

material left after the distorted areas are removed. It's a good rule to joint only good lumber.

JOINTING END GRAIN

End grain jointing is always difficult because you're jointing at the worst possible angle to the grain. For most projects, end jointing is not even necessary. But when you need to do it, follow these steps: Take very light cuts (1/32" or less) and feed the work as slowly as is practical. Check to be sure the jointer knives are sharp or they may burn the end grain during the cut. Joint the ends before jointing the edges so that any minor splintering will be removed. Splintering can also be reduced by jointing about 2" in from one side, then reversing the piece to complete the cut (Figure 6-10). You may also want to score the wood fibers at the very end of the cut with a chisel or utility knife before jointing.

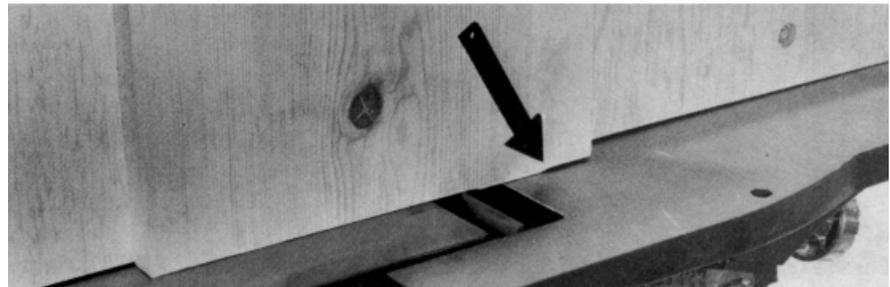
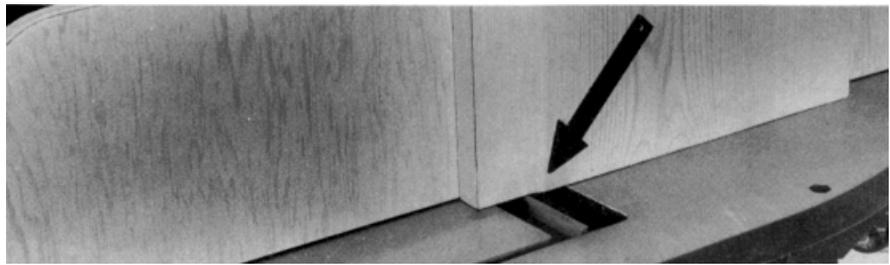


Figure 6-10. To reduce splintering, (A) make one pass to about this point; then (B) turn the stock end-for-end and make a second pass until it meets the first one which, here, is indicated by the arrow. Note: The guard is removed and the depth of cut is exaggerated for clarity.

JOINTING FOUR EDGES

When four edges of a piece of stock are to be jointed, the operation may be done as shown in Figure 6-11. The first and second cuts-across the grain-can be accomplished with single passes; the third and fourth cuts-with the grain-will remove the slight imperfections resulting from the first two cross-grain cuts.

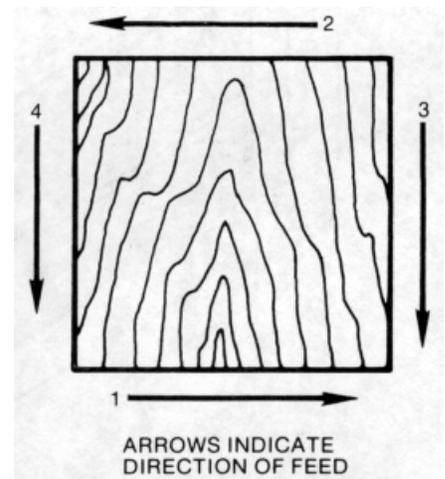


Figure 6-11. When all four edges of a piece of stock must be jointed, follow the pass sequence shown here. The final passes will remove the imperfections caused by cross-grain cutting.

SURFACING

Surfacing-jointing the face of a piece of stock-is usually done for one of three reasons: to smooth up a rough surface, to thin down a workpiece, or to remove a warp. Always use extra care when you surface because the top of the work is below the top of the fence and your hands are close to the danger zone. Warning: Always use a push stick or push blocks to move the stock over the cutterhead. Never try to surface a piece of stock less than 12" long or 1/4" thick. If you need a smaller component for a project, do your jointer work on a larger piece and cut off what you need.

