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Dave Campbell  
Editorial Content Chief, *WOOD* magazine



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# Installing Hinges on Face-frame Cabinets



**European hinges** hide completely inside a full-overlay or inset door. That, combined with user-friendly soft-closing options and adjustability in three planes, justifies their relatively high prices for many users.



**Full-overlay hinges** install easily, but fully exposed door edges can look bulky by today's standards for sleek cabinetry.



**Partial-overlay hinges** work with doors showing less bulk, and install nearly as easily as full-overlay hinges. Still, a lot of hinge shows.



**No-mortise inset hinges** enable a clean look with none of the door edge exposed, but they don't have a self-closing mechanism, so you'll need to add a catch.

Today's hardware universe offers a nearly limitless variety of cabinet-door hinges. To keep things simple, we'll focus on four types for installation on easy-to-make face-frame cabinets (as opposed to frameless or "European" cabinets). The best

hinge for your application depends on the type of door you're mounting, as well as the desired look and functionality. Here you'll find time-tested tips for installing each type, as well as some exciting hinge innovations that will improve your end result.

**Tip!** Always install and remove hinges before applying finish. This way you can fine-tune any installation mistakes without damaging the finish.

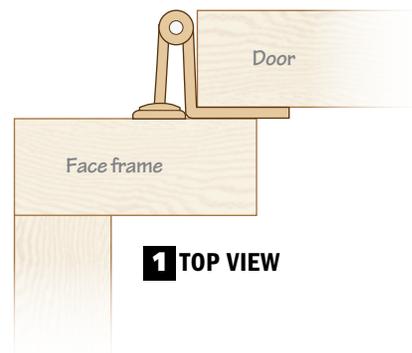
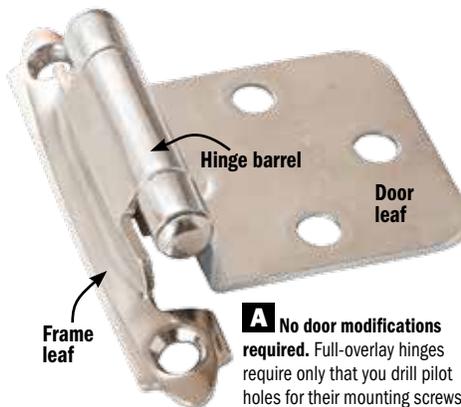
## Full-overlay hinges: Simple and forgiving

As the name implies, full-overlay hinges work with doors that cover, but do not fit inside, a cabinet opening. With no reveal to worry about, slight misfits don't show.

Before buying a face-mount hinge for this type of door, you'll need to know how much larger your doors are on each side than the cabinet opening. A  $\frac{3}{8}$ " overlay is common, but these hinges also come in  $\frac{1}{4}$ ",  $\frac{1}{2}$ ", and more rarely,  $\frac{3}{4}$ " and 1" overlay configurations.

To install these hinges, first lay out the hinge locations on the door. (See the **Skill Builder** on the *next page*.) Snug the hinge barrel [Photo A] against the door's edge [Drawing 1], and drill pilot holes into the door stile to prevent splitting. (To drill perfect pilot holes, see **Self-centering bits make perfect pilot holes** below right.) Screw the door leaf to the door back, then flip the door face-up and center it on the case opening.

To center the door, subtract the overlay dimension ( $\frac{3}{8}$ " in this case) from the face-frame stile width (2" here) and set your combination square to the resulting dimension (1 $\frac{1}{8}$ "). Now use the square to position the door [Photo B].



To ensure that adjacent doors align, clamp a ledger board to the face frame, as shown in the **Shop Tip** on page 4. If the cabinets aren't yet installed, lay them on their backs so you don't fight gravity while installing the doors.

As with any hinge, don't drill all the frame holes or install all the screws at once. Drill and drive a single screw in each hinge to secure the hinge on the face frame while you make minor adjustments. When you're satisfied with the fit, drill and drive the remaining screws into the frame.

*Reveal: the gap between the cabinet frame and the edge of an inset door.*



**B** Four points define a door location. Using a combination square, measure near the top and bottom of the door to ensure parallel. Repeat using the face-frame rail.

