Getting Appliances to Fit

Careful planning from the start is the key to a functional, hassle-free kitchen

BY DAVID GETTS

A few years ago, I got a call from a customer who wanted me to know that the electronics in her wall oven had burned out. I had installed the appliance only a year earlier, just long enough for the warranty to run out, and the news from the repairman who soon visited the house wasn't much better. He suggested they call me because the problem was my fault. According to the company, I had failed to drill vent holes in the oven cabinet to prevent overheating. As soon as the customers started the self-cleaning cycle, the delicate circuitry was, well, toast.

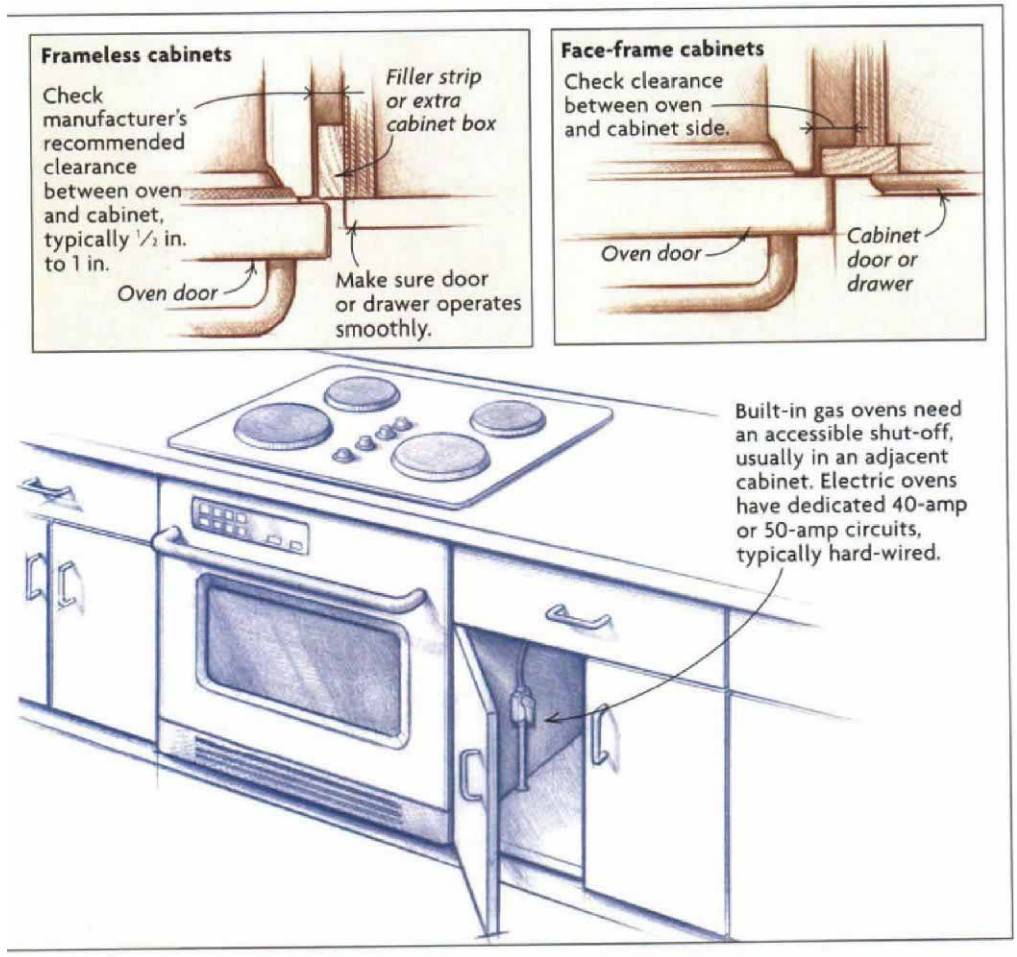
I knew I had saved the installation instructions, and when I went back to check them, I found nothing about adding ventilation to the cabinet. Not a word. Shown their own installation specs, the manufacturer agreed to cover the cost of repair as well as my time for modifying the oven cabinet. If the experience proved anything, it's that even following the manufacturer's instructions to the letter is no guarantee that an appliance installation will go smoothly. But it sure improves your odds.

These days, I insist clients choose their appliances before kitchen-design work starts. I make sure I have the most recent installation guides from the manufacturer (or I check www.dexpress.com for current dimensions). Remembering the hard-learned tricks presented here doesn't hurt, either. □

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Drawings by Bob La Pointe.

