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Bill Krier
Editor in Chief, WOOD magazine

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Space-Saving Double-Duty Tablesaw Workbench



Use it as
an outfeed
table ...

Attention, small-shop and garage shop woodworkers: Here's a project designed with you in mind. It's a combination workbench and outfeed table. Plus, for the space-starved shop, it stores in the same footprint as your tablesaw.



... or an
assembly
bench



Watch a FREE two-minute video of the
Tablesaw Workbench in action at:
woodmagazine.com/videos

PROJECT HIGHLIGHTS

- Overall dimensions: 61½" wide × 32⅞" deep × 39⅜" high (casters in the down position).
- You can customize the workbench to fit any type of tablesaw. The workbench shown at *left* fits a contractor's model with a 30" fence.
- Levelers let you adjust the bench to match your tablesaw height for use as an outfeed table.
- To renew the worksurface, simply flip or replace the ¾" plywood top panel.
- For the items needed to build this project, see *page 3*. You'll find the **Supplies** at hardware stores and home centers. For the casters, see **Source**.

Skill Builder

- Learn how to form large dadoes and rabbets using your tablesaw fence as a workpiece stop.

Note: To position the workbench over your tablesaw, remove the blade guard, rip fence, and miter gauge. The bench dimensions allow 1" clearance at the top of the tablesaw and 1" clearance at each side. There is no front-to-back clearance: With the workbench positioned over the tablesaw, the back fence rail touches the inside of the upper back rail (F) [Drawing 4], and the back of the front fence rail rests against the front legs (C).

Measure your tablesaw

No matter the type of tablesaw you own, or how it's accessorized, you can customize this project to fit your needs.

1 Measure your tablesaw [Drawing 1], and enter the dimensions in the empty brackets. (Our sample tablesaw dimensions are shown in parenthesis.) If by chance your saw dimensions match those of the sample tablesaw, stop here. Simply use the part dimensions for the sample tablesaw shown on the **Materials List** on *page 3*.

2 For dimensions in brackets larger or smaller than the

ones in parenthesis [Drawing 1], here's how to size the workbench to your tablesaw. (Don't let the following lengthy explanation scare you off. The process is really quite simple.)

■ Subtract the smaller *length* dimension from the larger one. Enter the difference in the **L** column under the **CALCULATE** heading on the **Materials List** for parts A, D, E, H, J, and K, and in the **W** column for part N, preceded by a plus symbol (+) for a length in brackets larger than the one in parenthesis, and a minus symbol (-) for a length in brackets smaller than the one in parenthesis.

■ Subtract the smaller *height* dimension from the larger one. Enter the difference in the **L** column under the **CALCULATE** heading for part C, and in the **W** column for part E, preceded by a plus symbol for a height in brackets larger than the one in parenthesis, and a minus symbol for a height in brackets smaller than the one in parenthesis.

■ Subtract the smaller *width* dimension from the larger one. Enter the difference in the **L** column under the **CALCULATE** heading for parts F, G, I, and N, preceded by a plus symbol for a width in brackets larger than the one in parenthesis, and a minus symbol for a width in brackets smaller than the one in parenthesis.

■ Divide the width dimension difference determined in the previous step by four. Record the dividend in the **L** column under the **CALCULATE** heading for parts L and M, preceded by a plus or minus symbol, as directed *above*.

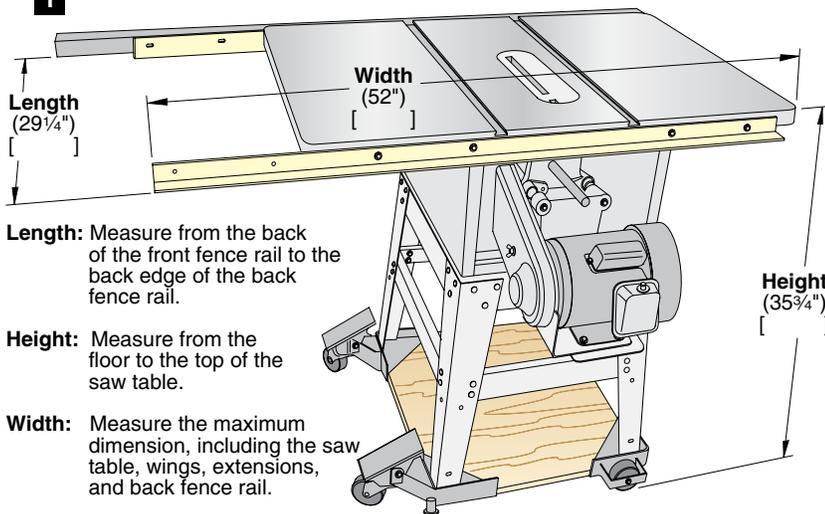
■ For a *width* dimension in brackets smaller than the one in parenthesis, divide the dimension difference by two. Enter the dividend in the **L** column under the **CALCULATE** heading for part

B, preceded by a minus symbol. (Do not make part B longer than the length listed for the sample tablesaw.)

