UNIQUE PROJECTS
make something original

Vertical Organizer

Back panel (1)

Vertical panel (6)

Bottom panel (1)
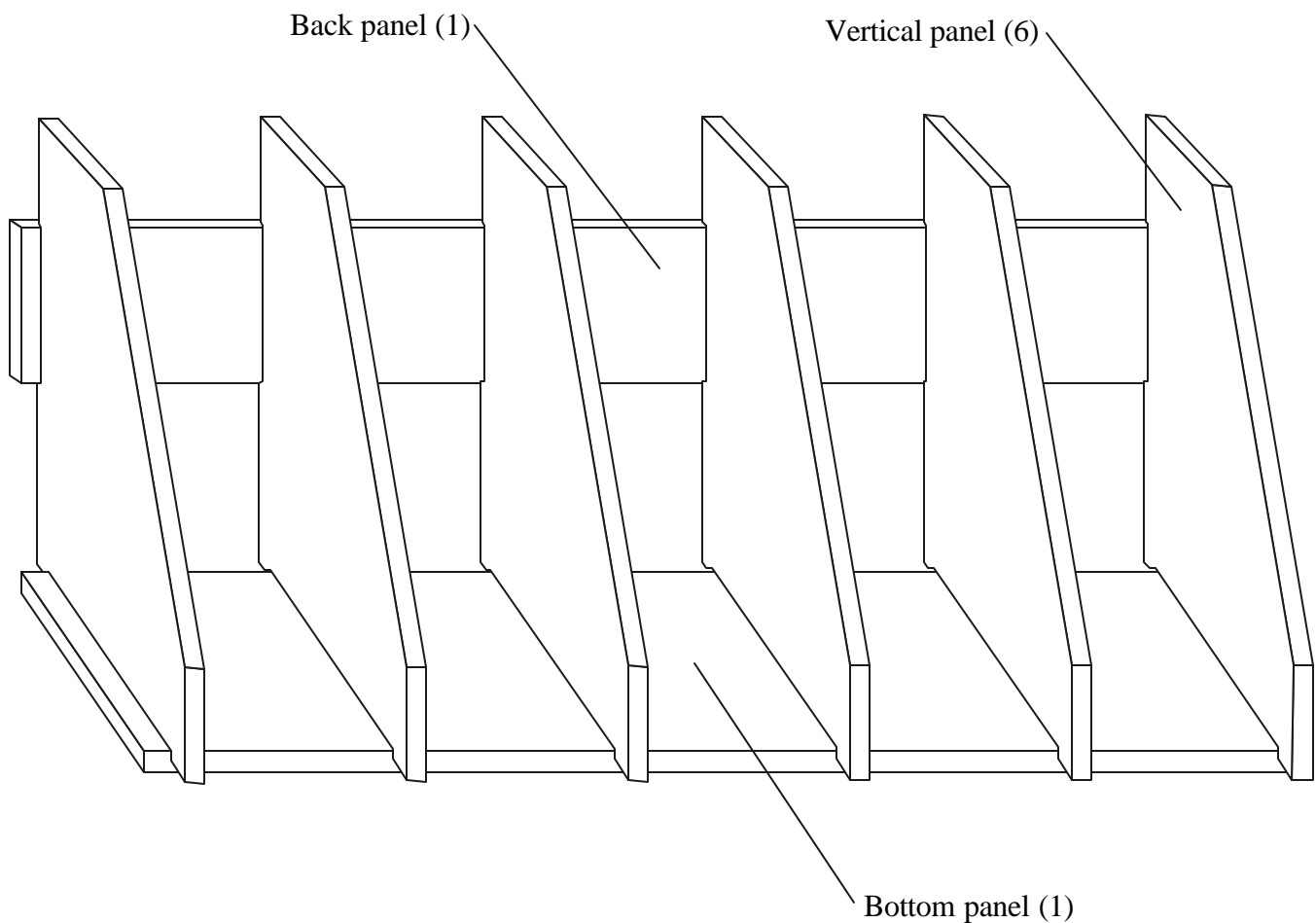
THIS IS NOT THE COMPLETE PLAN:
it is merely an *accompaniment* to the online version
which contains thorough information. You can take this with you
to the store to pick up the necessary materials and you can use it in the
shop while you are working but it is not a replacement to the online version.

