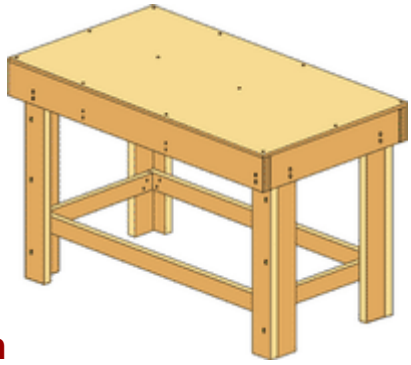


Building a Workbench

Your workbench is the heart of your shop. It should match your space and the type of work you do. The bench should be at a comfortable height for you and your work piece. If you haven't been able to find a bench that's right for you, try custom building your own. Lowe's is happy to provide this information as a service to you.

Determining Size and Dimensions

Most workbenches range from 28" to 36" deep, 48" to 96" wide and 28" to 38" tall. The amount of space you have usually dictates a bench's depth and width. Size your bench so you can move material and equipment past it freely. Find a good working height— you'll probably spend a good deal of time at the bench so it's important to be comfortable there. Everyone's measurements will vary; for clarity we used 30" for depth, 60" for width and 34" for height. You can use our measurements or click here for formulas to customize your bench.

Tools

- Circular saw
- Drill/driver with bits
- Belt sander or hand plane
- Wood clamps
- Measuring tape
- Dust mask
- Safety goggles

Materials

- 2x4 lumber
- 2x8 lumber
- 1 sheet 1/2" plywood
- 16- 3/8"x4" carriage bolts with washers and nuts
- Wood glue
- 3" wood screws

Cut list

Cut the pieces, using the measurements below or your own custom measurements.

- 1- 1/2" plywood cover — 60" by 30"
- 18- 2x4's for the top substrate — 57"
- 2- Long 2x8 top rails — 60"
- 2- Short 2x8 top rails — 27"
- 2- 2x4 rail stretchers — 27"
- 8- 2x4 leg pieces — 30"
- 2- Long 2x4 bottom rails — 54"
- 2- Short 2x4 bottom rails — 21"

Assembling the Bench

1.

2. Face-glue and clamp the 2x4's for the top substrate so they give the appearance of a butcher-block top. The substrate gives the bench strength and stability .

Good idea: Glue the 2x4's

the sets have cured, glue them together to create the full top substrate assembly.

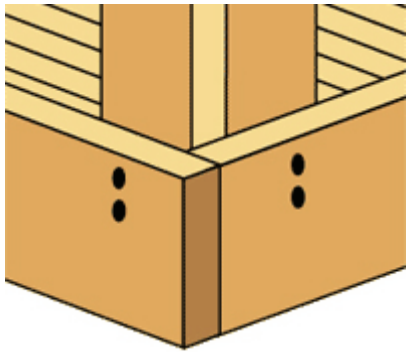
3. Use a belt sander or hand plane to flatten the top of the substrate.

4. Lay the substrate out, top side down. Align the short 2x8 top rails flush with the short sides of the substrate and use 3" wood screws to secure the rails to the substrate.

5. Align the long 2x8 top rails with the long sides of the substrate. The ends of the long top rails should be flush with the outside face of each short top rail. Secure the long top rails to the substrate with 3" wood screws.

6. Insert the rail stretchers between the long rails, positioned 1/3 of the way in from each end of the bench. Drive 3" wood screws through the long rails into the ends of the rail stretchers.

7.



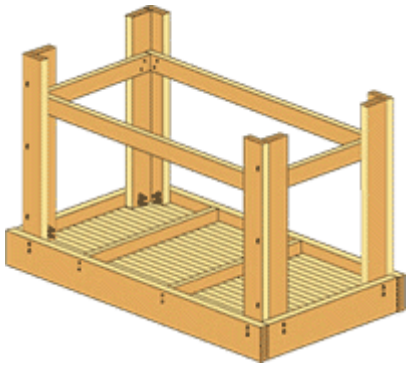
Detail of carriage bolt installation.

8. Construct four leg assemblies. Butt the edge of one 2x4 leg piece to the face of another and line the ends up flush. Screw the leg pieces together with 3" wood screws.

9. Set the legs inside the corners where the long and short top rails meet. The joints between the leg assemblies should be visible from the short sides of the bench. Bore 3/8" holes through the top rails and legs. Insert 3/8" x 4" carriage bolts from the outside face of the top rails through the leg pieces. Install a washer and nut on the backside of each carriage bolt and tighten.