### SKILL BUILDER

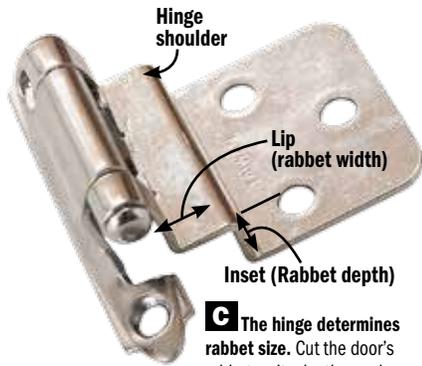
#### Self-centering bits make perfect pilot holes

Cut down on misaligned holes and snapped-off screws by using a self-centering bit (commonly called a Vix bit) when drilling pilot holes for hinge screws. Available in many sizes, these bits have outer sleeves that perfectly center the bit in a hinge's mounting holes. Adjust drilling depth by loosening a setscrew on the bit body.

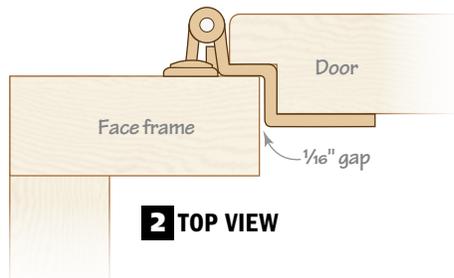
► Shop for self-centering bits. [woodmagazine.com/scbits](http://woodmagazine.com/scbits)



# Partial-overlay hinges: For a lighter look



**C** The hinge determines rabbet size. Cut the door's rabbet so its depth equals the hinge's inset, and its width equals the hinge lip.



from the face frame on all sides [Drawing 3]. Now cut a rabbet around the back of the door to match the shoulder in the hinge.

These hinges install in much the same manner as their full-overlay counterparts: After marking the hinge location, attach the hinge door leaf to the back of the door.

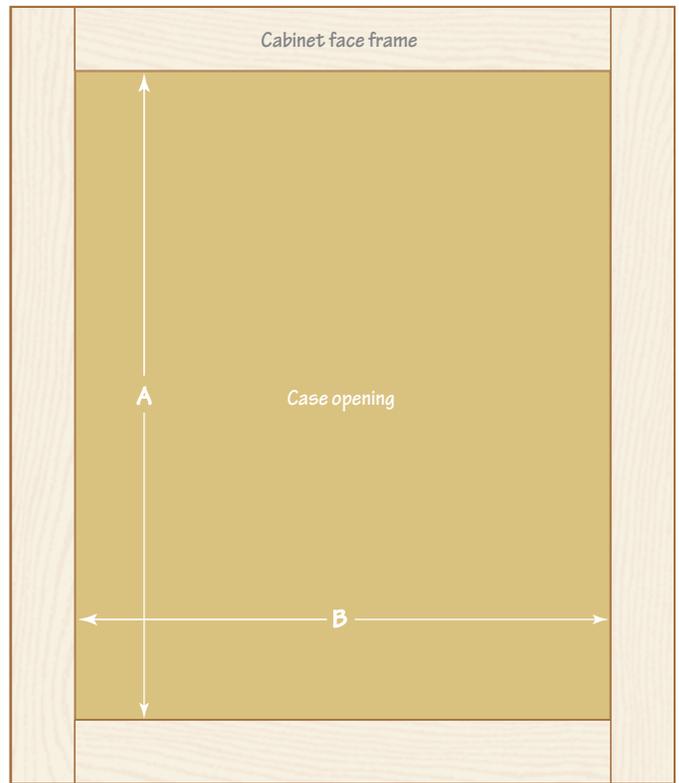
Position the door vertically and drive the frame-leaf screws. There's no need to center the door horizontally in the opening as long as you place 1/16" spacers between the hinge shoulder and the inside edge of the face frame when you drill and drive the leaf screws. With the hinges secured, remove the spacers.

These hinges combine the ease of installation with the simplicity of full-overlay hinges, but work with doors rabbeted on their backs in order to hide half of their edge thickness [Photo C, Drawing 2].