UNIQUE PROJECTS
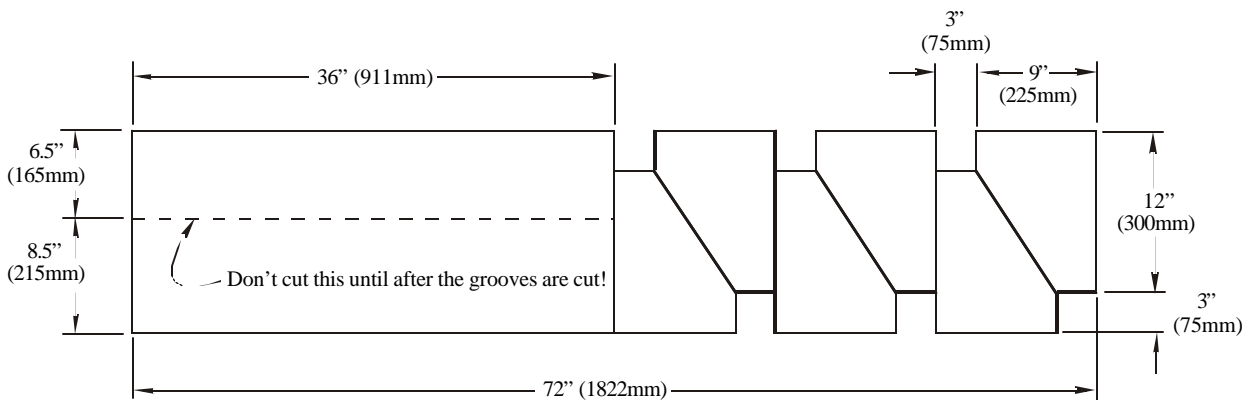make something original

step 1

Acquire materials:

Item	Qty.	Description
#1	1	approx. 1/2" (12mm) thick plywood, good both sides with no voids in the core plys
#2	1	wood glue
#3	1	double-sided tape
#4	12	finish brads
#5	1	finishing oil or paint with primer

Confirm that you have the proper tools:

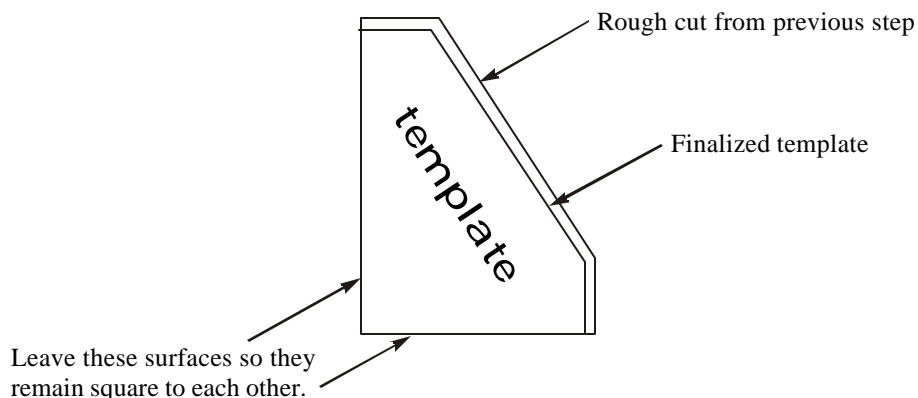| Tool |
|------|
| table saw |
| band saw or jig saw |
| dado set or router with straight bit |
| pattern making or flush trim router bit |
| clamps |
| brad nailer or hammer with nail set |
| disc sander or block plane |
| power sander |

step 2

Cut the plywood [Item #1]. Note that we are cutting the vertical panels slightly oversized so we can trim them to identical dimensions in a subsequent step. Make sure that you do not make the cut to separate the bottom and back panels yet: we will do this after we cut dadoes or grooves into them. Also, the backs of the six vertical panels need to be cut with the table saw to ensure that they are square to each other. The angled cuts can be made with a bandsaw or jig saw.

3"
(75mm)

36" (911mm)

9"
(225mm)

6.5"
(165mm)

12"
(300mm)

8.5"
(215mm)

Don't cut this until after the grooves are cut!

3"
(75mm)

72" (1822mm)

step 3

Make a template out of one of the vertical panels; its best to choose the one that came out the smallest if there are any slight differences in size. Draw lines about 1/8" (3mm) from the edges (but not on the back and bottom of the vertical panels as shown in the graphic. Using a disc sander, block plane, or hand sander with a course grit, remove the material up to the line. When you have achieved the desired dimension approx. 8 7/8 x 11 7/8" (222 x 297mm), mark this panel as the template with a pencil.

Rough cut from previous step

Finalized template

template

Leave these surfaces so they
remain square to each other.

