

# Installing Kitchen

With a few special tools, you can preassemble the cabinets and cut a big job down to size

BY MIKE GUERTIN

Installing kitchen cabinets is one of my favorite projects. Whether I'm working on a new home or on a remodeling project, cabinet installation signals that the end is in sight. And installing the right cabinets transforms an empty space into a functional, good-looking kitchen.

Even factory-made stock cabinets, though, can be fussy to install. Walls are rarely straight or floors flat. A two-person crew with basic tools requires at least a day to install an average-size kitchen. But thanks to a few specialty tools and some techniques I've developed through many years spent working alone, I can do the same work by myself.

Good planning and joining cabinets together prior to installation are two important strategies. Tools like a laser level, face-frame clamps, and a cabinet lift save time while also improving the accuracy of my work. Throughout the process, I do everything possible not to damage the new cabinets.

## Dings don't have to happen

On most projects, a lot of work has gone into getting the kitchen ready for the cabinets. The cabinets are a finish item, and I take every precaution not to let them become damaged during installation, starting as soon as they are delivered. Even if the cabinets arrive on the job before I am ready for them, I unbox them immediately to make sure everything I ordered was delivered and to inspect them for damage. Before installing the cabinets, I number (on painter's tape) and remove the doors, shelves, and drawers to protect them from damage. Removing these parts also lightens the boxes and makes them easier to handle. I don't reinstall any parts until the rest of the kitchen is complete.

## Put the plans on the floor

For me, part of planning a smooth installation is drawing the cabinet layout as well as important plumbing and electrical information on the

## Start with an accurate map



Lay out cabinet details on the floor. Here, I've taped resin paper over an old linoleum floor to show details more clearly. Mark the face of the wall cabinets, the face of the base cabinets, and the face of the rough toe kick. Also mark the locations of any individual cabinets and of the appliances.



# Cabinets Smooth and Solo



**Mark the top of the base cabinets and the bottom of the uppers**



I use a laser level to mark the walls at the ends of each cabinet run. Then I snap chalklines to guide base- and upper-cabinet installation. Plan to shim the base cabinets off the subfloor the thickness of the finish flooring so that the 1½-in.-thick countertop will be 36 in. above the finish floor.

**Find the studs**



A stud finder locates framing members quickly. I indicate the stud locations with a tick mark along the chalklines. The marks still will be visible when the cabinets are in place.



## Install blocking to anchor cabinets solidly



You can fasten upper cabinets just to the studs, but horizontal blocking installed between the studs makes for a more secure installation. In new homes or gutted remodels, I install 2x4 or 2x6 blocks between studs. Make sure to locate blocking behind the cabinet's top mounting rail. When installing cabinets on existing walls (as shown here), I cut through the wallboard where the top mounting rail will land. I remove the wallboard and install 2x4 blocks with 3-in. screws. Then I cover the blocks with drywall and finish the seams with tape and compound.



### Cabinet lift

Hanging a run of upper cabinets by yourself isn't a problem if you use a cabinet lift (\$525; [www.e-zspreadlift.com](http://www.e-zspreadlift.com)). Available at rental centers, this tool also can be used to roll base cabinets into position.

floor and walls. I draw the layout on the floor early in the construction process to help other tradesmen and myself proceed. This system speeds the installation process and helps me to avoid mistakes.

On the floor, I mark three lines parallel with the walls: the face of the wall cabinets, the face of the base cabinets, and the face of the rough toe kick. Then I mark the location of the individual base cabinets, wall cabinets, and appliances. I write the cabinet size code in each box and label the appliances and their sizes.

With all this information written on the floor, I can determine if I need filler strips and identify any potential conflicts, like an off-center range outlet. The layout also shows the electrician and plumber where to locate rough-ins for appliances and fixtures. I also indicate on the floor and walls where pipe runs occur to avoid driving any cabinet-mounting screws into them.

