

A Better Way to Build Drawers

NK-style drawers are easier to fit, offer smoother action and have a longer life than traditional drawers

BY MARK EDMUNDSON

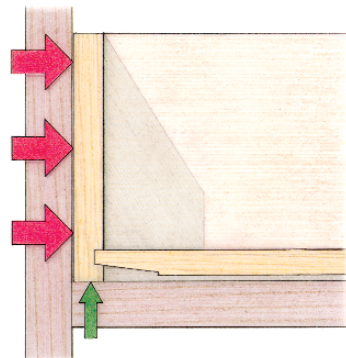


THE NK ADVANTAGE

NK drawers, named for the Swedish furniture manufacturer that popularized them, use a separate bottom assembly to eliminate the drawbacks of standard drawer designs.

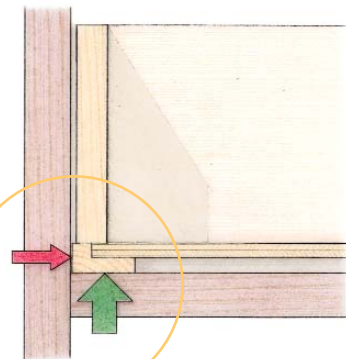
TRADITIONAL DRAWER

Thin, tall sides create a large friction surface area and are prone to sticking. Narrow glide surfaces wear out quickly.



NK DRAWER

Short, wide runners in the bottom assembly reduce the friction area and provide a wide, long-wearing glide surface.



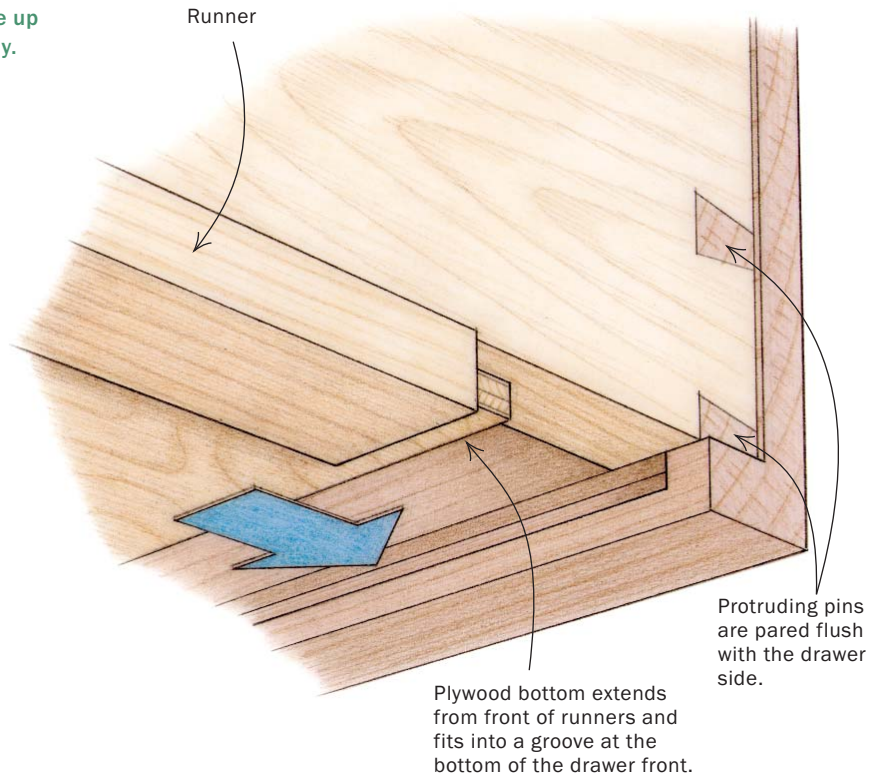
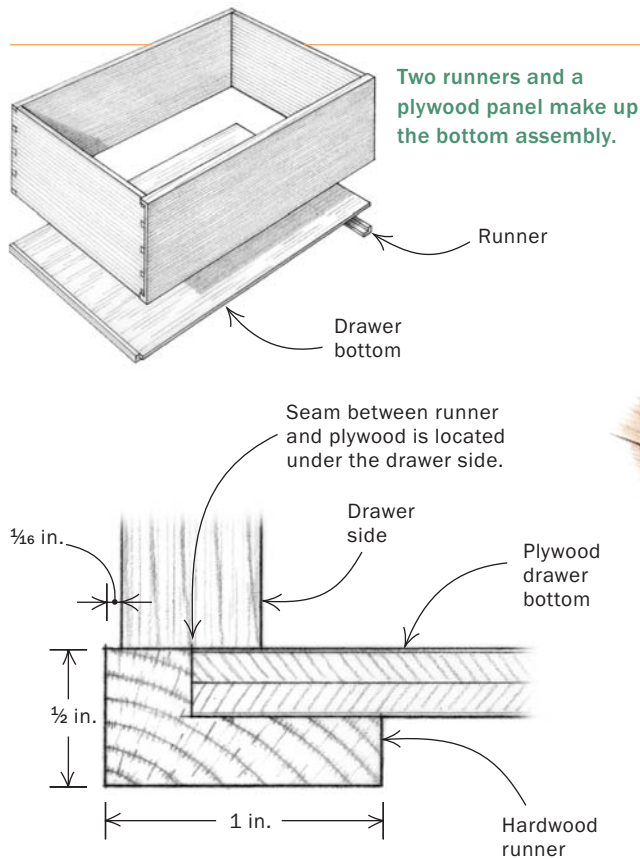
Consider a dresser drawer that is 16 in. deep and 30 in. wide. Let's say that every time it's opened it travels 12 in. out and 12 in. back in. If this drawer is opened once a day for 30 years, it will have traveled more than four miles, carrying its load of sweaters and jeans solely on the thickness of the drawer sides. By then it's probably running like a brick over a cheese grater. Worse, if the wear extends into the groove for the drawer bottom, it will damage not only the drawer but also the carcass itself.

