

# A Guide to Drawer Slides

Whether hidden, under-mount or side-mount, your choice depends on the project

BY JOHN MARCKWORTH



Ever since man abandoned the hollow log for storage and began building furniture, drawers and drawer making have defined the quality of both cabinet and cabinetmaker. If you don't believe that, just watch customers in a furniture or kitchen showroom. One of the first things they do is yank open a drawer, the equivalent of kicking the tires at a car lot.

Traditional and high-end furniture designs still call for piston-fit drawers that slide on wooden runners. They are time-consuming to fit and, even when executed with skill, may become sticky or sloppy due to extreme changes in humidity. That's one reason why drawer slides were invented. Depending on the project, mechanical

## HIDDEN SLIDES

A clip mounted under the drawer front engages the slide's runner (the movable portion). The fixed portion of the slide is screwed into the side of the case.



### Tandem by Blum

Drawer sides must not be thicker than  $\frac{5}{8}$  in. One size clip fits all. The clip has tool-free height adjustment. The drawer bottom must be recessed  $\frac{1}{2}$  in. from the sides.

### Quadro by Hettich

Clips must be matched to the drawer thickness. Three clip sizes are offered:  $\frac{1}{2}$  in.,  $\frac{5}{8}$  in. and  $\frac{3}{4}$  in. Elongated mounting holes allow for height adjustment. The drawer bottom must be recessed  $\frac{1}{2}$  in.

### Dynamic by Mepla

One size clip with tool-free height adjustment fits drawers up to  $\frac{3}{4}$  in. thick. The drawer bottom must be recessed  $\frac{3}{8}$  in. (10mm).

## UNDER-MOUNT SLIDES

If one or both sides of a drawer are built at an angle other than 90°, mount one or two slides underneath the drawer on the cabinet's base or on a horizontal divider.



**The best slides for mounting under a drawer.** Ball-bearing slides, commonly used as side-mounts, are the author's choice for under-mounting. But their load ratings will be lower when used this way.

drawer slides may be a good choice for custom furniture and cabinetry.

Drawer slides have a lot going for them. They cut down on the time it takes to build furniture. They can support greater loads. Drawers can be opened without tipping. Also, slides are unaffected by the seasons, and the best of them are virtually hidden and won't detract from the look of a finely crafted piece of furniture.

### Hidden slides are for fine furniture

Exposed drawer hardware has the kind of beauty that makes engineers smile, but woodworkers generally look upon them with considerably less affection. Fortunately, there are slides that mount under the drawer, hidden from sight. Among the top choices are Blum's Tandem, Mepla's Dynamic and Hettich's Quadro slides. All are self-closing, and most have micro-adjusters that can raise or lower the drawer front for fine-tuning after installation. They are made to handle loads of about 75 lbs. to 100 lbs., good for most applications,



Hidden slides may limit your design options. Drawer sides, for example, can be no thicker than  $\frac{3}{8}$  in. or  $\frac{3}{4}$  in., depending on the model of slides. And drawer bottoms must be recessed from the sides to provide a nook for the runners (the movable parts). Clips on the underside of the drawer hold the drawer fast to the runners and make drawer removal a snap. For hidden slides to operate smoothly, drawers must be built to fairly tight tolerances ( $\frac{1}{32}$  in. sloppy layout here and there can make a difference)—closer than what I've become

from kitchen cabinets to entertainment centers to bedroom furniture. They are available in three-quarter or full-extension models and tend to be among the more expensive slide options on the market.



**Ball-bearing slides can handle big drawers.** Whether the load is 50 lbs. or 500 lbs., you can find suitable ball-bearing slides for the job.

**Simple, economical roller slides for utility drawers.** When matched to the color of a drawer, these slides are unobtrusive.



accustomed to with other types of mechanical slides. Despite these requirements, I've grown to like hidden slides. Customers appreciate them, too.

### Under-mount slides solve unusual problems

Under-mount (also known as center-mount) drawer slides are mounted under the centerline of the drawer. Because only one slide is generally used, the drawer may be prone to racking when fully extended or overloaded. The best under-mount slides are of the captured ball-bearing design. (The same ball-bearing slides are also used in side-mount applications.) Wooden under-mount runners are also available, but I don't recommend them because they don't have the smooth action of the ball-bearing slides.

Under-mount slides are ideal for situations in which one or more drawer sides are purposefully not square (see the right photo above). (Hidden and

## SIDE-MOUNT SLIDES

For utility drawers or applications where heavy loads are encountered, side-mount slides are commonly used.



side-mount slides require square construction.) Under-mount slides can be used in pairs to improve the load-bearing capacity of a drawer. In such a situation, I mount the slides as close to the sides of the drawer as possible. Be sure to plan carefully for the load the drawer will carry—the stated load rating may decrease by more than 50% when ball-bearing slides are mounted under the drawer.

### Side-mount ball-bearing slides are designed for heavy loads

Ball-bearing slides have the smooth, positive action of hidden slides and are easier to install. But they are visible when the drawer is open. Ball-bearing slides are available in three-quarter extension, full extension and over-travel (usually 1 in. extra travel past full extension), as well as extralong lengths and with heavy load ratings (some can carry 500 lbs.). The slides require ½ in. to ¾ in. clearance on each side of the drawer. Ball-bearing slides are among the most versatile of drawer slides and a favorite for commercial installations or for projects that have heavy load requirements, such as kitchen drawers designed to hold canned goods or heavy cookware.

### Roller slides work well for utility drawers

Roller slides are used mostly on commercially produced furniture and cabinetry because of their low cost, simple design and straightforward operation. Each slide consists of two parts. The drawer-mounted piece has a fixed nylon or ball-bearing wheel at the back, and the cabinet-mounted piece has a corresponding wheel at the front. The slide interlocks on one side, and the two wheels run along channels formed by the opposing part.

