

Build a workshop workbench

Measured example - verify the real material sizes before cutting

WORKED EXAMPLE

1,800 x 600 x 900 mm

two-layer plywood top

This plan is a general-purpose bench, not a certified machine stand or structural platform. Change the height, restraint and support to suit the person, room, tools and actual material. Keep the top layer replaceable.

Top	2 x 1,800 x 600 x 18	Plywood layers. Glue and screw them together; make the upper layer replaceable.
Leg members	8 x 864 x 90 x 45	Two members form each nominal 90 x 90 leg. Adjust for the real top thickness and target height.
Upper long rails	2 x 1,620 x 90 x 45	Fit between the paired legs at the front and back. Confirm actual leg width first.
Upper end rails	2 x 420 x 90 x 45	Fit between paired legs at each end. Keep a clear front zone if a vice is planned.
Lower long stretchers	2 x 1,620 x 90 x 45	Stiffen the frame without catching feet or storage bins.
Lower end stretchers	2 x 420 x 90 x 45	Fit square with the long stretchers and keep the floor route clear.
Top support cleats	3 x 420 x 90 x 45	Support the two-layer top between upper rails. Do not use unsupported spans for heavy machinery.
Hardware / finish	Corrosion-resistant screws; suitable adhesive; levelling pads; sanding; compatible finish	Choose fixings for the material and load. Hide screw tips and allow finish to cure fully.

BEFORE CUTTING

Check the dressed timber size, plywood thickness, saw kerf, sheet nesting, grain direction, defects and the finished height. Add stock for waste, but do not replace a real nesting layout with a percentage alone.

Build order and final checks

Use the sequence after proving the dimensions in the room.

1

Prove the height

Mock up the top and confirm the working height, aisle, doorway and clearance. Revise the leg cut before building.

2

Prepare the parts

Cut square, label every piece, reject splits and twists, ease reachable edges and test drilling on an offcut.

3

Build the frames

Assemble paired legs with upper and lower long rails. Clamp, pre-drill and compare diagonals before tightening.

4

Join and square

Fit end rails and top cleats, then check the base on a flat surface. Adjust until the plan-view diagonals agree.

5

Fit the top

Laminate the plywood, countersink screws below the face and use accessible fixings so the upper layer can be replaced.

6

Level and test

Use suitable pads, restrain only to a verified substrate, then load progressively and stop if the bench rocks or racks.

SAFETY AND LIMITS

Keep guards in place, control wood dust, keep floors and aisles clear, and use task-appropriate eye, hearing and respiratory protection. Do not use this bench as a ladder, scaffold, vehicle support or substitute for a machine stand. Electrical changes and high-risk machinery need competent handling.

REFERENCES

OSHA - Woodworking: hazards and solutions

UK HSE - General workshop safety