■ Now add the numbers in the **W** and **L** columns under the **CALCULATE** heading to, or subtract them from, the **W** and **L** dimensions under the **SAMPLE TABLESAW** heading. Enter the new dimensions in the **W** and **L** columns under the **YOUR TABLESAW** heading. Then, to avoid confusion, cross out the obsolete **SAMPLE TABLESAW** dimensions.

Now, for example, let's say your tablesaw measures 30½" long, and you've entered this number on **Drawing 1** in the brackets under **Length**. In this case, complete the row in the **Materials List** as shown [Example, *page 3*].

1



Length: Measure from the back of the front fence rail to the back edge of the back fence rail.

Height: Measure from the floor to the top of the saw table.

Width: Measure the maximum dimension, including the saw table, wings, extensions, and back fence rail.

Note: Our tablesaw dimensions are shown in parenthesis.

EXAMPLE:

Materials List

Base	FINISHED SIZE:			SAMPLE TABLESAW		CALCULATE		YOUR TABLESAW		Matl.	Qty.
	T	W	L	W	L	W	L				
A pivot blocks	1 1/2"	3"	23 3/4"		+1 1/2"		25"		M	2	

Step 1
30 1/2" - 29 1/4" = 1 1/4"

Step 4
Cross out the obsolete dimension.

Step 2
The length in brackets is larger than the length in parenthesis.

Step 3
23 3/4" + 1 1/4" = 25"

Materials List

Base	FINISHED SIZE:			SAMPLE TABLESAW		CALCULATE		YOUR TABLESAW		Matl.	Qty.
	T	W	L	W	L	W	L				
A pivot blocks	1 1/2"	3"	23 3/4"						LM	2	
B levers	3/4"	7/8"	27 1/2"						M	2	
C* legs	3"	3"	34 1/2"						LP	4	
D end rails	1 1/2"	3"	29 1/4"						P	4	
E end panels	3/4"	23"	24"						BP	2	
F back rails	3/4"	8"	60"						BP	2	
G rail stiffener	3/4"	1 1/2"	54"						M	1	
Top											
H end trim	3/4"	2 1/2"	30"						M	2	
I front/ back trim	3/4"	2 1/2"	61 1/2"						M	2	
J top supports	3/4"	1 3/4"	29 1/4"						M	3	
K end cleats	3/4"	1 3/4"	24"						M	2	
L outer cleats	3/4"	1 3/4"	11 7/16"						M	2	
M inner cleats	3/4"	1 3/4"	14 7/16"						M	2	
N top panel	3/4"	30"	60"						BP	1	

*Parts initially cut oversize. See the instructions.

Materials key: LM—laminated maple, M—maple, LP—laminated pine, P—pine, BP—birch plywood.

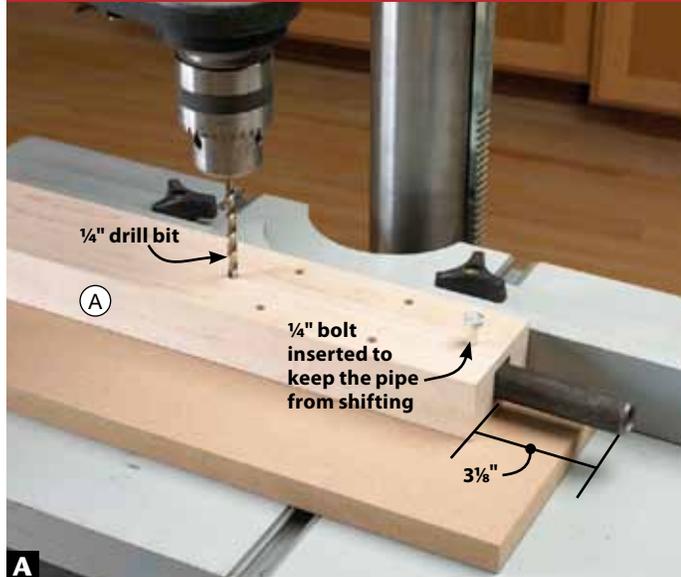
Supplies: #8x1 1/4", #8x1 1/2", #8x2", #8x2 1/2" flathead wood screws; 3/8" levelers with T-nuts (4); 1/4x1 1/2" hexhead bolts (6); 1/4x2" hexhead bolts (24); 1/4" washers (52); 1/4" lock nuts (32); 1/4x2" eyebolts (2); 7/8" washers (6); 1/6x3/4x36" steel bar; 1/2x36" schedule 40 steel pipe (2).

