

## Cutting parts to size

HOW TO TURN ROUGH LUMBER INTO STRAIGHT, FLAT, SQUARE FURNITURE PARTS

BY STUART LIPP

**A**t my first job in a furniture shop, I spent most of my time cutting lumber to size. I learned quickly that to make beautiful furniture, you must mill carefully. Cut a board too narrow, for example, and you no longer have bookmatched panels wide enough for your doors. Mill a piece out of square, and you could throw a whole project off kilter.

The way to avoid mistakes, I discovered, was to follow a logical sequence, and stack my boards in an orderly fashion so that there was no question about how they should be fed into the waiting machines. To make things easier as I moved from one machine to another, I started using two carts, one for the infeed side and one for the outfeed side. If you don't have two carts, you can always use a counter or benchtop.

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**Get organized to avoid mistakes.** Inspect each board for grain direction, cupping, and bowing before you start milling, and keep them organized so you don't have to look at each one before feeding it into the next machine.

# 1. Flatten both faces first

Milling a board square starts at the jointer, where you flatten one face. Then you move to the planer and plane the second face parallel to the first.

Get your boards organized before you start. Stack them so that they can be taken off the cart and fed directly into the jointer, which means the grain runs from top to bottom as it goes from the front end of the board to the back. If any boards are cupped or bowed, stack them so that the cup or bow makes a frown. The two low ends will provide a more stable base than the

peak of the cup or bow. I also throw a scrap board on the stack so that I can test my machine setups as I work through the milling process.

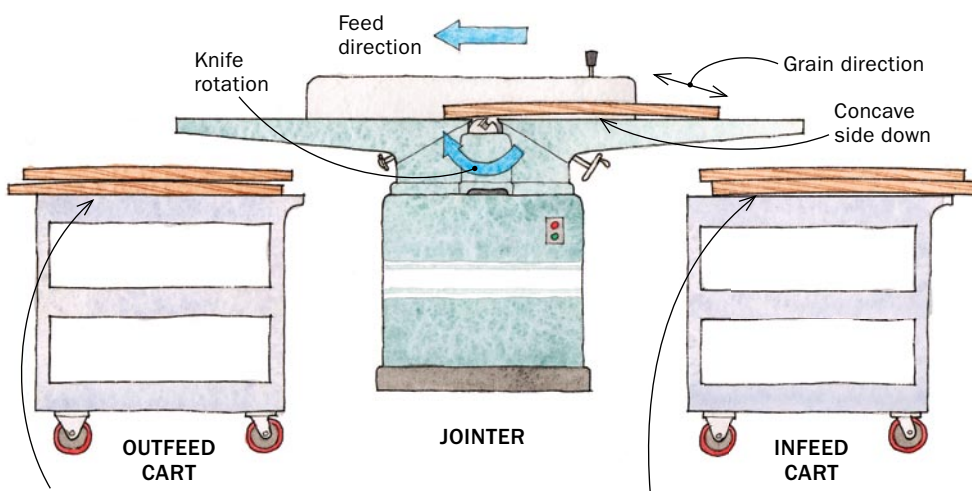
When planing, you can reduce snipe—the tendency of the planer to cut deeper at the front and back ends of the board—by feeding the boards through so that the leading end of one touches the trailing end of the one in front of it. Before the final pass, send the scrap piece through to check that the planer is set to the correct thickness.



**Faces, but no edges.** Lipp starts by flattening a face, but doesn't then straighten an edge. It's not always possible to feed edge grain into the jointer properly when only one face is jointed.

## JOINTER FLATTENS AND STRAIGHTENS FIRST FACE

Because the jointer's cutter is below the board, the grain should run from top to bottom. Feed a board backwards and the jointer will tear out grain rather than cut it cleanly.

