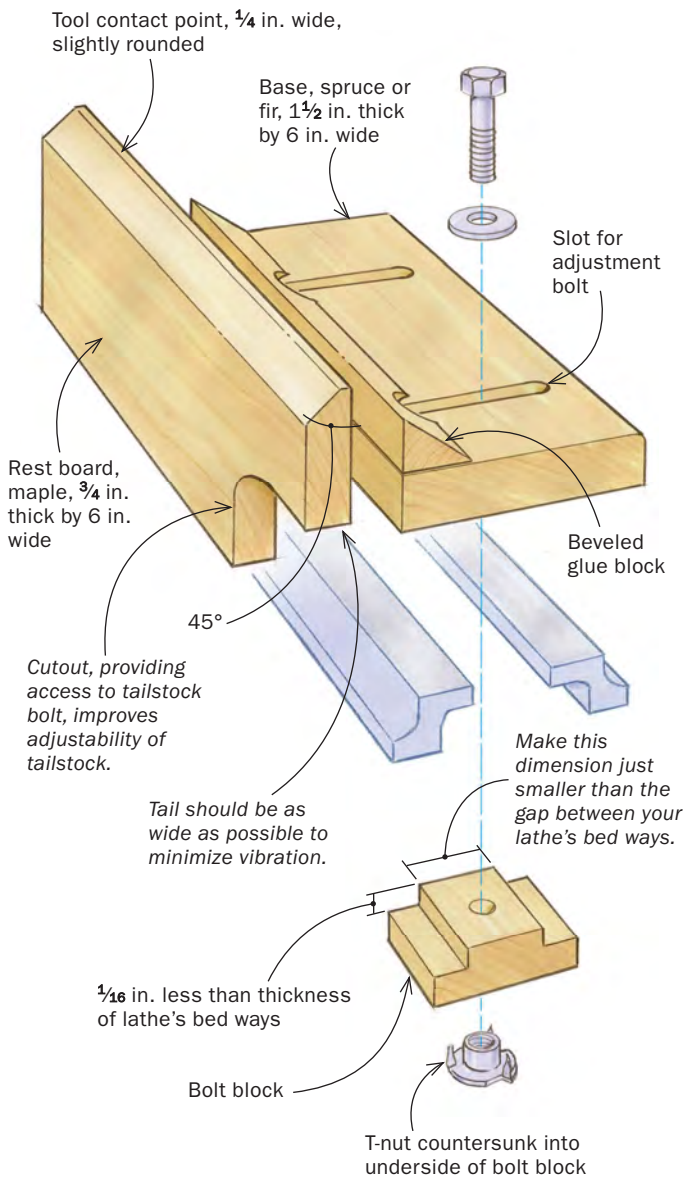
Make a Long Tool Rest for Your Lathe

This device makes smooth spindle turning faster and easier

BY TIM MANNEY

TOOL REST HANDLES ANY LENGTH SPINDLE



Drawings: Dan Thornton

BUILD THE BASE

Bolt slots for the base. *Using a jigsaw, Manney connects holes drilled in either end of the slots for the bolts that will tighten the tool rest to the lathe.*

The tool rests that come standard with most lathes are generally between 6 in. and 12 in. long. A short tool rest is fine for turning small things, but the first time you try to turn a table or chair leg, or anything else longer than the tool rest, you immediately recognize its limitations—you are forced to constantly reposition it and turn your workpiece in 6-in. to 12-in. segments. All this stopping and starting prevents you from making the fluid, full-body motions that yield consistent, smooth, flowing turnings.

You can buy commercially made tool rests 24 in. and longer; they're typically made of iron in a double-post design. And they are nice to use, but they can be hard to find and are usually pricey. Instead of going that route, I made three simple wooden tool rests in varying lengths, and I use them for all my spindle turning. Each tool rest cost less than $10 in materials and took about one hour to build. Once I'd made them, I put the tiny rest that came with my lathe in a box; then I forgot where the box was. Good riddance.

Curtis Buchanan taught me to turn during a fall and winter that I had the good fortune of working with him in his Windsor chair shop in Tennessee. My tool rests are based on the ones that Curtis uses. However, lacking the thick maple butcher block that Curtis used as the base of his rest, I came up with a slightly different construction method for mine, designing a rest that's easy to build from common materials.

