

Shaker Style Side Table

A Complete Guide for Beginner Woodworkers

Project Plan & Build Instructions

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Welcome

Welcome to your first furniture project. This guide will walk you through building a classic Shaker-style side table from start to finish. Whether you're completely new to woodworking or have some experience with simpler projects, this guide is designed to give you the knowledge and confidence you need to succeed.

The Shaker side table is an ideal first furniture project because it teaches fundamental skills that apply to nearly every piece of furniture you'll ever build: milling lumber, cutting joinery, gluing panels, shaping parts, and assembling components. The design itself is forgiving of small imperfections while still demanding enough precision to develop your skills.

About This Guide

I'm Steven Ricks, co-owner of The Joinery, a woodworking studio and learning community in Middleton, Wisconsin. I've taught hundreds of people how to build furniture, and I've written this guide to share not just the technical steps, but the practical wisdom that makes the difference between frustration and success.

Throughout this guide, you'll see special callout boxes labeled "Thoughts from Steven." These are where I share the things that don't fit neatly into step-by-step instructions—the philosophy behind the techniques, the mistakes I've seen students make (and how to avoid them), the shortcuts that actually work, and the conventional wisdom that's worth ignoring. These thoughts come from years of hands-on experience and teaching, and they're often the most valuable part of this guide.

Thoughts from Steven

Woodworking books and YouTube videos tend to present everything as if there's one right way to do it. There isn't. There's what works, what doesn't, and a lot of gray area in between. My goal is to give you the principles and the confidence to make good decisions, not to turn you into a robot following instructions. When you see these boxes, I'm talking to you like I would if you were standing next to me at the bench.

What You'll Learn

By the time you complete this project, you will understand:

- How wood behaves and why that matters for furniture design
- How to take rough lumber and mill it to precise dimensions
- How to create strong joints using the loose mortise and tenon method
- How to glue up solid wood panels for tabletops
- How to shape and refine parts for a professional appearance
- How to assemble a project methodically and accurately
- How to prepare surfaces for finishing

About the Shaker Style

The Shakers were a religious community that flourished in America from the late 1700s through the 1800s. They believed that creating something well was an act of devotion, and their furniture reflects this philosophy. Shaker furniture is characterized by clean lines, honest construction, and the absence of unnecessary ornamentation. Every element serves a purpose.

The side table you'll build embodies these principles: tapered legs that create visual lightness, simple aprons that provide structure, and a solid wood top that showcases the natural beauty of the material. It's a design that has remained popular for over two centuries because it simply works—both functionally and aesthetically.

Understanding Wood

Before you cut a single board, it's important to understand the material you're working with. Wood is unlike any other building material—it was once alive, and in many ways, it still behaves as if it is. Understanding wood's nature will help you make better decisions throughout this project and every project that follows.

Thoughts from Steven

One of my favorite sayings at The Joinery is "Wood will do what wood wants to do." We can plan for movement, design around it, and do everything right—but wood is ultimately unpredictable. A tree spent decades growing under tension and compression, reacting to wind, weather, and its own weight. That stress is locked inside the wood. When we mill, cut, and process a board, we release some of that tension—and we never know exactly when or how the wood will react. It might stay perfectly flat. It might twist overnight. It might wait six months and then move. Sound familiar? Wood is a lot like us humans—shaped by how it was raised, carrying invisible stresses, and sometimes surprising everyone with what it does next. The best we can do is understand the tendencies, design intelligently, and accept that we're working with a living material that has a mind of its own.

Wood Is Not Uniform

When you look at a board, you're looking at the cross-section of a tree's growth. Each year, trees add a new layer of growth—this creates the rings you see in the end grain. The way a board was cut from the log determines its grain pattern, its stability, and how it will behave over time.

Understanding grain direction is essential:

- **Long grain** runs the length of the board, parallel to the trunk of the tree. This is the strong direction. Wood resists breaking along the grain.
- **End grain** is visible on the ends of a board where the growth rings are exposed. This is the weak direction. End grain absorbs finishes differently and doesn't glue well.
- **Face grain** is the wide surface of a board that shows the decorative pattern. This is what you see on a tabletop.
- **Edge grain** is the narrow edge of a board. When boards are glued edge-to-edge (as for a tabletop), you're creating an edge-grain joint.

Why Wood Moves

Here's something that surprises many beginners: wood constantly expands and contracts throughout its life. Even after it's been cut, dried, and turned into furniture, wood continues to absorb and release moisture in response to humidity changes in its environment.

This movement happens primarily across the grain (the width of a board), not along the grain (the length). A 12-inch-wide tabletop might change by $\frac{1}{8}$ " or more between summer and winter. The length stays essentially constant.

Why This Matters

If you don't account for wood movement in your design, your furniture will self-destruct. A tabletop screwed rigidly to a base will crack. Joints that don't allow for movement will fail. The Shaker side table design accounts for movement by attaching the top with screws through elongated slots—the top can expand and contract freely while remaining securely fastened.

Internal Stress in Wood

Every board carries internal stress from its years as a living tree. As a tree grows, different parts are under tension (being stretched) or compression (being squeezed). The tree

compensates, building wood fibers that push back against these forces. When the tree is cut into boards, this stress remains locked inside.

The moment you start removing material—jointing a face, planing to thickness, ripping to width—you're disturbing the balance of forces that the tree spent years creating. Sometimes the wood stays stable. Sometimes it immediately cups, bows, or twists. Sometimes it waits days or weeks before moving. This is why experienced woodworkers often rough-cut parts oversized, let them sit overnight or longer, then mill to final dimension. It gives the wood a chance to move before you've committed to that final thickness.

Hardwood vs. Softwood

These terms can be misleading. "Hardwood" and "softwood" refer to the type of tree, not the actual hardness of the wood. Hardwoods come from deciduous trees (those that lose their leaves), while softwoods come from conifers (trees with needles). Balsa wood is technically a hardwood, while yew (a softwood) is harder than many hardwoods.

For furniture, we typically use hardwoods like:

- **Cherry** — Beautiful reddish-brown color that deepens with age. Works easily. Used in this project.
- **Oak** — Strong and durable with prominent grain. Red oak and white oak behave differently.
- **Maple** — Hard and dense with subtle grain. Can be difficult to work but takes finish beautifully.
- **Walnut** — Rich dark brown color. Easier to work than maple. Expensive but stunning.
- **Poplar** — Inexpensive and easy to work. Often used for painted projects or as a secondary wood.

Buying Lumber

Lumber is sold in two forms: dimensional lumber (like the 2×4s at home centers, already surfaced to standard sizes) and rough lumber (as it comes from the sawmill, with rough surfaces and no standard dimensions). For furniture, we typically buy rough lumber and mill it ourselves. This gives us more control over final dimensions and ensures flat, straight parts.

