



the

An Exclusive Lowe's
Woodworkers Publication

woodpost

Spring 2005

craft a trellis entry

4 Deck Bench 10 Scrap Wood Bin 12 New Router 15 Pocket Hole Joinery

From Our Shop

Warmer weather is coming, so you may be daydreaming of new ways to enjoy and enhance your outdoor spaces. We've been thinking the same thing. Check out our feature project, a garden entry trellis, that we built at the natural transition between a home's side yard and front yard. Finished to have an aged appearance and accented with plants or climbing vines, this trellis could be a beautiful part of your landscape for years to come.

We stayed outdoors for another project: a comfortable deck bench with storage beneath a removable seat. In addition to outdoor seating, it also gives you the perfect place to stow patio furniture cushions when not in use.

When you've finished making those projects, there are likely to be a few pieces of lumber left over. So we also included a plan to build a simple scrap wood organizer for your shop. It has dividers to sort different-size pieces, and casters on the bottom that allow you to roll it where it's needed.

Highlighted elsewhere in this issue is information on using the timesaving Kreg pocket hole screw tools and a new router kit by Hitachi. We've also included some guidelines that will help you decide what type of wood is best suited to your project.

Whether you build any of these or our other projects, let me know about the results. Or just give me your thoughts on *The Wood Post* and our Web site, Lowe's.com/Woodworkers. If you have any suggestions, I encourage you to write. We appreciate your comments.

Bill Sawyer,
Lowe's Woodworkers

P.S. Tell us about your projects or how you became interested in woodworking. Send your responses c/o Peggy Rees, P.O. Box 523, Birmingham, AL 35201. If we profile you in an upcoming issue of *The Wood Post*, you'll receive a free Hitachi 14.4-volt 3/8-inch cordless drill/driver kit.

FREE TO MEMBERS!

As a member of Lowe's Woodworkers, you're entitled to a free woodworking plan with each issue of *The Wood Post*. Try our plan for this stylish open-ended bookshelf (shown at right). It's available online until April 16, 2005. Log on to: Lowe's.com/FreePlan.



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the pros know

With the Experts at



Improving Home Improvement®

I'm just starting out in woodworking, and I'm confused about the saw blades available for cutting wood. Are there guidelines to help choose which blade is best for a job?

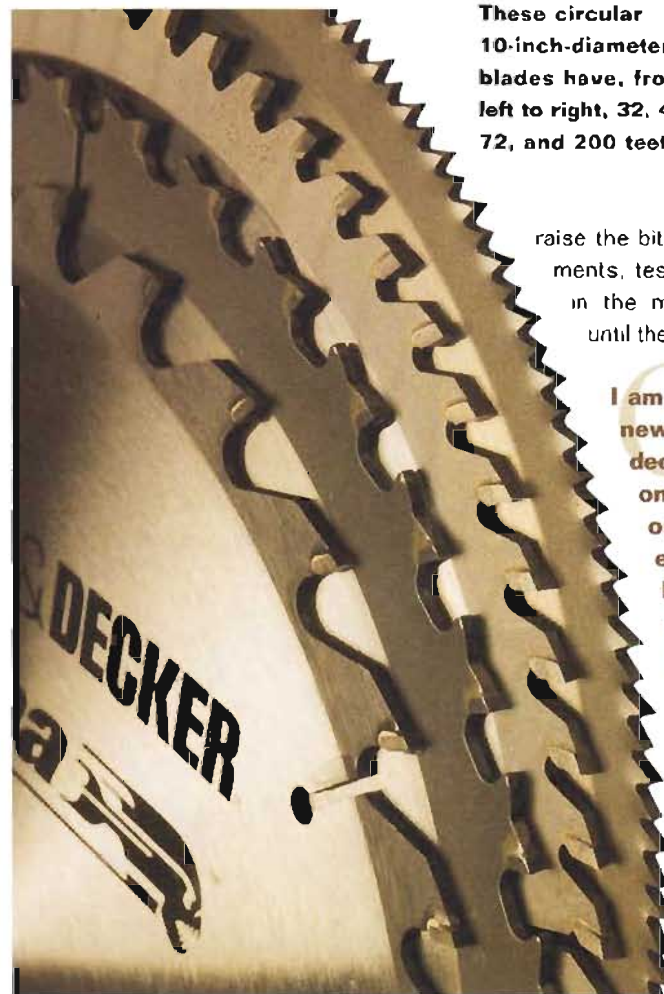
A: Whether a blade is powered by hand or machine, two main characteristics will affect its performance: the number of teeth and the set of the teeth.

Two common systems are used to describe tooth count: teeth per inch (tpi—for hand, scroll, saber and band saw blades), or the total number of teeth on a round blade such as that on a miter or circular saw. Generally speaking, the more teeth the finer the cut. For example, a circular saw blade with 72 teeth will produce a smoother cut than a blade with 32 teeth. A typical 10-inch-diameter table saw blade can have as few as 8 total teeth or as many as 200, the latter type being capable of super-smooth crosscuts.

The amount of set the teeth have also will affect the blade's cutting ability. Set refers to how each tooth is bent out slightly from the center of the blade. Without set, the blade would quickly bind. A coarse-cutting blade (such as one used for ripping) generally has a wider set than a finer-cutting saw. It is the set of a blade that creates kerf, or the width of the groove sawn in the wood.

I have problems getting joinery to fit together well. I often measure and remeasure. How can I get the fit that I want?

A: Woodworkers often use a technique called "sneak up on it" to fit joinery. This involves accurately cutting one half of a joint and then adjusting the tooling to cut the other half of the joint in stages until it fits. The best way to do this is to use scrap



These circular 10-inch-diameter blades have, from left to right, 32, 40, 72, and 200 teeth.

raise the bit or blade in small increments, testing the fit of the tenon in the mortise after every cut until the fit is close to perfect.

I am thinking of buying a new router, and I can't decide whether to select one with a 1/4-inch collet or a 1/2-inch collet. My existing router bits have 1/4-inch shanks. Should I purchase one with a 1/4-inch or 1/2-inch collet?

