Getting Appliances to Fit Part 2

Planning pays off with trouble-free installations

BY DAVID GETTS

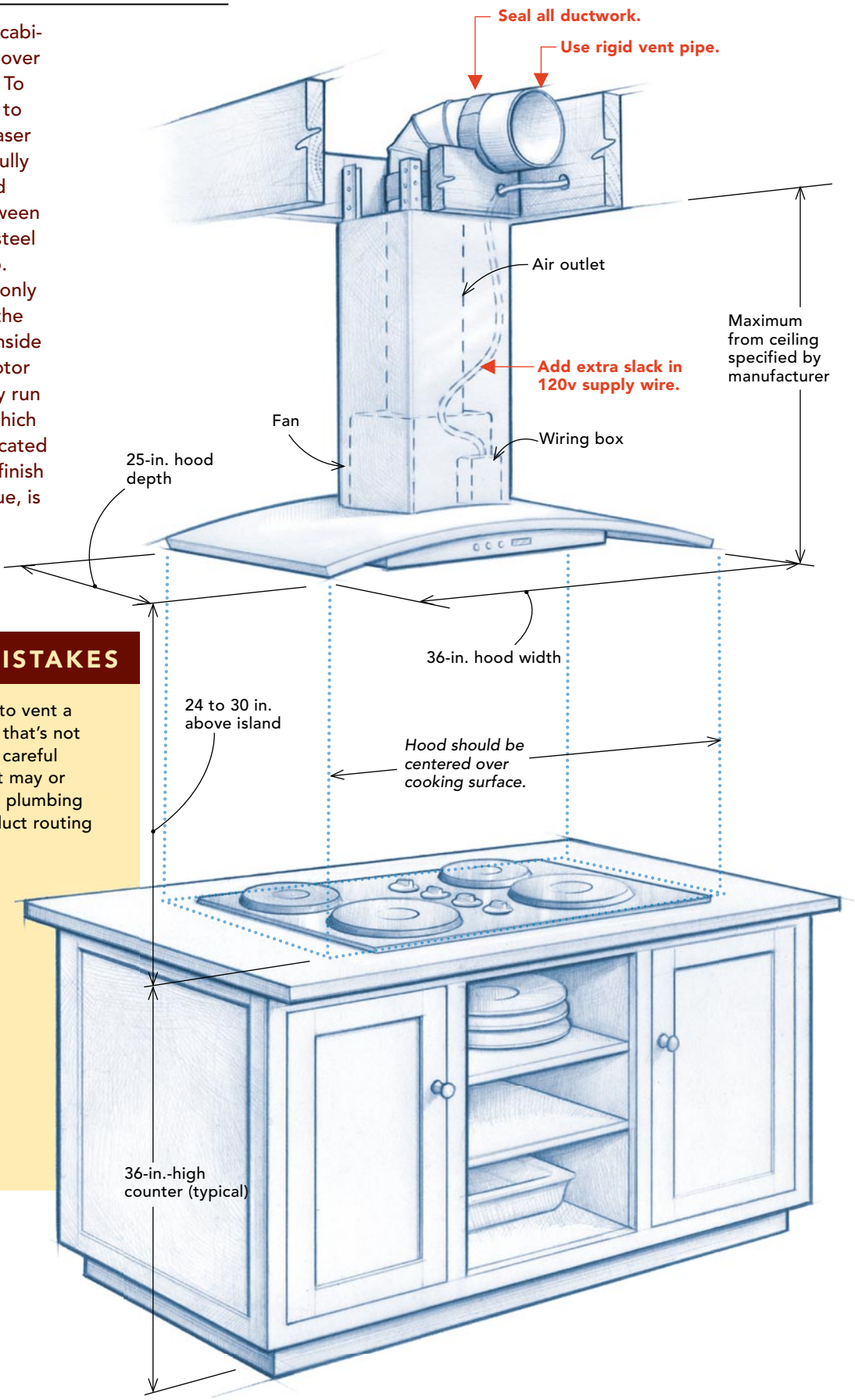
Ten years ago, I wrote an article for *Fine Homebuilding* (see *FHB* #143) on getting appliances to fit kitchen cabinetry. The basics of installation have remained the same since that time, but appliance options, configurations, and trends have changed. This has greatly affected kitchen design and the way cabinets should be constructed. Getting appliances to fit properly ensures a space that functions well, looks good, and operates safely. What you'll learn here is invaluable, but don't stop with this information. I've installed dozens of appliances through the years and still encounter new issues, even on appliances I've worked with before. Develop a good relationship with a local appliance distributor, especially if you are part of a kitchen design or installation team. A distributor will become one of your best sources for installation-specific information in the ever-evolving market of kitchen design.

