

Center

Shopmade guides ensure smooth action for wide drawers

BY MARK EDMUNDSON

Let's be honest. An occasional binding drawer is an ugly fact of life in woodworking. We've all knocked our heads against the wall trying to get a drawer to run straight and smooth. But center guides can relieve a lot of the pain, while solving the binding problem.

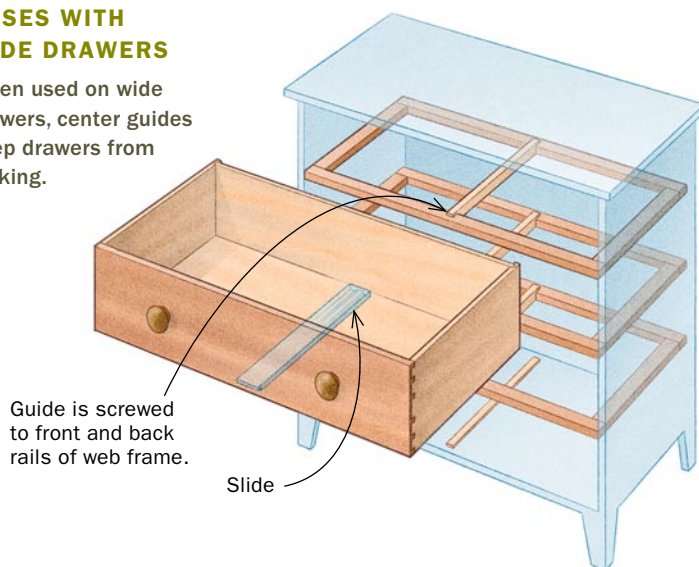
To steer a drawer in the center, you need to build two parts: the guide and the slide (see drawing, facing page). Make both parts of quartersawn hardwood to minimize seasonal wood movement. The guide is secured to the rails of the drawer pocket and mates with the slide, which is mounted underneath the drawer. The guide also serves as the stop for an inset drawer, allowing you to fine-tune the desired reveal at the front, and it works as the



A range of uses

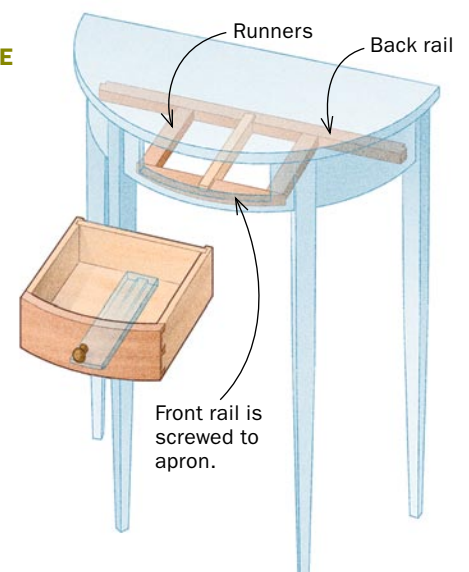
CASES WITH WIDE DRAWERS

When used on wide drawers, center guides keep drawers from racking.



DRAWER IN A DEMILUNE TABLE

Center guides are a great solution for steering drawers in irregularly shaped pieces, like this demilune table.



Guides for Drawers

kicker for a drawer below. The system is dirt-simple but very effective. With it, you can make any drawer run straight and true, with no binding—ever.

Although center guides work with almost any type of furniture—tables and both solid-wood and frame-and-panel cases—they are especially effective at guiding wide drawers. Installed correctly, center guides will allow you to open a drawer from either corner without fear of binding. Center guides also work well on small drawers, where they can take the place of side runners. What's more, they are a great solution for guiding irregularly shaped drawers, or normal drawers in an irregularly shaped cabinet or table—basically anywhere the sides of the case can't guide the drawers. The system even works with overlay drawers.