10. Measure 12" from the bottom of each leg and mark. Align the tops of the long 2x4 bottom rails flush with the marks and use 3" wood screws to secure the rails to the legs.

11.



The bench after steps 1 through 9 are complete. Click here for a larger version of this image.

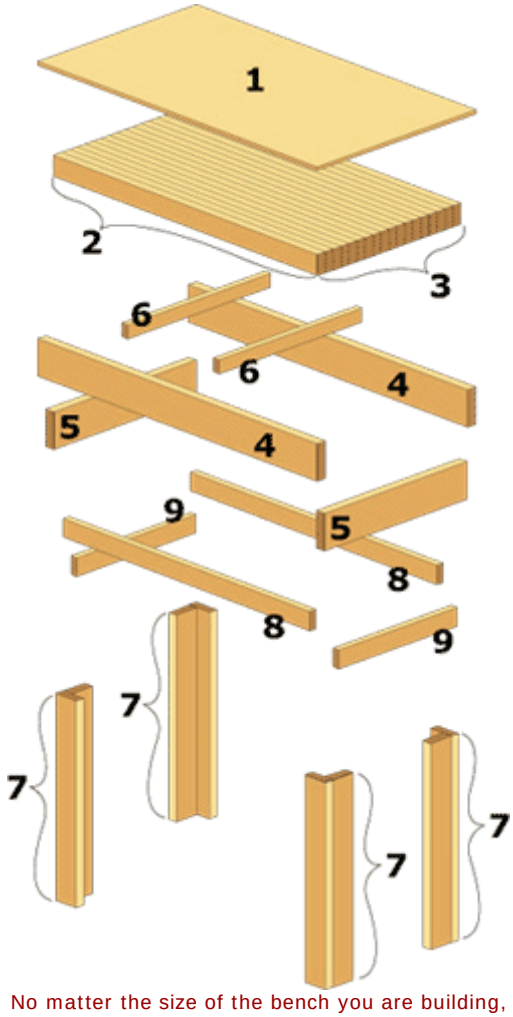
12. Insert the short 2x4 bottom rails between the long 2x4 bottom rails. The outside face of the bottom rail should butt to the inside face of the leg. Secure the short rails to the legs with 3" wood screws.

13. Stand the workbench right side up. The bench will be heavy, so have someone help you. Align the edges of the 1/2" plywood top flush with the edges of the bench. Secure the top to the substrate with 1" flathead screws. If the plywood top is damaged later, it's a simple task to remove and replace it.

Position the bench in your workspace and use it for all your projects.

Formulas for Sizing Workbench Parts

Below are the formulas we used to determine the size of our workbench parts. Use them to customize the bench to your own needs. We've included our dimensions as examples.



No matter the size of the bench you are building, you'll need all 20 of these pieces (top substrate counted as 1 piece) to complete this project.

1. Plywood cover for the top.
   The dimensions of the plywood cover for the top are equal to the overall width by the overall depth.

   Example:
   60" by 30" 1/2"

2. Length of 2x4's for the top substrate.
   Overall width - 3

   Example:
   60-3 = 57"

3. Number of 2x4's for the top substrate.
   (Overall depth - 3) ÷ 1.5

   Example:
   (30-3) ÷ 1.5 = Number of 2x4's for the top
   27 ÷ 1.5 =18

4. Length of Long 2x8 top rails.
   Overall width

   Example:
   60 = 60"
   Regardless of other dimensions the bench will require two long 2x8 top rails.

5. Length of short 2x8 top rails.
   Overall depth -3

   Example:
   30-3=27"
   Regardless of other dimensions the bench will require two short 2x8 top rails.

6. Length of 2x4 rail stretchers.
   Overall depth - 3

   Example:
   30-3= 27"
   The bench should have at least two rail stretchers, positioned 1/3 of the way in from each edge of the bench.

7. Length of 2x4 legs.
   Overall height - 4

   Example:
   34-4=30"
   Regardless of other dimensions the bench will require eight 2x4 leg pieces.

8. Length of long 2x4 bottom rails.
   Overall width - 6

   Example:
   60-6=54"
   Regardless of other dimensions the bench will require two long 2x4 bottom rails.

9. Length of short 2x4 bottom rail.
   Overall depth - 9

   Example:
   30-9= 21"
   Regardless of other dimensions the bench will require two short 2x4 bottom rails.