

- Never leave the thickness planer running unattended. When you're finished planing, turn off and unplug the planer.
- Don't lean on the planer, whether it's running or not. And never stand on the planer or use it as a step stool. You could harm yourself and your planer.
- Never use your planer as a storage shelf. Small tools, screws, and nails could roll under the shields. When the planer is turned on, these objects could be thrown out, severely damaging the machine-or injuring you.
- Make sure the machine rests firmly on the floor-not up on its retractable casters.
- Use only Shopsmith Planer Knives; other brands of knives are not wedge-shaped and will not seat properly in the cutterhead.
- Do not attempt to disassemble or repair the control box.

SETTING THE THICKNESS

Turn the thickness adjustment crank counter-clockwise to lower the table and accommodate thicker stock. Turn the crank clockwise to raise the table and decrease the final thickness of the planed lumber (Figure 21-3).

Always make this adjustment from a greater to a lesser thickness. For instance, if you want to plane a board 3/4" thick, first lower the table so that it goes down past the 3/4" mark on the thickness scale at least one full turn of the crank. Then raise the table up to the mark. This maneuver takes up any slack in the thickness adjusting mechanism. If you don't set the thickness from greater to lesser, there's a chance the planer table may "drift" down slightly during the pass and you'll get a tapered board.

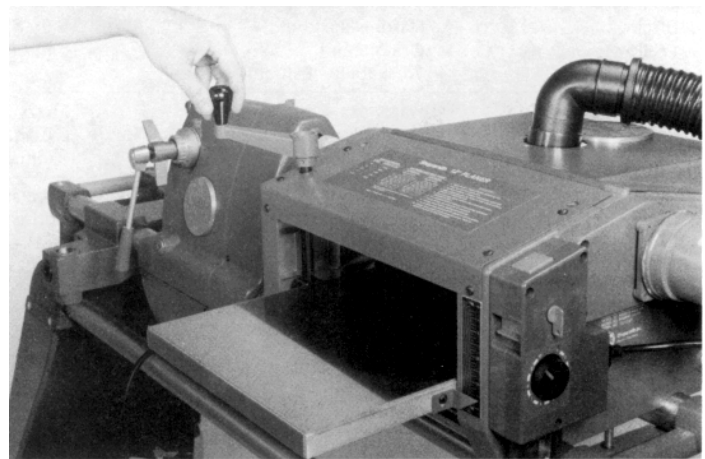


Figure 21-3. Always make thickness adjustments from a greater to a lesser thickness, turning the thickness adjustment crank clockwise and raising the table.

By adjusting the thickness, you also adjust the depth of cut-how much stock the planer removes from a board in a single pass. To remove 1/16" of stock from a 3/4" board, turn the thickness adjustment mechanism clockwise one full revolution. **Warning: Never turn the thickness adjustment mechanism while you are planing stock.**

THICKNESS PLANER SPEEDS AND FEED RATES

Before you begin any thickness planer operation, set the Mark V to run at the correct cutterhead speed and the feed motor to feed stock at the proper rate (Figure 21-4). For the most part, the right speed and feed rate depend on:

- the hardness of the wood
- the width of the board
- the depth of cut
- the sharpness of the knives.

The harder the wood, the wider the board, the deeper the cut, the duller the knives, the slower you want to set the cutterhead speed and feed rate. As you plane softer woods, narrower boards, or take shallower

cuts with sharp knives, you can use faster speeds and feed rates. To determine the correct speed and feed rate for an operation, first look up the hardness of the wood you're planing in Table 21-1. Measure the width of the widest board and decide the amount of stock you want to remove in each pass. Then look up the recommended feed rates in Table 21-2.

To a lesser extent, speed and feed rates also depend on the grain pattern of the stock. As the grain becomes more figured or "wild," or the more knots there are in the grain, the slower the speed and feed rates should be. If the planer "bogs down" during a cut, even though the cutterhead speed and the feed rate are set properly, immediately lower the feed rate to let the planer catch up. On the next pass, try a slower feed rate. If that doesn't work, try a shallower depth of cut, then a slower cutterhead speed—in that order. Do not continue to run the planer at a speed or feed rate that

causes the machine to labor or stop during a cut. Caution: If you operate the planer at too high of a speed, the motor that powers the cutterhead will overheat, blow fuses, and may burn out.