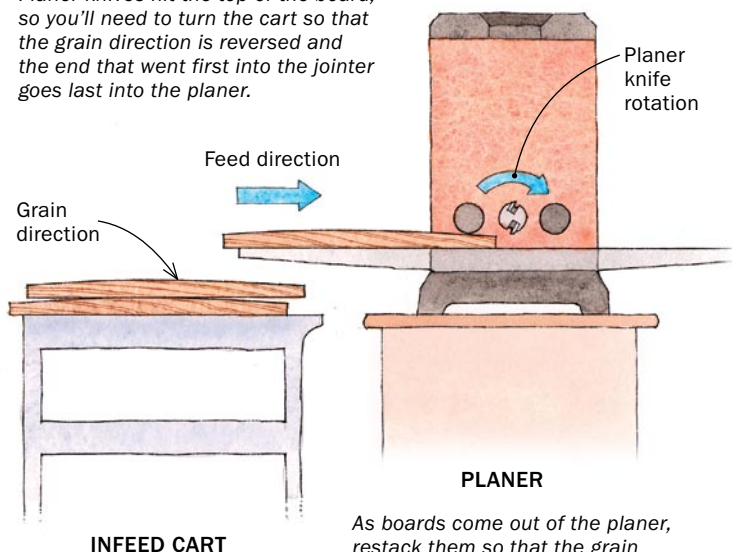


2. As you take boards off the jointer, stack them the same way they went in.

1. Stack the boards so you can take boards from the cart and feed them straight into the jointer.

## PLANER MAKES SECOND FACE PARALLEL TO FIRST

Planer knives hit the top of the board, so you'll need to turn the cart so that the grain direction is reversed and the end that went first into the jointer goes last into the planer.



As boards come out of the planer, restack them so that the grain runs in the same direction.



**Plane second face flat.** When the board is about 90% flat, begin to flip it end for end after each pass. That keeps the grain running in the right direction as you take equal amounts off each face, which relieves internal tensions evenly and minimizes how much the board will cup afterward.

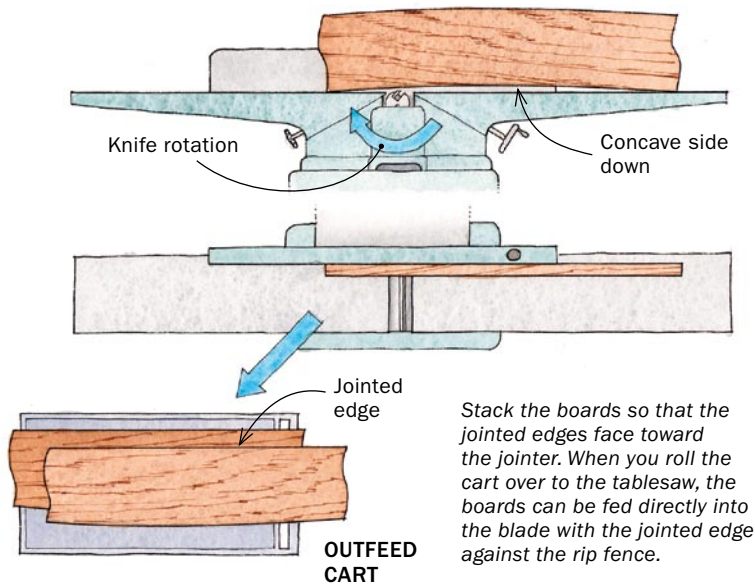
## 2. Rip wide parts to width before narrow ones

After the boards have been planed to thickness, joint one edge straight and then rip them to width. But don't joint any edges until you've checked to make sure the jointer's fence is 90° to its tables. When jointing the first edge, just like when jointing the first face, any crook in the board should face down.

At the tablesaw, use the scrap piece in the stack to check that the blade is square to the saw's table. Rip the widest parts first and work down to the narrowest—it's always better to accidentally cut a part too wide than too narrow. The jointed edge should run against the rip fence.

