



questions from Our Readers

vertical-grain Douglas Fir

In issue No. 80, you featured a tool cabinet made out of Douglas fir. When I tried to buy Douglas fir locally, all I could find was framing lumber and it doesn't look anything like the wood you used. Why is this?

*Art Beauchamp
Baton Rouge, LA*




Whenever we build projects out of Douglas fir, we typically use ordinary framing lumber (commonly known as “two-by” stock). But for the heirloom tool cabinet in Issue No. 80, as well as the workbench on page 16 of this issue, we used *vertical-grain* Douglas fir.

Vertical-grain Douglas fir isn't a different species or type of wood. Instead, this wood gets its name from the way it's cut at the sawmill. If you take a look at the end of a piece of vertical-grain fir, you'll see that the growth rings run nearly perpendicular to the face of the board, producing a straight, even grain pattern.

On the other hand, most framing lumber has grain that runs almost parallel with the face of the board, typically resulting in a loose, wavy grain pattern. (See photos in margin at left for comparison.)

Growth Rings. Just as important as the grain direction is the tree that the wood comes from. The best-looking fir comes from trees that grow up in mature, established forests. These trees grow slowly because they're competing with neighboring trees for light, air, and soil nutrients. And the slower a tree grows, the closer the annual growth rings are spaced, resulting in a tighter grain pattern.

On the other hand, trees that are commercially planted and harvested tend to mature much quicker. And as a result, they have wider-spaced growth rings.

Sources. Vertical-grain Douglas fir isn't something you're likely to find at your local home center. You'll have better luck trying a traditional lumber dealer. And you may even have to special-order the wood. But be prepared for a little sticker shock. Because of the waste involved in sawing logs into vertical-grain boards, you can expect to pay three to four times more than you would for run-of-the-mill framing lumber. 



◀ **Vertical Grain.** If you look at the end of this board, you can see that the grain runs vertically.

◀ **Horizontal Grain.** Most construction lumber has grain that runs horizontally or in arcs.

Technique: Grain Matching

Matching grain between boards is a concern whenever you're gluing up a panel. But when it came to gluing up the legs for the

workbench in this issue, I faced a different kind of challenge. I wanted all four faces of each leg to look similar. To do this, I selected boards with grain running *diagonally* to the face of the board. This way, the grain on the edges of the two leg halves looks the same as the grain on the faces of the boards (see photo).



Questions & Answers

Using Cutting Diagrams

Q *What's the purpose of the cutting diagrams you show with your projects, and how are they used?*

Josh Higdon
Chelan, Washington

A A cutting diagram gives you a rough idea of how much lumber and sheet goods you'll need for a project (drawing at right). How you use a cutting diagram depends on the material.

HARDWOOD. When you go to the lumberyard to purchase wood for a project, the diagram gives you an idea of what size boards to choose. Since lumber is typically sold in board feet, we include that figure in the diagram.

MINOR DEFECTS. In a perfect world, you could lay out the pieces directly from the diagram. But many times the boards you

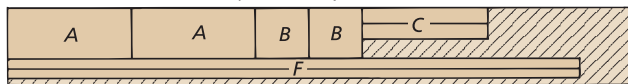
find at the lumberyard have imperfections, like knots and cracks. In most cases, you'll have to change the layout of the cutting diagram to work around the defects. To make up for the waste caused by defects, I usually buy about 20 percent more lumber than the project calls for.

LAYOUT. After selecting the lumber, I mark the imperfections and identify the "good" wood. Then, I lay out the larger pieces first, taking into account the $\frac{1}{8}$ " kerf for the saw cuts. (It's easier to fit the smaller pieces in later.)

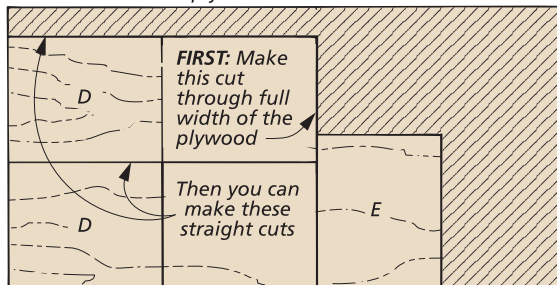
Next, I group similar sized pieces together to cut down on waste and the number of cuts I have to make. I also lay out the

Cutting Diagram

$\frac{3}{4}$ " x $7\frac{1}{2}$ " - 60" Red Oak (3.1 Bd. Ft.)



48" x 96" - $\frac{3}{4}$ " Oak plywood



▲ **Lay Out the Parts.** A cutting diagram helps you determine how to lay out the parts on the stock to reduce waste.

pieces slightly oversize. I can trim the parts to exact size as I'm building.

PLYWOOD. Cutting diagrams really come in handy when working with plywood. Since plywood comes in standard size sheets, you can follow the diagram exactly (remember to allow for the saw kerfs). But you still have to make the cuts correctly.

Although not specified in the diagram, making the cuts in a particular order can make the task easier. You can usually spot a cut line that runs the entire length or width of the plywood sheet.

After making the first cut, you're left with more manageable-sized pieces. The order for the rest of the cuts should be readily apparent. **W**

Start by laying out larger pieces on good stock

Mark as close to the defect as possible to save useable lumber for smaller pieces

NOTE: Imperfections are a reality in lumber. Adjust your layout to suit the board

Remove rough edges at the jointer or table saw

You can salvage lumber from both sides of a split

Do you have any questions for us?

If you have a question related to woodworking techniques, tools, finishing, hardware, or accessories, we'd like to hear from you.

Just write down your question and mail it to us: Woodsmith Q&A, 2200 Grand Avenue, Des Moines, Iowa 50312. Or you can email us the question to: woodsmith@woodsmith.com.

Please include your full name, address, and daytime telephone number in case we have questions.