When sizing the door for a partial-overlay hinge, multiply your overlay dimension (3/8" in this case) by 2, and then add the result to the width and height of the cabinet opening. Subtract 1/4" from the resulting dimensions to give the door some clearance

► Learn to build frame-and-panel doors. [woodmagazine.com/frameandpanel](http://woodmagazine.com/frameandpanel)

## 5 SIZE A PARTIAL-OVERLAY DOOR TO FIT THE CABINET OPENING



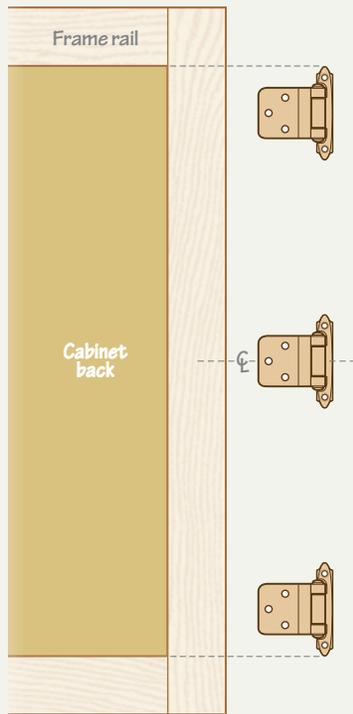
$$\begin{aligned} \text{Height of door} &= A + (\text{overlay dimension} \times 2) - \frac{1}{4}'' \\ \text{Width of door} &= B + (\text{overlay dimension} \times 2) - \frac{1}{4}'' \end{aligned}$$

## SKILL BUILDER

### Hinge-placement precision

When positioning hinges, you'll find these guidelines helpful:

1. For hinges exposed on the outside of the door, simply align the end of each hinge with the rail's inside edge (see drawing).
2. For European cup hinges mounted to typical cabinet doors, center the cup hole about 4" from the top or bottom of the door.
3. Doors taller than 30", wider than 24", or weighing more than a few pounds, may require three or more hinges. Check with the hinge-maker's specifications for load-bearing capacity, and space the middle hinge(s) evenly between the top and bottom ones.



# Inset hinges: Hiding in plain sight

Often used in furniture, inset hinges and the doors they support give a clean, tidy appearance. Inset hinges work well on cabinets, too, but don't usually have the handy self-closing feature found on other hinges—you'll need a catch to keep these doors closed. When shopping for inset hinges, look for ones with screw slots in place of circular holes [Photo D] to provide more adjustability.

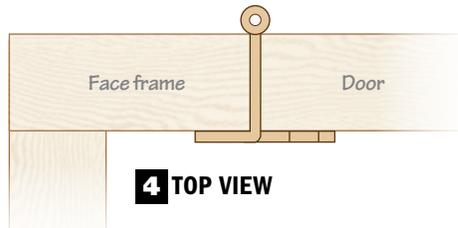
To determine the size of your door, measure the thickness of the hinge when closed, multiply by 2, and subtract the result from the width and height of the cabinet opening. If the opening isn't exactly square, cut your door  $\frac{1}{8}$ " wider and longer to give yourself extra material for fitting.

To install these hinges on the door, determine hinge location as before, butt the hinge shoulder against the door edge and back, and drill pilot holes centered in the screw slots. Drive both screws [Photo E].

When installing the door, use a ledger board (*below right*) to set the vertical spacing, and attach each hinge to the face frame using only one screw. Check that the door swings freely and has an even reveal, then drive the remaining screws.



**D Slots help lots.** Look for inset hinges with screw slots that allow for slight vertical and horizontal adjustments after mounting.

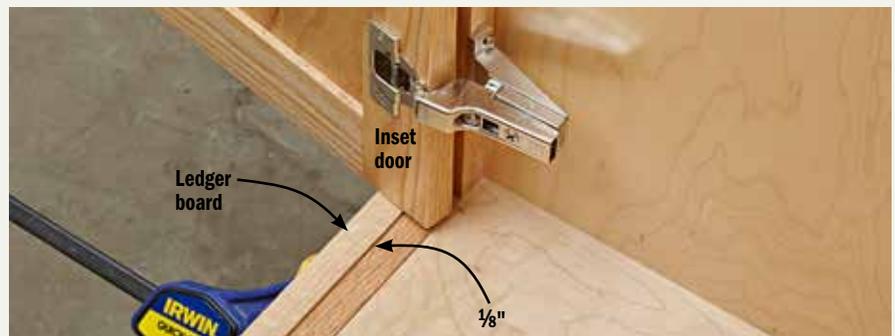


**E Shoot for the center.** Drive screws in the center of the hinge slots to maximize adjustability. Drill and drive the center screw after making adjustments.

