GRAINBENCH ORIGINAL | CONFIDENT BEGINNER

The Weekend Assembly Table

A simple assembly table with square legs, 2x4 rails on all four sides at both levels, and two supported plywood panels.



SIZE	SKILL	TIME	JOINERY
48 in wide, 24 in deep, 34 in tall	Confident beginner	About a day, plus finish drying	Pocket screws, glue and panel screws

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01 / MATERIALS AND TOOLS

What to buy.

LUMBER AND SHEET GOODS

BUY	USED FOR
2 x 4x4 board, 8 ft	L square legs
3 x 2x4 board, 8 ft	A front and back rails, E end rails
1 x 3/4 plywood, 4 ft x 8 ft sheet	B lower shelf blank - 4 notches, T worktop

Use straight, dry softwood for the posts and all 2x4 rails, plus flat 3/4 in plywood. Square posts are nominal 4x4; measure their actual faces before marking notches. The light plywood colouring is for material clarity, not a required stain. Buy one full 4 x 8 ft plywood sheet: two 48 x 24 in panels do not fit one 4 x 4 ft panel once a saw kerf is included. Follow the cutting layout below and check each factory edge used for a 48 in dimension is straight and actually 48 in. If it is undersize or must be trimmed, obtain an oversize panel rather than quietly reducing the finished table.

HARDWARE AND SUPPLIES

ITEM	AMOUNT
2-1/2 in coarse-thread pocket-hole screws	32 used; buy a box of 50 for setup and spares
#8 x 1-1/2 in flathead wood screws	24 used; buy a box of 50 for setup and spares
Wood glue	One small bottle of interior wood glue
Sandpaper	120 and 180 grit
Finish	About 1 L (1 quart), depending on coverage; coat all faces and cut edges

TOOLS

- Saw and supported setup suitable for the square posts and 2x4 rails
- Circular saw with straight-edge guide for plywood, or store-cut blanks
- Jigsaw for the leg notches
- Pocket-hole jig for 1-1/2 in stock, stepped bit, stop collar and long driver
- Drill/driver, suitable pilot and countersink bits
- Tape, pencil, square, straightedge and clamps opening at least 48 in
- Sanding tools, eye/hearing protection and dust protection

02 / CUT LIST

Cut the parts.

Finished dimensions are below. Square one end, cut matching pieces together and label every part. Cutting layouts allow 1 in of end trimming per board and 1/8 in saw kerfs. Mark the front and top edges before drilling. Use offcuts only if they are sound, straight and large enough for the stated cutting allowance.

ID	PART	QTY	LENGTH	WIDTH	THICK	FROM
L	Square legs	4	33-1/4 in	3-1/2 in	3-1/2 in	4x4
A	Front and back rails	4	41 in	3-1/2 in	1-1/2 in	2x4
E	End rails	4	17 in	3-1/2 in	1-1/2 in	2x4
B	Lower shelf blank - 4 notches	1	48 in	24 in	3/4 in	3/4 plywood
T	Worktop	1	48 in	24 in	3/4 in	3/4 plywood

CUTTING DIAGRAMS

4x4 x 8 ft — 67-5/8 in used, including 1 in to square the end and 1/8 in per cut



4x4 x 8 ft — 67-5/8 in used, including 1 in to square the end and 1/8 in per cut



2x4 x 8 ft — 83-1/8 in used, including 1 in to square the end and 1/8 in per cut



2x4 x 8 ft — 83-1/8 in used, including 1 in to square the end and 1/8 in per cut



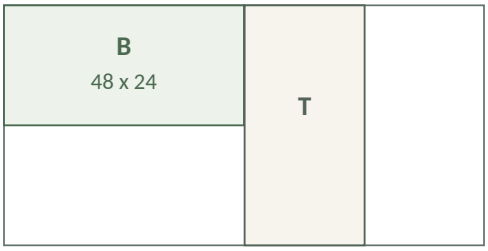
2x4 x 8 ft — 69-3/8 in used, including 1 in to square the end and 1/8 in per cut



02 / CUT LIST, CONTINUED

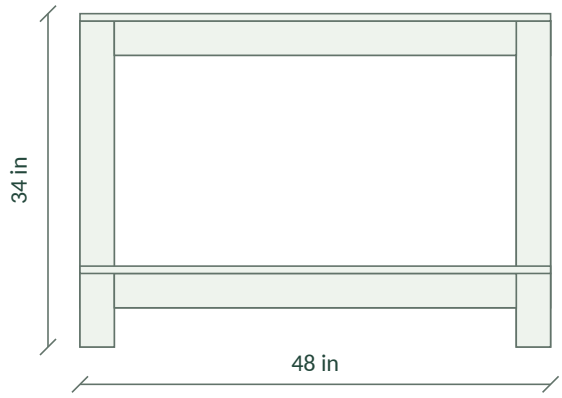
3/4 plywood, 4 ft x 8 ft

Long edge runs left to right. Allow 1/8 in between parts for the saw.