### Accurate elevations help you to get the right heights

On the walls, I mark stud, blocking, and utility locations as well as the top of the base cabinets and the bottom of the upper cabinets. I factor in the thickness of the finished flooring before these elevations are marked.

Stock base cabinets are 34½ in. tall (1½-in.-thick countertops bring the finished elevation of the base cabinets up to 36 in.). If you install the base cabinets on the subfloor and then cover the floor with ¾-in.-thick hardwood flooring, the countertop height will be short. So when I mark the elevation of the top of the base cabinets, I add the height of the finished flooring. In this case, I added ⅞ in. for a tile floor.

I always measure the elevation from the lowest spot I can find on the subfloor and use a laser level to mark the elevations at the ends of cabinet runs. Then I snap a chalkline or connect the points with a long spirit level. I also find the elevation of the bottom of the upper cabinets and use a stud finder to locate and mark the studs along both elevation lines.

When I install the base cabinets, I set them on plywood strips to shim them to the proper height. In fact, I cut plywood strips that are both thicker and thinner than I need and use them to make up for low



### Face-frame clamps

Keeping the face frames of adjacent cabinets aligned while you screw them together is done easily with these special clamps (\$71.50 a pair; [www.adjustableclamp.com](http://www.adjustableclamp.com)). The clamps have protective pads to keep new cabinets from being scratched and a drill guide to keep pilot holes straight. The guide flips out of the way, allowing you to drive the screw without removing the clamp.



# JOIN WALL CABINETS ON THE FLOOR

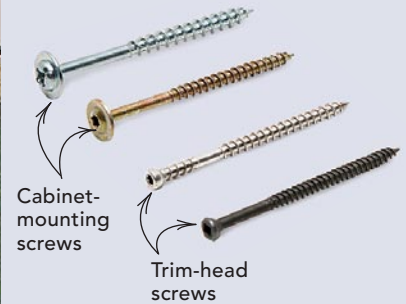
## Use clamps to draw the stiles together

I use three screws in stiles 24 in. or taller and two screws in those shorter. Drill a  $\frac{1}{8}$ -in.-dia. pilot hole through both stiles and a shallow  $\frac{3}{16}$ -in. hole into only the first stile to counterbore each trim-head screw. If possible, I locate the screws so that they'll be hidden by door hinges.

1



## Don't use drywall screws



Cabinet-mounting screws

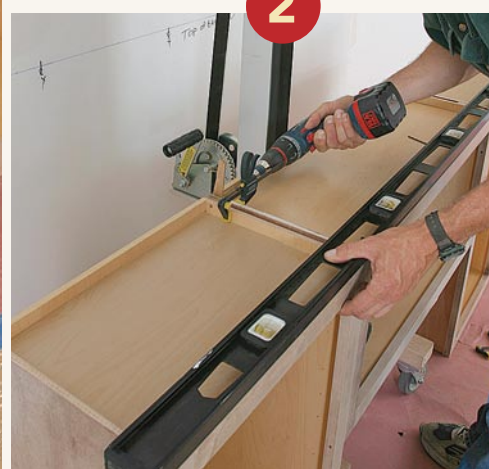
Trim-head screws

Many cabinet companies now supply mounting screws, but years ago, we were left to our own devices. Like many installers, I made the mistake of hanging cabinets with drywall screws, which simply aren't strong enough to support loaded cabinets. These days, I use only special **cabinet-mounting screws**, preferably those with broad washer heads for full shoulder support ([www.mcfeelys.com](http://www.mcfeelys.com)). To join stiles, I use **trim-head screws**. The smaller heads can be hidden easily by hinges, plugs, or wood putty.

2

## Align the cabinets with a straightedge

Before joining the back of the cabinets, I put a straightedge across the top to make sure the tops are level and the front is straight. Then I shim between the side panels at the rear of the cabinet, and drive screws to keep the ganged cabinets straight. The cabinets now can be installed as a single unit.