Side-hung drawers avoid this problem by having the drawer run on rails dadoed into the drawer sides. French bottoms avoid the wear by adding slips to the bottom of the sides, which increase the surface that bears the weight of the drawer. In both of these cases, however, the sides still rub against the drawer opening. This is especially a problem in deep drawers, where the tall sides are difficult to fit to the carcass and are prone to sticking.

A style that solves both problems—excessive wear and too much friction—is the NK (pronounced “enco”) drawer, developed in the early 1900s by a Swedish manufacturer, Nordiska Kompaniet. I started building NK drawers, which require no hardware, for deep drawers. Now I make almost all of my drawers this way.

The NK drawer is quite different from a standard drawer. For one, the front is slightly wider than the sides, except where the dovetail pins have been pared flush. Runners glued to the bottom of the sides also protrude from the sides, making them even with the sides of the drawer front. The last big difference is the bottom. It's made of plywood and glued into a rabbet in each runner.

The NK drawer has a few advantages over a standard drawer. The runners provide extra surface area where it's needed—under the drawer—and reduce the amount of surface area rubbing at the sides. Also, fitting this drawer means fitting the bottom assembly



only, which is easier than fitting a standard drawer, especially if it is large. Without the front, sides and back of the drawer to obstruct your view, it's easy to see where the runners are binding. Finally, even if the box isn't glued up perfectly square, the drawer will operate smoothly, because the bottom sits proud of the sides.

Build the bottom assembly first

The construction of the NK drawer is as different as its design. The bottom assembly comes first, because it determines the dimensions of the drawer box. The bottom assembly is composed of three parts: two runners and a plywood bottom. Fine plywoods are available in a variety of species, but I often make my own drawer bottoms with veneer chosen to match the drawer front, laid up on a thin plywood core.

The runner dimensions must be sized to minimize the friction against the carcass sides and maximize the support of the drawer's weight. On the dresser featured here, the drawers are 16 in. deep and 30 in. wide, with heights ranging from 5¾ in. to 8 in. I made the runners ½ in. high and 1 in. wide.