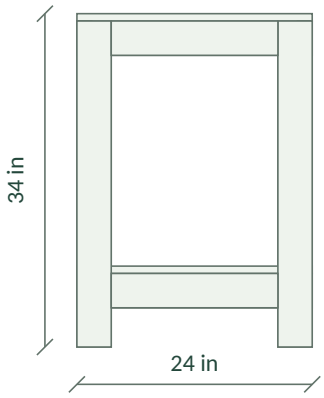


FINISHED SIZE

FRONT



SIDE



All four lower rail bottom edges are 4 in above the ground. Rail outside faces are flush with the outside post faces; no fractional setbacks are needed. The notched lower shelf covers all four lower rails. Fit it before installing the upper rails. Lower shelf underside/top: 7-1/2 / 8-1/4 in. Upper rail bottom/top: 29-3/4 / 33-1/4 in. The worktop finishes at 34 in and is flush with the outside frame, supported at the corners by the post tops and along the sides by rails.

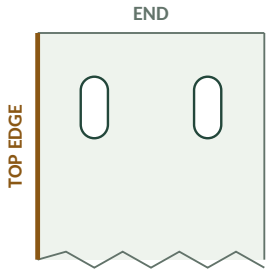
03 / BUILD

Put it together.

STEP 1 Cut, label and drill the rails

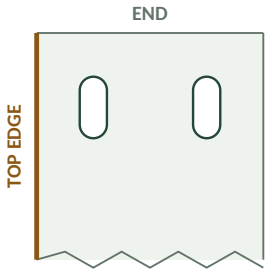
Cut the four matching legs together; label the eight rails and keep their top edges marked. Set the jig and stop for 1-1/2 in stock. Drill 2 pockets at each end of every A and E on the inward face, at 7/8 and 2-5/8 in below its top edge. Use 2-1/2 in pocket screws throughout the frame. Test the setting on matching scrap before drilling the project rails.

A **Front and back rails**
Inward face



Same at the other end
2 at each end | 16 total
7/8, 2-5/8 in from top edge

E **End rails**
Inward face

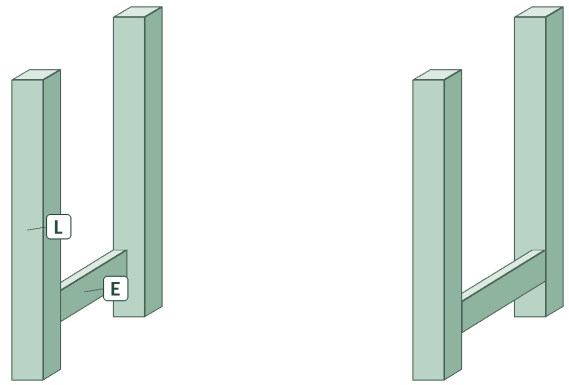


Same at the other end
2 at each end | 16 total
7/8, 2-5/8 in from top edge

Ovals = pocket-hole entries, enlarged. Not a drilling template.

STEP 2 Build the two lower end frames

Pair two L legs for each end frame. Mark each leg 4 in up from the bottom; place a lower E with its bottom on the marks and its outside face flush with the post outside faces. Clamp square, glue the rail ends and drive 2 pocket screws into each leg, 4 per rail. Keep all pocket entries facing inward. Check both lower E rails finish at the same height.