A: You should go with a router that accepts 1/2-inch bits—just make sure yours comes with either an adapter or a separate collet that can take bits with the smaller 1/4-inch shank. The reason for this is twofold.

wood on hand that's identical in thickness to the project pieces. Once the fit is perfect on the scrap piece, go ahead and cut the project piece.

Say you need to cut a mortise and tenon joint. The most reliable way is to lay out the mortise with precision, and then cut it.

The idea is to start with the bit or blade set to cut the tenon fat (meaning a little wider than needed). Then progressively

First, the stouter shanks of 1/2-inch bits are less prone to vibration and chatter, meaning you'll usually get a smoother cut with a 1/2-inch-shank bit. The next reason deals with availability. Because 1/2-inch-shank bits are becoming increasingly popular, manufacturers are making more of them and fewer 1/4-inch-shank bits. Many router makers now ship their tools either with collets of both sizes or with an adapter ■

Deck Bench

Use this handy piece for storage and seating.

Add seating to a deck, patio, or porch with this project. And this piece does double-duty: a removable seat reveals plenty of vented storage for outdoor cushions or gardening equipment.

TOOL LIST

- table saw (with dado blade set)
- miter saw
- router
- 3/8-inch roundover bit
- drill/driver (with #2 square driver bit and 1 1/2-inch countersink drill bit)
- power sander or sanding block
- Kreg ProPack Pocket Hole System
- 2-inch hole saw
- hammer and chisel
- staple gun
- clamps
- framing square
- tape measure
- pencil



Instructions:

General: Use wood glue in addition to screws when joining parts. Clean excess glue from wood per manufacturer's instructions. Use silicone sealant on all joints as you build.

Step 1: Construct the box assembly (see Figure 1).

a. Using a table saw, trim one edge of both (8-foot-long) 2 x 6s to square the edges. Measuring from the squared edge, rip 1 1/2 x 1 1/2-inch stock for the legs, rails, lower center

support, and deck brace. Cut the pieces per the Cut List.

b. Using a table saw, cut 1/2 x 1/2-inch dados in all legs and rails (see detail of upper rails in Figure 1). Cut two dados in the legs since they will be accepting two panels each.

c. Cut the tenons on the lower rails and lower end rails (see tenon detail for lower rails in Figure 1).

d. Using a table saw, cut a 3/4-inch-deep notch in the upper end rails (see notch placement in Figure 1). Make several cuts

Figure 1

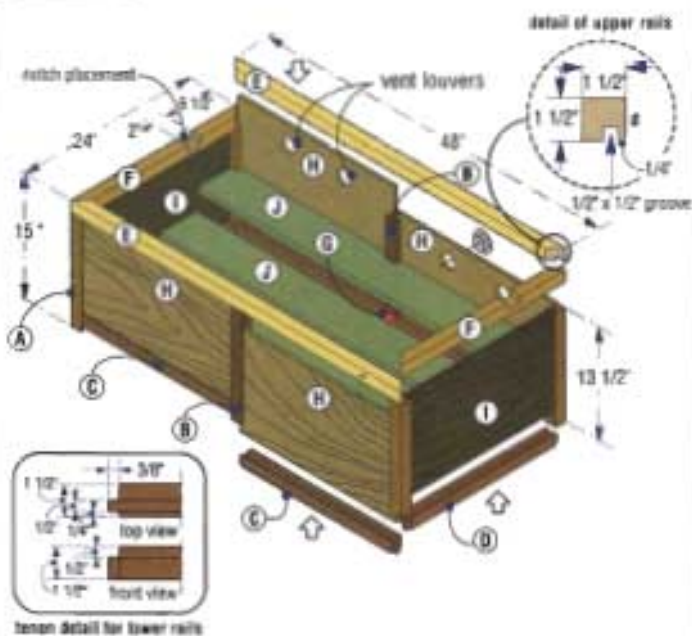
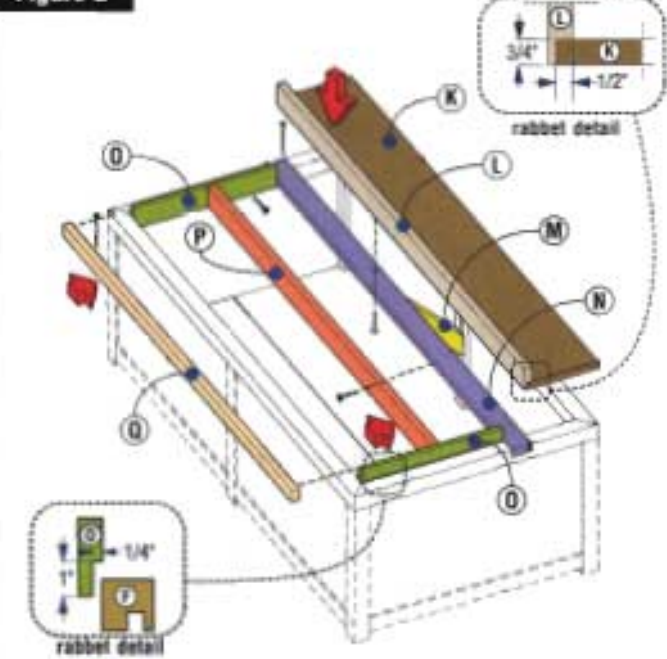


Figure 2



$\frac{1}{8}$ inch apart in the notch, and then use a chisel to gently tap out the waste wood.

■ Cut front and back panels then the end panels per the Cut List.

f. Dry-fit the assembly using clamps, check for fit and square, and adjust as needed. Assemble the box using 1½-inch screws.

g. Using the hole saw, drill four 2-inch-diameter holes in the back panels per Figure 1. Install four vent louvers.