Lumber thickness is specified in "quarters"—the number of quarter-inches thick:

- 4/4 ("four-quarter") = 1" rough, mills to approximately ¾" finished
- 5/4 ("five-quarter") = 1¼" rough, mills to approximately 1" finished
- 6/4 ("six-quarter") = 1½" rough, mills to approximately 1¼" finished
- 8/4 ("eight-quarter") = 2" rough, mills to approximately 1¾" finished

For this project, the legs require 6/4 or thicker stock (to yield 1⅜" square legs), while the aprons and top can be made from 4/4 stock.

Thoughts from Steven

Don't fall in love. Trust me, when you start looking at wood for this project you won't pick just for size. Your eyes will be drawn to that one board—either the fine grain or that one quirky knot will catch your eye. Before you know it, you're in love. But remember our first rule: wood will do what wood wants to do. That means during the build, that piece you fell in love with might cup or crack, or you may even make a mistake and ruin it. You will be heartbroken. Now that I've told you this, you'll still fall in love and become overly cautious and inadvertently make a mistake. Trust me—don't fall in love and put that added pressure on yourself.

Reading Measurements & Using Measuring Tools

Here's something that surprises many beginners: in woodworking, consistency matters more than precision. Yes, you need to be able to read a tape measure and work in fractions. But obsessing over hitting exact dimensions often misses the point.

Consistency Over Precision

Consider the aprons on this table. The plan calls for side aprons at 18¼" long. But here's the thing: if your side aprons are both 18¾" instead, the table will be fine. What matters is that both side aprons are the same length. If one is 18¼" and the other is 18¾", you have a problem—your table will be racked and the joints won't pull together properly.

The same principle applies to thickness. The plans call for a ¾" thick tabletop, but if yours ends up at ⅝" or 13/16", that's perfectly acceptable if it looks good to you. Some people prefer thicker tops. Some wood mills better at slightly different thicknesses. Don't overcomplicate things by demanding precision where it isn't needed.

The exception is joinery. When parts must fit together—a tenon into a mortise, boards edge-to-edge for a panel—precision matters. A sloppy joint is a weak joint. But for overall dimensions? Consistency wins.

Cut to Fit, Not to a Number

The best woodworkers don't obsess over tape measures. Instead, they cut parts to match each other. Need two side aprons the same length? Cut them together, or use the first one to mark the second. Need a brace to fit between two aprons? Measure the actual opening on your actual assembly, not the number on a drawing.

This approach has several advantages:

- It eliminates errors from misreading measurements
- It accounts for small variations that accumulate during a build
- It guarantees matching parts are actually identical
- It's often faster than careful measuring

Story sticks: Some woodworkers use "story sticks"—a piece of scrap with marks indicating key dimensions for a project. Instead of measuring 18¼" every time, you mark the story stick once and use it to transfer that dimension repeatedly. The actual number becomes irrelevant; what matters is that every part marked from that stick is identical.

Thoughts from Steven

Repeatability is more important than accuracy. If your four legs are all exactly the same length, your table will sit flat—even if they're all 23⅞" instead of 24". If your two side aprons match perfectly, your base will be square—even if they're slightly longer or shorter than the plan calls for. Save your precision for joinery, where fit actually matters. Everything else? Just make the matching parts match.

Understanding Fractions

That said, you do need to be able to read a tape measure. Woodworking uses fractional inches, not decimals. Most tape measures divide inches into sixteenths. Here's how to read them:

- The longest marks (besides inches) are ½" marks
- The next longest are ¼" marks
- Then ⅛" marks
- The shortest marks are 1/16" marks

Common measurements you'll encounter in this project:

- $\frac{3}{4}$ " — three-quarters inch (twelve $\frac{1}{16}$ " marks)
- $1\frac{3}{8}$ " — one and three-eighths inches
- $5\frac{1}{2}$ " — five and one-half inches
- $18\frac{1}{4}$ " — eighteen and one-quarter inches

Measuring Tools

Tape Measure: The most common measuring tool. The hook at the end is designed to move slightly—it slides out for outside measurements and in for inside measurements, compensating for its own thickness. For best accuracy, "burn an inch"—start measuring from the 1" mark instead of the hook, then subtract 1" from your reading.

Combination Square: A versatile tool that serves as a ruler, a square (for checking 90° angles), and a marking gauge. The blade slides through the head and locks at any position.

Try Square: A fixed 90° square used to check that edges are perpendicular to faces. Essential for verifying that your milled lumber is truly square.

Marking Gauge: Used to scribe a line parallel to an edge. Invaluable for laying out joinery consistently.

Use the Same Tool

Never assume your tape measure agrees with someone else's—they often don't. Use the same measuring tool for all related measurements throughout your project. Better yet, whenever possible, mark directly from actual parts rather than from numbers.

Project Overview

Now that you understand the basics of wood and measurement, let's look at what you'll be building. The Shaker side table consists of just a few components: a solid wood top, four legs, four aprons (the horizontal pieces that connect the legs), and two braces that support the top.

Thoughts from Steven

This is a prototype. When I do a project for the first time, I like to think of it as a prototype—I'm practicing the skills to produce the real piece once I have it all figured out. This takes a lot of the pressure off. It doesn't need to be perfect. You can focus more on the process and learn from each mistake. Then after you've done it once, do the real one. Sometimes for the first or prototype version I use a lower grade wood or scraps I have around the shop. This really takes the pressure off. But quite often I use my favorite wood, cherry, and dive straight in because it's already pretty affordable. Very often once I've finished the prototype, I look at it and say "Wow, that looks great!" Sometimes I do a second and sometimes I don't. My recommendation to you is: consider this build a prototype. Take the pressure off and just enjoy the process. You may be impressed with what you turn out.

Finished Dimensions

- **Overall Height:** 24 inches
- **Top Width:** 16 inches
- **Top Depth:** 24 inches
- **Top Thickness:** $\frac{3}{4}$ inch
- **Leg Dimensions:** $1\frac{3}{8}$ " $\times$ $1\frac{3}{8}$ " square, tapering to approximately $\frac{7}{8}$ " at the foot
- **Base Height:** $23\frac{1}{4}$ inches (to underside of top)

Anatomy of the Table

Top: Made from boards glued edge-to-edge to create a panel. The top overhangs the base equally on all sides. A chamfer (angled cut) on the top edges softens the appearance and prevents damage to the edges.

Legs: Square at the top where they join the aprons, tapered on two inside faces below the aprons. The taper creates visual lightness while the square section at the top provides ample material for strong joints.

Aprons: The horizontal members that connect the legs. There are four aprons—front, back, and two sides. They provide structural rigidity and prevent the legs from spreading.

Braces: Two cross-members that span between the front and back aprons. They support the tabletop and provide attachment points. Made from pine (a softer, less expensive wood) since they're hidden.

Joinery: The table uses loose mortise and tenon joints—a strong, traditional joint made quick and accurate with the Festool Domino system.

Bill of Materials

Below is a complete list of parts needed for this project. Cherry is the primary wood species—it's an excellent choice for beginners because it works easily with both hand and power tools, and it develops a beautiful patina over time.