The technique for handling and feeding the stock is similar to edge jointing. However, since the stock lies flat on the table below the top of the fence, always use a push stick or push blocks (Figure 6-12). They help you to maintain even pressure, give you better control over the stock, and help keep your hands out of the danger zone. As you get used to using a push stick and push blocks, you'll find they may actually



Figure 6-12. A push block will help maintain even pressure, give better control over the stock, and keep your hands out of the danger zone.

improve your woodworking. Since a push stick or a push block keeps your fingers safe, you feel more confident while making a cut. This confidence helps you achieve better control, and better control means a better cut.

If you are using push blocks with sponge rubber bottoms, you may want to modify the hand movements when cutting. Use your left hand to position the push block about midway along the infeed table and move the push block forward with the stock while maintaining downward pressure. As the push block starts to enter the danger zone, stop the feed, bring the left hand back to its starting point, and then continue. With a little practice, these short movements can be made without affecting the quality of the cut.

SQUARING STOCK

Figure 6-13 shows the sequence of cuts if a board must be squared on all six sides. First straighten one surface using the jointer, then plane the second surface parallel to the first using the planer. Then joint one edge to straighten it with the jointer depth set to remove no more than 1/16" per pass. Place the jointed edge against the table saw rip fence. Rip to width plus 1/16". With the jointer set to remove 1/16", joint the sawn edge. Crosscut one end. Remove just enough to square up the end. Measure to length and crosscut the other end.

SURFACING PROBLEM STOCK

Boards with defects such as cupping or wind must have special attention if they are to be surfaced safely and with a minimum loss of stock.

A cupped board is dished across its width as shown in Figure 6-14; its high points provide some bearing surface when the board is placed concave-side-down on the table (Figure 6-15). Keep the board as level as possible during the first pass; after that it will have a "flat" to provide bearing surface.

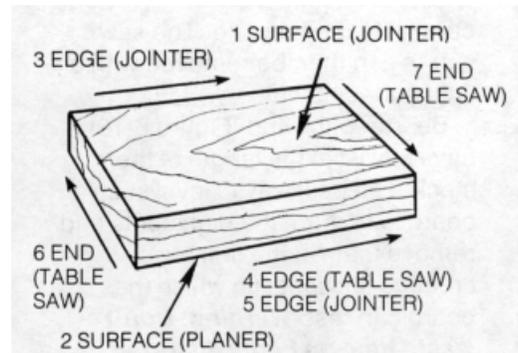


Figure 6-13. The seven steps and machines used to square up the six surfaces of a piece of stock.

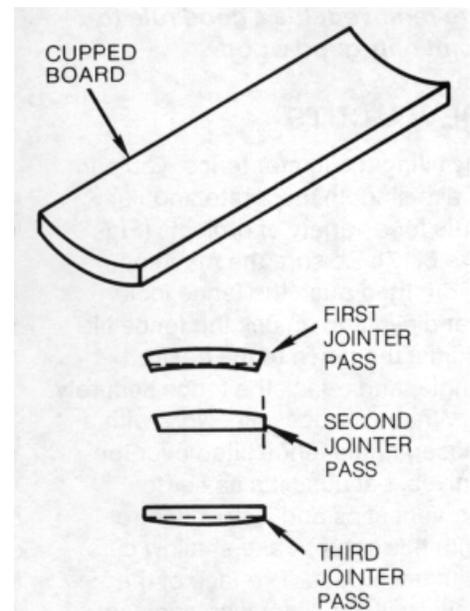


Figure 6-14. Cupped boards, if they are narrow enough and the cup is not extreme, can be jointed in this manner.

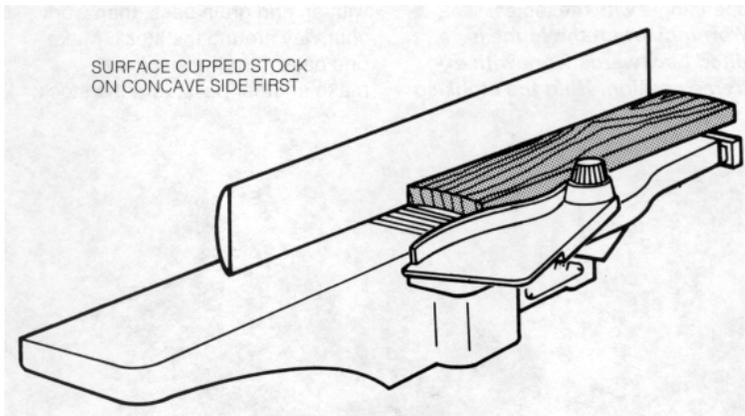


Figure 6-15. The high points provide some bearing surface when the cupped board is placed concave-side down on the table.