Step 2: Install the lower center support and flooring slats (see Figure 1).

a. Drill pocket holes, and attach the lower center support to the center legs using 2½-inch Kreg screws. The top of the support should be flush with the tops of the lower rails.

b. Cut the flooring slats per the Cut List and dry-fit them on top of the lower rails and center support. There should be a 1/8-inch gap between the boards. The flooring slats can be removed for now. They will be attached once the deck assembly is in place.

LOWE'S SHOPPING LIST

Lumber®

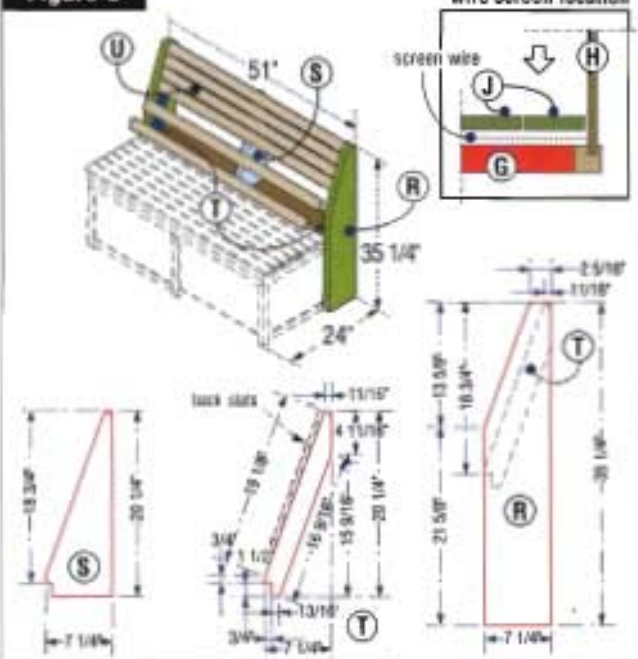
- 8 (10-foot-long) 1 x 6s
- 2 (8-foot-long) 2 x 6s
- 1 (8-foot-long) 2 x 8
- 1 (48- x 96-inch) sheet of $\frac{3}{8}$ -inch-thick plywood
- 1 (48- x 96-inch) sheet of $\frac{1}{2}$ -inch-thick plywood

*Use all lumber and plywood rated for outdoor use.

Hardware & Supplies

- 2 boxes (1½-inch) stainless steel deck screws
- 1 box (3-inch) stainless steel deck screws
- 1 box (2½-inch) Kreg pocket screws (coarse thread)
- 1 bag (2-inch) vent louvers
- 1 roll (36- x 84-inch) aluminum wire screen
- ¼-inch staples
- exterior-grade wood glue
- clear silicone sealant
- 2 (4-pack) nail-on furniture glides
- 1 gallon Olympic Wood Protector Semi-Transparent Stain, Teak #730

Figure 3



Step 3: Cut and assemble the curb and deck pieces (see Figure 2).

■ Using a table saw, cut the deck and all curb pieces per the Cut List.

b. Cut a rabbet $\frac{3}{4}$ -inch deep x 1-inch high in the curb ends (see rabbet detail in Figure 2).

e. Cut a rabbet in the deck curb, measuring $\frac{1}{2}$ inch wide and $\frac{3}{8}$ inch high. This is the notch the deck will slide into.

d. Assemble the curb front, ends, and back using 1½-inch screws, but don't attach the curbing assembly to the box assembly now.

CUT LIST

Part Name	Material	Size (in inches)	Qty.
(A) corner legs	2 x 6	1½ x 1½ x 13½	4
(B) center legs	2 x 6	1½ x 1½ x 13½	2
(C) lower rails	2 x 6	1½ x 1½ x 22½	4
(D) lower end rails	2 x 6	1½ x 1½ x 21½	2
(E) upper rails	2 x 6	1½ x 1½ x 48	2
(F) upper end rails	2 x 6	1½ x 1½ x 24	2
(G) lower center support	2 x 6	1½ x 1½ x 21	1
(H) front & back panels	½-inch plywood	¾ x 12 x 22½	4
(I) end panels	½-inch plywood	¾ x 12½ x 21½	2
(J) flooring slats	1 x 6	¾ x 5½ x 46½	4
(K) deck	½-inch plywood	¾ x 7 x 48	1
(L) deck curb	1 x 6	¾ x 2½ x 48	1
(M) deck brace	2 x 6	1½ x 1½ x 9½	1
(N) curb bottom	1 x 6	¾ x 2 x 48	1
(O) curb ends	1 x 6	¾ x 2½ x 14	2
(P) curb back	1 x 6	¾ x 2½ x 45	1
(Q) curb front	1 x 6	¾ x 1½ x 45½	1
(R) back supports	2 x 8	1½ x 7½ x 35½	2
(S) center support	2 x 8	1½ x 7½ x 20½	1
(T) slat supports	1 x 6	¾ x 2½ x 23½	2
(U) back slats	1 x 6	¾ x 2½ x 48	6
(V) seat slats	1 x 6	¾ x 2½ x 49½	7
(W) seat panel	½-inch plywood	¾ x 15½ x 47½	1
(X) seat sides	1 x 6	¾ x 2½ x 16½	2
(Y) seat trim (long)	1 x 6	¾ x 2½ x 48	2

e. Dry-fit the curb bottom, deck curb, and deck, then trim as needed. Assemble these three parts as a unit using 1½-inch screws, but do not attach to the box assembly at this time.

f. Cut and dry-fit the deck brace. Drill holes for 2½-inch pocket screws in preparation for assembly.

Step 4: Build and attach the seat back assembly. Attach the wire screen and flooring slats (see Figure 3).

a. Cut back supports and center support per the Cut List and details in Figure 3. Clamp the pieces together, and sand to shape the corners.

b. Attach the center support to the deck assembly (built in Step 3) from the bottom using 3-inch screws. Set the back supports aside for now.

c. Attach the deck and center support assembly to the box assembly using 1½-inch screws.

d. Attach the curbing assembly (built in Step 3) to the box assembly using 1½-inch screws.

e. Invert the box assembly, and attach the deck brace using 2½-inch Kreg pocket screws. Cut the wire screen to fit the bottom

of the box assembly, and secure to the lower rails using staples.

f. Set the assembly upright; then attach the flooring slats atop the screen using 1½-inch screws.