Because the runners butt up to the drawer front, their lengths are determined by subtracting the thickness of the drawer front from the drawer depth. In this case, the front is ¾ in. thick, so the runner length is 15¼ in. The runners are rabbeted to accept the bottom. The rabbet depth is the same as the thickness of the bottom, and the width of the rabbet is such that the edge of the plywood will end up directly underneath the drawer side, splitting its thickness. Because the runners provide all of the support for the drawer, the drawer sides can be thinner than ½ in. For these large drawers I resawed 5/4 stock and ended up with sides that are ½ in. thick.

Once the runners have been rabbeted, place them into the draw-



Start with the bottom assembly. With the runners in place, determine the width of the plywood bottom. Cut the bottom a bit wider than necessary. Then trim it to fit.



The drawer pocket is the best place for gluing up the bottom assembly. The author uses clamping cauls and small sticks wedged against the drawer divider above.



Each part determines the size of the next one. Lay out the groove in the drawer front directly from the bottom assembly. Then measure to the groove in the drawer front to determine the height of the drawer sides.

er opening and measure the distance between the walls of the rabbets. Cut the plywood panel a hair wider so that you have some wood to work with when making the final fit. You may want to glue a strip of solid wood to the back edge of the plywood to conceal the core. The bottom must extend past the front of the runners into a groove in the drawer front, so make the bottom $\frac{1}{4}$ in. longer than the runners. Once these pieces have been cut to size but before gluing them together, test the fit in the drawer opening. If the fit is tight, you shouldn't have too much work to make it run smoothly, but if it won't fit at all, reduce the width of the bottom. If it's too loose, place a shim between the plywood's edge and the rabbet during glue-up. Once these pieces are to your liking, they may be glued up.

The bottom assembly may also be glued up in the drawer pocket itself, to ensure a close fit from the get-go. This way you also can align the front edges of the runners with the carcass during glue-up, which in turn will cause the drawer front to be parallel with the front of the carcass. You will need two $\frac{1}{2}$ -in.-square clamping cauls cut to the same length as the runners. Place the bottom assembly in the drawer pocket and set the cauls on the outside edges of the plywood. The easiest way to clamp down the cauls is to wedge small sticks against the drawer divider above. Make sure that the back of the runners and the back of the bottom remain flush.

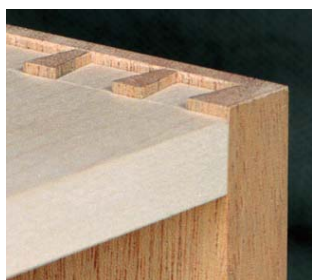
When the glue is dry, you can begin fitting the bottom assembly to the drawer pocket. This definitely will be the easiest large drawer that you will ever fit. The bottom assembly should fit the pocket tightly and only need a few plane strokes to make it run smoothly, but there is always at least one renegade in the bunch that will need a little bit more coaxing. Begin by flipping the assembly upside down and fitting the front few inches of it into the opening. If the back is still off, check the dimension of the back end of the bottom, fitting from the back of the cabinet. Once this is done, plane the runners so they are once again straight. Check the fit frequently to avoid removing too much material.

To test whether the bottom assembly fits and is running smoothly, pull it out about three-quarters of the way (you may have to place a weight at the back of the assembly to keep it from tipping) and try to close it by pressing at either the right side or the left side. If the assembly goes in without binding, it's ready. If it sticks it probably needs a little bit of sanding to create a smoother run.

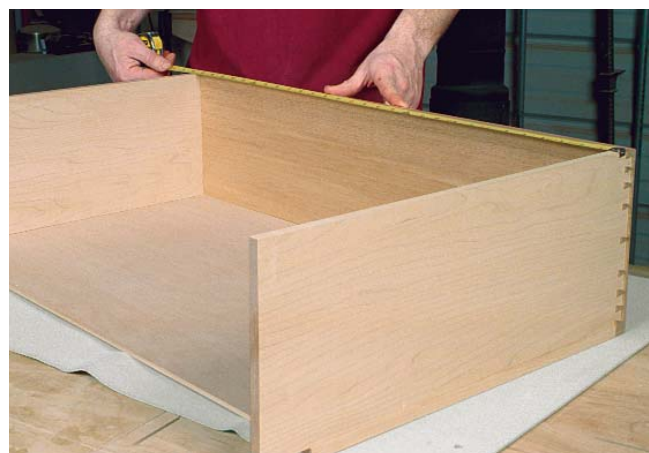
If, in the excitement of fitting the bottom assembly, you take off a little too much wood—which I've done more than once—and the fit becomes sloppy, just rip about $\frac{1}{8}$ in. off the side of the runner, glue on a slightly thicker strip and start again.