Thoughts from Steven

I love cherry. I love the grain, the color, the workability—meaning its ability to hold a crisp edge without splitting or rounding over. I love the dark oxidation it takes on with time; a piece of cherry furniture just gets more beautiful as it ages. Cherry also has one of the lowest amounts of seasonal movement of any hardwood, which means fewer surprises down the road. It's great for beginners, relatively affordable compared to walnut or figured maple, and it looks fantastic. If you're not sure what wood to use for a project, cherry is rarely the wrong answer.

Part	Qty	Final Dimensions	Material
Top	1	$\frac{3}{4}" \times 16" \times 24"$	Cherry
Legs	4	$1\frac{3}{8}" \times 1\frac{3}{8}" \times 23\frac{1}{4}"$	Cherry
Front Apron	1	$\frac{3}{4}" \times 5\frac{1}{2}" \times 10\frac{1}{4}"$	Cherry
Back Apron	1	$\frac{3}{4}" \times 5\frac{1}{2}" \times 10\frac{1}{4}"$	Cherry
Side Aprons	2	$\frac{3}{4}" \times 5\frac{1}{2}" \times 18\frac{1}{4}"$	Cherry
Braces	2	$\frac{3}{4}" \times 1\frac{1}{2}" \times (\text{cut to fit})$	Pine

Understanding the Dimensions

The dimensions above are final dimensions—the size each part should be after milling. When buying rough lumber, you'll need extra material to account for milling (removing $\frac{1}{8}"$ to $\frac{1}{4}"$ from thickness), waste from defects, and the inevitable learning curve. For this project, buy approximately 8-10 board feet of 4/4 cherry for the aprons and top, and 2-3 board feet of 6/4 (or thicker) cherry for the legs.

What's a Board Foot?

Lumber is sold by the "board foot"—a unit of volume equal to 144 cubic inches ($12" \times 12" \times 1"$). A board that's 1" thick, 6" wide, and 8' long contains 4 board feet. To calculate: $(\text{Thickness} \times \text{Width} \times \text{Length}) \div 144$. Most lumber dealers will help you calculate your needs.

Tools You'll Use

Modern woodworking uses a combination of power tools for efficiency and hand tools for precision and refinement. Don't be intimidated by the list below—each tool serves a specific purpose, and you'll learn to use them safely and effectively.

Thoughts from Steven

These are the tools we use at The Joinery, but you don't need all of this to build the table. You can use hand tools for a lot of it, substitute pocket screws for the Dominos, use a band saw in place of the table saw. The key is to use what you have—or join a maker space or shared shop in your area. I highly recommend a community shop. You get the benefit of higher-quality tools than most of us can afford individually, plus the knowledge of other members. The Joinery prides itself on the community of woodworkers we've built and how well they help each other out. That's worth more than any tool.

Power Tools for Stock Preparation

Miter Saw

A miter saw makes crosscuts (cuts across the grain). It consists of a circular blade mounted on an arm that pivots down onto the workpiece. The saw can be angled to make miter cuts, hence the name. For this project, you'll use it to cut rough lumber to manageable lengths before milling.

Safety note: *Keep your hands well away from the blade path. Let the blade reach full speed before cutting, and let it stop completely before raising it.*

Jointer

A jointer flattens one face of a board and can also straighten one edge. It consists of two tables (infeed and outfeed) with a rotating cutterhead between them. The infeed table is set slightly lower than the outfeed table—the cutterhead removes that difference as the board passes over it.

Why it matters: *You can't build accurate furniture from warped, twisted lumber. The jointer creates the flat reference surfaces everything else depends on.*

Planer (Thickness Planer)

A planer makes a board a uniform thickness by removing material from one face. The board rides on a flat bed while a spinning cutterhead above removes material. Unlike the jointer, the planer references off the bottom face—so you must joint a face first, then plane with the jointed face down.

The relationship: *Jointer creates a flat face. Planer makes the opposite face parallel to it. Together, they give you a board that's flat, uniform thickness, with parallel faces.*

Table Saw

The table saw is the workhorse of the shop. It makes rip cuts (with the grain) and crosscuts (across the grain). A circular blade protrudes through a slot in a flat table. A fence guides the workpiece for rip cuts; a miter gauge guides crosscuts.

Safety note: *The table saw demands respect. Always use the blade guard and riving knife. Never stand directly behind the blade. Use push sticks for narrow cuts. If something feels wrong, stop.*

Tools for Joinery

Festool Domino

The Domino is a specialized tool that cuts mortises (rectangular slots) for loose tenon joinery. Traditional mortise and tenon joinery requires cutting a projecting tenon on one piece and a matching mortise on the other—a time-consuming process that demands skill. The Domino simplifies this by cutting identical mortises in both pieces, connected by a separate "loose" tenon.

Why we use it: *It's fast, accurate, and produces joints as strong as traditional mortise and tenon. For beginners, it removes much of the difficulty from creating furniture-quality joinery.*

Tools for Shaping & Finishing

Router

A router spins a bit at high speed to cut profiles, grooves, and shapes. For this project, you'll use a chamfer bit to create the angled edge detail on the tabletop. The router can be handheld or mounted in a router table.

Safety note: *Routers are loud and can grab unexpectedly. Always feed against the bit's rotation. Secure the workpiece. Take multiple light passes for deep cuts.*

Palm Sander (Random Orbit Sander)

The random orbit sander combines spinning and orbital motion to remove material without leaving swirl marks. It's used for final surface preparation before finishing. Work through progressively finer grits (120, 150, 180, 220) to achieve a smooth surface.

Card Scraper

A card scraper is a simple rectangle of steel with a burred edge that shears thin shavings from wood. It's invaluable for removing tear-out, mill marks, and dried glue. Unlike sandpaper, it cuts cleanly without clogging and leaves a superior surface.

Personal Items to Bring

- **Pencil** — A regular #2 pencil works well. Mechanical pencils stay sharp but can break.
- **Notepad** — For notes, sketches, and recording measurements.
- **Tape measure** — 12' or 16' length. Quality matters—cheap tape measures stretch and give inaccurate readings.
- **Safety glasses** — Required whenever power tools are running. Get comfortable ones you'll actually wear.
- **Hearing protection** — Planers, routers, and sanders are loud enough to cause permanent damage.
- **Dust mask** — N95 or better. Wood dust is a health hazard, especially from certain species.

Safety in the Shop

Woodworking is safe when done thoughtfully, and dangerous when done carelessly. Every tool in the shop can cause injury if misused. The good news: injuries are almost entirely preventable. The key is developing habits that protect you even when you're tired or distracted.

Thoughts from Steven

At The Joinery, we teach the 2-3-12 rule. It applies to every tool in the shop:

2 — Every tool has two control surfaces. Know what they are and use them properly. On a table saw, it's the fence and the table. On a jointer, it's the fence and the infeed/outfeed tables. If you don't know the two control surfaces for a tool, ask before you use it.