Step 5: Construct the seat assembly (see Figure 4).

a. Cut the seat trim and seat sides per the Cut List, and rabbet them to accept the seat panel. The rabbet should be ¼-inch wide and ¾-inch deep.

b. Miter the ends of the seat trim and side pieces. Join them using 1½-inch screws.

c. Cut the seat panel, and attach to the trim assembly using 1½-inch screws.

d. Cut seat slats per the Cut List. Round over the top edges with a ¼-inch roundover router bit. Attach the slats to the seat assembly using 1½-inch screws.

Step 6: Attach the seat back, and finish construction (see Figure 3).

a. Cut back slats per the Cut List. Use a ¼-inch roundover router bit to round the top and bottom edges of the back slats on the side that will be facing the front of the bench.

b. Attach the back supports to the sides of the box assembly using 3-inch screws

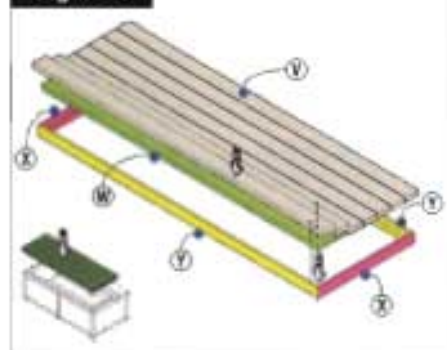
c. Cut the slat supports per the Cut List, and attach them to the back supports using 1½-inch screws (see details in Figure 3).

d. Starting at the top, attach the back slats to the slat supports and the center support using 1½-inch screws. Leave a ¼-inch space between slats.

e. Attach furniture glides to the bottom of each leg; sand bench, and finish as desired. This one was finished with Olympic Wood Protector Semi-Transparent Stain, Teak #730.

Project #SP051 ■

Figure 4





Garden Entry Trellis

Issue a special invitation to family and friends to enter your outdoor room.

There is a uniqueness about a canopy that leads you to a garden. Sophisticated but simple in design, this entry trellis is beautiful all by itself, but is made to be covered in vines and flanked by plants.

TOOL LIST

- circular saw with a straightedge guide
- miter saw
- power sander or sanding block and various-grit sandpaper
- power drill/driver and bits (including #2 square driver bit)
- posthole digger
- shovel
- trowel
- chisel
- hammer
- level
- framing square
- stakes
- tape measure
- pencil

Instructions:

General: Countersink screws, set nails, and fill holes. Use glue in addition to fasteners when connecting parts. Remove the excess glue per manufacturer's instructions.

Step 1: Build the posts.

a. Cut the post pieces (4 per post) and assemble using 3-inch screws per the Post Section illustration.

b. Cut the post caps per the Cut List. Attach one post cap to the top of each post using 3-inch screws.

Step 2: Assemble the two side panels.

a. Place two posts, capped ends facing the same direction, on a flat surface spaced 21 inches apart, wide sides facing up. Cut the side rafter supports per the Cut List.

b. Place a side rafter support flush with the top of the post caps and flush with the outside of the two posts. Use a framing square to check for square. Attach the support to the posts using 3-inch screws.

c. Cut the horizontal laths per the Cut List. Cut a 1/2-inch chamfer on the three outside-facing end edges of each lath.

d. Using 3-inch screws, attach the first piece of horizontal lath 12 inches from the top of the post and flush with its outside edges. Repeat for the rest of the horizontal lath pieces, spacing them 12 inches apart from lath top to lath top (see Figure 1). Repeat this step for the other side panel.

Step 3: Assemble the rafters and struts.

a. Cut the rafters per the Cut List. Make a 45° cut at each end of the rafters (see the rafter end detail). Start the cut 3/4 inch from the top edge of the rafter.

b. Mark the centerline along the top edge of the rafter. Mark 16 1/2 inches from the centerline in both directions. Measure and mark 1 1/2 inches from each 16 1/2-inch mark back toward the center. Project these marks 1 1/2 inches down the face of the rafters. This is the notch location for the two outside struts.

c. Place marks 3/4 inch on either side of the centerline, and project these lines 1 1/2 inches down the rafter face. This will be the notch location for the center strut.

d. Adjust the depth of your saw cut to 1 1/2 inches. Make several cuts approximately 1/4 inch apart inside the three sections marked. Using a chisel and hammer, carefully remove the wood in the notches. Repeat for the remaining rafters.

e. Cut the struts per the Cut List. Then cut a 1/2-inch chamfer on the edges at the end of the struts.