David Getts (www.davidgettsdesign.com) is a cabinetmaker and designer in Seattle.

Photo this page: David Chamberlain, Chamberlain Woodworking-Boulder. Drawings: Bob La Pointe.

ISLAND VENTILATION HOODS

Island hoods hang independent of cabinetry and must be located directly over the cooktop for best performance. To line things up properly, you'll need to use a plumb bob or, preferably, a laser level. The hood is suspended and fully supported from the ceiling, so solid blocking needs to be installed between the joists above the island for the steel support framework to be bolted to. The rigid vent pipe, which is commonly 8 in. dia. but is sized according to the manufacturer's specifications, fits inside the frame support. Because the motor is located on the hood itself, simply run the nonmetallic sheathed cable—which will be hard-wired into a 120v dedicated circuit—down the same shaft. The finish material, usually a stainless-steel flue, is attached to cover up the frame.



AVOID THESE MISTAKES

Poor duct layout. It's easy enough to vent a hood straight through the roof, but that's not always an option. Wall exits require careful manipulation through joist bays that may or may not be filled with electrical and plumbing utilities. Take the time to consider duct routing well before installation time.

Not enough wire. Make sure the electrician leaves enough wire in the ceiling to reach the appliance. Take care not to pinch the wire when attaching the framework.

Unhealthful ventilation. Seal and insulate all the ductwork in unconditioned spaces to reduce condensation and the potential for mold growth.

Using flexible pipe. Always specify rigid-metal vent pipe, which is more durable and performs better.

DISHWASHER DRAWERS

In my opinion, the dishwasher drawer is one of the best improvements made among all kitchen appliances. Pulling out an elevated drawer to load dishes is a lot more convenient than bending down to load a standard washer. Dish drawers can be stacked on top of each other—to occupy a similarly sized space as a standard washer—or purchased as separate units and placed on each side of the sink. Separate, single drawers require a cabinet box to sit on, and demand two separate plumbing supply and waste lines. A single 120v duplex outlet supports two separate dish drawers. Just make sure it is centrally located. Like standard dishwashers, a dish drawer is secured to the counter above or to the cabinetry on each side.

