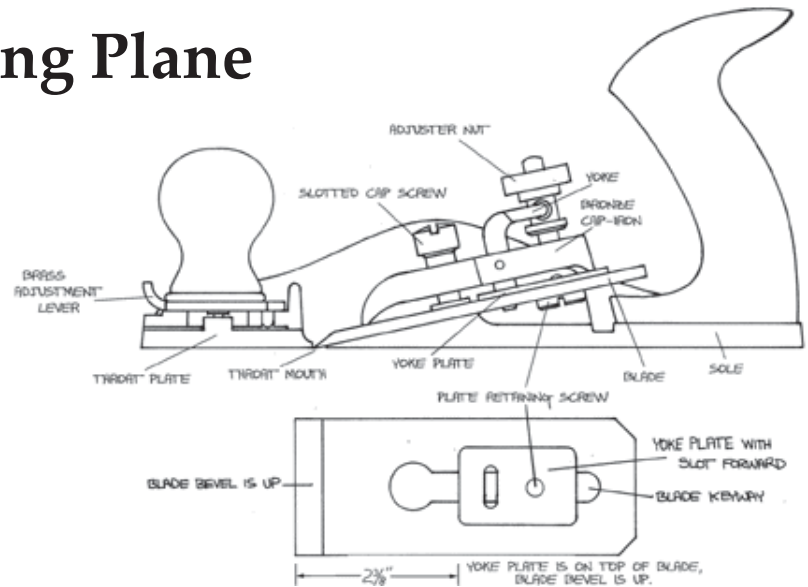


# Lie-Nielsen Toolworks Product - Use and Care Instructions

## Low Angle Smoothing Plane

The Low Angle Smoothing Plane is a shorter version of our Low Angle Jack. These are two of the three large-format low angle block planes that Stanley made. This tool was only made from 1926 to 1943\*, which may account for the extraordinary high prices that it commands on the antique market. This tool has an adjustable mouth, and a unique overhead Bailey adjuster for depth of cut.



It is useful in a wide variety of jobs from rough work to smoothing, and can be easily converted from one type of work to another. The best finishes will be obtained with a very sharp blade set to take a fine cut, and the mouth opening no larger than necessary to pass the chip. When you want to cut more aggressively, open the mouth more and advance the blade for a deeper cut. For best results on end grain, set the blade and mouth fine.

**Geometry:** The blade sits in the body at 12°. It comes with a 25° flat ground bevel, making the included cutting angle 37°.

**Blade Sharpening:** The blade comes ready to use. Slight additional honing will increase performance. We often recommend a secondary bevel of 1° or 2°. This is most easily accomplished with a good honing guide, and it will improve performance, especially in hard woods. Further modifications of the bevel angles can be made to suit your style and the work.

**Mouth Adjustment:** Hold the tool in one hand and loosen the front knob about 1/4 turn. Adjust with the brass lever. Tighten the knob again firmly, but do not over tighten.

**Blade Adjustment:** The blade is easily adjusted with the adjuster nut over the cap iron. This unique arrangement provides silky smooth adjustment. Turn the screw clockwise to advance and counter clockwise to retract the blade. You do not need to loosen the cap screw to do this. Make sure the mouth is adequately open before advancing the blade to avoid damaging your edge. When adjusting the blade, it is a good idea always to finish on a forward adjustment. This takes up backlash in the adjuster mechanism and will help prevent the blade slipping in use.

**Lateral Adjustment:** Like our Low Angle Jack, the Low Angle Smoother intentionally has very little lateral adjustment of the blade. This is an advantage. As you adjust the blade it will track squarely with the sole. The disadvantage is that you must sharpen the blade square. Today there are many good jigs on the market that make this easy to do. If you find that you don't like this feature, you can grind the blade narrower to give more lateral play.

# Lie-Nielsen Toolworks Product - Use and Care Instructions

**Setting the Yoke Plate:** The overhead yoke engages the slotted plate screwed to the blade. The front of this plate needs to be about 2 3/8" from the cutting edge, with the slot toward the front of the blade. You can make a small jig with scraps of wood to set this distance. Tighten the plate retaining screw very firmly to adjust the blade.

**To remove the cap:** Loosen the 9/16" slotted cap screw several turns. Lift the cap by the adjusting nut and slip the cap over the cap screw through the large hole. Reverse the process to replace, making sure the gear tooth yoke end fits into the slot in the blade adjustment plate. The tapered shoulder of the cap screw fits into the countersink in the cap. You should tighten this screw firmly.

**Handling the Tool:** You will probably find that, with a full grip around the handle, your little finger will not have much room. The 164 is very short for a handled tool (this is the reason for the overhead adjuster), and to get a maximum of usable blade, some finger room is sacrificed. This will improve as the blade is sharpened. Meanwhile, grip high or with three fingers the little one pointing forward or the index finger curled around the adjuster screw.

**Materials:** The body is cast from Ductile Iron, a very strong alloy that will take a lot of abuse. These castings are fully stress-relieved, a process that removes inherent stresses and ensures that the tool will remain flat and true. The cap is Manganese Bronze. Other parts are Brass and Steel.

The blade is 3/16" thick A-2 Tool Steel hardened to Rockwell 60-62 cryogenically treated and double tempered. Our heat treating technique ensures that the blade will take and hold a very fine edge. After heat treating, the blade is fully surface ground on the top, back, and cutting edge for a long time, giving a smooth, flat surface that will take a mirror finish very quickly. The thick blade provides solid chatter-free cutting.

**Maintenance:** The sole is ground flat to .0015" or less. Occasional hand lapping with fine wet/dry sandpaper (320 grit or higher) on a flat surface like a glass plate will help remove dings and keep it true. The cap iron can be polished with any good brass polish, or allowed to patina with age and use. Occasionally, the tool should be disassembled, cleaned, and moving parts oiled. The blade should be kept lightly oiled to prevent rust, especially when the tool is not in use. Waxing the body will help protect it from rust. In our shop, we use a fine abrasive handblock to remove light surface oxide from body or blade. The abrasive handblock is available from us.

\*Alvin Sellins, *The Stanley Plane*, The Early American Industries Association, 1975