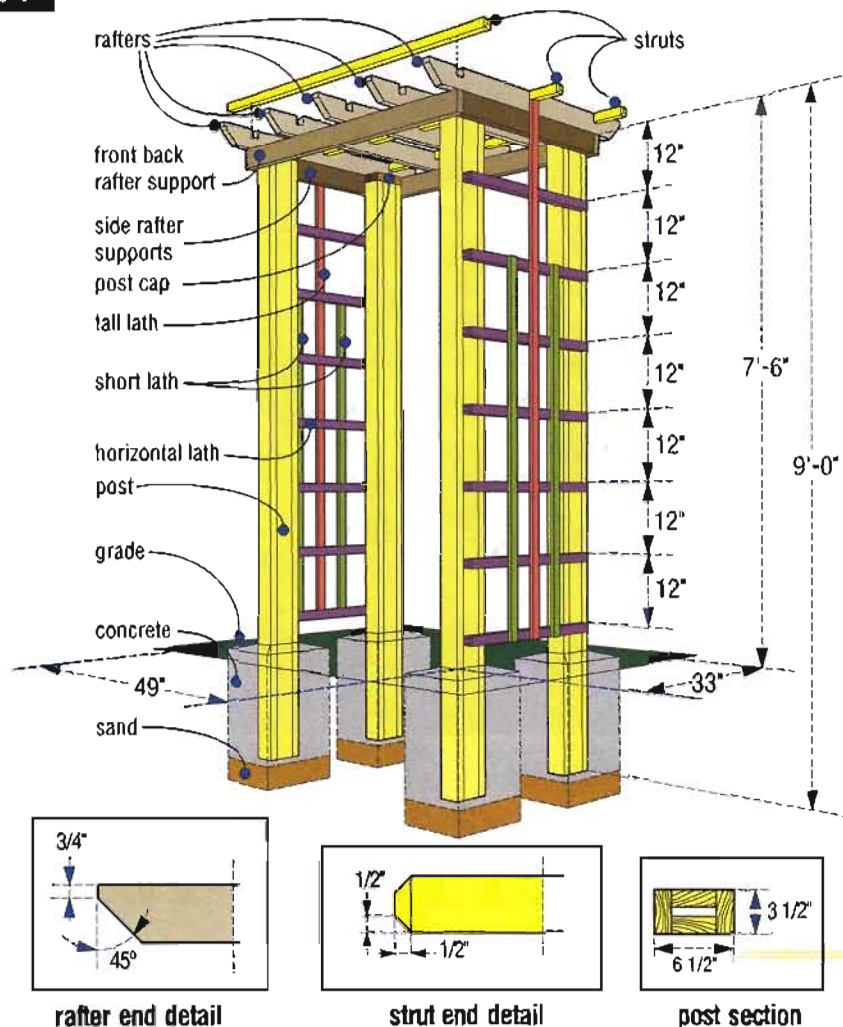
f. Place the two end rafters on a flat surface 49 inches apart from the inside edges. Place the remaining rafters 11 1/2 inches apart. Dry-fit the struts in the notches. Struts should overhang the outside rafters by 6 inches. Adjust the spacing between the rafters as needed.

g. Remove one strut and apply glue to the notches. Replace the strut and secure using 3-inch screws. Repeat this step for the remaining struts, and allow the assembly to dry.

Step 4: Prepare the location for installation of the trellis.

a. Lay out, stake, and square the location of the four posts. The centers of the posts marking the

Figure 1





entryway are 39½ inches apart. Front to back, the post centers are 26½ inches apart.

b. At each marked corner, dig a hole that measures approximately 11½ x 14 inches and 22 inches deep. Add sand to the bottom of the holes until they are 18 inches deep.

Step 5: Install the side panel assemblies.

a. Place the side panel assemblies in the holes. Place a level on the top edge of the side rafter support and adjust the amount of sand in one hole or another until the side is level.

b. Place a level vertically along one post of the same side to check for plumb. Use stakes and scrap lumber to temporarily secure this side, and then add enough dry concrete mix—a few inches or more—to the holes to stabilize it. Tamp the concrete mix in place.

c. Repeat this procedure for the other assembly, making sure that the two panels are 49 inches apart, from outside edge to outside edge. Add or remove sand from the holes to make the two sides level with each other.

d. Add enough dry concrete mix into the remaining two holes to stabilize the assembly. Use stakes and scrap lumber to secure it.

CUT LIST

Part Name	Material	Size (in inches)	Qty.
struts	(8-foot-long) 2 x 4	1½ x 1½ x 64	3
rafters	(8-foot-long) 2 x 4	1½ x 3½ x 48	5
front/back rafter supports	(10-foot-long) 2 x 4	1½ x 3½ x 52	2
side rafter supports	(8-foot-long) 2 x 4	1½ x 3½ x 33	2
post caps	(8-foot-long) 2 x 4	1½ x 3½ x 6½	4
tall laths	1 x 6	¾ x 1½ x 85½	2
short laths	1 x 6	¾ x 1½ x 61½	4
horizontal laths	(8-foot-long) 2 x 4	1½ x 1½ x 33	14
posts	(10-foot-long) 2 x 4	1½ x 3½ x 106½	16

Step 6: Attach the front and back rafter supports. Add the rafter and strut assembly.

a. Attach the front and back rafter supports to the two side panel assemblies using 3-inch screws. They should be flush with the top of the posts as well as with the outside edges of the side rafter supports.

b. Place the rafter and strut assembly on top of the posts. Adjust until the rafters overhang the front and back of the rafter supports by 6 inches. Also adjust the entire trellis from side to side until the two outside rafters are aligned with the outside edges of the side rafter supports. Attach the rafters to the rafter supports using 16d nails.

Step 7: Attach the tall and short laths.

a. Cut the tall and short laths per the Cut List. Attach one tall lath to each side panel, aligning it below the center strut. Attach it to the side rafter support and to each horizontal lath piece using 8d nails.

b. Using 8d nails, attach the short lath pieces (2 per side) to the horizontal lath pieces, leaving a 4-inch space between them and the long lath. The short pieces should be flush with the lower edge of the bottom horizontal lath.

Step 8: Complete the installation. Finish the trellis.

a. Check that each side is still level and plumb.

b. Mix enough wet concrete per the manufacturer's instructions to fill the balance of the holes. (The wet mix will also set the dry concrete mix you put in the holes earlier.) Pour concrete into the holes until it is just above ground level, then trowel the top of the concrete to slope it away from the posts in all four directions. Let concrete cure overnight.

c. Grade the dirt around the posts and dispose of excess dirt from the holes.

d. Sand the trellis before finishing. Stain or paint as desired. (The trellis pictured was finished with Olympic Wood Protector Semi-Transparent Stain, Weathered Barnboard #917.) **Project #SP052 ■**

LOWE'S SHOPPING LIST

Lumber*

- 2 (8-foot-long) 1 x 6s
- 8 (8-foot-long) 2 x 4s
- 17 (10-foot-long) 2 x 4s

*Use lumber rated for outdoor use.