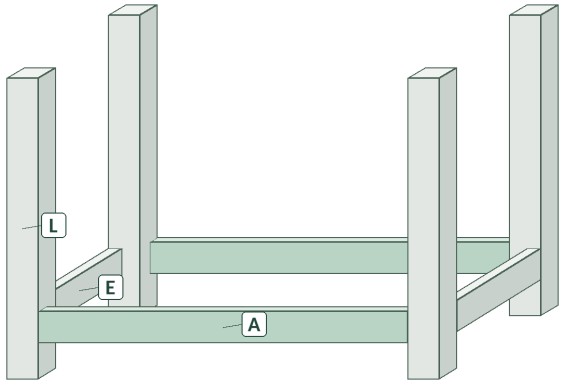


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03 / BUILD, CONTINUED

STEP 3 Join the lower frame

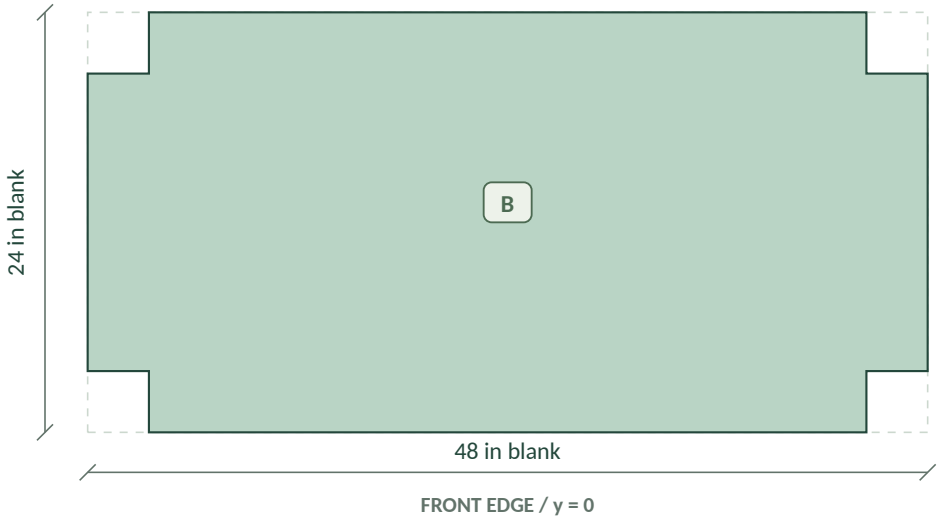
Stand the end frames on a flat surface and fit the two lower A between them. Keep the lower A bottom edges at the same 4 in marks, with outside faces flush with the posts. Clamp, glue and drive 2 pocket screws at each end, 8 for the pair. Leave all upper rails off. Match the diagonal measurements and check all four feet sit flat.



GREEN: added in this step | GREY: already in place

STEP 4 Cut and dry-fit the shelf notches

Cut B as a 48 x 24 in blank and mark four corner notches around the actual legs. Each nominal notch is 3-1/2 x 3-1/2 in; remove only these four corners. Jigsaw inside the waste, then ease each cut to the marked line and allow only the sliding/finish clearance needed around the posts. Dry-fit every notch against the actual stock before sealing the cut edges.



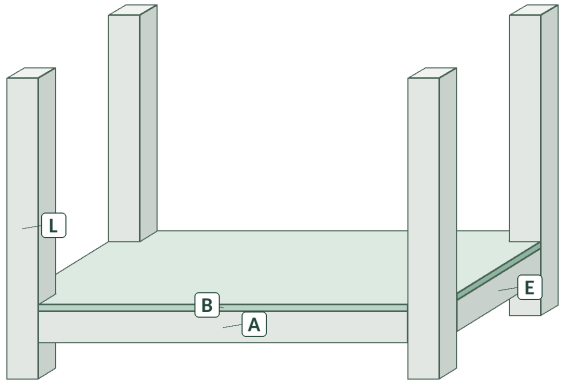
4 notches
3-1/2 x 3-1/2 in
Mark actual posts.

Dashed line = blank.
Top view.

Coordinates start at the front-left blank corner. Not a full-size template.

STEP 5 Install the shelf before the upper rails

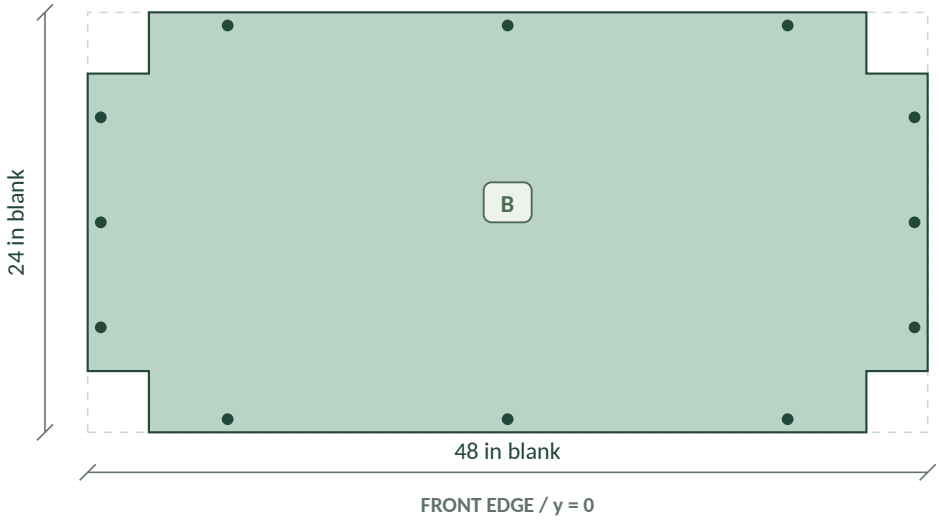
Lower B over the four leg tops while the upper frame is still open. The underside must rest directly on all four lower rails at 7-1/2 in, with its outside edges aligned to the post outside faces. Keep the notches around the posts; do not force the plywood or enlarge a notch to compensate for a misplaced rail. Clamp the panel flat. Check rail bearing around every edge and recheck the frame diagonals.