3 — Keep your hands 3 inches from any blade or cutter. If an operation would put your fingers closer than that, you need a push stick, push block, or a different approach.

12 — Do a gut check on any board 12 inches or shorter. Short pieces are harder to control and more dangerous. If the board is under 12 inches, stop and ask yourself: Am I using the right tool for this? Is there a safer way? Should I ask someone?

General Safety Principles

1. **Protect your eyes.** Safety glasses must be worn whenever any power tool is running—even if you're not the one operating it. Wood chips fly unpredictably.
2. **Protect your ears.** Hearing damage is cumulative and irreversible. Wear hearing protection around loud tools (planers, routers, sanders). If you have to raise your voice to be heard, it's too loud.
3. **Protect your lungs.** Wood dust causes respiratory problems, and some species are toxic. Wear a dust mask when sanding and whenever dust is in the air. The shop's dust collection system helps but doesn't eliminate exposure.
4. **Dress appropriately.** Remove loose clothing, jewelry, and lanyards. Tie back long hair. Loose items can catch in spinning tools with devastating results.
5. **Stay focused.** Never operate tools when tired, distracted, or impaired. Most accidents happen when attention lapses. If you're not fully present, step away.
6. **Keep the shop clean.** Clutter causes accidents. Offcuts on the floor are tripping hazards. Sawdust accumulation is a fire risk. Clean as you go.

Table Saw Safety

The table saw deserves special attention because it's involved in more shop injuries than any other tool. These injuries are almost always preventable.

1. **Use the blade guard and riving knife.** The guard prevents contact with the blade. The riving knife prevents kickback by keeping the cut kerf open.
2. **Stand to the side, never behind the blade.** If kickback occurs, the workpiece will shoot backward along the blade line. Don't be in that line.
3. **Use push sticks for narrow cuts.** When ripping narrow pieces, your hand would pass too close to the blade. Push sticks keep hands safe.
4. **Never reach over or behind the spinning blade.** Turn off the saw first if you need to retrieve something.
5. **Let the blade stop completely before retrieving cut pieces.** A spinning blade can grab a loose piece and throw it.
6. **Never cut freehand.** Every cut must reference the fence or miter gauge—never both at the same time.

Router Safety

1. **Ensure the bit is properly secured.** A loose bit can come free at high speed with dangerous results.
2. **Feed against the bit's rotation.** This gives you control. Feeding with the rotation (climb cutting) can cause the router to grab and run along the workpiece.
3. **Take multiple passes for deep cuts.** Trying to remove too much material at once strains the tool and can cause it to grab.
4. **Secure the workpiece.** A router has significant torque. If the workpiece moves, you lose control.

When in Doubt, Ask

If you're unsure about any operation, stop and ask. There's no shame in asking questions—only in pretending to know something you don't. Every experienced woodworker was once a beginner, and good shops foster a culture of learning and helping.

Thoughts from Steven

To do good woodworking you need to be comfortable and focused. If you get tired, take a rest. If you're hungry, get a snack. Wear comfortable shoes. Woodworking should be an escape from life's pressures, not adding to them. Don't get me wrong—woodworking can be challenging and even frustrating at times. That's when you should take a break, get out of the noise and dust, and just relax. It will work out. I've been doing this a long time and taught hundreds of people how to do woodworking, and every major mistake or injury has happened when a person was tired or already frustrated. Relax, enjoy it, and be comfortable. I promise you your table will be better and you will be safer for it.

Phase 1: Milling the Lumber

Milling is the process of taking rough lumber and machining it to precise, usable dimensions. It's the foundation of every woodworking project—you can't build accurately from inaccurate material. This phase teaches the four-step milling process that you'll use for every project going forward.

Why We Mill Lumber

Rough lumber from the sawmill is neither flat nor uniform. It has seen marks, cup, bow, twist, and varying thickness. Even "surfaced" lumber from big box stores isn't truly flat—it's just been run through machines quickly without regard for accuracy. Furniture requires parts that are flat, straight, square, and precise in dimension. We achieve this through methodical milling.

The Four-Step Milling Process

Step 1: Rough Crosscut to Workable Length

Using the miter saw, cut boards to rough length. The goal is to create pieces that are easy to handle on the jointer, planer, and table saw—typically between 2 and 4 feet long. Boards that are too short are hard to control; boards that are too long are unwieldy and prone to snipe.

If you have several small parts to cut from one board, don't cut them individually yet. Instead, group them together and cut a single workable-length piece that you'll break down later. For example, if you need four 11" pieces, cut a single 48" section now. You'll mill and rip this larger piece, then crosscut to final lengths at the end.

Tip: *Examine each board before cutting. Look for defects (knots, cracks, discoloration) and plan your cuts to avoid them or place them where they won't matter.*

Thoughts from Steven

Most power tools have an optimal length that works best. I find that with the jointer, planer, and table saw, boards between 2 and 4 feet are ideal. Short boards are dangerous—they're hard to control and can kick back or get pulled into the machine. Extremely long boards are awkward and difficult to keep flat against fences and tables. Group your smaller parts together to create workable lengths, mill and rip them at those lengths, then do your final crosscuts on the miter saw. The miter saw is much safer for cutting short pieces than the table saw.

Step 2: Joint One Face

The jointer flattens one face of the board. This creates your reference surface—everything else depends on it being truly flat.

1. Check the board for cup or bow. Place the concave side down (like a shallow bowl). This gives two stable contact points.
2. Set the jointer for a light cut (1/32" to 1/16").
3. Feed the board smoothly across the cutterhead, applying downward pressure on the outfeed table (the side after the cutterhead).
4. Take as many passes as needed until the entire face shows fresh cut marks. This means it's flat.

Tip: *Mark the jointed face with a pencil squiggle. You'll reference this face throughout the remaining steps.*

Step 3: Joint One Edge

With the jointed face against the fence, run one edge across the jointer. This creates an edge that's straight and exactly 90° to the face.

1. Press the jointed face firmly against the fence throughout the cut.
2. Apply pressure both down (onto the table) and in (against the fence).
3. Take light passes until the entire edge shows fresh cut marks.

Tip: Use a try square to check that the edge is 90° to the face. If the fence is set correctly, it will be.

Step 4: Plane to Thickness

The planer makes the board a uniform thickness with parallel faces. It removes material from the top while the board rides on its jointed face. Setting the planer correctly for your first pass is important—take it slow until you understand how the machine works.

1. **Measure your board's thickness.** Use calipers or a reliable ruler to measure the thickest point of your board. Rough lumber varies, so check in several places and note the thickest measurement.
2. **Set the planer to your board's current thickness.** Adjust the planer's depth setting to match your measurement. You're not trying to remove material yet—you're setting up for a skim cut that will just kiss the high spots.
3. **Place the board jointed-face-down on the planer bed.** The flat, jointed face you created on the jointer becomes your reference surface. The planer will make the top face parallel to this bottom face.
4. **Run the board through and check.** Look at the top face. You should see fresh cut marks on the high spots only. If the planer didn't touch the board, lower the depth slightly and try again. If it's taking a heavy cut, you set it too low—raise it.
5. **Once the entire face shows cut marks, switch to light cuts.** Now you know the board is fully engaged. Set the planer for light passes (1/32" to 1/16" per pass) to bring the board to final thickness.
6. **Alternate sides.** After a pass or two, flip the board over and take a pass from the other side. Continue alternating until you reach your target thickness.