Hardware & Supplies

- 1 box (2½-inch) 8d galvanized finishing nails
- 1 box (3½-inch) 16d galvanized finishing nails
- 1 box (3-inch) stainless steel deck screws
- 4 (50-pound) bags all-purpose sand
- 4 (50-pound) bags all-purpose concrete mix
- 1 gallon Olympic Wood Protector Semi-Transparent Stain, Weathered Barnboard #917
- exterior-grade wood glue
- wood filler

Scrap Wood Organizer

Keep your shop tidy with this useful project.

Here's a solution for storing and sorting all those wood scraps of varying sizes scattered about the shop or garage. Give that lumber a place to stay with this compartmentalized bin on wheels.



Instructions:

General: Use wood glue in addition to fasteners when joining wood parts. Fill all nail holes and voids with wood filler, sand smooth, and finish if desired. As pictured, this project is unfinished.

Step 1: Cut the dividers and end panels. Mark partition and cleat locations.

a. Cut the dividers and end panels (see Figure 1). Place the end panels on a flat surface. Mark the locations of the partitions and cleats per the dimensions given in Figure 1.

b. Mark the locations of the partitions and cleats on both sides of the dividers.

Step 2: Construct the base frame.

a. Cut the stiles and rails per the Cut List.

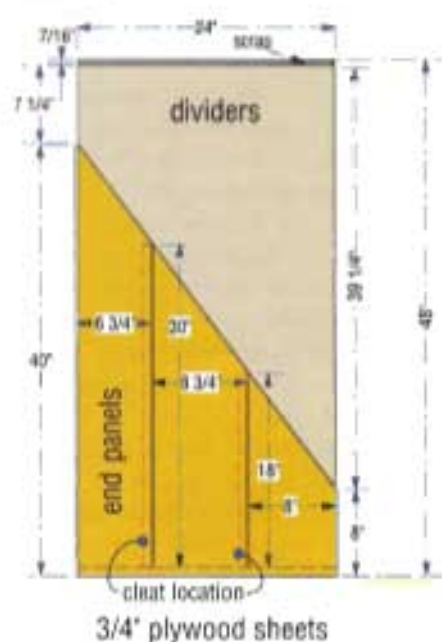
b. Using the Kreg system, drill two pocket holes in the ends of each stile. (Turn to the Workshop column on page 15 for more information about using the pocket hole system).

c. Assemble the base frame by aligning two stiles flush with the ends of the two rails (see Figure 2). Attach using pocket screws.

d. Measure in 10 1/8 inches from the right end of the frame, and mark both rails. This mark is the centerline of the third stile. Measure in 21 1/8 inches from the same end, and mark both rails. This mark is the centerline of the fourth stile.

e. Using pocket screws, attach the third and fourth stiles to the base frame.

Figure 1



f. Cut the hardware cloth to fit, and staple to the base frame.

Step 3: Cut the cleats, and then attach them to the end panels and the dividers. Attach the end and back panels to the base frame.

a. Cut the cleats per the Cut List. Attach them to the end panels and the dividers using 1-inch brads (see Figure 3). Position the cleats $\frac{1}{8}$ -inch up from the bottom edge of the end panels.

b. Attach the end panels to the base frame using $1\frac{1}{2}$ -inch screws. The ends should be flush with both the front and bottom of the base frame.

c. Attach the back panel to the base frame using $1\frac{1}{2}$ -inch screws. Be sure that the back panel is flush with the outside edges of the end panels and the bottom of the base frame.

Step 4: Cut the partitions. Attach dividers, partitions, and front panel to the base frame. Install casters.

a. Mark a line on the back panel 10 $\frac{1}{2}$ inches in from the right end panel. Then make a second mark $\frac{1}{8}$ inch to the left of the first mark. Attach the first divider between the two marks using $1\frac{1}{2}$ -inch screws. Repeat this process to place and secure the second divider,

using the same measurements used to place the first divider.

b. Place the entire assembly on its back, and secure the dividers through the base frame using 4d finishing nails.

c. Cut all the partitions per the Cut List. Attach both tall and short partitions to the cleats using 1-inch brads.

d. Using $1\frac{1}{2}$ -inch screws, attach the front panel flush with the outside edges of the end panels and base frame.

e. Using a $\frac{1}{8}$ -inch bit, predrill the holes for the casters at each corner of the base frame. Attach a caster at each corner using lag screws and two washers per screw.

Project #SP053 ■

Figure 2

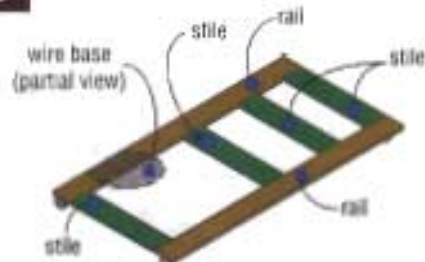
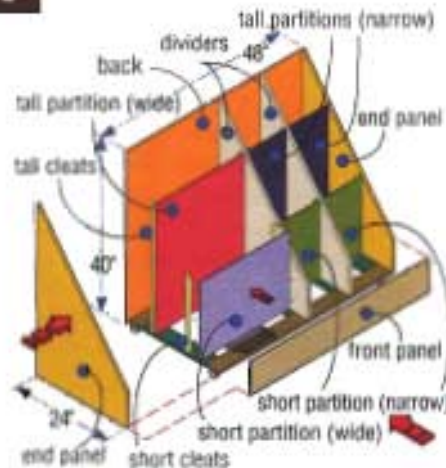


Figure 3



TOOL LIST

- table saw (or circular saw with straightedge guide)
- miter saw
- power drill/driver with Phillips-head driver and $\frac{1}{8}$ -inch bit
- Kreg ProPack Pocket Hole System or Kreg Mini Kit
- hammer
- framing square
- tape measure
- pencil

LOWE'S SHOPPING LIST

Lumber

- 9 (3-foot-long) $\frac{1}{2}$ -inch-square dowels
- 2 (8-foot-long) 1 x 4s, pine
- 1 (48- x 96-inch) sheet of $\frac{1}{8}$ -inch-thick pine plywood
- 2 (48- x 96-inch) sheets of $\frac{1}{8}$ -inch-thick birch plywood