Smooth move:  
preinstalled  
crown molding



I think it's easier to apply crown molding to the cabinets with the preassembled unit on the floor. To do this, however, I first have to lift the cabinets into position and mark the bottom of the crown on each end of the bank of cabinets and at all cabinet joints. I then can lower the cabinets, screw blocking to the top rails, and install the crown by screwing through the blocking and into the crown from behind. With this technique, there are no nail holes that need to be filled with color-matched putty.



1

**Crank it up**

Cabinets make the lift top heavy, so I roll the lift close to the wall before cranking the ganged cabinets up and positioning them against their layout lines. Don't risk dropping the cabinets; clamp them to the lift's table until they are screwed to the wall.





### Drill holes for wiring

With the lift holding the cabinet close to the wall, I can drill holes to wire undercabinet lights exactly where they need to be.



### Drive screws into studs and blocking

Cabinet-installation screws require pilot holes. I drive screws into the studs above the top panel of the cabinet, below the bottom panel, or through the back. When blocking is installed (see p. 44), I drill holes 2 in. from the side panels through the mounting rail and about 12 in. apart. With the unit secured to the wall with at least four screws, I remove the lift and drive the remaining screws.

and high spots in the subfloor. I cut the strips to equal the distance from the rough-toe-kick line to the wall (around 22 in.). And I set a strip at each end of a run of base cabinets and everywhere two cabinets meet. Later, when the base cabinets are installed, I use cedar shims to level and make fine adjustments to raise the tops of the cabinets to the chalkline.

### Upper or base cabinets first?

Professional kitchen installers debate whether the upper cabinets or the base cabinets should be mounted first. There's no right or wrong sequence, only preferences.

For many years, I installed the base cabinets first and laid boards over them to serve as a platform to rest the upper cabinets on during installation. But after damaging the face frames on a few base cabinets with my belt buckle and tools dangling from my belt, I changed to mounting upper cabinets first and haven't looked back.

Before I install the upper cabinets, I use a long spirit level, referencing the upper-cabinet positions marked on the floor, to draw plumb lines for the sides of the upper cabinets. This ensures that the upper cabinets will align with the base cabinets.

### Preassemble the cabinets, and forget about wavy walls

Walls are never flat. Even walls framed with engineered studs have bumps and dips at drywall seams. Sometimes cabinets aren't perfect, either. The side panels may be slightly out of square with the face frame, or a backing panel may not be flat across the rear. Imperfections in walls and cabinets make aligning the faces of cabinet runs difficult, particularly when cabinets are installed one at a time. I overcome these problems by ganging cabinets together before mounting them to the wall. This approach is faster and more precise than mounting cabinets individually.

Cabinets can be preassembled resting upright on the floor, on their backs, or elevated on a bench. I gang a run of cabinets together by screwing together the face-frame stiles and the rear of the cabinets. The trick is to clamp a straightedge along the top front of the cabinets while you screw them together. The front face and the top edge of the run need to be straight. Once the rear of the cabinets is joined, they will stay aligned.

I locate screws where they are least likely to be seen: behind the hinges or in the drawer spaces on base cabinets. If a screw is needed where it can't be hidden, I countersink trim-head screws and cover them with color-matched filler. Screws joining the rear of the cabinets can be driven through the cabinet side panels above the top

## Hanging cabinets with a ledger instead of a lift



If you don't have a cabinet lift, you can screw a temporary ledger board along the chalkline to support the back of a wall unit, and wedge a wood prop in place to support the front while you drive installation screws. But I prefer to have a helper, especially for longer runs of cabinets.

panel, where they'll never be noticed. I use three screws to join stiles taller than 24 in. and two screws in anything shorter. Two screws are plenty to hold the cabinet rears together. Once screwed together, the individual boxes essentially become one long cabinet.