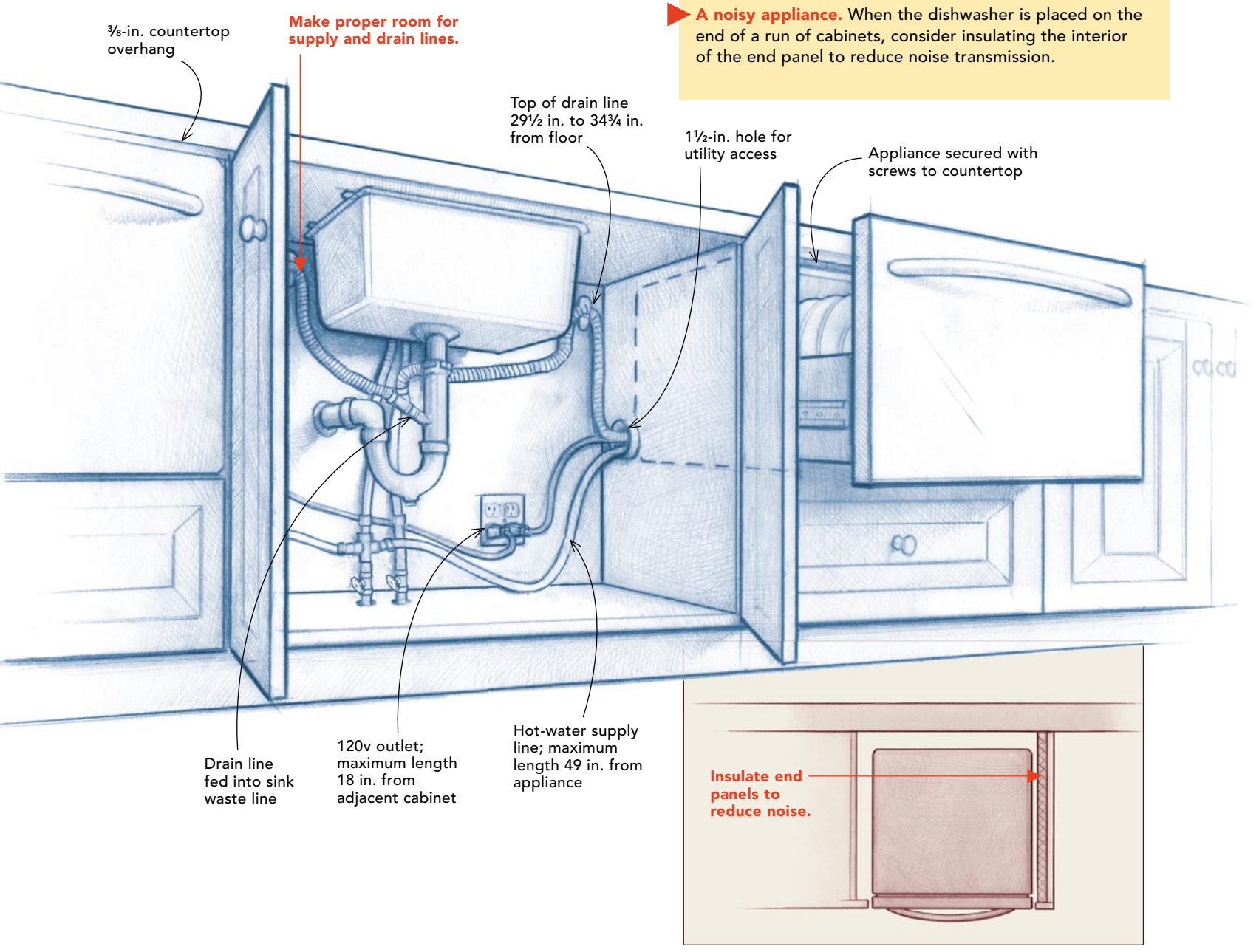
AVOID THESE MISTAKES

A new appliance that doesn't fit an old opening. If you are replacing an old dishwasher with a new one, check the opening width. American dishwashers require a 24-in.-wide opening, and the European style, which all dishwasher-drawer units are, needs a 23⅝-in. opening. Filler strips may be required to close gaps.

Obstructed drainage. Utilities will be coming into the sink cabinet from both sides. Make sure you have provided enough room under the sink to accommodate this design; otherwise, the appliances may not fill or drain properly.