Blades and bits: Stack dado set; 1/4" round-over and 45° chamfer router bits.

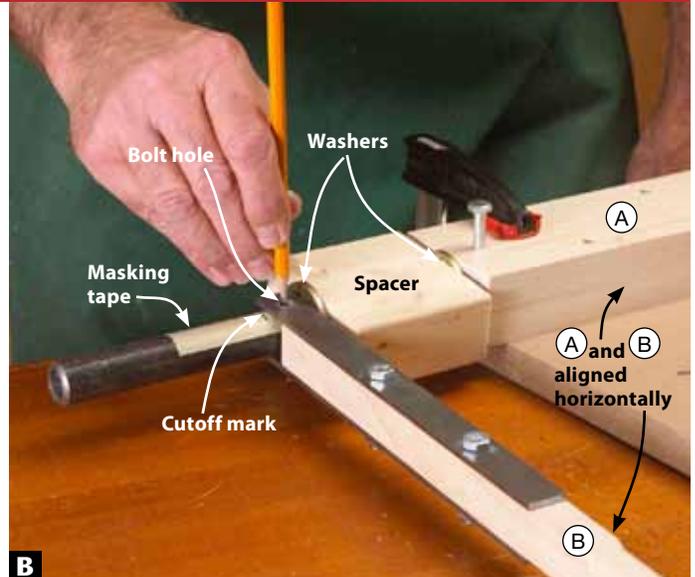
Source

Casters. 4" swivel caster with brake no. 36992, (4). Call Hartville Tool, 800-345-2396, or go to hartvilletool.com.

DRILL THE PIVOT BLOCKS AND CUT THE PIPES TO LENGTH



A With 3 $\frac{1}{8}$ " of pipe protruding from one end of the pivot block (A), drill holes through the block and pipe at the marked hole centers.



B With washers, a spacer, and the lever assembly in place, mark the pipe length and lever attachment bolt-hole location.

Build the pivot assemblies

1 For the pivot blocks (A), cut four $\frac{3}{4}$ "-thick pieces of stock to the width and length listed. (We used maple. If you've adjusted the length of part A, be sure to use the new length.) Then, making two passes with a dado blade, cut centered grooves in each piece [Drawings 2 and 2a]. Clamp the pieces together in the arrangement shown, and verify that $\frac{1}{2}$ " schedule 40 steel pipe slips through the square hole. Now glue and clamp the pieces, keeping the ends and edges flush.

2 Lay out the hole centers on the bottom face of each pivot block (A) [Drawing 2a]. (Use the caster plates to locate the caster-mounting holes.) Drill only the caster-mounting holes.

3 Cut two levers (B) to size. Rout stopped round-overs along the edges [Drawing 2]. Then, from a $\frac{1}{2} \times \frac{3}{4} \times 36$ " steel bar, cut