Why Alternate Sides?

Wood releases internal stress as you remove material. Taking all your passes from one side can cause the board to cup or bow. By alternating, you release stress evenly from both sides, resulting in a flat, stable board.

Thoughts from Steven

Snipe. If you've spent any time watching YouTube videos or reading woodworking magazines, you've seen this term. The whole world seems infatuated with eliminating snipe. Well, here's a tip for you: you can't. It's the nature of the tool.

Snipe is a slightly deeper cut—usually a few thousandths of an inch—at the very beginning and end of a board. Here's why it happens: A planer has two rollers, one before the cutterhead (infeed) and one after (outfeed). These rollers press the board flat against the bed while the cutterhead removes material from the top. But at the very start of the cut, only the infeed roller is engaged. At the very end, only the outfeed roller is engaged. In those moments, the board can lift slightly into the cutterhead, creating a deeper cut.

You can minimize snipe by supporting the board as it enters and exits, or by feeding boards end-to-end so the rollers stay engaged. But eliminate it completely? No. That's why we cut our boards an inch or two longer than final dimension—so we can trim off the snipe at the end. Stop chasing perfection and just plan for it.

Cutting Parts to Final Dimension

After milling, your boards are flat and uniform in thickness, but they still need to be cut to final width and length. The sequence matters: rip to width first, then crosscut to final length.

Ripping to Width (Table Saw): Set the fence to the desired width, measured from the fence to the blade. Place the jointed edge against the fence and push the board through. The result is a board with two parallel edges at your desired width. Do all your ripping while the boards are still at workable lengths.

Crosscutting to Final Length (Miter Saw): Now cut your milled and ripped boards to their final lengths. The miter saw excels at this—it's safer and more accurate for crosscutting than the table saw, especially for shorter pieces. Measure carefully; this is your final chance to get it right.

Milling the Parts for This Project

Legs (4 pieces): Mill to $1\frac{3}{8}" \times 1\frac{3}{8}"$ square $\times 23\frac{1}{4}"$ long. Start with 6/4 or thicker stock. It's critical that all four legs are identical—mill them at the same machine settings without adjusting between pieces.

Front & Back Aprons (2 pieces): Mill to $\frac{3}{4}" \times 5\frac{1}{2}" \times 10\frac{1}{4}"$. Start with 4/4 stock.

Side Aprons (2 pieces): Mill to $\frac{3}{4}" \times 5\frac{1}{2}" \times 18\frac{1}{4}"$. Start with 4/4 stock.

Tabletop Boards: Mill to $\frac{3}{4}"$ thickness. Width and length depend on how many boards you're gluing together—you need enough to make a 16" $\times$ 24" panel after glue-up and trimming.

Phase 2: Layout & Joinery

With your parts milled to size, it's time to cut the joints that will hold the table together. Good joinery is the difference between furniture that lasts generations and furniture that wobbles loose in a few years. This phase covers marking, the mortise and tenon joint, and using the Festool Domino.

Understanding the Mortise and Tenon

The mortise and tenon is one of the oldest and strongest joints in woodworking, dating back thousands of years. It consists of a rectangular projection (the tenon) on one piece that fits into a corresponding rectangular hole (the mortise) in another piece. When glued, it creates a large long-grain to long-grain glue surface—exactly what makes the strongest bond.

Traditional vs. Loose Tenon: In a traditional mortise and tenon, the tenon is cut from the solid wood of one piece (like the end of an apron). This requires more skill and setup. The loose tenon method cuts identical mortises in both pieces and connects them with a separate piece of wood (the "loose tenon"). Same strength, easier execution.

The Importance of Marking

Accurate marking is critical. Before cutting any joints, you must mark every part so they can only go together one way. This prevents the frustration of discovering during assembly that parts are oriented wrong.

The Triangle Marking System

1. Arrange all parts in their final positions—legs at the corners, aprons between them, everything oriented as it will be in the finished table.
2. On each part, draw a triangle on the TOP face with the point of the triangle facing OUTSIDE (toward the exterior of the table).
3. If you need to reference joints—where specific parts must mate together—mark each side of the joint with a matching number.

That's it. With just the triangle, you always have two points of reference: the top face (where the triangle is drawn) and the outside face (where the triangle points). From those two references, you can always determine the correct position of any part in your final assembly.

Thoughts from Steven

I standardize my markings so I never have to think about them. Triangle on top, pointing outside—every piece, every project. This standardization means I don't have to rethink each piece and wonder "did I point outside or inside on this one?" The system works because it's consistent. Once you develop the habit, marking becomes automatic, and you'll never assemble a table with a leg facing the wrong direction. Keep it simple. Keep it the same.

Why This Works

When you cut joinery, you'll reference the machine's fence against a consistent face of the wood. By always knowing which face is the outside, you ensure the outside faces—the ones everyone sees—end up flush. Any small variations in thickness get hidden on the inside.

Using the Festool Domino

The Domino is essentially a plunge router designed specifically for cutting mortises. It uses a special bit that oscillates (moves side to side) as it plunges, creating a clean rectangular slot perfectly sized for the loose tenons.

This is where your marking system pays off. The Festool Domino is designed to guarantee perfect alignment every time—if you use it consistently. The key is always referencing off the same surfaces: the outside face (where your triangle points) and the top edge.

Basic Domino Operation:

1. **Select the tenon size.** For this project, 8mm × 40mm tenons work well. The Domino uses different-sized bits for different tenon sizes.
2. **Set the depth.** The mortise depth should be slightly more than half the tenon length, allowing room for glue.
3. **Position the face plate on the outside of the board.** The flat face plate of the Domino rests against the outside face—the face your triangle is pointing toward. This is your reference surface.
4. **Use the plunger to locate the mortise.** On the face of the Domino, there are plungers on each side of the cutter. Touch the plunger to the top edge of your board. This automatically positions your mortise in the correct location—no measuring required.
5. **Plunge.** Hold the Domino firmly against the outside face with the plunger touching the top edge, and plunge the cutter to create the mortise.

Thoughts from Steven

The beauty of this system is that you don't need to measure mortise locations. Face plate on the outside, plunger on the top—that's it. Do exactly the same thing on the mating piece (the leg), and your mortises will align perfectly. Your marking system made this possible: because you marked every piece the same way, you always know which face is the outside and which edge is the top. Consistency in marking leads to consistency in joinery.

Cutting Mortises for the Side Table

For this table, we intentionally offset the aprons slightly from the front face of the legs—the aprons sit about 1/8" back from the leg faces. This is a traditional detail that creates a subtle shadow line and allows for slight variations in part thickness. We achieve this offset through different fence settings on the Domino.