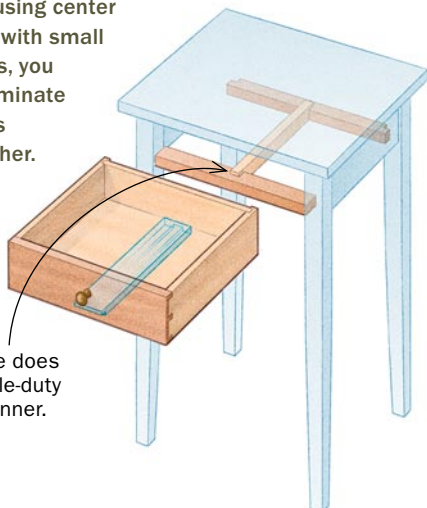
Notch rails to hold the guide

The construction sequence for center-guided drawers differs a bit from traditional methods, in that the web frame that supports the drawer (two rails, two runners) will need to be notched for the guide before it is glued into the cabinet. But the drawer bottom should be the type that can be slid out the back. Once you

SMALL DRAWERS

When using center guides with small drawers, you can eliminate runners altogether.

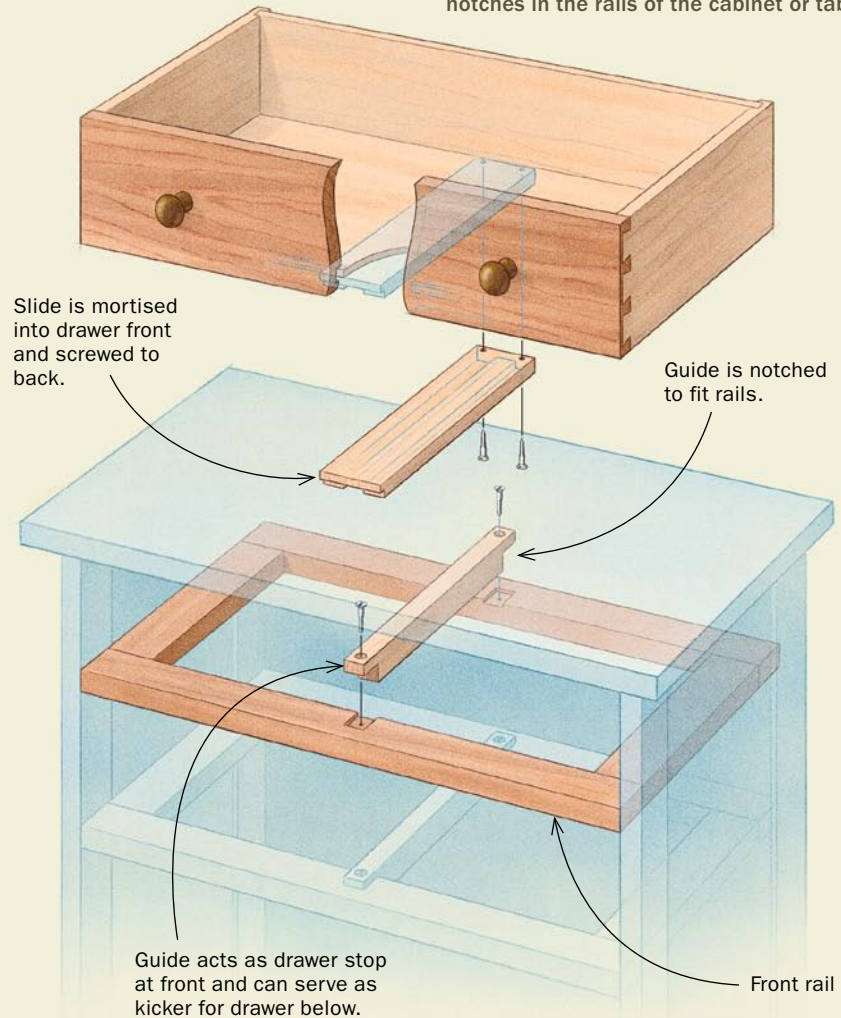
Guide does double-duty as runner.