My rests are made of three components: the base, the rest board (the vertical board that the tool rides on), and a beveled glue block. The base is a piece of construction lumber roughly 1½ in. thick and 6 in. wide. The rest board is maple (though any dense, tight-grained, diffuse-porous hardwood should be fine). Finally, the beveled glue block adds rigidity. The three parts are simply glued together, requiring no joinery or fasteners. The hefty components and large

Glue on the bevel block. *After ripping a length of 2x2 at 45° on the bandsaw, glue it to the base.*

Smooth the way for the rest board. *Let the glue cure, then clean up the joint between the base and the beveled glue block.*

Make room for the bolt heads. *A Forstner bit creates clearance for a wrench at the glue-block end of the bolt slot.*

Photos: Jonathan Binzen

THE REST IS NEXT

Measure to the center. *To determine the height of the rest board, measure between the lathe bed and the center, then subtract ¼ in. or so.*

The rest board gets ripped. *At the bandsaw, Manney rips the rest board to width.*

Accounting for the cutout. *To establish the length of the cutout at the end of the rest board, measure from the front of the tailstock casting to the adjustment wheel; the height of the cutout should be as low as possible while allowing wrench access to the tailstock adjustment bolt.*

Saw out the cutout. *Manney makes relief cuts in the maple rest board before sawing the curve.*

Glue again. *With the rest board ready, glue it to the base and bevel assembly (left). After glue-up, bevel the top edge of the rest board at 45°, leaving a flat ¼ in. wide. Then plane the flat to a slight radius.*

glue surfaces create a rigid, vibration-free tool rest.

Two slots in the base accept the bolts that clamp the rest to the bed of the lathe. The slots allow adjustment toward and away from the lathe centers to accommodate workpieces of different diameters. The bolts are threaded into wooden blocks with T-nuts embedded in them. The blocks, which are T-shaped themselves, slide under the ways of the lathe. The softwood base does dent under the washers from the clamping pressure of the bolts. This has no effect on the performance of the tool rest, but if you wish to minimize denting, a harder wood is the ticket.

I create a curved cutout at the right end of the rest to maximize the adjustability of the tailstock for workpieces of different lengths. The cutout provides clearance for the base of the tailstock and access to the bolt that tightens and loosens the tailstock. The tail of the rest—the part above the cutout—is the portion of the tool rest most vulnerable to vibration. Make it as wide as possible to minimize vibration.

The total length of your tool rest is whatever your heart desires. I use a 16-in., a 24-in., and a monster 45-in. With the 45-in.-long tool rest I can turn the rear legs of ladderback chairs without ever repositioning.

The top edge of the tool rest should be below your lathe centers. How far below depends on personal preference. I make mine about ¼ in. below the centers. I bevel back the top edge of the rest board at about 45°. This keeps the contact point of the turning tool close to the wood. When I bevel the edge I leave a ¼-in. flat at the apex and then slightly round the flat to create a durable contact point. If a tool (read skew) catches and gets slammed into the tool rest hard enough, it will dent. When that happens I plane the dent away, then replane the bevel and the rounded ¼-in. edge. It is important that the top edge be straight and smooth.

When you're ready to use the rest, it's easy to set it parallel with the lathe centers: Using a combination square referenced on the outside face of the rest board, simply align both ends of the rest the same distance from the centers.

I have been using these tool rests almost every day for the past six years. They are as functional as the day that I built them and I couldn't imagine working without them.

Tim Manney makes furniture and chairmaking tools in South Portland, Maine.

ATTACHMENT ISSUES

T-blocks with T-nuts. *Make T-shaped hardwood blocks sized to the space between your lathe's bed ways and insert T-nuts into them from below. Hold the T-blocks from below and lightly tighten the adjustment bolts by hand.*