Apron Mortises (fence set to 16mm): Cut the mortises in the apron ends first. Place the Domino face plate on the outside of the apron (the face the triangle points toward), touch the plunger to the top edge, and plunge. Cut both ends of all four aprons at this setting.

Leg Mortises (fence set to 20mm): Each leg receives two mortises on adjacent outside faces. Place the Domino face plate on the outside face of the leg (the face the triangle points toward), touch the plunger to the top of the leg, and plunge. The 4mm difference between settings (20mm vs 16mm) creates the 1/8" offset that sets the apron back from the leg face.

Why this works: Both mortises are cut with the plunger referencing the top, so they align vertically. The different fence settings position them at different distances from the outside faces, creating the offset. No measuring, no layout—just consistent technique.

Phase 3: Shaping the Parts

With joinery complete, it's time to refine the parts before assembly. This phase covers tapering the legs and preparing the tabletop. These steps transform utilitarian rectangular parts into the elegant components of a Shaker table.

Tapering the Legs

Shaker furniture typically features legs that taper from the apron to the foot. This visual refinement makes the piece appear lighter and more graceful without sacrificing strength. The taper only appears on the two inside faces of each leg—the outside faces remain straight.

Understanding the Taper

- **Tapers go on the inside faces** —the faces opposite of where your triangles point. Your triangles point to the outside of the table, so tapers are cut on the opposite two faces.
- **Tapers are on the same faces as the mortises.** This makes sense: the mortises are on the inside faces (where the aprons attach), and so are the tapers (below the aprons).
- The taper starts exactly 5" from the top of the leg, below where the apron meets the leg.
- The foot tapers to approximately $\frac{7}{8}$ " square (from $1\frac{3}{8}$ " at the top).
- The outside faces remain at full width ($1\frac{3}{8}$ ").

Laying Out the Taper

1. Identify the two inside faces of each leg—these are opposite of where your triangle points, and the same faces where you cut the mortises.
2. Mark a line exactly 5" from the top of the leg on each inside face. This is where the taper begins—do not cut or sand above this line.
3. Mark the ending width on the bottom of the leg. If you're tapering from $1\frac{3}{8}$ " to $\frac{7}{8}$ ", you're removing $\frac{1}{4}$ " from each inside face.
4. Connect the marks with a straight line. This is your cut line.
5. Repeat on the adjacent inside face.

Cutting the Taper

There are several ways to cut a taper. A tapering jig on the table saw gives precise, repeatable results. Alternatively, cut close to the line on the bandsaw and clean up with a hand plane.

Thoughts from Steven

Do not let your taper go above the 5" mark—and just as important, do not sand above the 5" mark when cleaning up after the cut. The area above that line is where the apron meets the leg. If you taper or sand into that area, you'll remove material that the apron needs to sit tight against. The result will be a gap between your apron and leg that no amount of clamping will fix. Mark that 5" line clearly, and respect it.

Preparing the Tabletop

Unless you have unusually wide lumber, the tabletop will be made from multiple boards glued edge-to-edge. This is called a panel glue-up.

Arranging the Boards

Arrange your boards with the goal of creating a top that looks good to you. Flip them, rotate them, try different combinations. Look for:

- **Pleasing grain flow.** Does the grain pattern look natural across the joints? Avoid jarring transitions where straight grain meets wild figure.
- **Color matching.** Cherry can vary in color from board to board. Arrange pieces so the color transitions look intentional.
- **Mark the arrangement.** Once you're satisfied, draw a large triangle across all boards. This lets you recreate the exact arrangement at glue-up.

Thoughts from Steven

You may have read that you should alternate the growth rings—one board cup-up, the next cup-down—to keep the top flat. That's a myth. This tabletop is small and not structural. Cherry is very stable wood. And remember: wood will do what wood wants to do. If it wants to cup or twist, it will, and it doesn't matter what the growth rings say. In my opinion, the supposed benefit of alternating doesn't outweigh the look and aesthetic of a well-matched top. So forget the growth rings and arrange the boards in a way that's pleasing to you.

Preparing the Edges

The mating edges must be flat, straight, and mate perfectly. Joint each edge on the jointer until it meets this standard. When you hold two boards together, there should be no visible gaps. Light should not pass through the joint anywhere along its length.

Thoughts from Steven

You might look at this and say "Steven, why aren't you using biscuits or Dominos to join the boards?" First of all, no one should ever use biscuits. Ever. I'm not a fan. Second, neither biscuits nor Dominos add any structural strength to a panel glue-up—or more precisely, no additional strength is needed. With today's glues, the glue is the strongest point of the joint. You're gluing long grain to long grain, and if you completely cover the joint with glue, this top will last forever. Biscuits and Dominos are sometimes sold as alignment aids, but in my experience they only get in the way and create extra work. A well-jointed edge and careful clamping are all you need. Oh yeah—never use biscuits.

Preparing Parts for Assembly

Before gluing anything together, take the time to clean up all your parts. Remove burn marks from the table saw, mill marks from the planer, and any other blemishes. It's much easier to do this now, while the parts are separate, than after everything is glued together and you're trying to sand into corners.

The Card Scraper

The card scraper is your best friend for this work. It's a simple tool—just a rectangular piece of hardened steel with a tiny burr rolled onto the edge—but it removes wood quickly and leaves a surface that's ready for finish without sanding.

How to use a card scraper:

1. **Hold the scraper with both hands.** Grip it between your thumbs and fingers, with your thumbs on the back face pushing forward and your fingers on the front face pulling back. This creates a slight bow in the middle of the scraper.
2. **Tilt the scraper forward.** Angle it about 15-20 degrees from vertical, leaning in the direction you're pushing.
3. **Push with steady pressure.** The scraper should produce thin shavings, not dust. If you're getting dust, the burr is dull or your angle is wrong.
4. **Work with the grain.** Scrape in the direction of the wood grain to avoid tearout.

The scraper excels at removing burn marks, planer ripples, and glue residue. A well-sharpened scraper leaves the wood so smooth that you may not need to sand at all. Focus on any visible blemishes and work until they're gone.

Thoughts from Steven

My world changed the day I was introduced to the proper way of using a card scraper. No joke—using a well-tuned card scraper correctly is life changing. If you hate sanding like I do, the card scraper is going to be your new best friend. However, learn to use it correctly. I see so many students using it like a large guitar pick or just rubbing it over the wood. Sure, you get some sawdust, but if used correctly you'll get the most beautiful, thin shavings and the resulting wood surface is buttery smooth. Once you've properly card-scraped a surface, never touch that surface with sandpaper. I've found the best card scraper to be from Lost Art Press, Crucible Tools. Watch their videos and learn how to use it and put a proper edge on it, and you will start creating magic. If you can find someone who knows how to use them well, have them help you get over the learning curve.