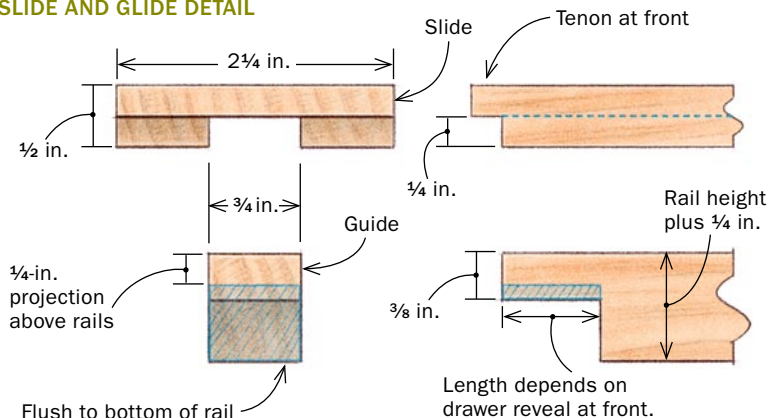
ANATOMY: THE SLIDE AND THE GUIDE

The slide is grooved and mounted underneath the drawer bottom; one end sits in a shallow mortise in the drawer front and the other is screwed to the drawer back.

The guide mates with the groove in the slide and sits in notches in the rails of the cabinet or table.



SLIDE AND GLIDE DETAIL



Rout notches for the guides

Frame-and-panel cases usually use web frames to support drawers, while solid-wood cases often use separate back and front rails to allow for wood movement. Either way, the notches for the center guides must be perfectly aligned, side to side and front to back.



IN WEB FRAMES

Router-cut notches are quick and precise. If you have a few web frames to notch, use a jig like this, clamped flush with the edge of the frame. The fence on top aligns the notches front to back, and stops keep all notches the same length.



IN SEPARATE RAILS

T-shaped jig aligns notches. Clamp the two rails together and make a T-shaped fence from plywood scraps. First, rout a test slot into the "T" of the fence to help align the path of the bit with the marks for the notch.



The router-bit flaw. The 3/4-in.-dia. straight bit leaves a rounded notch that needs to be squared up with a chisel.

Make the guide,



Mill the guide. After planing the width to fit tightly in the notches, cut the half-lap joint using a dado set.

have completed this and glued up the carcase, you can build the drawer box and put the bottom in place. Once the drawer has been fitted into the opening, the guide and slide can be milled and installed.

The guide is typically 3/4 in. wide and sits in 1/8-in.-deep notches centered in the front and back rails of the web frame. The length of the notches in the rails depends on whether the drawer is an overlay or inset type. If you're using overlay drawers, which don't need a drawer stop, simply end the notches 3/4 in. from the outside edges of the rails.

An inset drawer requires a little more finesse. The guide will act as the drawer stop. So if the drawer front is flush with the front of the case, mark the end of the notch based on the thickness of the drawer front (for a 3/4-in.-thick drawer front, the notch stops 3/4 in. from the front of the rail). If the drawer front is set into the case to create a reveal, add that inset to the equation. In either case, make the notch on the rear rail the same length to avoid complication when notching the guides.

You can chop out the notches using a chisel and a scrap of hardwood as a guide, but this can be slow going and inconsistent. For this guide system to work well, it's critical that the guide run parallel to the case side (or side of the web frame). That's why I prefer to cut the notches using

then the slide



Get a groove in your slide. Cut the groove in the drawer slide using a 1/2-in. dado set. To ensure a centered groove, make two passes, rotating the slide 180° after the first pass (left). When the groove is almost the right size, stop shifting the fence to adjust the groove width. Instead, put masking tape along the fence to dial in the width (right).



Cut the stub tenon on the front of the slide. Use the same dado-blade height as you did to cut the center groove.

a router and a plywood jig (see photos, facing page). The jig ensures that the cuts are parallel to the edges and makes it easy to bang out all of the notches for a chest of drawers in minutes.

Fit the guide to the rails and the slide to the guide

Once you have the web frame notched, mill the guide so that it fits tight in the notches. Then lay out and cut the half-lap joints on both ends so that the guide is flush with the bottom of the rails and projects 1/4 in. above them. If you're doing more than one drawer, cut all the guides at the same time. You are now ready to mill the slide, or slides if you have more than one drawer.

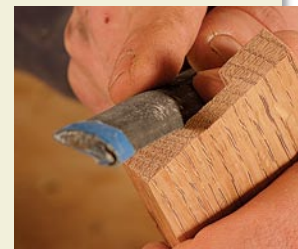
In most situations, a 1/2-in.-thick by 2 1/4-in.-wide slide is sufficient. To cut the groove down the center for the guide, use a 1/2-in.-wide dado setup on the tablesaw. Make the cut in two passes, rotating the piece 180° after the first pass. Check the fit of guide to slide often. Shift the fence to make heavy adjustments, but when you're close, attach masking tape to the fence to shim out the cut in small increments.

