Versatile Plywood Drawers



An honest box with your choice of two simple drawer joints

BY GARY ROGOWSKI

S ome drawers are built with great care, hinting at the treasures hiding behind their polished faces. They have the look and feel of a crisply tailored suit. But plywood utility drawers feel more like loosefitting jeans: They're made for comfort and use, not for show. Utility drawers are the perfect receptacles for those minor tornadoes of odds and ends.

You can build simple plywood drawers with a tablesaw, a router and your choice of two basic joints: the rabbet or the tongue and dado. For ease of construction, build the drawers with ¹/₂-in. plywood (I use 9-ply Baltic birch) or a high-density particleboard. Just make sure your sheet goods are flat and of consistent thickness. Millwork then simply involves cutting the parts to length and width. Use ¹/₄-in. plywood for the drawer bottoms, which also serve as the drawer runners.

Construct the cabinet carcase out of the same ¹/₂-in. plywood used for the drawers. For a clean look, I spline-miter my cabinet



BUILDING A SPLINE-MITERED BOX

For a simple plywood carcase, 45° miter joints result in clean corners and concealed end grain. A mitered corner should be strengthened with a plywood spline that fits into grooves cut the full length of each side piece.

Before glue-up, dado ¹/4-in. grooves into the side panels for the drawer runners.

Rabbet the rear edges of all four panels to accept a flush-mounted, ¹/4-in. plywood back.

Locate the spline closer to the inside face of the box to avoid weakening the joint.

Weak point

Thetongue-and-dadojoint

The simplest setup for cutting a tongue-anddado joint requires only one bit-height setting on the router table. However, the bit hole in the table must be small enough or have a table insert to prevent the drawer pieces from diving into the hole when passed vertically over it. If your table doesn't have an insert, drill an access hole through some flat ¹/₄-in. plywood or hardboard, and clamp it to your table.

First cut the dadoes in the drawer sides. Set the bit height for the full dado cut, and then position and clamp the fence. I always take a practice pass before committing good stock to the cut. If the dado is in the right place, the outside face of the drawer front will wind up flush with the end of the drawer side. Without changing the bit-depth setting, cut the tongues in the drawer face and back with the pieces held vertically. Score the face with a gauge line to prevent tearout. You will have to adjust the fence to get a perfect-fitting tongue.

Because the end of the dado is fragile and can break off, avoid too tight a fit, and use caution when pulling the joint apart. –G.R.



Spline

First cut the dadoes in the drawer sides. The dado should be one-third (or less) the thickness of the board.



Next cut the tongues in the drawer face and back. Adjust the fence for the shoulder width, but leave the bit height the same as it was for the dadoes. Hold the stock vertically.



Test the fit. If you cut the dado first and use it to locate the tongue, the fit should be right.



sides together, as shown in the drawing at left. I rabbet the rear edges to accept a flush-mounted, ¹/₄-in. plywood back, but you could rabbet the sides together and simply screw on the back. Before glue-up, dado 1/4-in.wide grooves into the cabinet sides for the drawer runners to rest in. Make sure the case goes together square by checking the diagonals across the face and back of the cabinet. Pull the cabinet square by clamping across the longer diagonal. Squaring the cabinet will make fitting the drawers much simpler later on.

Both the rabbet and the tongue and dado are excellent joints for plywood construction because they help line up the drawer parts when gluing. The difference between these joints is partly structural and partly visual. The tongue and dado shows the ply edge on the face of the drawer, whereas the rabbet keeps this edge hidden from sight. But the rabbet needs fasteners such as dowels or nails to resist being pulled apart every time the drawer is yanked open. Because the tongue of the drawer front is secured by the dado of the drawer side, the tongue and dado naturally resists this same movement,

You can cut either joint on a router table (see the boxes on this and the facing page). For pulls, I bore 1-in. holes in the drawer fronts with a Multispur bit or a Forstner bit, positioning the bit so that a portion of the hole overlaps the top edge of the drawer.

Glue up the drawer sides, and then glue on the bottoms. Make sure that the drawer boxes fit between the case sides with only a little slop; let the drawer bottom be the item you adjust for that perfect fit. Then comes the best moment: filling all those drawers with stuff.

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The rabbet joint requires just one router cut into each end of the drawer face and back. The drawer sides are simply crosscut to the correct length, figured by taking the outside dimension of the drawer box less the width of the rabbet on both ends. Use a router bit the same width as the drawer side, so you can cut the full width of the rabbet with each pass across the bit.

To spare your bit, take two separate passes to cut the rabbets to depth. The first pass takes away about ¹/₈ in. of material; the second cuts to depth, in this case, ¹/₄ in. A rabbet joint can also be roughed out on a saw and then router cut in only one pass, with the bit set to full depth.

The sides on my utility drawers are about 3 in. wide. When you cut narrow boards like these on a router table, you can gang up two or three to give them greater stability against the fence and to reduce tearout. Make sure you're aware of where your fingers are when the bit emerges from the cut. After the drawers are glued up, pin the drawer sides to the face and back with $\frac{1}{2}$ in. dowel pins. If you prefer to fasten the sides with finish nails, drive the nails at a slight inward angle, and set the nail heads. -G.R.



The rabbet joint



Gang several pieces together. Cutting two or three pieces at once improves stability against the fence and reduces tearout.



Pin a rabbet joint with dowels or nails. Fasteners keep the joint from breaking apart when the drawer is yanked open.