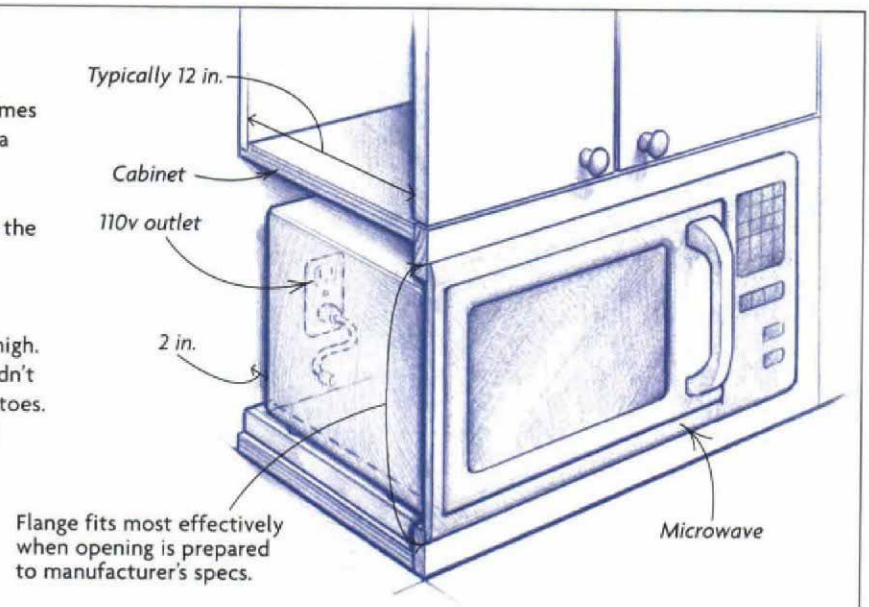
UNDER-COUNTER BUILT-IN OVEN

Ovens generate a lot of heat (as I learned), so great care should be taken to follow the manufacturer's instructions on minimum clearances. Overheating can damage the oven or, worse, cause a fire. The distance between the side of the oven and cabinet is critical. In a frameless cabinet, an extra cabinet side or a filler strip may be needed to keep the oven at least 1 in. away from Thermofoil doors, which can be damaged by high heat. Some cabinet manufacturers provide an extra cabinet box for the oven, which provides this extra clearance, or you can add your own to adjacent cabinet sides.



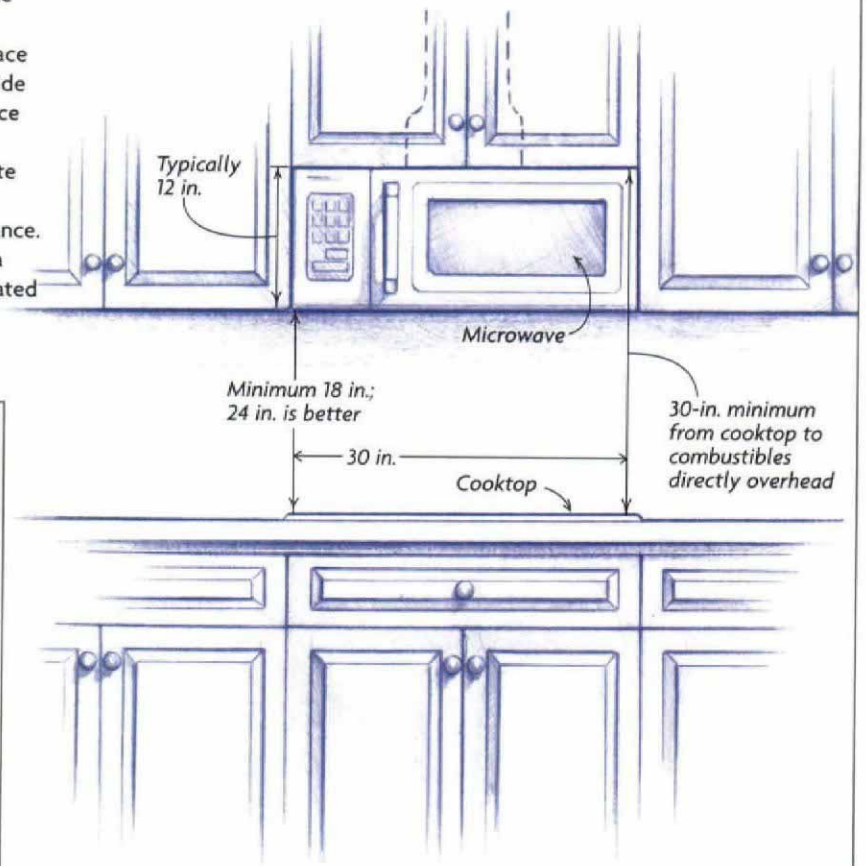
BUILT-IN MICROWAVE

Although microwave ovens often are mounted over the cooktop where they double as a vent hood, they sometimes are installed in a cabinet. Because there is no ductwork, a built-in requires nothing more than a 110v outlet and a properly sized cabinet. Remember to follow the manufacturer's cabinet-size requirements closely so that the trim kit, if there is one, fits accurately. The single most important consideration is installation height. In one installation I did, the owner insisted on a certain height above the countertop even though I thought it was too high. They won the argument. Even with my 6-ft. frame, I couldn't see the inside bottom of the microwave standing on my toes. Both husband and wife were tall, but the location would make that microwave awkward for anyone else to use.