The runners must line up evenly with the front of the opening to ensure a consistent reveal around the drawer front. If the runners don't line up, use the front of the carcass to determine how much

DRY-FIT AND MEASURE FOR SIDES AND BACK



The drawer side is set in from the bottom runners and the sides of the drawer front (above). When laying out the half-blind pins, set a marking gauge about $\frac{3}{16}$ in. heavier than the thickness of the drawer sides.



Temporarily attach the bottom assembly to find your next dimensions. Use the back of the drawer runners to scribe the length of the sides (left). Then measure across the sides to find the length of the drawer back. Cut the sides and back to length, then cut the through-dovetails at the back corners.

PARE THE PINS AFTER ASSEMBLY



A small dowel at the back helps keep the drawer box aligned during glue-up. Just be sure that the edges of the drawer front line up exactly with the sides of the runners.

Paring back the pins. Use a small stack of index cards and a plane blade to pare away the pins without tearing out the short grain. Remove one card at a time until they're gone and the pins are trimmed flush. Sections of the half-pins at the top and bottom are removed, leaving them square.



to trim the longer runner. Scribe a line and clamp a square guide block to the runner, then pare away the excess with a chisel.

Size the drawer front

Cut and plane down the edges of the drawer front until the drawer fits snugly in the carcass opening. Using the bottom assembly as a reference, locate the groove in the drawer front that will receive the protruding edge of the plywood.

Now measure from the top of the drawer front to the top of the groove to find the height of the drawer sides. Add a fraction more to the height to allow for slight misalignment of dovetails.

Cut the half-blind dovetails—Cut the tails first. Then, to hold the sides in from the runners and the drawer front, set a marking gauge $\frac{1}{16}$ in. heavier than the drawer side's thickness when laying out the pins in the drawer front. Any more than $\frac{1}{16}$ in., and the drawer front's protruding end grain will be too fragile.

I leave the sides long until I've finished the joinery at the front. This way, if I mess up a set of tails, I can cut them off and do them over again. Usually I cut all of the pins in the fronts, choose the worst-fitting side and redo its tails, working in reverse and marking from pins to tails. This second chance takes a little pressure off cutting dovetails.

After the joinery has been cut for the sides and fronts, dry-fit the parts and place the box on top of the bottom assembly. If everything looks good and the runners are snug against the drawer front, use the runners to mark off the lengths of the sides. Then cut the sides to length.

Now measure the distance from the outside of one drawer side to the outside of the other at the front, and cut the back to that di-

mension. After the joinery has been completed but before the glue-up, finish-sand the drawer sides; otherwise, the protruding runners and drawer front will make sanding difficult.

Glue up the drawer

Gluing up an NK drawer can be a bit fussy. Start by gluing up the front, sides and back. Once that assembly is dry, you're ready to attach the bottom assembly. Line up the sides and runners carefully: If the front overhangs a runner on one side, it will come up too short on the other, and all could be lost.

The back corners of the drawer should be centered on the bottom assembly. To ensure alignment, while the assembly is clamped up during the dry-fitting, drill a small hole at the back of the plywood bottom, up into the drawer back. During glue-up, slide a dowel into this hole. The front will stay put, because the plywood bottom slides into the groove in the drawer front.

All that's left now is to pare down the protruding pins on the drawer front. A sharp chisel will do, but I like to use a freshly sharpened plane blade and some index cards as shims. If you take off too much at once, the end grain can crumble. Start with a stack of index cards slightly lower than the pins, lay down the blade and make small shearing cuts. Then remove a card or two and repeat as necessary. Finally, pare away the slope of the half-pins at the top and bottom, leaving horizontal lines.

NK drawers are more complex than standard drawers, but they make fitting large drawers a much less nerve-wracking job. And it's a comfort to know that these drawers will continue to run smoothly as the years and miles pile up. □

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