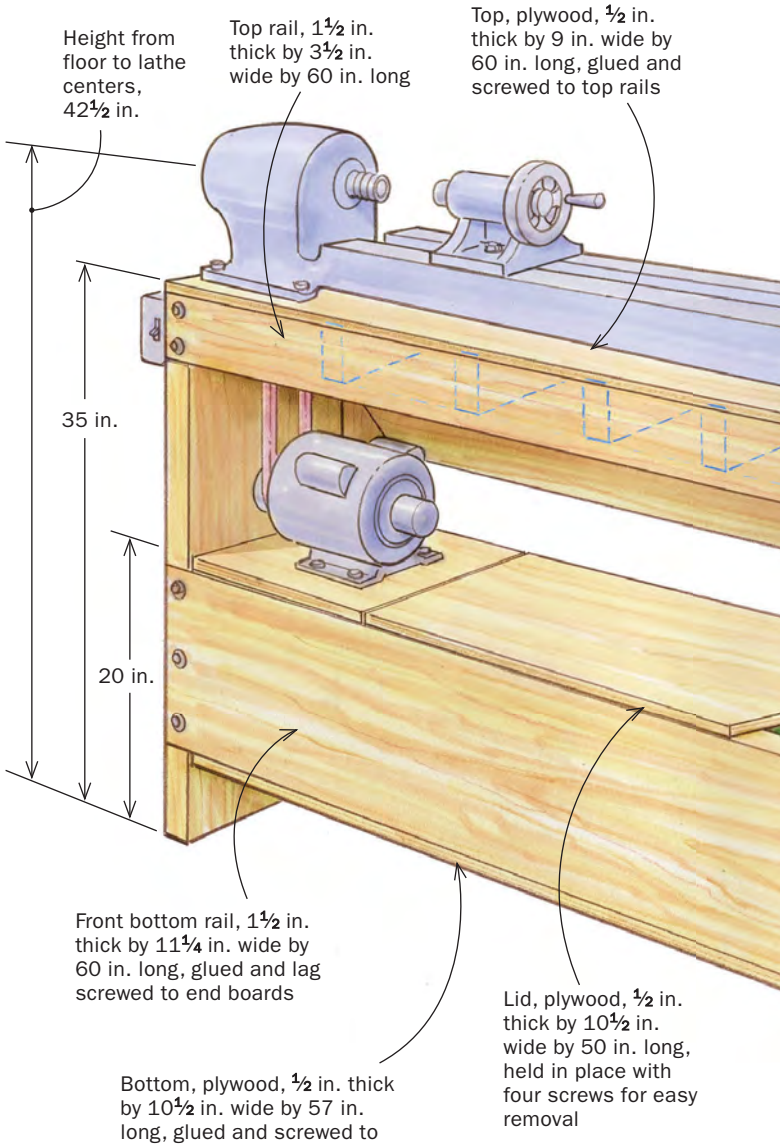
See about the centers. *With a combination square registered against the face of the rest board, set the tool rest equidistant from the headstock and tailstock centers, then tighten the bolts.*

The wrench finds an opening. *The cutout in the rest board provides access to tighten the tailstock so you can turn workpieces shorter than the tool rest.*

Bulk up your benchtop lathe

A sturdy stand with a bed extension and sand for ballast lets a bantam lathe function like a heavyweight.