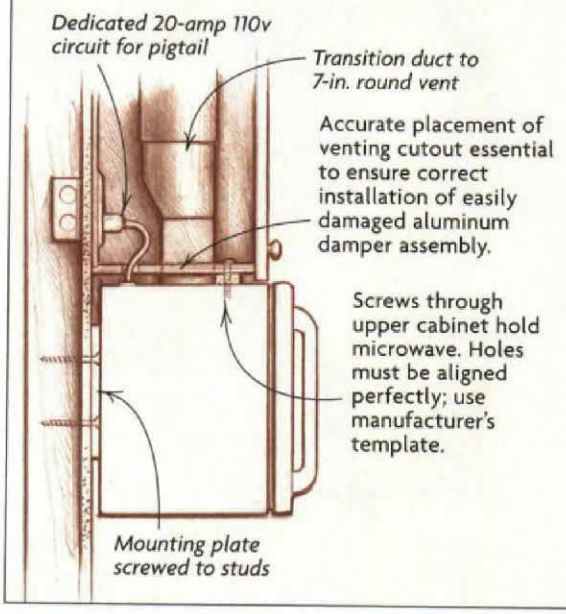


OVER-COOKTOP MICROWAVE

Microwave ovens mounted over the cooktop have become extremely popular in recent years. Functioning as both a microwave and stove vent, these appliances save both space and money. Because they are designed to fit in a 30-in. wide opening (the same as a standard cooktop), they can replace an old vent hood or over-the-stove cabinet in a retrofit. Many can be set up to vent to the outside or to recirculate air through filters. Vent pipe is typically 7-in. dia. with a 3¼-in. by 10-in. transition where it connects to the appliance. Microwaves come with a pigtail attachment to plug into a 110v outlet (20-amp dedicated circuit) that should be located in the cabinet above.