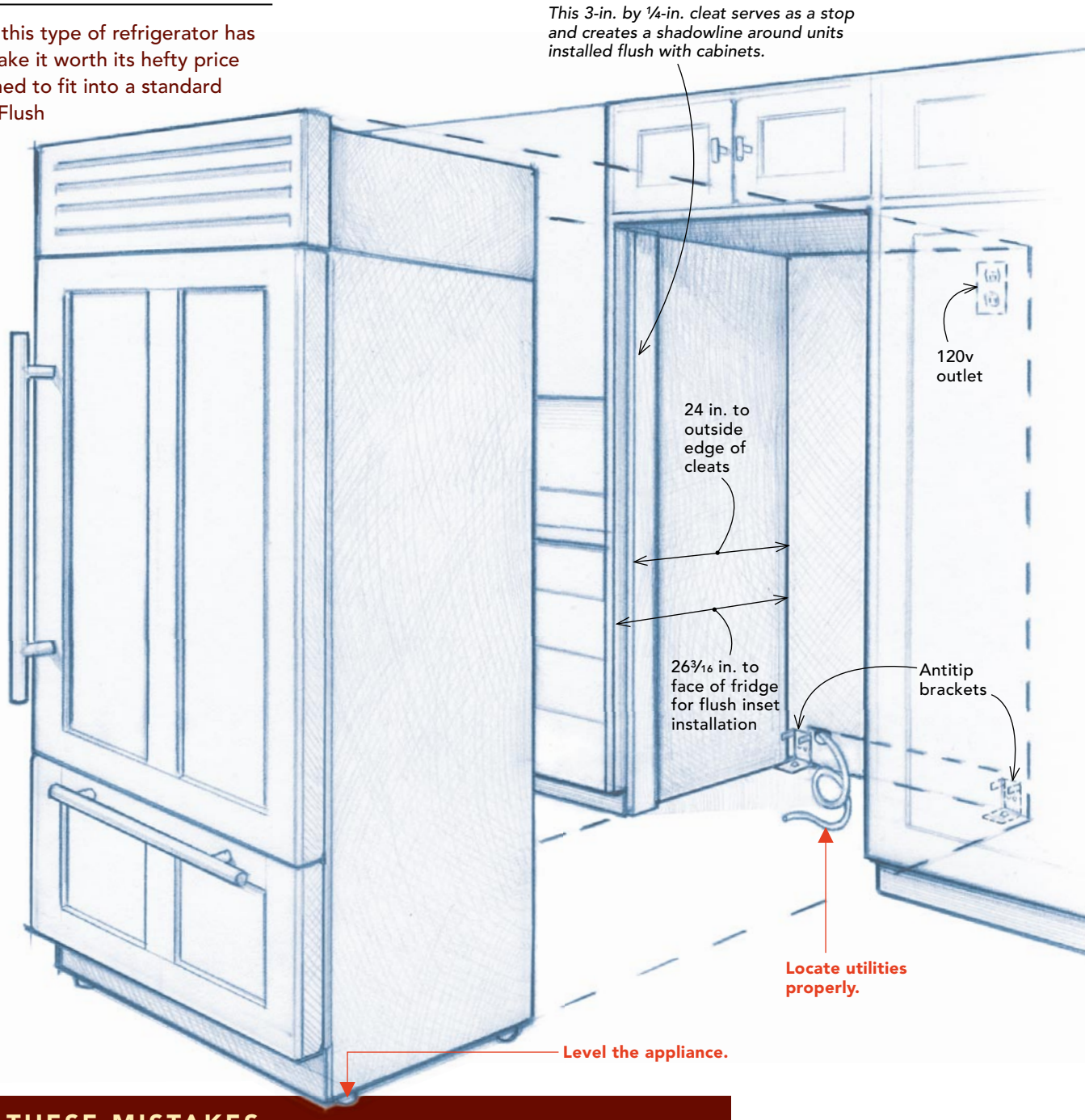
A built-in unit that doesn't look built-in. If you are installing a panel over the appliance to conceal it within the cabinetry, make sure the unit is installed to the correct depth so that the applied panel ends up on the same vertical plane as adjacent cabinetry.

A noisy appliance. When the dishwasher is placed on the end of a run of cabinets, consider insulating the interior of the end panel to reduce noise transmission.



BUILT-IN REFRIGERATORS

Although expensive, this type of refrigerator has many options that make it worth its hefty price tag. Some are designed to fit into a standard 24-in.-deep cabinet. Flush inset units require a deeper cabinet but don't project out farther than any other piece of cabinetry; for the largest appliance in the kitchen, this is significant. These units are now designed to be fully integrated with overlay wood panels that match the rest of the cabinetry. Once considered the eyesore of the kitchen, the refrigerator can now disappear. With a top-mount compressor, you'll still see the vent grille, but if you choose a refrigerator with a bottom-mount compressor, even the venting unit can be disguised.



AVOID THESE MISTAKES

Inaccessible kitchen. A built-in refrigerator is the largest and heaviest appliance. Many of these units barely make it into the house. Before purchase and installation, make sure the fridge will fit into the intended space.