Light Sanding if Needed

If any areas still need attention after scraping, sand them lightly with 180 or 220 grit. Don't sand everything just because you think you should—only sand what needs it. Be careful not to round over edges or soften the crisp lines of your parts.

Dry Fitting

Before any glue is applied, assemble the entire base with loose tenons but no glue. This is called a dry fit. Check for:

- Square: Measure diagonally from leg to leg. If the diagonal measurements are equal, the base is square.
- Flush joints: All parts should be flush at the joints, not offset.
- Tight fit: Joints should pull together firmly with clamp pressure. If they don't, check for issues.

Address any problems now. Once glue is in the joint, there's no going back.

Phase 4: Gluing & Assembly

Glue-up is where careful preparation pays off—or where problems reveal themselves. Work methodically, don't rush, and have everything ready before you open the glue bottle. Glue starts to set in minutes, so there's no time to search for missing clamps or realize a part is oriented wrong.

Understanding Wood Glue

Modern wood glue (PVA or polyvinyl acetate) is remarkable. A properly made glue joint is stronger than the wood itself—the wood will break before the glue fails. But this requires good technique: surfaces must be flat and mating, glue must be applied to both surfaces, and parts must be clamped with appropriate pressure during cure.

Key principles:

- **Long-grain to long-grain:** The strongest bond. This is how our mortise and tenon joints work.
- **End-grain glues poorly:** End grain absorbs glue like a sponge, leaving little at the surface. Avoid end-grain joints.
- **Clamping is essential:** Clamps hold parts together while the glue cures and ensure a thin, even glue line.
- **More glue isn't better:** Apply a thin, even coat to both surfaces. Excess glue squeezes out and makes a mess.

Thoughts from Steven

Glue can be the enemy of a good finish, so be careful and clean with it. Pay attention to any glue on your fingers and clean them off immediately—or you'll leave fingerprints that show up in the finish. Before you start any glue-up, have a small cup of water and an old toothbrush ready. Once your joints are glued and clamped, use the brush and water to scrub the joints clean. Don't be afraid of using too much water. If the joint is tight, water won't get into the joint, but it will clean up the outside beautifully. Use a towel to wipe off the excess. This takes an extra few minutes but saves hours of frustration when you're trying to get a nice finish.

Gluing the Tabletop Panel

1. **Prepare everything first.** Have all boards arranged in order, clamps set to approximate width, a small cup of water, an old toothbrush, and a towel ready.
2. **Apply glue to all mating edges.** Roll or brush a thin, even coat on both edges of each joint. You should see full coverage with no dry spots.
3. **Bring the boards together.** Align them according to your triangle marks.
4. **Apply clamps alternating above and below.** This equalizes pressure and prevents the panel from cupping under clamp force.
5. **Check alignment.** The faces should be flush. Use your hand or a straightedge to feel for steps. Adjust as needed before the glue sets.
6. **Clean up the squeeze-out.** Use your toothbrush and water to scrub along all the joints. Wipe with a towel. Take your time—this is much easier now than after the glue dries.

Let the panel cure at least overnight before unclamping.

Gluing the Base

Assemble the base in stages to make the process manageable:

Stage 1: End Assemblies

Glue each end assembly first—two legs and one short apron. Apply glue to the mortises and the loose tenons, assemble, clamp, check for square, and let cure.

Stage 2: Complete Base

Once the end assemblies have cured, connect them with the long aprons. Apply glue, assemble, clamp, and check that the entire base is square and flat (all four feet touching the bench).

Checking for Square

Measure diagonally from corner to corner in both directions. If the measurements are equal, the assembly is square. If not, place a clamp across the longer diagonal and tighten slightly—this pulls the assembly toward square. Recheck and adjust.

Stage 3: Make and Install Braces

Now that the base is assembled, you can make the braces. The braces span between the front and back aprons, providing a mounting surface for the tabletop and additional rigidity to the base.

- **Material:** Pine, $\frac{3}{4}$ " $\times$ 1½".
- **Length:** Measure the actual distance between the front and back aprons on your assembled base, and cut the braces to fit snugly.
- **Slot for screws:** Drill or rout an elongated slot (not a round hole) for the screws that attach the top. The slot runs perpendicular to the length of the brace.
- **Why elongated slots:** The slot allows the screw to move as the tabletop expands and contracts with humidity changes. A round hole would lock the top in place and eventually cause cracking.

Once the braces are made, glue and screw them in position, flush with the tops of the aprons.

Phase 5: Completing the Table

With the base assembled and the tabletop glued up, you're in the home stretch. This phase covers flattening and sizing the top, adding the edge detail, final sanding, and attaching the top to the base.

Flattening the Tabletop

Even with careful glue-up, there will be minor unevenness at the joints. The panel needs to be flattened before it can be cut to final size.

At The Joinery:

We remove the dried glue with a card scraper, then run the tabletop through the planer. We have a 20" planer, so we have that luxury—your panel at 16" wide will fit through with room to spare. This is the fastest and most consistent method.

Without a wide planer:

- **Hand plane:** A sharp hand plane can flatten a panel beautifully. Work diagonally across the grain first, then finish with the grain.
- **Card scraper:** For final cleanup, especially around glue lines.
- **Random orbit sander:** Starting with 80 or 100 grit, sand both faces evenly until flat, then progress through finer grits.

Cutting to Final Size

Cut the tabletop to its final dimensions: 16" × 24".

At The Joinery:

We rip the top to width on the table saw, then use a crosscut sled to trim up the ends square. The table saw gives you a clean, straight edge and the crosscut sled ensures perfectly square corners.

Alternate methods:

A track saw works well for both ripping and crosscutting. You can also use a circular saw with a straightedge clamped as a guide—just take your time and make sure the straightedge is positioned accurately.

Thoughts from Steven

Don't fall into the square trap. The tabletop doesn't interface with any other wood or joint on its edges—only the bottom touches the aprons. Because of this, here's another rule from Steven: if it looks straight, it is straight. Many of my students have obsessed over the top being perfectly square. It doesn't need to be. It just needs to look good. Trust me, none of your family and friends are going to whip out their carpenter's square and check your top. If it looks square, it is square, and that's all that matters. Spend your time on the finish and forget about the square.

Adding the Chamfer

A chamfer is an angled cut that softens the edges of the tabletop. It prevents damage to the sharp corners, adds visual interest, and gives your fingers a comfortable edge to grip.

- Install a chamfer bit in the router.
- Set the depth for approximately 1/8" to 3/16" chamfer.
- Rout all four top edges, moving counter-clockwise around the top (feeding against the bit's rotation).
- Sand the chamfer smooth.

Final Sanding

Sanding prepares the surface for finish. Work through progressively finer grits:

5. **120 grit:** Removes tool marks, flattens any remaining imperfections.
6. **150 grit:** Removes 120 grit scratches.
7. **180 grit:** Continues refining the surface.
8. **220 grit:** Final sanding. The surface should feel smooth as glass.