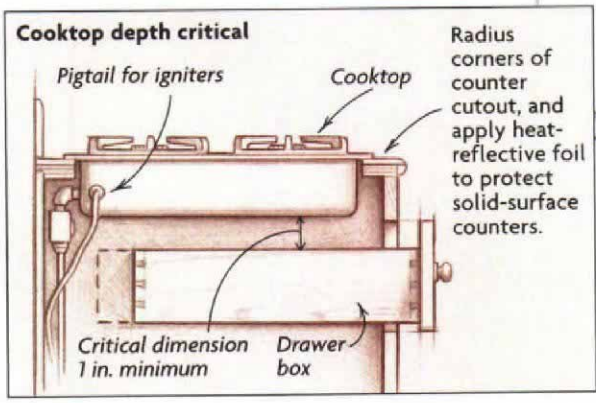


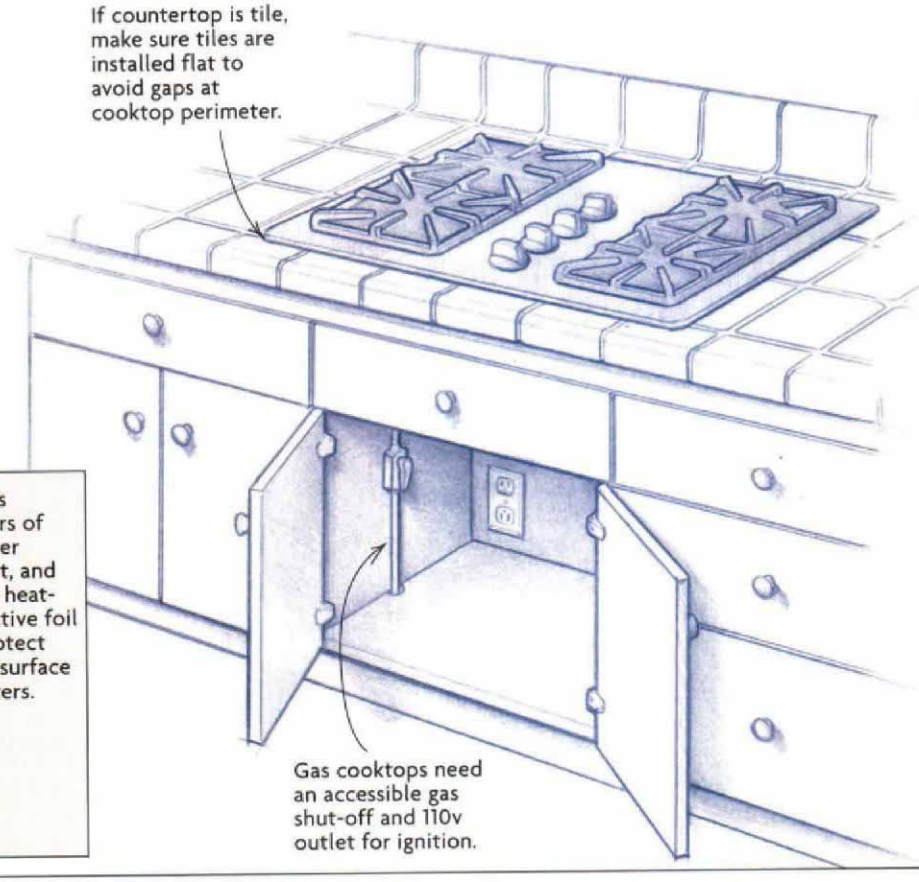
Power supply and mounting brackets



DROP-IN COOKTOP

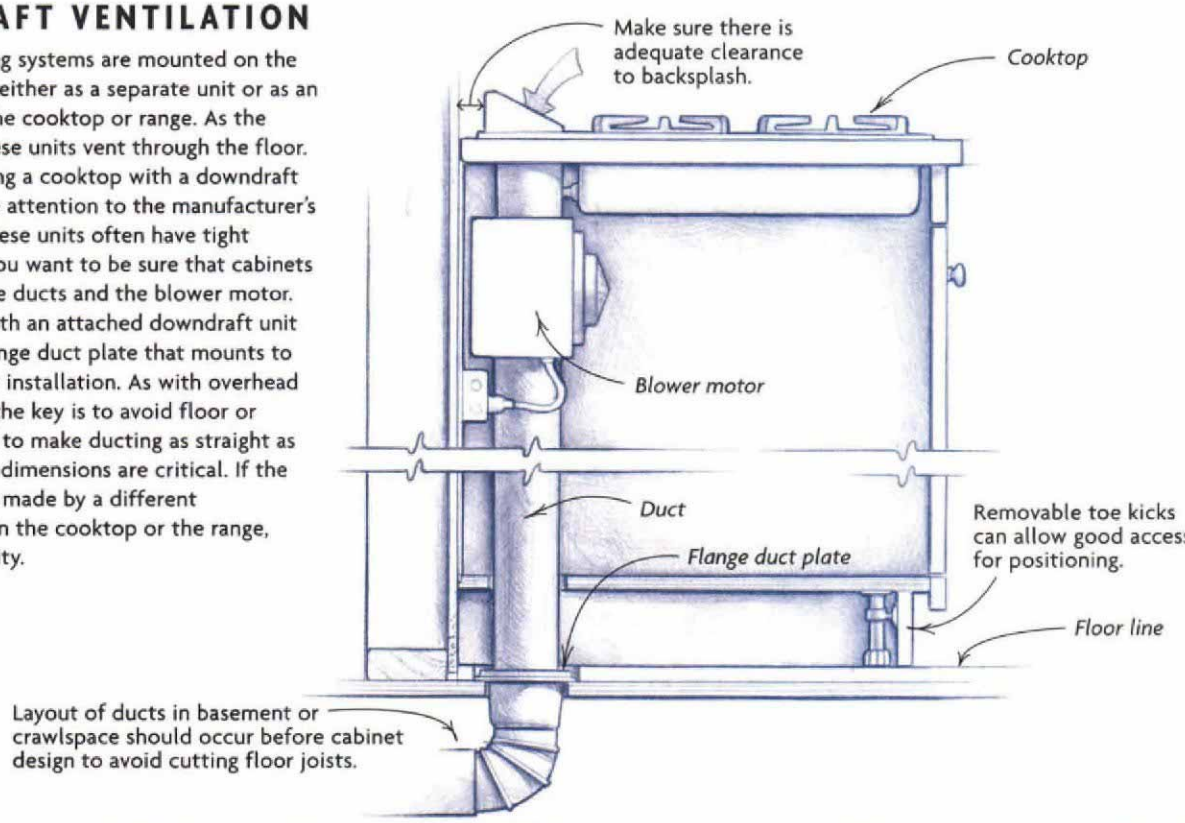
Drop-in cooktops are the way to go for a sleek look. As the name implies, these appliances are dropped into a cutout in the countertop, much like a self-rimming sink. One advantage is that the front edge of the countertop and the cabinets below are continuous for a cleaner look. Another is that there are no spaces for food to fall into. Using a separate cooktop also expands the options for an oven, which is installed separately and can be from a different manufacturer. Knowing the exact depth of the cooktop is critical so that cabinets below can be designed correctly; cooktops usually are no more than 4 in. deep, allowing the use of a shallow drawer directly below the cooktop.