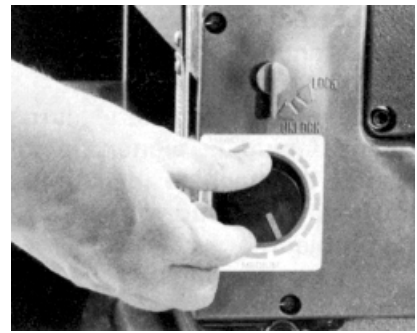


Figure 21-4. To increase the power feed rate, turn the feed control clockwise. To decrease the feed, turn the feed control counterclockwise.

Table 21-1: Wood Planing Guide

This guide contains information on a variety of common and exotic woods that will help take the guesswork out of your planing operations. To use it, first look up the wood you're about to plane in the **Wood Characteristics Chart**. Pay particular attention to the hardness rating—whether the wood is rated as hard, medium, or soft. Once you know the hardness of the wood, measure the width of the widest board you have to plane and decide the amount of stock you want to remove on each pass. Use the Speed and Feed Chart to determine the Mark V speed dial setting (Speed) and the planer feed control setting (Feed).

Wood Characteristics Chart

Wood	Characteristics	Planing Tips
Ash (White)	Hardness: Hard Grain: Distinct Workability: Difficult	Tends to chip when fed too fast or against the grain.
Basswood	Hardness: Soft Grain: Faint Workability: Fair	Pay attention to grain direction. Becomes fuzzy if you cut against grain.
Birch (Yellow)	Hardness: Hard Grain: Faint Workability: Difficult	Very difficult to plane because of curly grain pattern. Take very shallow cuts.
Butternut	Hardness: Soft Grain: Distinct Workability: Fair	Fuzzy, tough grain. Becomes fuzzier if you cut against grain. The grain direction may be inconsistent.

Table 21-1: Wood Planing Guide (Continued)

Wood Characteristics Chart

Wood	Characteristics	Planing Tips
Cedar (Aromatic Red or Western Brown)	Hardness: Soft Grain: Distinct Workability: Fair	Feed slowly to avoid chipping out knots. If you work with western brown cedar, wear a dust mask-sawdust may cause an allergic reaction.
Cherry (Wild)	Hardness: Hard Grain: Distinct Workability: Difficult	Tends to burn when planed at a high speed or slow feed rate.
Chestnut (Wormy)	Hardness: Soft Grain: Distinct Workability: Easy	Stock tends to be brittle. Chips out easily around knots.
Cocobolo	Hardness: Hard Grain: Distinct Workability: Difficult	Stock is very hard and brittle. Pay attention to grain direction to avoid chipping. Wear dust mask-sawdust is toxic!
Ebony	Hardness: Hard Grain: Faint Workability: Difficult	Stock is very hard. Limit depth of cut to 1/32". Difficult to tell grain direction. Stock is sometimes coated with wax to avoid checking. Remove wax with scraper before planing to avoid gumming up table and rollers. Wear dust mask-sawdust is toxic!
Elm (Rock)	Hardness: Hard Grain: Distinct Workability: Fair	Tough grain. Pay attention to grain direction. Chips badly if you cut against grain.
Fir (Douglas)	Hardness: Medium Grain: Distinct Workability: Difficult	Stock alternates between hard and soft. Pay attention to grain directions. Chips or feathers if you cut against grain.
Fruitwood (Apple, Pear, etc.)	Hardness: Hard Grain: Distinct Workability: Difficult	Tends to burn when fed too slowly. Tends to chip when fed too fast.
Hickory	Hardness: Hard Grain: Faint Workability: Difficult	Extremely hard, tough wood. Limit depth of cut to 1/32". Tends to burn when planed at high speed or slow feed rate.
Mahogany (Honduras)	Hardness: Medium Grain: Faint Workability: Easy	Grain direction may be inconsistent. Wear dust mask-sawdust may cause an allergic reaction.