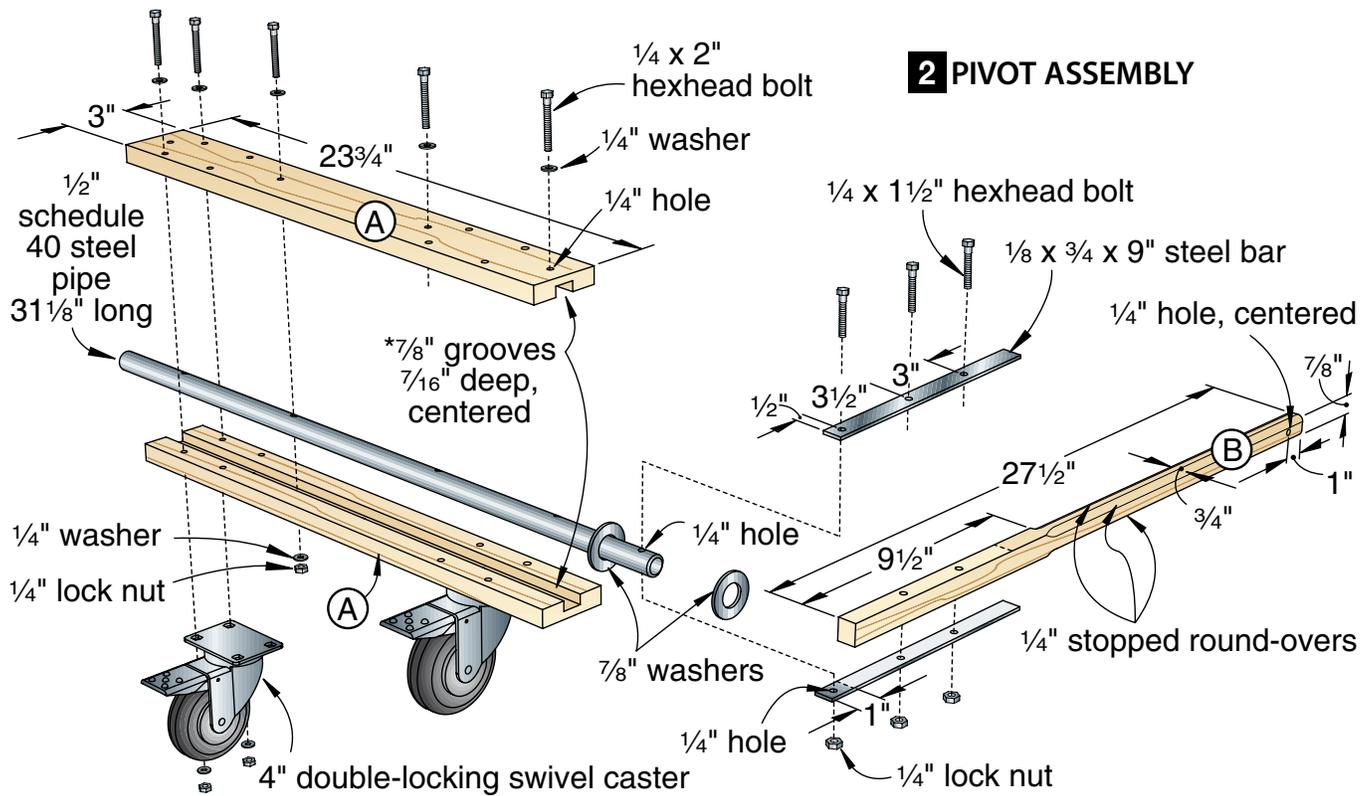
four 9"-long pieces. Drill holes where shown. Now position a bar protruding 1" beyond the end of the lever. Using the holes in the bar as guides, mark hole positions on each lever. Also mark the hole center at the opposite end of each lever. Drill the holes on your drill press. Bolt the bars to the levers.

4 Slide a 36"-long piece of $\frac{1}{2}$ " schedule 40 steel pipe into each pivot block (A), letting the pipe protrude 3 $\frac{1}{8}$ " at one end. Then drill the four $\frac{1}{4}$ " holes that go through both the pivot block and pipe, where previously marked [Photo A]. To keep the pipe from shifting in the pivot block, insert bolts into the holes as you drill them.

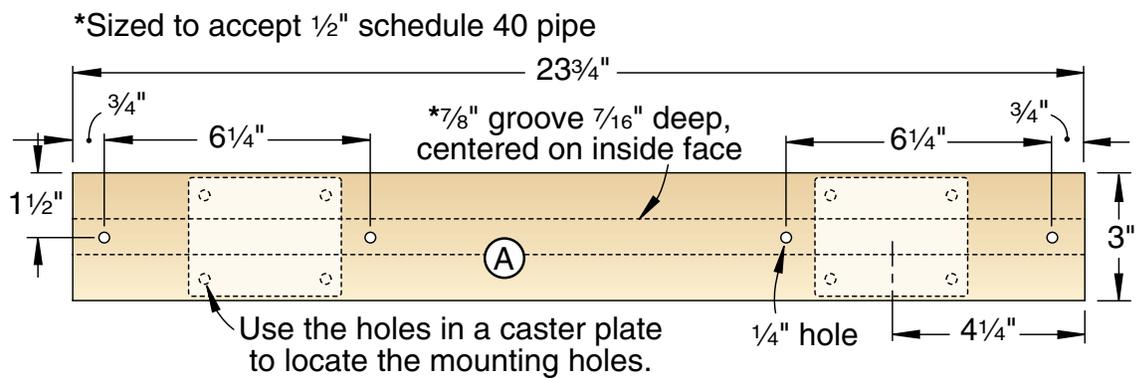
5 To cut the pipes to finished length, first cut a 3"-long spacer from 2x4 scrap. [The spacer represents the thickness of a leg (C).] Drill a centered $\frac{7}{8}$ " hole through

the 3" dimension. Then slide two washers and the spacer onto the long protruding pipe end of one pivot block (A) assembly. Apply masking tape to the pipe, and with the lever (B) and pivot block aligned horizontally, mark the finished length and the bolt-hole location [Photo B]. Repeat with the other assembly. Now mark the pipes and pivot blocks for reassembly, remove the pipes, and cut them to length. Using a V-block on your

