paring process.



The tuning can also be done with a flat file using the exact same principle - remove the graphite-covered section of timber, reseal the blade, check its position, and if necessary, repeat these steps until it settles to a position where it can be finely adjusted with gentle taps to bring it in or out of the mouth.



## Squaring the Blade



A possible issue at this stage is that the blade does not seat square to the mouth. This will prevent optimal performance.

This has two possible causes - one is that more material has been removed underneath one side of the blade, and the “high” side of the blade is being detained. Add more pencil to the blade, reseal, and if the new marked areas are noticeably to one side or another, this may be the cause. Gently pare these back and check to see if the blade is now seating square.

Alternatively, the sides of the blade may be fouling in the block, and this can be fixed.

This blade is not seating square. Note that on the left there is no gap between blade and body, but on the right there is a fair gap.

Paring (as described above) on the left side only may allow that side of the blade to drop evenly. If, however, the paring has been carried out evenly, the side channel that holds the blade will need to be relieved.



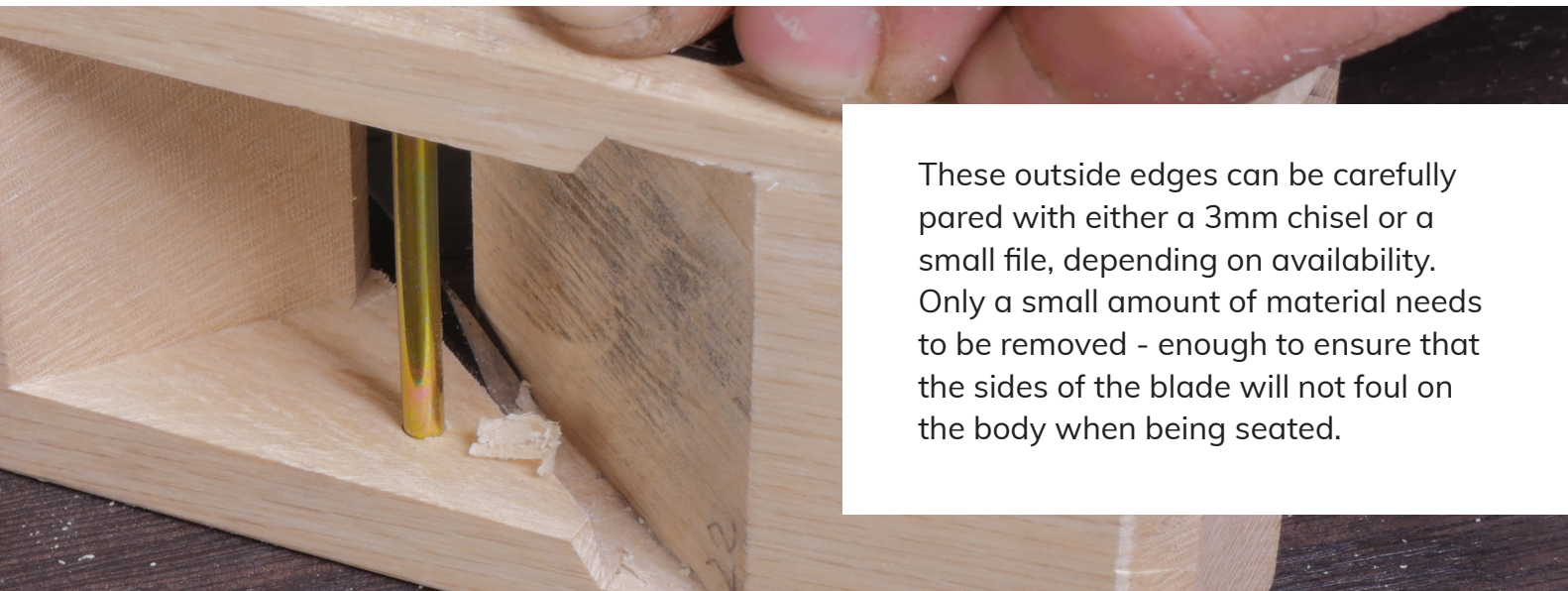
Japanese planes hold their wedge-shaped blades in specially shaped rebates. Only the the surface that we previously worked on holds the blade - the very outside edges will ideally allow a very small space between themselves and the plade.

Ideally, when held up to a bright light, light should be visible on either side of the blade through a 0.5mm (extremely small) gap.



This edge of the channel should never be touched.

Light should be visible here when held to a light source on both sides of the plane.



These outside edges can be carefully pared with either a 3mm chisel or a small file, depending on availability. Only a small amount of material needs to be removed - enough to ensure that the sides of the blade will not foul on the body when being seated.



Work from either side of the opening to ensure an even surface.

Take small cuts at a time and re-seat the blade regularly to test the fit.