Hardware & Supplies

- 1 box (1-inch) brads
- 1 box 4d (1 $\frac{1}{2}$ -inch) finishing nails
- 16 Ck x 1-inch lag screws
- 1 box (1 $\frac{1}{2}$ -inch) drywall screws
- 1 box (1 $\frac{1}{2}$ -inch) Kreg pocket screws (coarse thread)
- 1 box ($\frac{1}{8}$ -inch) galvanized poultry staples
- 32 Ck-inch flat washers
- 1 roll (23-gauge) hardware cloth
- 4 (2 $\frac{1}{2}$ -inch) industrial swivel casters
- wood glue
- wood filler
- sandpaper

CUT LIST

Part Name	Material	Size (in inches)	Qty.
dividers	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 24 x 39 $\frac{1}{2}$	2
end panels	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 24 x 40	2
rails	1 x 4	$\frac{1}{8}$ x 3 $\frac{1}{2}$ x 46 $\frac{1}{2}$	2
stiles	1 x 4	$\frac{1}{8}$ x 3 $\frac{1}{2}$ x 17	4
wire base	hardware cloth	24 x 46 $\frac{1}{2}$	1
back panel	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 40 x 48	1
tall partition (wide)	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 24 x 30	1
tall partitions (narrow)	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 10 $\frac{1}{2}$ x 30	2
short partition (wide)	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 18 x 24	1
short partitions (narrow)	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 10 $\frac{1}{2}$ x 18	2
tall cleats	dowels	$\frac{1}{2}$ x $\frac{1}{2}$ x 24	6
short cleats	dowels	$\frac{1}{2}$ x $\frac{1}{2}$ x 18	6
front panel	$\frac{1}{8}$ -inch plywood	$\frac{1}{8}$ x 8 x 48	1

A Cut Above

This new router kit makes quick, beautiful work of both decorative and functional cuts.

The versatility of routers can be as appealing to beginners as it is to veteran woodworkers. These tools, when equipped with appropriate bits, can round sharp edges, create decorative cuts, carve smooth coves, and cut many types of joinery, including rabbets and dovetails.

Routers generally come in two types: fixed base or plunge. A fixed-base router works best for cuts made to an outside edge of a piece of wood. A plunge router is most suited to make cuts on the face of a piece of wood. The plunge mechanism allows the cutting blade to be lowered directly onto the spot where a cut needs to be made, and then it's raised back up.

In recent years, however, routers have evolved. Some of today's newer models incorporate both the fixed- and plunge-base technology in the same tool. Hitachi's new combo router kit KM12VC (#117513) falls into this category.



All in One

This router has an 11-amp, 2½-horsepower motor. It's quieter than a typical motor and will allow you to cut any type of wood. The lower noise also results in reduced vibration while cutting. This kit contains collets for both ¼- and ½-inch bit shanks.

Great Cuts

When equipped with different bits (sold separately), this router is capable of cutting many styles, including (see photo at left, from top to bottom): a double roundover, a ¼-inch rabbet, a cove (left), and a chamfer, as well as a flush trim along the edges of two joined pieces.





Plunge Perfect

A plunge router is particularly helpful in making cuts such as this $\frac{1}{4}$ -inch deep stop-groove. You center the router over the spot where the cut is to be made, plunge the unit down onto the wood, and follow your guide to where the groove is to end; then you raise the blade back up.



Quick Change

You can switch the compact motor from a fixed base to a plunge base in seconds by using the toolless release clamp. The two-stage clamp gives you the ability to make fine depth adjustments for precise cuts.



Handles Well

Hitachi has been at the forefront of designing tools that feel as good as they look. And that's the case with this router's ergonomic design. Its handles are a natural fit in your hands.

member profile

A Family Tradition

Janet Trotter



Janet Trotter has been holding on to a hammer and nails for as long as she can remember. When Janet was a young child, her father built the family home. In fact, the house became a family project that eventually involved the entire neighbor-

hood, as her father accepted the help of anyone who offered. Janet says this gave her a sense of community as well as great family memories.

"We always had something to do; if you were bored you could pick up a hammer and get to work," Janet recalls. Her father instilled in her a helpful attitude and a great knowledge of tools. It was only natural for Janet to carry on her father's love of building.

These days Janet feels confident about building and remodeling homes, but she is a self-proclaimed beginner at finer woodworking projects, such as pieces of furniture.

Still, Janet savors her most recent project—a bench with built-in storage for one of her two grown daughters. After looking at benches in stores, Janet decided that she could use her own skills to create both a bench and some memories for her daughter.

With that project underway, Janet is already planning to build an Adirondack-style chair or perhaps an old-fashioned glider. It looks like she'll have a busy spring. But hopefully she won't be too busy to find the time to sit in and enjoy one of her projects. ■

begin with the wood

The Right Wood For the Job

Different types of wood have their strengths.

With each woodworking project you take on, one of the first decisions you make will be whether to use solid wood or an engineered product, such as medium density fiberboard (MDF), or a mix of these. Each choice has its strong points, depending on the project.

Strong and Solid

You're getting ready to start on a project and can't decide what to use for some of the parts: solid wood or an engineered product, such as plywood, particle board, or medium density fiberboard (MDF). Each of these materials has its strong points.

Solid wood is strong and beautiful, but it costs more than other types of wood. It accepts fasteners well and allows smooth edges that do not need to be covered. It can be connected with joinery ranging from a simple butt joint to a complex dovetail. This type of wood is better used for narrow pieces, because it offers more strength. But its larger, wider pieces are more likely to cup, twist, or bow than those of engineered products. This is also true of narrow boards glued up to make wider panels. If the boards don't glue up flat, the panel will need planing or sanding. Panels such as these are more challenging to finish, because the individual pieces often will take the finish differently.