2 PIVOT ASSEMBLY



2a PIVOT BLOCK



Assemble the ends

1 For the legs (C), cut eight 2×4 pieces $\frac{1}{2}$ " longer than listed. Laminate them in pairs to form four 3×3 $\frac{1}{2}$ " blanks. Then joint one edge smooth, rip the opposite edge to width, and crosscut the legs to length. To avoid problems when building projects from construction lumber, see the **Shop Tip, below**.

2 To form 3"-wide dadoes in the inside faces of the legs (C) [Drawing 3], install a $\frac{3}{4}$ " dado blade in your tablesaw, and adjust it to cut 1 $\frac{1}{2}$ " deep. To establish one edge of the dadoes, position the fence 5" from the *right* side of the blade, and attach an extension to the miter gauge to back the cuts. Then, using the fence as a stop, cut a dado at both ends on the inside face of each leg. Next, to establish the other edge of the dadoes, reposition the fence 8" from the *left* side of the blade.

Again using the fence as a stop, cut a second dado at each end of all four legs. Now make repeat cuts to remove the waste.

3 To form the 8"-wide rabbets at the top and bottom of the back legs (C) [Drawings 3 and 3a], leave the tablesaw set up as in the previous step, but lower the blade to cut $\frac{3}{4}$ " deep. Then, making sure you will have mirror-image parts, cut a dado at both ends of the back face of the back legs. Now make repeat cuts to remove the waste from the dadoes to the ends of the legs.

4 Drill a $\frac{7}{8}$ " hole for the pivot assembly pipes at the bottom of each leg [Drawing 3a]. Then drill a hole for the leveler T-nut.

5 Cut the end rails (D) to size. Glue and clamp them into the leg (C) dadoes with the rail ends flush with the front surface of the front legs and the rabbeted surface

of the back legs [Drawing 3]. Check the assemblies for square. Then drill holes, and drive the screws. (For #8 screws in softwood, drill $\frac{5}{32}$ " shank holes and $\frac{3}{32}$ " pilot holes.)

6 Cut the end panels (E) to size. Glue and clamp the panels to the end rails (D) with the top of each panel flush with the top of the upper rail. Drill screw holes, and drive the screws.

SHOP TIP

How to keep construction lumber straight

Construction lumber (2×4s, 2×6s, etc.) has a high moisture content. When brought into a shop, the lumber dries out, causing it to shrink and often twist. Of course, your project will go together easier with straight lumber. Here's a simple solution.

First, select lumber that does not include the center (pith) of the tree. Cut the parts to rough length as soon as you bring the lumber home. Then place the parts in a trash bag, as shown at right, and close it with a twist tie. Remove



the parts for machining, and return them to the bag until you are ready to assemble them. After building the project, the wood dries, but now twisting of any one part is restrained by the other parts.

Complete the base

1 Cut the back rails (F) to size. Drill $\frac{7}{8}$ " holes for the pipe in the lower rail [Drawing 4]. Join the end assemblies (C/D/E) with the back rails (F), and glue and screw the rails in place [Drawing 4 and Photo C].

Note: Locate the screw holes in the back rails (F) so they don't interfere with the screws that fasten the end rails (D) to the legs (C). To avoid interfering with the leg levelers, use a $1\frac{1}{2}$ "-long screw at the lower outside corners of the bottom back rail.

2 Apply a finish to the pivot blocks (A) and levers (B). (For an easy-to-apply and easy-to-repair finish, we applied two coats of Minwax Antique Oil Finish.) Attach the casters to the pivot blocks [Drawing 2].