## Pain-free slide installation

### GENERAL GUIDELINES

Using a tape measure, pencil and square to mark each slide's location in a cabinet invites errors. I employ a "pattern method for dummies," which works even on bad days and guarantees accuracy better than ¼ in., the tolerance required for most drawer slides.

Lay out the drawer using a story stick, which is a piece of scrap the same height as the cabinet interior. Mark the drawer dimensions and the location of hardware on the story stick. Be sure to note whether the drawers are inset or overlay, because this will affect the depth of the slides. Also, pay attention to the clearance between drawers: the requirements are given in the instructions. Mark the story stick accordingly. Use the story stick to position drawer-guide jigs accurately inside the cabinet.

When ordering slides in bulk, you may have to buy screws separately. Order the correct style of screw from the manufacturer; incompatible screws may cause the moving parts of slides to jam. Use a self-centering drill bit when predrilling mounting holes. Most slides have a combination of round and elongated mounting holes. Use the elongated holes for the initial mounting, adjust as needed, and secure the slide by placing screws through the round holes.

For Euro-style frameless cabinetry, drawer slides are mounted directly to the sides of the cabinet. For traditional face-frame cabinets, I usually install blocking (a wooden spacer) behind each slide. The blocking, which runs the full length of the slide, is unobtrusive because I use the same material used on the cabinet interior. Blocking can be adjusted for either inset or overlay drawer faces. As an alternative to wood blocking, plastic or nylon spacers are available in ¼-in. (or metric equivalent) thickness increments. Use proportionally longer screws with these. The spacers work, but I

Most makes require ½ in. clearance on each side.

Some roller slides incorporate a "self-closing" feature—a short, downward-angled section at the back of the runner that pulls the drawer into the cabinet the last inch or so with no effort on your part. The downside of this

design is that the slides wear out sooner because fewer parts carry the load. Roller slides are not suitable for heavy loads, and their design allows for a fair amount of rack (side-to-side movement) when extended. They're okay for utility applications such as kitchen drawers.

From production cabinetry to custom furniture, modern drawer slides can provide a fast and reliable method of dealing with the hallmark of the cabinetmaker's art: the drawer. □

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Mark the location of drawers and slides on a story stick. Used in tandem with a jig, the story stick ensures accurate placement of the slides inside the cabinet.



Pilot holes should be centered. Self-centering bits guarantee accurate placement.

prefer wooden blocking, which can be fine-tuned with a pass across a jointer and provide a rock-solid mounting surface.

And yet a third alternative is nylon or metal sockets, which mount to the cabinet back and attach to the rear of slides. I don't use sockets because they are more difficult to position accurately than blocking and don't provide the same kind of strength.

Even the best installation may require some fit and fiddle at the final stage, especially with flush drawers and narrow reveals. If the drawer is a bit too narrow for the opening, shim the slides out from the cabinet using a piece of paper or cardboard.

## HIDDEN SLIDES

The runners of hidden slides cannot be removed. Drawers are held on top of the runners by hooked tabs at the back corners and a pair of clips under the front, behind the face. Aim for tolerances of  $\frac{1}{32}$  in. when working with these slides.

Installing the slides on the sides of a cabinet is fairly straightforward, much like other side-mount hardware. Use a piece of plywood scrap, cut to the height of the slide location (transfer marks from the story stick), place the slide on top of it and then screw it in place. Proceed from top to bottom, cutting the plywood as you go. Commercial jigs are also available for predrilling mounting holes.



*Use a piece of scrap plywood to position the slides inside the case. Also, set the slides back from the edge of the case, as per the manufacturer's instructions.*



*Hidden slides require clips, which go underneath the drawer. The author uses a boring guide from Blum to predrill the mounting holes at the proper angle.*



*The rear of the drawer is bored out using a jig, too. The holes are for hooks located at the tail ends of the runners.*



*The drawer sits on top of the runners. Notches are cut in the back to clear the runners.*

## UNDER-MOUNT SLIDES

Under-mount slides are installed under the centerline of a drawer. You really don't need a story stick to install them. Simply mark a centerline on the divider and the underside of the drawer bottom. Then place the slide halves over the marks and screw them in place. Thick drawer bottoms, usually  $\frac{5}{8}$  in. minimum, must be used to provide enough material for the screws to take hold, and this may add a lot of unnecessary weight to a drawer. Under-mount slides must be mounted to a fixed shelf, a divider or a stretcher. Plastic or wooden guides, attached to the carcass (under the corners of drawers), are required to keep the drawers from tipping.



*Locate the slide along the centerlines of the cabinet divider and the drawer. The slide screws into the drawer bottom, so use material that's at least  $\frac{5}{8}$  in. thick.*



*Place guides under the corners of the drawer. A variety of plastic guides are available. The wooden ones are shopmade.*

## BALL-BEARING AND ROLLER SLIDES

Ball-bearing and roller slides may be positioned on the case using the same plywood-scrap/story-stick method mentioned in the section on hidden slides (above). Some companies offer jigs made specifically for their products—this type of jig can be more efficient when doing large runs of drawers. When screwing ball-bearing slides to the sides of a drawer, place the drawer and slide half on a flat surface to ensure that the slide ends up flush with the side. With roller slides, the drawer runner, which is usually L-shaped, wraps around the bottom and side and is held with screws.



*Ball-bearing slides are installed flush with the bottom edge of the drawer sides. Use a flat surface such as a workbench when installing them.*



*Roller slides are easy to position. The L-shaped runners wrap around the undersides of drawers.*