Always sand in the direction of the grain. Cross-grain scratches show badly under finish. Use a sanding block or random orbit sander—never sand freehand with paper alone.

Thoughts from Steven

I don't know why, but people go nuts on sanding. I think they're comfortable with it. But here's my caution: don't overdo it. If you used the card scraper well earlier in the process, you may not need to sand at all—the scraper leaves the wood ready for finish. Only sand the parts that have visible blemishes or need smoothing. Be very careful not to round over edges; leave the hard lines crisp. Use the progressive grits only if you need to in order to fix a gnarly spot or two.

Attaching the Top

5. **Center the top on the base.** The overhang should be equal on all sides.
6. **Mark screw locations.** Through the elongated slots in the braces, mark where the screws will enter the underside of the top.
7. **Drill pilot holes.** Remove the top and drill pilot holes at the marked locations. Be absolutely certain not to drill through the top!
8. **Attach with screws.** Use pan-head screws with washers. The screw heads should be able to slide in the elongated slots—snug but not locked. This allows the top to move with seasonal changes.

Finishing Your Table

Finishing is the final step—and a topic deep enough to fill its own book. A good finish protects the wood, enhances its appearance, and makes the surface pleasant to touch. Here's an overview of options for cherry.

How Cherry Ages

Fresh-cut cherry is pale pinkish-brown. With exposure to light (especially UV), it darkens dramatically over several months to a rich reddish-brown. This natural aging process is one of cherry's most appealing characteristics. Clear finishes allow the wood to continue developing this patina; tinted finishes or thick film finishes can slow or stop it.

Finish Options

Oil Finishes (Danish Oil, Tung Oil)

Penetrating finishes that soak into the wood rather than building up on the surface. They're easy to apply (wipe on, let soak, wipe off), enhance the wood's natural beauty, and are easy to repair. Downsides: lower durability than film finishes and periodic maintenance required.

Wiping Varnish

Oil-based varnish thinned for easy application. Apply thin coats with a rag, let dry, scuff with fine sandpaper or steel wool, and repeat. Builds a thin, protective film over multiple coats. More durable than oil alone but still repairable.

Shellac

A traditional finish derived from lac beetles. Shellac dries fast, rubs out to a beautiful sheen, and is completely non-toxic when cured. However, it's not resistant to water or alcohol—ring marks are a risk on tabletops without additional protection.

Water-Based Polyurethane

Very durable and water-clear. Dries quickly, doesn't yellow with age, and cleans up with water. May raise the grain on the first coat (sand smooth before the second coat). Good choice for high-use surfaces.

Oil-Based Polyurethane

The most durable common finish. Builds a tough, protective film. Amber tone warms the wood's color. Slow drying and strong smell during application. Difficult to repair—spot repairs show.

Thoughts from Steven

I'm a lazy finisher. Finishing is my least favorite part of the project, so I look for an easy solution that lasts a long time and is repairable. By repairable, I mean it can be touched up easily with no need to sand the entire surface. To that end, my favorite finish is a brand called Tried and True. It's a linseed oil and resin finish that is non-toxic, doesn't produce a lot of fumes, gives a beautiful natural wood look, and since it's an oil finish, it's resistant to water and stains. If you do need to repair a planter ring, all you do is sand out the ring, apply a little more finish, and you're done. It goes on easy: wipe on a good thick coat with a towel or brush, let it sit for 15-20 minutes, then wipe off the excess. Wait 24 hours, then apply a second coat the same way. I usually stop after two coats, but you can keep going if you want. For tabletops, I then buff in a layer of wax to give it a little more sheen and protection. If it starts looking dingy in a few years, do a light cleaning and then apply another coat. Most oil finishes work similarly, but Danish oil and tung oil are very runny and hard to control—they can also cover unevenly if drips aren't caught. The Tried and True is very forgiving and has a consistency like honey, so it's easy to control. If I'm feeling frisky and really want some sheen, I mix the Linseed Oil 50/50 with Tried and True Varnish Oil.

Glossary of Terms

Apron: The horizontal members that connect table legs, providing structure and preventing the legs from spreading.

Board foot: A unit of lumber volume equal to 144 cubic inches (12" × 12" × 1").

Chamfer: An angled cut on an edge, typically 45 degrees, that softens the edge and adds visual detail.

Crosscut: A cut made across the grain of the wood (across the width of a board).

Dry fit: Assembling parts without glue to verify fit and alignment before final assembly.

End grain: The exposed ends of wood fibers, visible at the ends of a board. Absorbs finish differently and glues poorly.

Face grain: The wide surface of a board showing the decorative grain pattern.

Glue-up: The process of gluing parts together, or the assembly being glued.

Grain: The direction of wood fibers in a board, determined by the tree's growth pattern.

Hardwood: Wood from deciduous trees (those that lose their leaves). Typically denser than softwood.

Jointer: A machine that flattens one face of a board and can straighten one edge.

Long grain: The grain running the length of a board. The strong direction of wood; glues well.

Loose tenon: A separate piece of wood that fits into mortises cut in two mating parts, creating a mortise and tenon joint.

Milling: The process of machining rough lumber to precise, flat, uniform dimensions.

Mortise: A rectangular hole cut into wood to receive a tenon.

Planer: A machine that makes boards a uniform thickness by removing material from one face.

Rip cut: A cut made with the grain of the wood (along the length of a board).

Rough lumber: Lumber as it comes from the sawmill, with rough surfaces and no standard dimensions.

Softwood: Wood from coniferous trees (those with needles). Not necessarily soft in feel.

Square: Having 90-degree angles; also, a tool used to check and mark 90-degree angles.

Taper: A gradual reduction in width or thickness along the length of a part.

Tenon: A projecting tongue on one part that fits into a mortise on another part.

Wood movement: The expansion and contraction of wood in response to humidity changes. Occurs primarily across the grain.

Congratulations

You've completed your first piece of furniture—a significant accomplishment. The skills you've learned extend far beyond this single project. Milling, joinery, glue-up, shaping, and finishing are the foundations of all furniture making.

Your Shaker side table will serve you for decades if cared for. More importantly, it represents a change in how you see furniture. You now understand what goes into making something well—the planning, precision, and patience. You'll never look at furniture the same way again.

What's Next?

- **Build another one.** A matching pair of side tables would look great, and the second one will go faster.
- **Try a variation.** Same design, different wood species. Or modify the dimensions for a specific space.
- **Explore different joinery.** Traditional mortise and tenon, dovetails, or box joints await.
- **Take another class.** Each project builds on the last. What will you build next?
- **Join The Joinery community.** Continue developing your skills with shop access, additional classes, and fellow woodworkers.

Thoughts from Steven

Building furniture is humbling. No matter how much you learn, wood still surprises you. That's part of what makes it rewarding—you're never just executing a plan, you're collaborating with a material that has its own ideas. Embrace the imperfections. Learn from the mistakes. And remember: every piece of furniture you'll ever admire was made by someone who was once exactly where you are now.

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