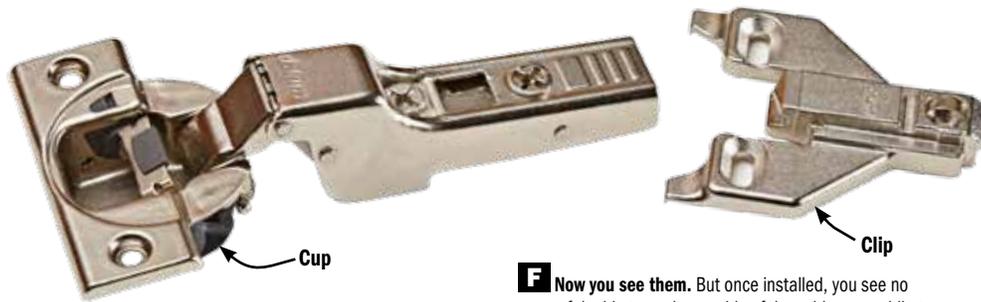
## SHOP TIP

### Line 'em up with a ledger board

In the course of building and installing more than 200 cabinet doors, reader Dick Babbitt of Friday Harbor, Washington, developed this simple, time-saving method for installing hinges on doors. Key to his method: a ledger board that supports and aligns the doors, *right*. "Use a straight scrap of wood at least as long as the cabinet, and position it parallel to the bottom rail quickly and easily using  $\frac{1}{2}$ " spacers," Dick advises. "In addition to making hinge installation easy, the board perfectly aligns the bottoms of multiple doors." A ledger board helps you install inset doors, too. Simply position the ledger board  $\frac{1}{8}$ " above the bottom cabinet rail as shown, *below*.

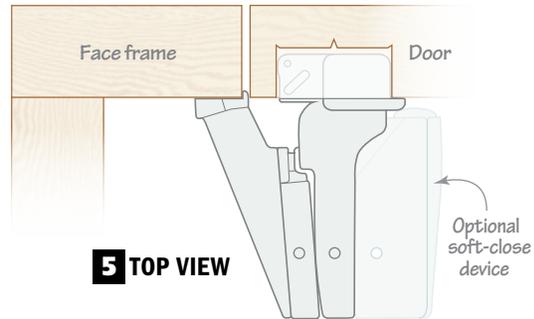


# European hinges: Totally concealed with features aplenty



Since their arrival on American shores several decades ago, these hinges [Photo F] have become the standard in manufactured cabinetry for good reason. Though several times more expensive than the other hinges shown in this article, European hinges (also known as 35mm or cup hinges) hide entirely inside a door [Drawing 5], come in configurations for full-overlay and inset doors, and offer user-friendly features such as self-close and soft-close (the door slows toward the end of its close instead of banging shut—see **Bang a door no more** next page). They also offer more adjustability than other types, enabling you to move an installed door about 1/8" in all three planes: in and out, up and down, and side-to-side.

**F** Now you see them. But once installed, you see no trace of the hinge on the outside of the cabinet, providing a clean appearance.



**5** TOP VIEW

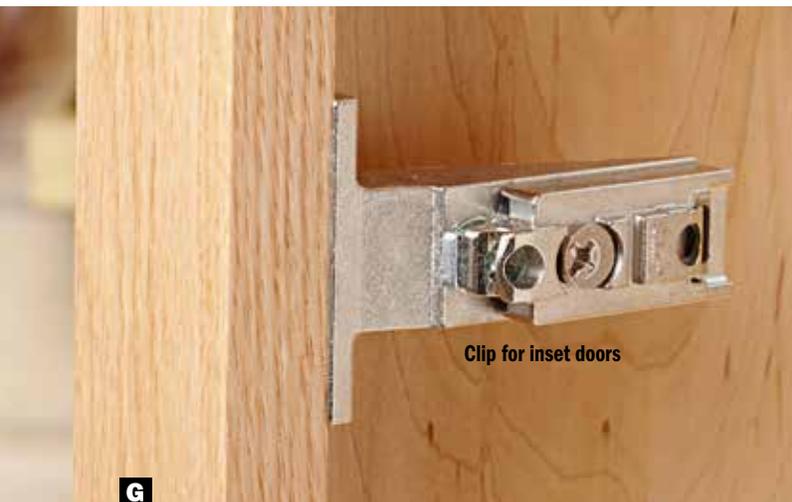
Begin the installation of these hinges by drilling a flat-bottom 35mm (or 1 3/8") hole on the back of the door stile. That hole houses the hinge's round cup. The position of that hole, and the screws that secure the cup side of the hinge, vary by manufacturer and model. If you're installing more than a couple of doors it's a good idea to make a drilling template for quickly marking those hole locations.