When I install the cabinet run as a unit, I still have to check the whole run for level using both a spirit level and the elevation lines. I make adjustments once for the whole run of cabinets instead of making many adjustments for each individual cabinet. I usually can move long runs of base cabinets into place by myself, but sometimes I need help with upper cabinets.

### Wall cabinets get a lift

Two people easily can lift a gang of three to six wall cabinets when the doors and shelves have been removed. But I work alone a lot, so I rely on a cabinet lift. For me, the cabinet lift has been worth every penny I spent on it, but if you're doing one kitchen-cabinet installation, you usually can find a lift at a rental center. The lift's table supports up to 6 ft. of ganged cabinets. For longer cabinet gangs, I screw a plank to the lift's table.

I roll the cabinets to the wall while they are still low on the lift, then crank them up. This keeps the center of gravity down and makes the lift less likely to tip. When I'm 3 in. from the wall, I raise the cabinets up to the mounting line; mark and drill pilot holes for mounting screws; and cut openings for utilities and undercabinet-lighting wires.

A cabinet lift isn't necessary to mount wall cabinets; it just makes the job easier. For short runs of cabinets, you can screw a temporary 1x3 ledger to the wall to support the cabinets. If you use a ledger, drill pilot holes and twist screws into the holes at both ends of the cabinet run before lifting it to the wall. The ledger will help as you balance the cabinets with one hand and drive the screw with the other. Long gangs of cabinets can be lifted onto a ledger by two people. One person can hold the top against the wall while the other drives the screws.

I also preassemble the base cabinets. After shimming the ganged base cabinets to the appropriate elevation, I fasten them to the wall at each stud, using shims to fill any hollows.

Installing doors and drawers is the last thing I do on a project. I wait until the countertops are set, the plumbing is connected, everything is painted, and the flooring is installed. Waiting until the end of the project protects the cabinet doors and drawer fronts from collateral damage as the project is completed. □

Mike Guertin is a builder and remodeler in East Greenwich, R.I., and a contributing editor to *Fine Homebuilding*. Photos by Brian Pontolilo, except where noted.

1



### Keep the tops flush and the front straight

Join the base cabinets together with trim screws through the stiles. Shim between and screw together the panels in the back. Use a straight-edge across the front of ganged base cabinets to keep the tops flush and the fronts straight. If the cabinets are imperfect, I sometimes have to plane the tops down to get surfaces flush.

### Use a gauge stick to pad out the floor

2



Due to the fluctuations in the subfloor, the plywood strips won't all be the same thickness. I rip 2-in.-wide strips of 1/4-in., 1/2-in., and 3/4-in. plywood and use a 34 1/4-in. gauge stick (the height of the cabinets less the countertop) to determine which size strip to use. I place strips at each end of a run of cabinets and anywhere cabinets are joined.



## Shim for wavy walls

I drill pilot holes at each stud location, and drive screws to secure the cabinets. Shims fill the hollows between the mounting rails and walls.

4



## Set base cabinets on the strips, then shim

After setting a gang of base cabinets into position on the plywood strips, I use shims to make sure they are sturdy and level.

3



## Corner details

### Better support for single cabinets

Cabinets less than 24 in. wide that stand alone or next to an appliance are prone to movement. I secure the bottom front on these cabinets by mounting a 2x block to the floor just inside the rough toe kick. I drop the cabinet over the blocking, and screw through the rough toe kick.



### A face frame takes the place of a corner cabinet

Angled base cabinets for inside-corner sinks are expensive. Rather than buy an unnecessary box, I order an extra face-frame panel and a door from the cabinet company and use them to connect the base cabinets on both sides of the sink. The side panels of the adjoining cabinets and the painted drywall become the inside walls of the cabinet. I mount blocking to the sides of the adjacent cabinets and along the walls to support a plywood bottom panel with holes drilled for the plumbing. To support the countertop, I screw cleats to the walls. If the inside-corner cabinet will house a sink, I leave it open. If it is for storage, I make it a lazy susan.