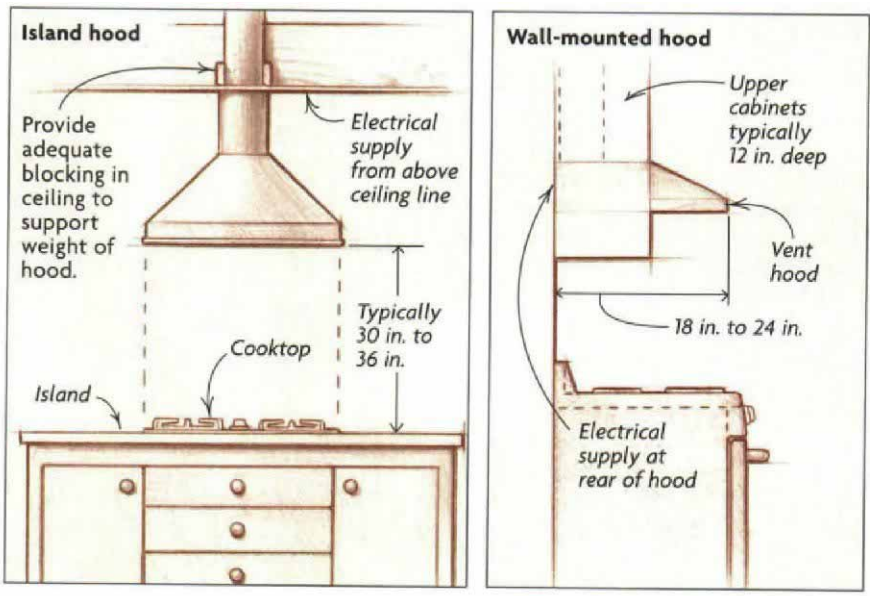
DOWNDRAFT VENTILATION

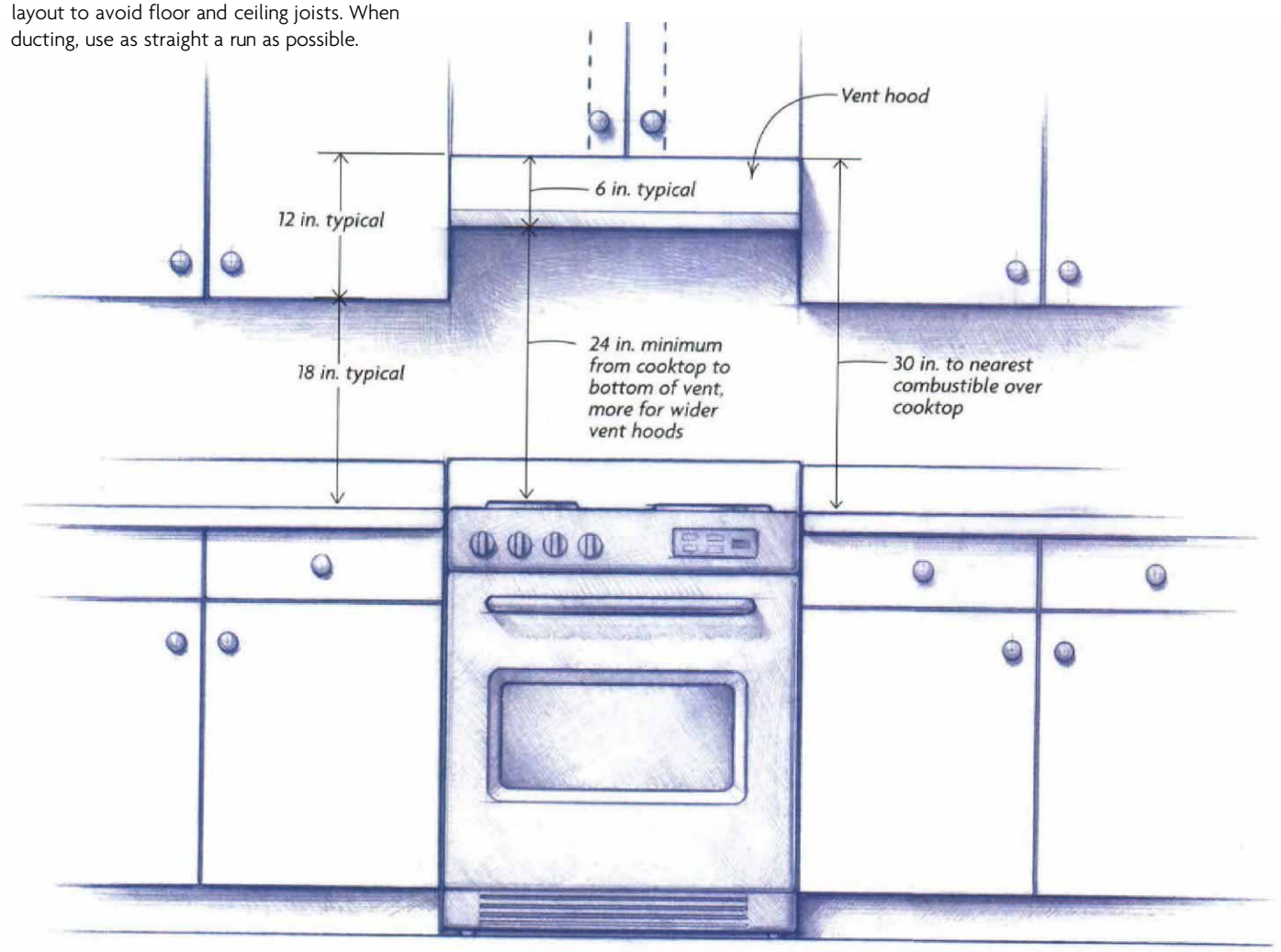
Downdraft venting systems are mounted on the cooktop surface, either as a separate unit or as an integral part of the cooktop or range. As the name implies, these units vent through the floor. If you are installing a cooktop with a downdraft feature, pay close attention to the manufacturer's specifications. These units often have tight tolerances, and you want to be sure that cabinets can accommodate ducts and the blower motor. Slide-in ranges with an attached downdraft unit usually have a flange duct plate that mounts to the floor for easy installation. As with overhead venting options, the key is to avoid floor or ceiling joists, and to make ducting as straight as possible. Cabinet dimensions are critical. If the downdraft unit is made by a different manufacturer than the cooktop or the range, check compatibility.



UPDRAFT VENTILATION

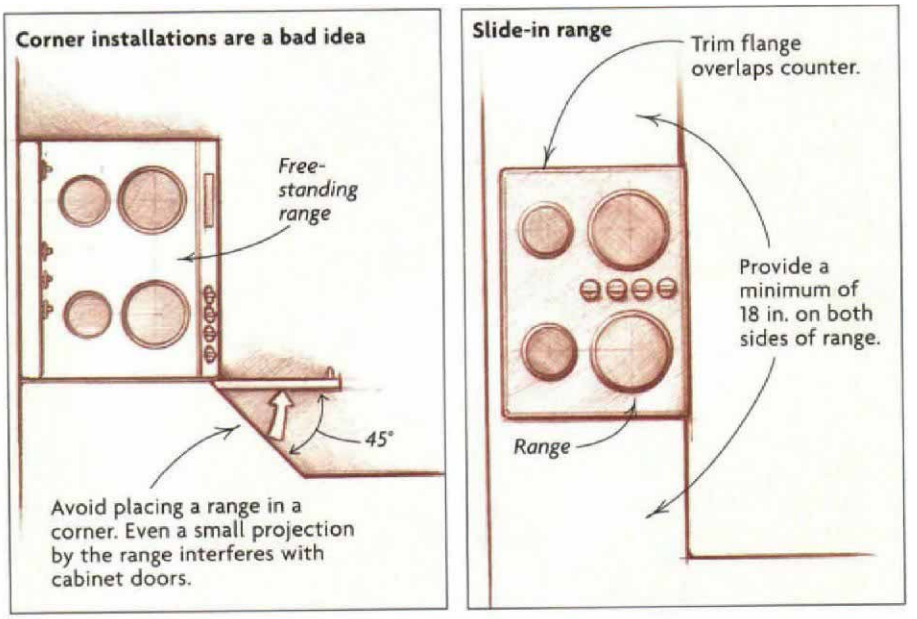
Updraft vents installed on a wall above the cooktop or stove—typically beneath an upper cabinet—are vented to the outside either through a sidewall or through the roof. They are relatively simple to install. These units are hard-wired from the back and vented through the top. Four screws attach the hood to the cabinet above. Upgraded versions enclose the hood in a wood, tile or stone shroud. Although an added shroud makes for a more difficult installation, the mechanics are the same. Wide hoods over the stove, those 24 in. deep, should be installed slightly higher than a standard hood—30 in. to 36 in. instead of 24 in. to 30 in. That's also the rule for commercial-style installations. The other type of updraft ventilation is a hood that hangs from the ceiling, usually over a kitchen island. My biggest concern here is to make sure the unit is securely fastened to the ceiling, so adequate blocking in the ceiling is essential. It also can be a challenge to locate the hood so that it will be centered over the island. Both types of vent systems require careful layout to avoid floor and ceiling joists. When ducting, use as straight a run as possible.