Wide Selection

Plywood makes it possible to use large panels without the trouble of gluing up separate boards. It accepts fasteners well and is relatively inexpensive. But its cross-ply construction means that the edges need to be covered and joinery options are limited.

Depending on its outer layer of veneer, plywood can offer a uniform appearance (rotary cut veneer) or the appearance of boards glued together (rift or quarter-sawn veneer). Plywood is easy to cut, relatively flat, and dimensionally stable. It is ideal for wide areas, such as the sides, tops, and bottoms of cabinets.

Mixed Material

Particle board and MDF are engineered panels made by compressing glue-coated wood fibers under heat and pressure. These panels tend to be very flat, smooth, and dimensionally stable—even more so than plywood. Although they require coarse thread screws for proper fastening and the edges prevent complex joinery, the smooth surface coats easily with paint.

The substantial weight of these products makes them useful for damping vibration and creating a stable foundation. These are also the perfect material for tool bases, such as a table saw, drill press, or lathe. MDF is very popular in the furniture industry, where it's the premier substrate or base for high-grade veneer. ■



Under equal weight, a narrow strip of plywood (bottom) has almost 1/2 inch more bend than a same-size strip of hardwood.

Pocket Hole Joinery

The Kreg system makes a tough job easier.

A strong, accurate joint obviously has the potential to make or break a woodworking project. Creating that joint takes precise measuring, careful fitting, and sometimes even repeated, complex cutting. But with a Kreg Pocket Hole System, you have the capability of making a joint that's accurate, barely noticeable, and fast. And you won't even need extra clamps.



Basically, this tool kit allows you to drill a hole at an angle into one piece of wood, and then join it to another with a self-tapping screw—eliminating the need to drill into the second piece altogether. This process helps you avoid the alignment problems that often occur when you have to lay out and drill holes for fasteners. And no pilot holes are required.

The most common use of pocket hole joinery is in building face frames. Whether the frame is for a bookcase, vanity, or cabinet, the Kreg jig can join the parts of the frame very quickly. This tool system is also valuable when joining rails or aprons to table legs. You can even use it to join the tabletop to the aprons. Likewise, pocket hole joinery is perfect for attaching edge banding to plywood or particle board when making a table or countertop.

The Kreg jig consists of a drilling guide and a special stepped drill bit. The bit drills

the pocket for the screw and also creates a step inside the pocket that acts as a screw stop. The photos at right illustrate the sequence for using this system.

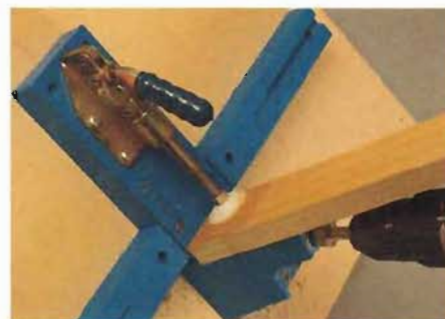
It's important to note that a self-tapping screw must be used to secure the parts. A standard screw will tend to cause the wood in the mating part to split.

Kreg Choices

The most extensive of these systems is the Kreg ProPack Pocket Hole System (#205283). This kit comes with three different pocket jigs, support wings to help hold the piece you are working on, a face clamp, square driver bits, and both fine- and coarse-thread self-tapping screws. For less involved projects there is the Kreg Rocket-Pocket Hole System (#205289) and the Kreg Mini Jig Kit (#205297). The mini jig's no-fence design makes it a great tool for repairs in hard-to-reach places. ■



1. To use the jig, start by setting the stop collar on the bit to the desired depth.



2. Position the part designated for pocket holes into the jig, and clamp in place. Set the stepped drill bit in a guide, and drill until the stop collar butts up against the guide; repeat for any additional holes.



3. Position the parts, and clamp them in place with the Kreg Face Clamp. Drive in the screws, and the joint is done—no glue required.



4. When finished, the Kreg screws provide a very strong joint. And if turned over, the piece shows no evidence of fasteners.

put it together

Notch Joints

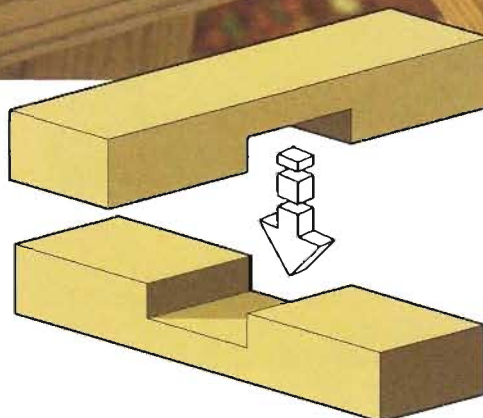
These connections increase
the strength of your project.

Although it is one of the simplest ways to join wood, a butt joint is not necessarily the strongest: The joined parts rely solely on glue and/or fasteners to hold them together. But the joint can be strengthened considerably by adding a notch to either one or both parts.

There are several ways to cut a notch: by hand, with power tools, or a combination of the two. One method is to make two cuts with a saw (hand or power) to define the sides of the notch. Then make a series of cuts in the waste area (the portion of the wood that's to be cut out) with a saw, and remove the waste with a chisel. Or you can cut notches quickly and accurately on a table saw fitted with a dado blade. A table-mounted router fitted with a straight bit is another quick way to cut a notch.

Adding a notch to a joint does two things. First, the sides of the notch capture the other piece and keep it from moving. This makes the project easier to assemble, because the notch prevents parts from slipping while being attached. Second, the sides and bottom of the notch increase the surface area to be glued, which helps make the finished piece stronger. When you cut a notch in only one piece, you create a half lap joint.

For an even stronger joint, you can cut a pair of matching notches halfway into each piece of wood to be assembled. Once the two pieces are connected, both parts are locked into place. This process creates a lap joint.



In the photo, the trellis uses notched joints, called half lap joints, in which only one piece is notched. The illustration shows a lap joint with both pieces notched identically.



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