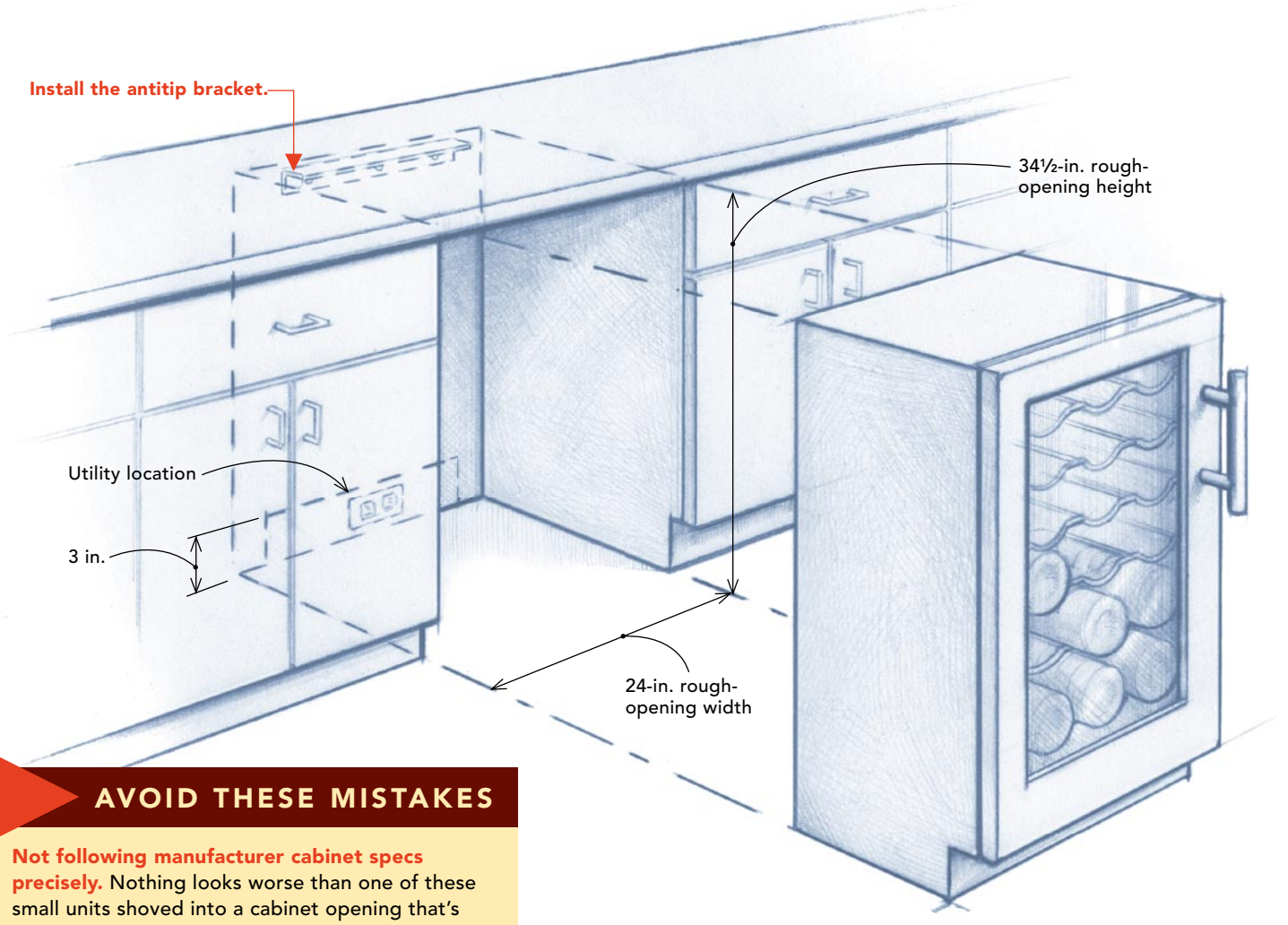
An appliance that wobbles or has an uneven reveal around the cabinetry. Built-in refrigerators usually have a good leveling system accessible from the front of the appliance, but for floors that are really bad, you may not have enough adjustment. Check the floor before installing so that you can be prepared to shim the appliance if needed.

Improper utility placement. You don't want to slide the big beast into place and have it cover up the water-supply line for the icemaker.

Damaging adjacent surfaces upon installation. Cover the floors with something flat and rigid like hardboard. Refrigerators will shred a floor finish easily when pushed into place.

UNDERCOUNTER REFRIGERATORS, WINE COOLERS, ICEMAKERS

Many people are including these smaller appliances, which are designed to fit under a countertop, in their main-kitchen or outdoor-kitchen designs because they take up little space. There are few differences between these appliances from an installation standpoint. They are all roughly the same size and have similar electrical demands. Even though they are small, they still need to be secured to the adjacent cabinets and/or countertop above with screws and a bracket.