BUILD A HEFTY STAND

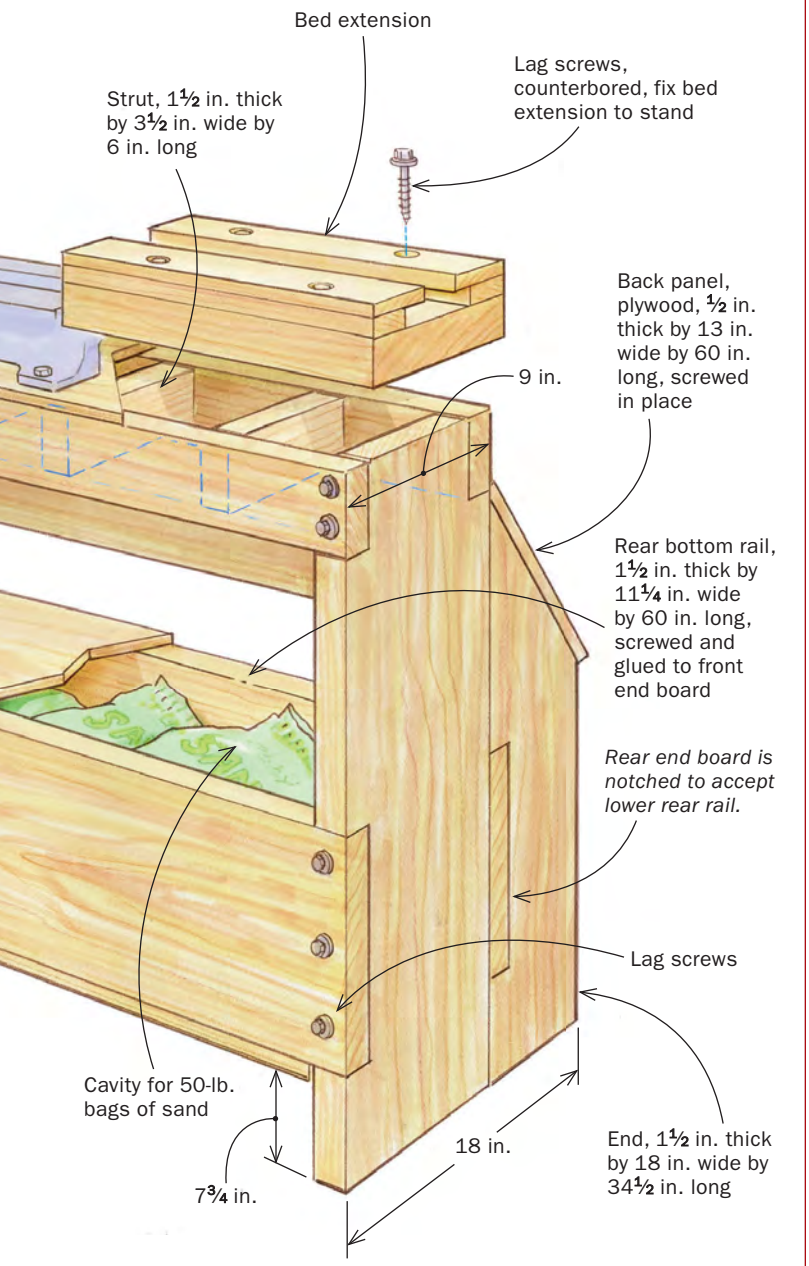


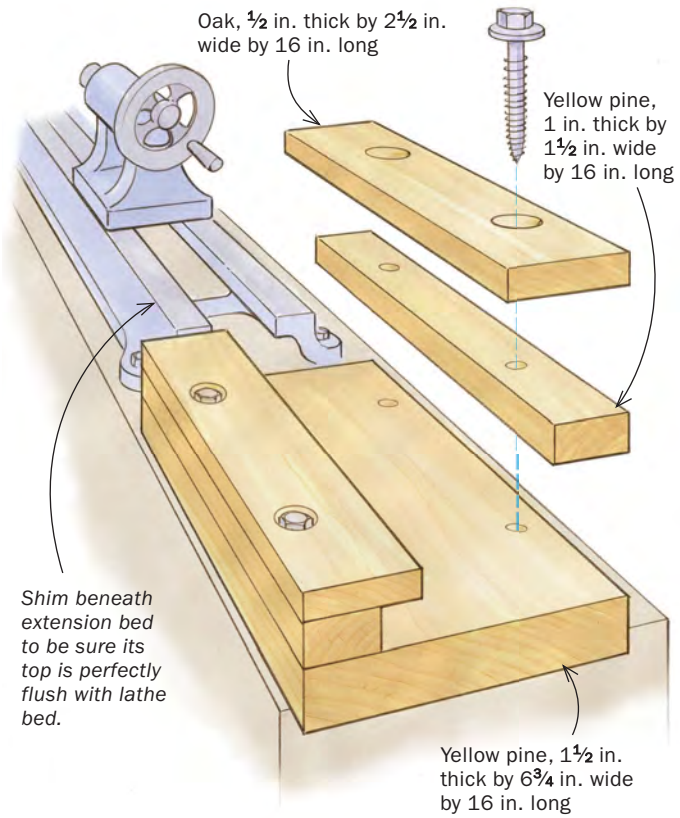
When I set up my first workshop, I bought small, homeowner-grade machinery that was manufactured between 1930 and 1950. The shop was in a rented space, and I knew I would have to move at some point. The machines I bought were stout and of good quality, and their diminutive size meant I could pick them up by myself, put them into the back of a small pickup, and set them up in a new space without having to hire a rigging crew or recruit the help of a horde of friends. They also take up minimal real estate, a benefit in small workshops.

The disadvantage of smaller, lightweight tools is that they are more prone to vibration and chatter than their counterparts that weigh hundreds of pounds. I compensated for that by making stands for those tools, stands that are robustly built and incorporate shelving or boxes that I can fill with 50-lb. bags of sand. When it is time to move I take the machine off of the stand and move the machine, the stand, and the sand separately.

My lathe stand is a good example of this approach. The lathe is a 1938 Craftsman model that weighs less than 100 lb. The stand is built sturdily with construction lumber and a few plywood panels that make for a rigid assembly. There is a box in the frame

SHOPMADE EXTENSION BED





that holds 150 lb. of sand to help deaden vibrations and keep the lathe stable when I'm roughing down large spindles.

The height of your stand will vary depending on your height and the height of your lathe centers. I am 5-ft. 5-in. tall, and I built my stand so that my lathe's centers are 42½ in. from the floor, which puts the centers at the height of the crease of my elbows when I stand with my arms by my sides. Turning at this height is comfortable for me.

If I were building the stand again, I would make cutouts on the bottoms of the end panels to create feet so it would be easier to shim the stand to match an uneven workshop floor. I would also increase the width of the sand compartment so bags of sand would fit flat in the box rather than on edge. This would let me double the amount of sand in the base from 150 lb. to 300 lb.

I built my stand longer than the lathe and added a bed extension so that I could turn the long rear posts of my ladderback chairs. I built the extension bed out of scrap, and I have always meant to go back and build something a little more stable and durable, but it works fine and I just keep using it. When I lag-bolted the extension bed to the stand I shimmed beneath it with business cards to bring it perfectly into alignment with the lathe bed.

—T.M.