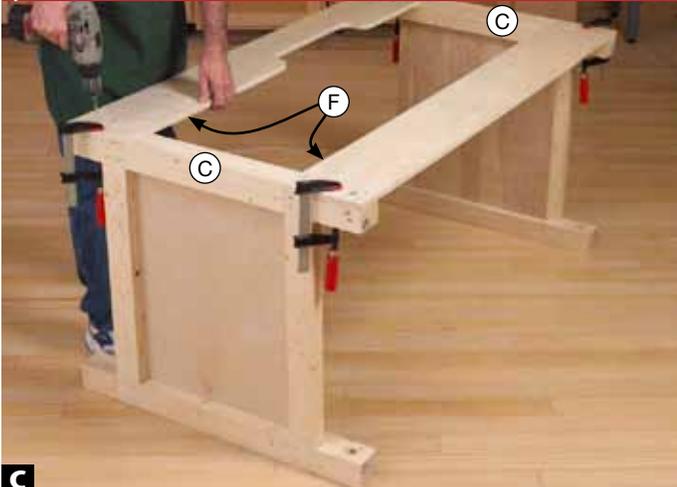
3 Place the base upside down on the floor, and slide the pipes through the legs (C), washers, pivot block (A) assemblies, and lower back rail (F) [Drawing 3]. Align the pivot block holes with the pipe holes, and bolt the pipes in place [Drawing 2]. Now slip a washer and a lever (B) assembly onto each pipe, and bolt the levers in place [Drawing 4].

4 Adhere masking tape to the lower back rail (F) at the location of the lever (B) ends when the casters are in the down position. Draw a line on the tape $1\frac{3}{4}$ " from the bottom edge of the rail. Drill holes in the rail for the eyebolt lever pins [Drawing 4, Photo D]. Apply tape to the upper back rail at the locations of the lever ends when the casters are

in the up position. Mark lines on the tape $1\frac{1}{2}$ " from the ends of the rail. Rotate the levers so the casters are in the up position, and drill 1"-deep holes through the rail and into the legs (C).

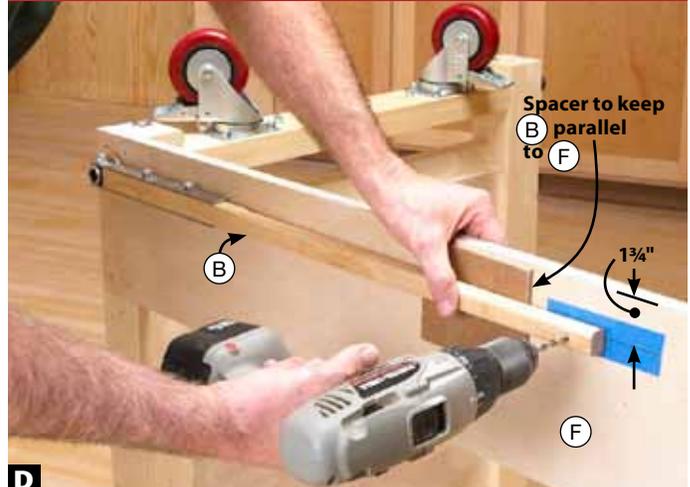
5 Turn the base right side up. Cut the rail stiffener (G) to size, and glue and clamp it to the top edge of the lower back rail (F) [Drawing 4].

JOIN THE BASE ENDS



C Glue and clamp the back rails (F) into the end assembly leg (C) rabbets. Check for square, drill screw holes, and drive the screws.

DRILL THE LEVER-PIN HOLES



D Using the hole in the lever (B) as a guide, align the drill bit with the marked line, and drill a lever-pin hole through the rail (F).

Add the top

1 Cut the end trim (H) and front and back trim (I) to size. Set the back trim aside. Clamp the end trim and front trim to the legs (C) with the top edge of the trim protruding $\frac{3}{4}$ " beyond the tops of the legs [Drawing 5]. (Use a scrap of $\frac{3}{4}$ " plywood for a gauge.) Drill screw holes and drive the screws. (For #8 screws in hardwood, drill $\frac{5}{32}$ " shank holes and $\frac{7}{64}$ " pilot holes.)

2 Cut the top supports (J), end cleats (K), outer cleats (L), and inner cleats (M) to size. Then clamp the parts in place with the top edges $\frac{3}{4}$ " below the top edges of the end trim (H) and front trim (I), and with the top edges of the top supports flush with the top edge of the upper back rail (F) [Drawing 5]. Now drill screw holes and drive the screws. Retrieve the back trim, and clamp it to the upper back rail. Drill screw holes, and drive the screws.

3 Cut the top (N) to size. Clamp it in place, resting on the upper back rail (F), top supports (J), and cleats (K, L, M). Drill screw holes, and drive the screws. Rout a $\frac{3}{16}$ " chamfer along the outer edges of the trim (H, I).