AVOID THESE MISTAKES

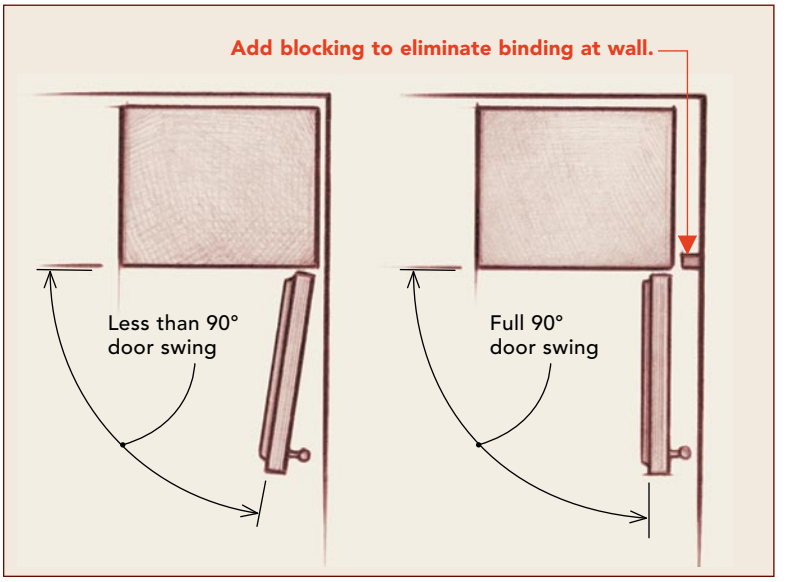
Not following manufacturer cabinet specs precisely. Nothing looks worse than one of these small units shoved into a cabinet opening that's too big. Build the cabinet with tight tolerances in mind.

Improper plumbing and electrical rough-in. Locate the electrical and plumbing in the exact spots recommended by the manufacturer. If you don't, you may have issues getting the appliance to fit in the opening. This can be a real problem in islands where the opening may not be as deep.

Prepping for the wrong electrical demand. The appliance will come with a pigtail ready to be plugged into an outlet. Be sure you have an outlet installed during rough-in, not a loose wire for a hard-wire application.

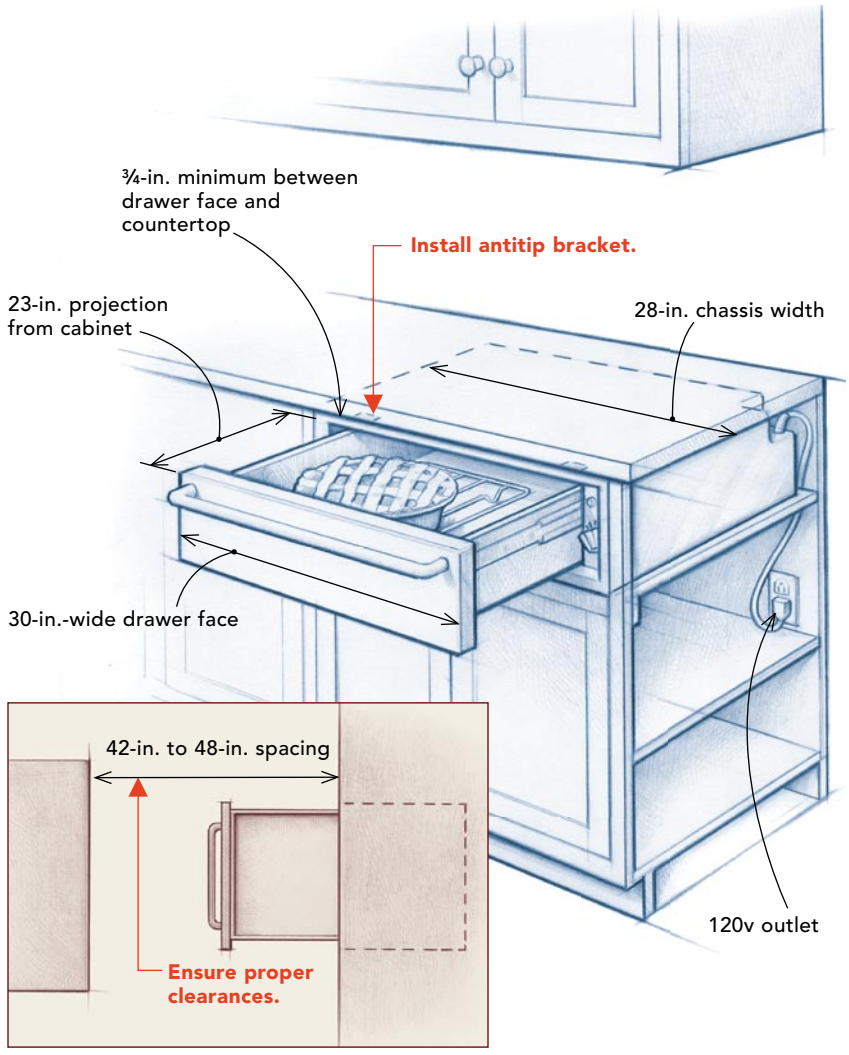
Inadequate spacing. Installing the fridge too close to a wall can result in door binding and wall damage. Space the appliance out from the wall with blocking, and cover with matching trim.