You don't want a loose fit, so once you have a tight fit, it may be better to fine-tune it with a handplane along the edge of the guide. Take light passes. This step also cleans up any rough areas that could

Fine-tune the fit



A slide that glides. You want the slide to move without sticking and without noticeable side-to-side play. If necessary, take a couple of light plane strokes off the guide to fine-tune the fit, but don't go overboard.



Kiss the edges with a file. Ease the blunt edges of the guide and slide to make it easier for the two parts to engage.

Final assembly requires careful layout



ATTACH SLIDE TO DRAWER

Install the guide and wedge the slide. Put masking tape over the guide to wedge the slide on top, with the tip of the slide sticking out about 3 in.



Center the drawer in the opening. Place the drawer on top of the slide and push it in until the underside of the drawer front touches the front of the slide. Add paper shims on both sides to keep the drawer centered as you work.

Mark, mortise, and check the fit. Knife in the edges of the mortise for the stub tenon (right). Remove the drawer, and chisel out the mortise for the slide. When checking the fit, insert a scrap piece of the drawer bottom to ensure alignment (far right).



interfere with the drawer run. Once the pieces fit nicely, cut the stub tenon on the front of the slide.

To make the parts engage more easily, ease the edges on the front of the guide and the rear of the slide using files or sandpaper. If you are making more than one pair of slides and guides, be sure to mark mating pairs that have been fitted to each other. Now screw the guide to the web frame and install the frame in the case.

Mount the slide underneath the drawer

With the web frames installed, glue up the drawer box and add the bottom. Be sure that the drawer is square; if it's not perfectly square and the slide is centered, the drawer front will not be parallel in the opening.

To fit the slide to the drawer, begin by placing a couple of pieces of blue tape over the guide inside the case. Now place the slide on the guide, with the slide protruding about 3 in. out front; the tape will wedge the slide in place for marking.

Push in the drawer until the underside of the drawer front touches the front of the slide. You want the drawer face centered in the opening. To center it, add paper shims between the drawer and cabinet sides. Now mark the mortise for the slide on the back of the drawer front. Remove the drawer from the opening, take out the drawer bottom, and then chisel out the mortise for the slide.

ADJUST FOR A PERFECT RUN



Almost there. With the slide fitted into its mortise in front and cut to length, place the drawer back into its opening. Push it all the way in and pencil in the outline of the slide on the bottom (top). Next, remove the drawer and attach the slide to the bottom using double-sided tape, aligning the slide at the rear with the layout marks (bottom).



Does it work? Push in the drawer and pull it out to test the run. If there's any binding, adjust the slide to the left or right, depending on where the bind occurs.

Fine-tune the fit—Once the slide fits snug in the mortise, cut it to length and screw in the drawer bottom. Place the slide into its mortise, then put the drawer and slide over the guide. Push the drawer all the way in, and then scribe the outline of the slide at the back of the drawer. Now remove the drawer, and temporarily attach the slide to the drawer bottom with double-sided tape, aligning the back of the slide with the scribe marks. Slide in the drawer to test the run.

If the drawer binds on one side, shift the slide at the back of the drawer closer to the side that is binding. If the drawer binds at the front, you may need to lengthen the

slide mortise a bit away from the side that binds, then glue in a shim later to fix it in place. When the drawer runs smoothly and the drawer front is parallel to the cabinet, screw the slide to the drawer back on each side of the groove. If the drawer runs smoothly but the drawer front is a bit out of alignment with the cabinet, you'll have to plane a bit of the drawer front to correct the reveal. Countersink the screws so they don't rub the front rail. Add a bit of wax, and you'll have a drawer that will run smooth and straight for its lifetime. □

Mark Edmundson is a furniture maker and teacher based in Sandpoint, Idaho.



Screw the slide to the drawer back. Once the drawer is running straight and smooth, permanently attach the slide. Use an offcut from the guide as a clamping caul.