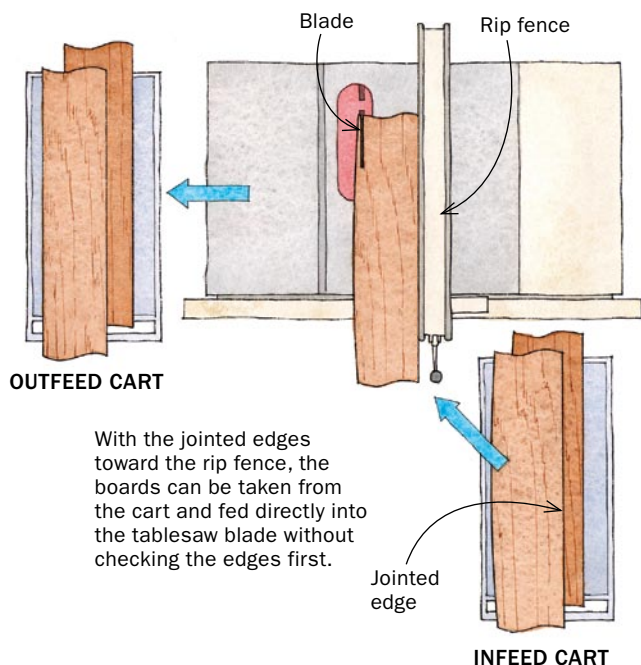
### JOINT AN EDGE STRAIGHT AND SQUARE

Flip the board as needed to run the grain past the knives in the right direction. Curved edges should face down, because the two ends of the curve provide greater stability than the hump on the other edge.



**Right edge, right direction.** Joint the concave side for stability. Both faces are flat and straight so you can flip the board either way to avoid tearout.

### GOOD EDGE GOES AGAINST THE FENCE



**Straight from cart to blade.** For safer ripping on the tablesaw, a board must have a straight edge to run against the fence. Also, use a push stick on narrow boards.

## 3. Finally, cut parts to length

Now it's time to cut the boards to final length. You can use either a miter gauge with an auxiliary fence attached, or a crosscut sled. In either case, use the piece of scrap first to check that the gauge or sled is cutting square. Make sure to locate the test cut an inch or two from the end. If both sides of the blade are not buried in the

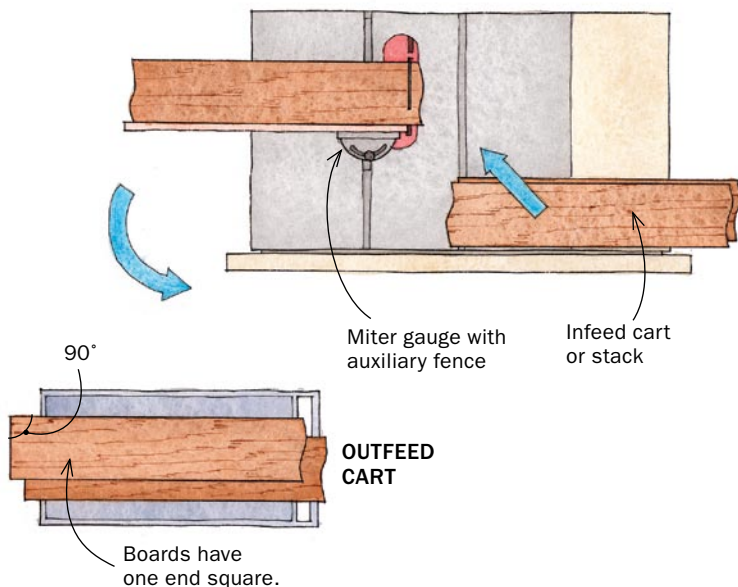
wood, the blade could deflect and lead you to think it's not cutting square when it is. Cut one end square on all of the boards. Then cut them to length, working from the longest parts to the shortest (it's easy to cut a piece shorter, but impossible to go back and cut it longer).

### SQUARE AN END



**Smart stacking.** Lipp saves time by stacking all of the pieces on the extension table. After cutting the boards to length, he stacks them on the outfeed cart.

Square the first end, flip the board end for end, and place it on the outfeed cart, ready to be cut to length.



### CUT TO LENGTH



**Nothing fancy.** A square block clamped to the auxiliary fence works great as a stop. Cut every same-length part at once. Then move the block for the next shortest parts.



**Work from long to short.** To avoid cutting a piece too short, start with the longest parts and work toward the shortest. A board can always be cut shorter, but never longer.

Switch the carts around and cut the boards to length. Use a stop block when more than one part is the same length.