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step 4

With the template created we can trim the remaining vertical panels to size. Using double-sided tape [Item #3] affix one vertical panel to the template; make sure that the backs and bottoms of both pieces are aligned - you won't need to trim these surfaces. With a router, preferably mounted in a router table, and a flush-trim or pattern-making bit, trim all the vertical panels to size. Make sure that the bearing rides squarely against the template.

step 5

Now that all of the panels are cut to size, align them into a stack and clamp the stack together with C-clamps. Place the stack in a vise and sand all edges including the backs and bottoms so that all of the vertical panels are of identical dimensions and have smooth edges.

step 6

Next we will cut the dadoes or grooves into the back and bottom panels. Remember that we are cutting the dadoes or grooves into one panel, and then we will cut that panel in two to create the back and bottom panel. Using a test piece of the same plywood that you are using for the vertical organizer set the dado or groove width and depth. The width should allow a panel to fit in and slide back and forth - any tighter and assembly will be difficult or impossible, and a looser fit would yield visible gaps. The depth of the dadoes or grooves should be about half the thickness of the material - this will provide a sufficient gluing surface without sacrificing the integrity of the bottom and back panels.

Table saw fence

1/2" (12mm)
7 3/8" (187mm)
14 1/4" (362mm)
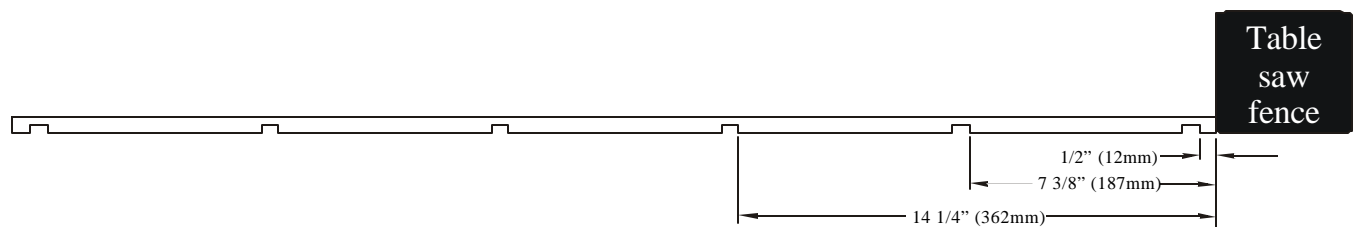
Cut the first dado through 1/2" (12mm) from the end. Rotate the panel 180 degrees and, using the same fence setting, cut another dado 1/2" (12mm) from the other end. This system guarantees symmetricity and speeds the entire process. Use the graphic above for the dimensions; if you rotate the board each time, these three fence settings yield the 6 necessary dadoes. Remember that the fence is determining the distance to the edge of the dado not to the centerline; make sure you consider this when you are making your own calculations.

step 7

Now we can cut the board to create the bottom and back panels. After trimming, our vertical panels are 8 7/8" (222mm) wide and we want them to be a little proud, so we are cutting the bottom panel to be 8 ½" (215mm) wide. The width of the back panel is not functionally critical, so we will simply use the remaining piece for the back.

step 8

Next, you can cut profiles on the edges of the boards. Don't perform any profiling on the bottoms and backs of the vertical panels because they need to be inserted into the dadoes. Otherwise you can profile all edges. Be careful when working on the back and bottom panels - make sure that the bearing doesn't ride into the dadoes you made: to prevent this you will need to rely on the router table fence instead of the ball bearing for guidance.

step 9

Sand all pieces sufficiently, but do not oversand the vertical panels because they will fail to fit into the dadoes if you do so. If one of the fits is tight, you can sand the vertical panel to get an appropriate fit. We recommend that you progress through the grits and stop at 320 or 400. Try one final dry fit to make sure that everything fits properly before proceeding.

step 10

Final assembly and finishing. If you have a brad nailer, glue and nail the pieces together. If you don't glue the bottoms of the vertical panels and the respective dadoes and fit into place; use the back panel as a temporary caul to clamp the vertical panels down into the dadoes. You can view a photograph of this in the online plan. Once this is dry, unclamp and attach the back panel with glue and brads. You will need to mark where you will be putting the back panel so you know where you should apply glue onto the backs of the vertical panels. After any gluing step, let it set until gummy - it is very easy to remove any squeezeout at this point: any earlier and it will make a mess and any later the glue will harden and be very difficult to remove especially in tight corners.

end