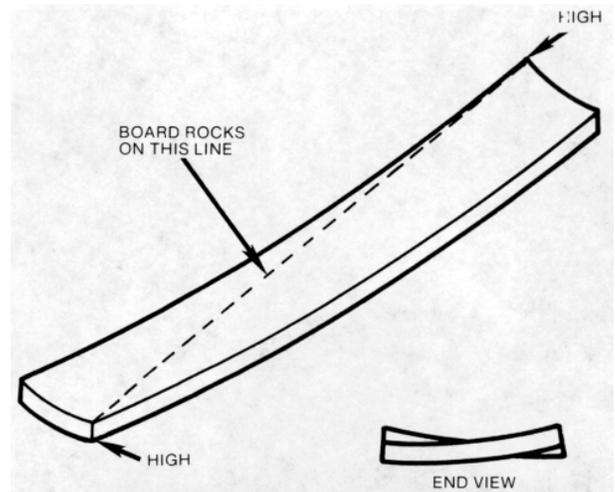


Figure 6-16. This type of distortion, called “wind,” is indicated by a twist in the length of the stock.

An optional procedure to use when the thickness of the stock permits is to resaw the stock after the jointer has established a flat surface for the rip fence. This will roughly surface the second side parallel to the first one. The saw marks can then be removed with a light surfacing cut.

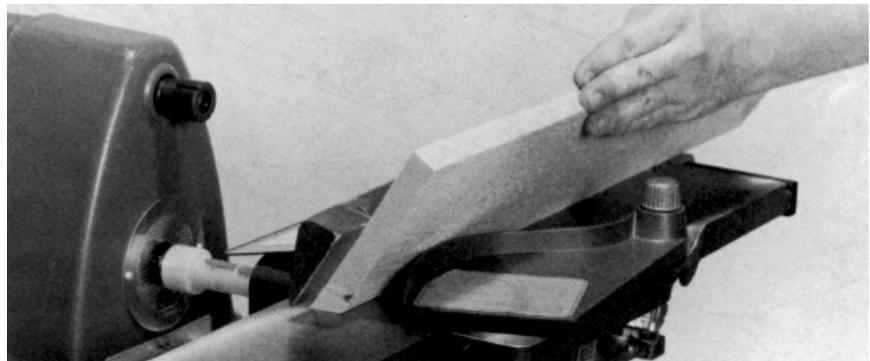


Figure 6-17. Bevels are formed with the fence tilted over the knives.

Boards with wind (Figure 6-16) have a twist in the length of the stock. The best way to level such a board is to mark the high spots and remove them in the first pass, creating flat spots on which the board can rest. **Warning:** Don't waste time on badly distorted material. It can be dangerous and you may not have much material left after the distorted areas are removed. It's a good rule to joint only good wood.

BEVEL CUTS

By tilting the jointer fence, you can make smooth, accurate angular cuts for a variety of projects (Figure 6-17). Be sure the machine is off; then push the fence lock handle in and unlock the fence tilt. Adjust the fence to the desired angle, and relock the fence securely.

Whenever possible, work with a closed angle fence tilted over the knives, because it's easier to prevent slips and loss of control with this setup. Take shallow cuts with each pass. The face of the bevel will get wider with each cut; eventually reaching across the edge. However, if the stock is thick, the fence may have to be tilted backwards so it forms an open angle with the tables. **Warning:** When the fence is tilted backwards work with extreme caution. Hold the stock so it won't slide out from under your hands. Use push blocks to move the stock.

CHAMFERS

A chamfer is a bevel cut that does not remove the entire edge of the stock. Accomplish it by setting the fence to the angle desired (as you would for a bevel cut) and then making the number of passes required