Unstable appliance. Don't forget to install the antitip bracket that comes with the unit.



WARMING DRAWERS

Just like dishwasher drawers, warming drawers use the popular drawer feature for their ease of access. They're most commonly placed under a countertop near the oven, but these appliances can be placed at any location where there is enough room to pull out a drawer. Warming drawers come with a wide variety of options, but their main purpose is keeping food or dishes warm, not cooking. Therefore, they require a dedicated circuit with only a 120v outlet (the appliance generally comes with an attached pigtail). Mount the outlet in an adjacent cabinet to the appliance as specified by the manufacturer. Different-size units are available, so verify that the model fits into the recommended opening.



AVOID THESE MISTAKES

An appliance that won't fit because of improper rough-in work. An outlet located in the wrong place at rough-in can keep the appliance from sitting properly. Double-check the layout to ensure that all electrical outlets and wires end up in the right location.

Incorrect clearances. Make sure adjacent cabinets don't interfere with the safe operation of the warming drawer as it is opened and closed.

An appliance that's unstable when the drawer is fully extended. Install the antitip bracket to keep the unit stable under heavy loads.

10 tips for the seamless installation of any appliance

1. **Read the instructions—really.** Unless you install appliances for a living, it's good to review the instructions, even if you've installed the appliance before. Specifications can change.
2. **Obtain the appliance specifications before cabinet fabrication or layout.** To avoid problems down the road, I require this of all my clients. There's nothing worse than preparing an opening for a particular unit, then finding out later that the client bought something else that won't fit.
3. **Always get help.** Appliances are heavy and expensive, which means it's easy to damage them and the surrounding areas. Having an extra set of hands to maneuver appliances around tight spaces is critical.
4. **Adequately protect surrounding surfaces and the appliance itself.** Always protect the floor and any surface that's close to the appliance when setting it in place. If there is a protective coating on the appliance, don't remove it until the unit is installed.
5. **Carefully prep utilities for retrofits.** When retrofitting an existing kitchen for a new appliance, carefully survey the space before drilling holes, modifying the opening, or cutting cabinetry. It's a lot easier to make a mistake than to fix one.
6. **In a retrofit situation, you may need to modify material you're not familiar with.** If it's out of your comfort zone and expertise, call a professional. For example, attempting to enlarge the cooktop opening on an existing slab stone counter can have disastrous effects. One errant tap can crack the counter.
7. **Always check for inadequate cabinet clearances and interference with other appliances.** Clearance and interference issues are typically a direct result of improper planning. Check for these before beginning the work to avoid any rework to make it right.
8. **Rough-in gas, electrical, or vent pipes in the right spot.** You don't want to install an appliance toward the end of a job only to discover that the rough-in is incorrect or that there isn't sufficient clearance to run ventilation through the ceiling. Don't lock yourself in to a rough-in location if you're unsure about the layout.
9. **Create adequate space within appliance cabinets.** The utilities that appliances need to operate require space inside the cabinet. Sometimes an adjacent cabinet won't house the utilities, and you'll need to use the back wall. Make sure there is sufficient depth in the cabinet before installing the appliance.
10. **Prepare the job site for appliance delivery.** This seems obvious, but some of these appliances are so large and heavy that you really need to have a strategic plan. Whatever you can do to get the appliance into the space safely will make the entire process flow more smoothly, even if it means removing doors and door stops.