Attach the cup side of the hinge with its arm positioned 90° to the door edge and

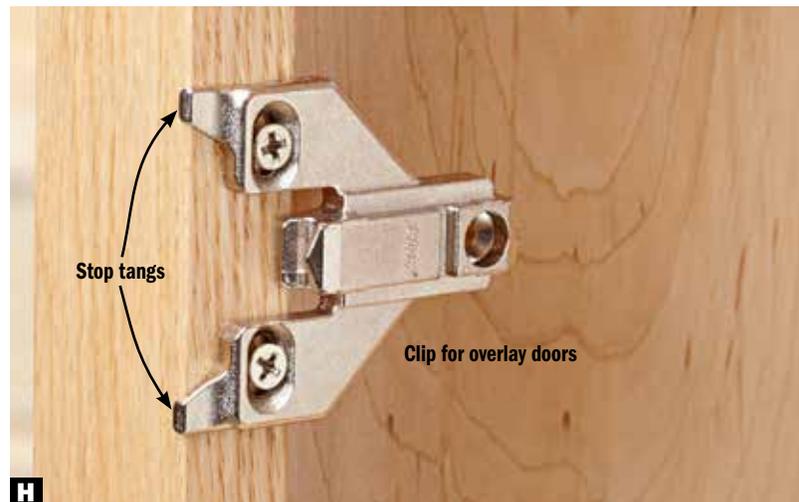
snap the clip side of the hinge onto it. Rest the door on a ledger board clamped securely in place, and while holding it in the open position with one hand, use your other hand to position the clip's stop tangs on the edge of the face frame [Photos G and H]. Drill screw pilot holes in the center of the clip's slots and attach the top hinge first by driving the upper screw. Do the same to the lower hinge. Now drive the remaining screws, as shown on page 1. Remove the ledger board, then close the door(s) and make any necessary fine adjustments.

**Tip!** To keep things manageable while attaching European hinges, magnetize your driver bit to hold a screw, freeing your hands to hold the door and drill/driver.

► Free hinge-locating jig plan: [woodmagazine.com/hingejig](http://woodmagazine.com/hingejig)



**G**



**H**

**Two clips make the same cup hinge work for overlay or inset doors.** The process described here works for both types of doors; you simply need different hinge clips attached to either the inside edge or back side of the face frame.

# Bang a door no more

If you want to put an end to nerve-shattering cabinet-door closings, simple rubber bumpers won't do the trick. Instead, install a soft-closing device that dramatically slows the closing motion before the door contacts the face frame. You have multiple options, *below*. We show Blum products, but other manufacturers offer similar items. 🌱



Add-on soft-close device for hinge *below*. (Shown installed in cabinet photo *below right*.)



Soft-close mechanism for attachment to a single-door cabinet.



Same mechanism for cabinets with side-by-side doors.



**Blum hinge** with self-close but not soft-close.



Same hinge with addition of internal soft-close mechanism.



**You have a lot of options in slowing a closing door:** Buy a new European hinge with the feature built-in, purchase a soft-closing attachment available for some hinges, or add a stand-alone soft-closing mechanism to the upper rail of the cabinet face frame.

► **Source:** Blum hinges and soft-closing mechanisms: Rockler, 800-279-4441, rockler.com.

Produced by **Bill Krier** and **Nate Granzow** with **Kevin Boyle**  
Illustrations: **Kurt Schultz**

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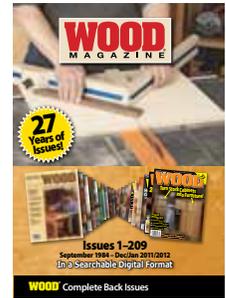
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