4 Position the workbench over your tablesaw, and on the inside face of the upper back rail (F), mark the location of any part of the tablesaw that protrudes beyond the back fence rail and interferes with the upper back rail. Then transfer the marks to the outside face of the upper back rail. Now lay out a notch, adding 1" of clearance all around the obstruction. Jigsaw and sand the notch.

Apply finish and hardware

1 Inspect the bench, and finish-sand, where needed. Ease any sharp edges with a sanding block. Apply the finish.

2 Tap the T-nuts into the holes in the bottoms of the legs (C), and screw in the levelers. Insert eyebolts into the lever (B) end holes, and secure them with washers and lock nuts [Drawing 4].

Using the workbench

1 To use the bench as a tablesaw outfeed support, rotate the levers (B) to the vertical position (casters up), and insert the protruding ends of the eyebolts into the holes in the upper back

rail (F). Adjust the levelers so the bench height matches your tablesaw height.

2 To position the bench over your tablesaw, first remove the blade guard, miter gauge, and rip fence from the tablesaw. Then withdraw the eyebolts from the holes in the upper back rail (F). Rotate the levers (B) to the horizontal position (casters down), and insert the eyebolts into the holes in the lower back rail (F). Now roll the bench into place, and depress the caster locks with your foot. ♣

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Project design: **Jeff Norris**, Delta, B.C.

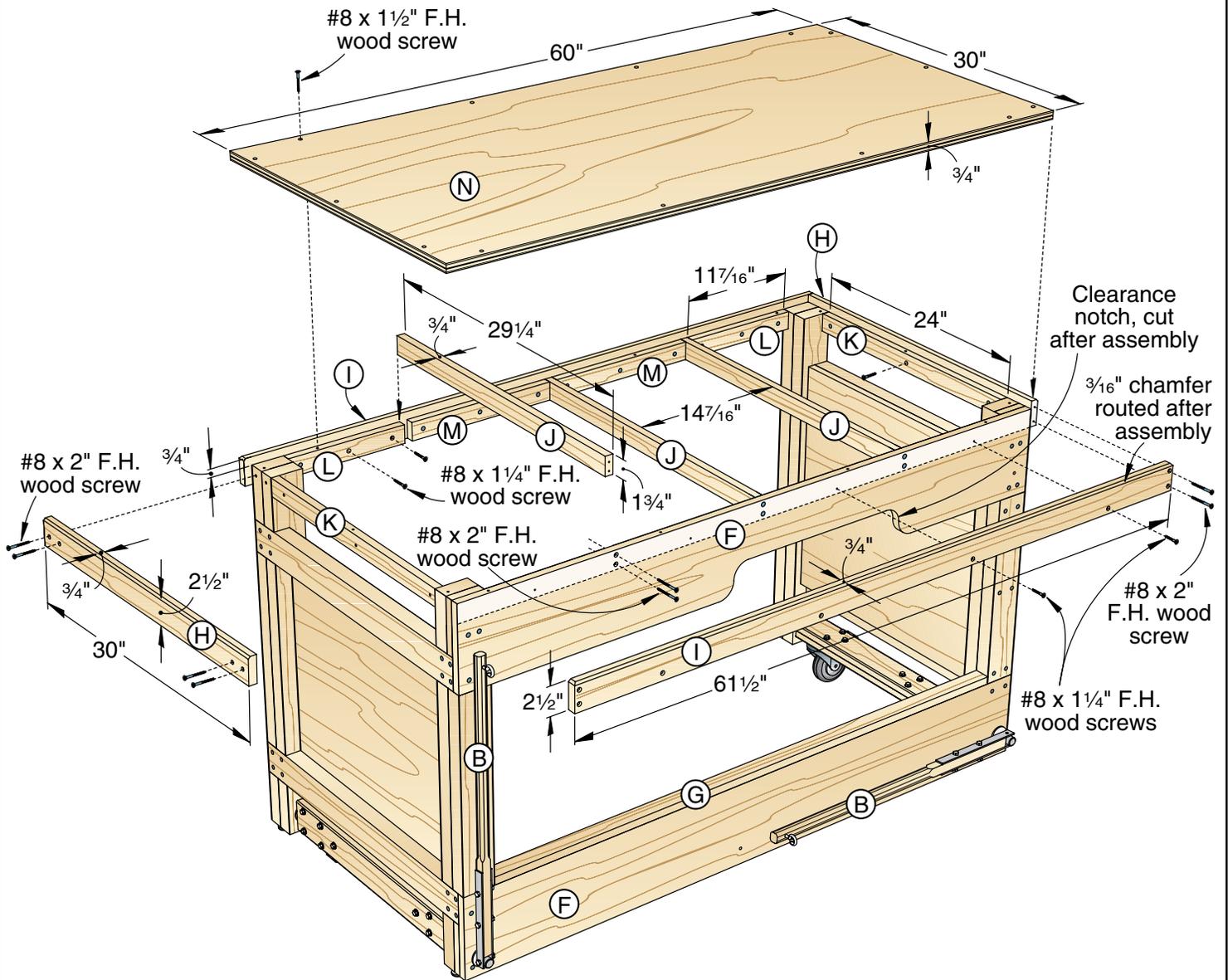
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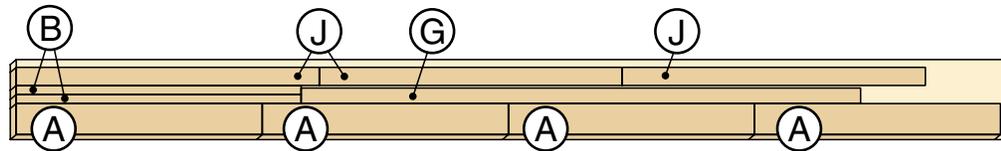
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5 TOP