GREEN: added in this step | GREY: already in place

STEP 6 Fix the shelf to all four rails

Mark the fixing positions shown below on B. Keep every pilot centred over its receiving rail; the dots are measured from the front-left corner of the original blank. Predrill and countersink for 12 of the 1-1/2 in flathead screws, 3 into each rail. Drive heads just flush; do not use the long pocket screws through plywood. Check the plywood stays flat and no screw head is buried below the face.



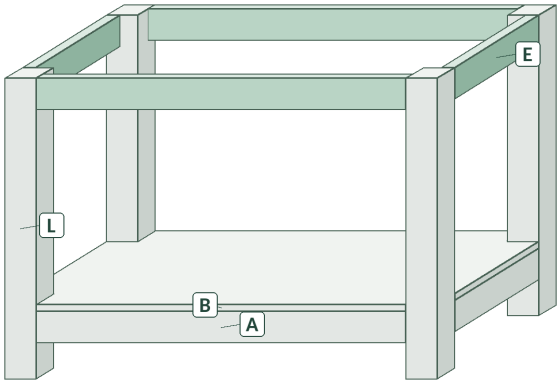
12 panel screws
Front/back: x = 8, 24, 40; y = 3/4, 23-1/4 in.
Ends: x = 3/4, 47-1/4; y = 6, 12, 18 in.

Coordinates start at the front-left blank corner. Not a full-size template.

03 / BUILD, CONTINUED

STEP 7 Fit the four upper rails

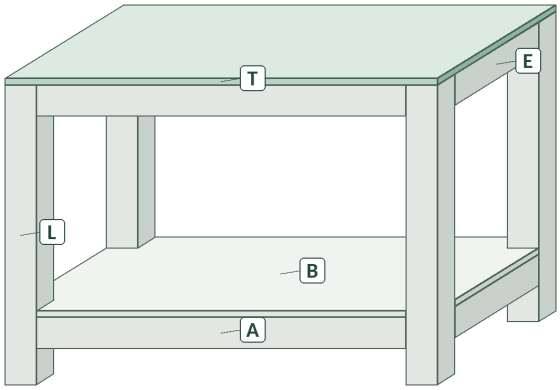
Fit the remaining two E and two A between the legs. Mark their bottom edges 29-3/4 in above the ground; the rail tops must be level with the leg tops at 33-1/4 in, and outside faces must stay flush. Clamp square, glue and drive 2 pocket screws per rail end, 16 screws for these four rails. Lay a straightedge across the frame and check every top edge is level before fitting T.



GREEN: added in this step | GREY: already in place

STEP 8 Fit the supported plywood worktop

Set the unnotched T panel onto the upper rails and four leg tops. Align it flush all around: its top finishes 34 in above the ground, with no unsupported end overhang. Clamp, mark the same 12 fixing coordinates used for B, predrill/countersink and install the remaining twelve 1-1/2 in panel screws. Check both end rails sit immediately beneath the tabletop edges and all heads finish flush.



GREEN: added in this step | GREY: already in place

03 / BUILD, CONTINUED

STEP 9

Finish and check the table

Ease the plywood edges and sand to 180 grit. Seal all faces, undersides, notch cuts and leg ends; follow glue and finish cure times. Inspect square, level, panel bearing and screw tips. This is an assembly table, not a seat, step or rated machine stand.



CARE

Keep the frame level, joints tight and plywood dry. Inspect screws and cut edges after moving it. Not a seat or step.

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Dimensions, part quantities, stock yields, rail bearing, panel clearances and assembly sequence were checked digitally. This design has not been physically built or load-tested.