Cutting Diagram



$\frac{3}{4}$ x $7\frac{1}{4}$ x 96" Maple (5.3 bd. ft.)



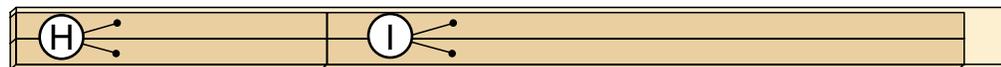
$1\frac{1}{2}$ x $3\frac{1}{2}$ x 120" Pine (2x4) (2 needed)



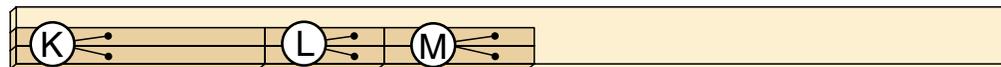
$1\frac{1}{2}$ x $3\frac{1}{2}$ x 96" Pine (2x4)



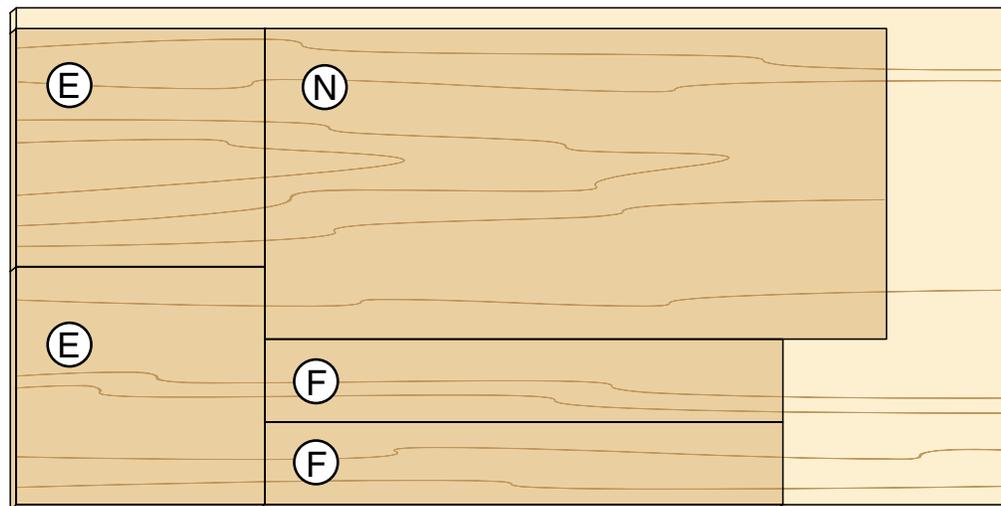
$1\frac{1}{2}$ x $3\frac{1}{2}$ x 120" Pine (2x4)



$\frac{3}{4}$ x $5\frac{1}{2}$ x 96" Maple (4 bd. ft.)



$\frac{3}{4}$ x $5\frac{1}{2}$ x 96" Maple (4 bd. ft.)



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

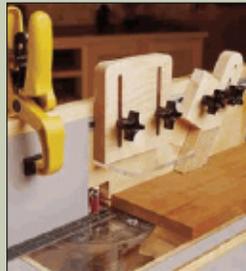
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