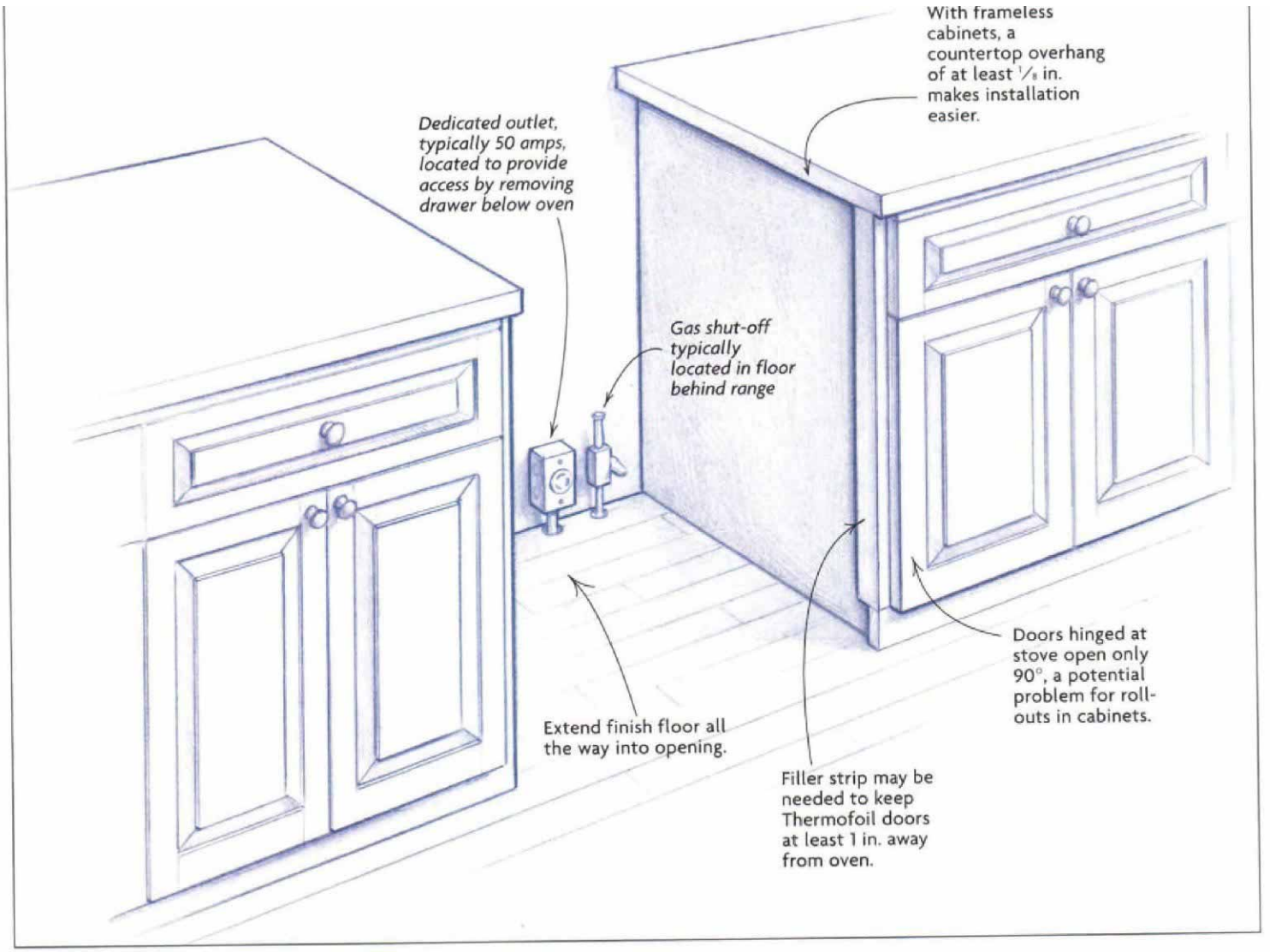




FREE-STANDING AND SLIDE-IN RANGES

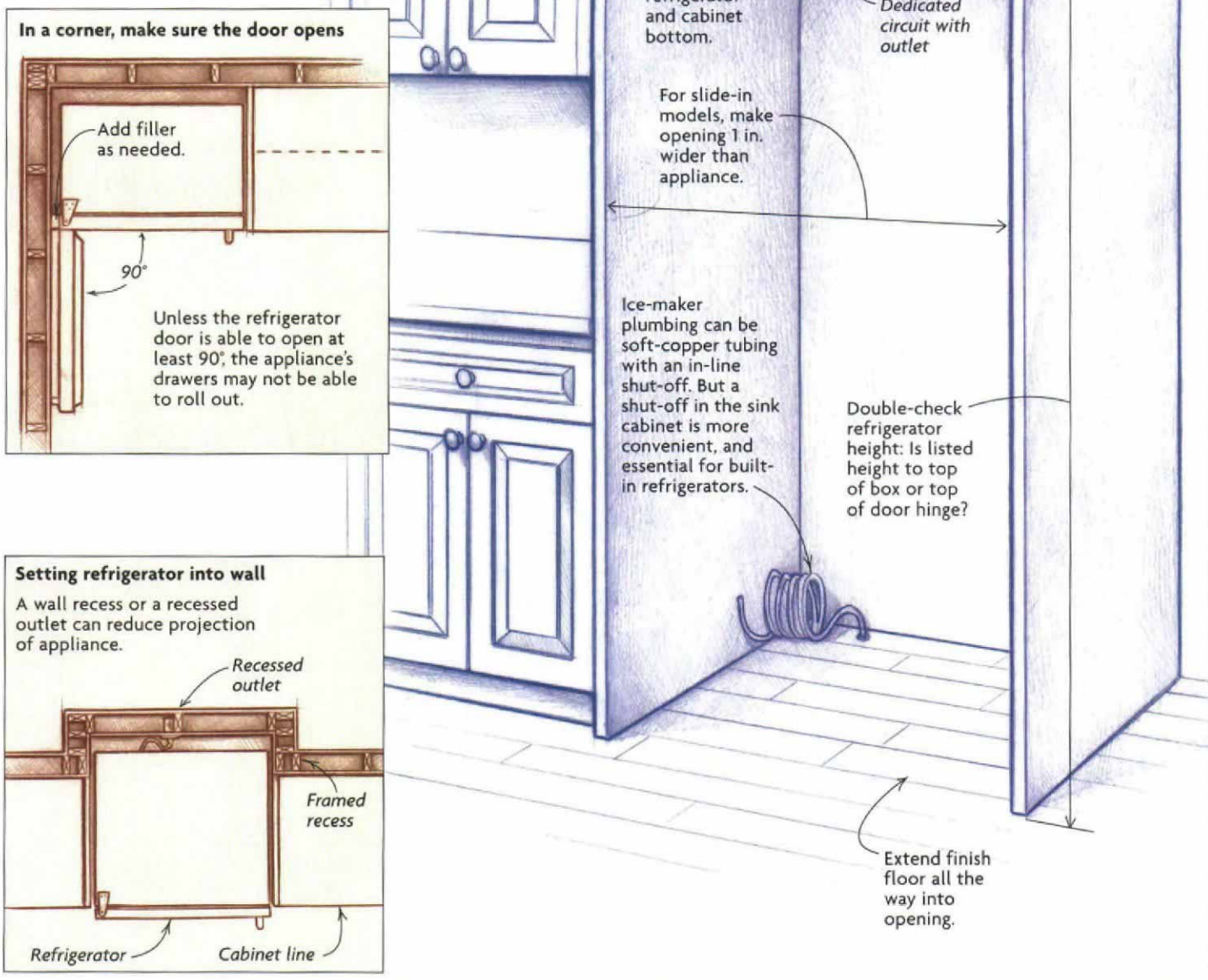
Free-standing and slide-in ranges are most common. Although installation is essentially the same, there are some differences worth noting. Free-standing appliances have two finished ends and are independent of the cabinets and countertop. A free-standing range stands slightly taller than the countertop, and there is a small gap between the appliance and the edge of the countertop. Slide-in ranges are similar in appearance except that the top has a trim flange that overlaps the countertop cutout. They appear built-in. Installation requires leveling the appliance until the trim flange comes in contact with the countertop surface. They both combine a cooktop with an oven in a single metal cabinet Most measure 30 in. wide (some are 27 in.) and require an opening of 30 in.





REFRIGERATORS

The refrigerator is the largest appliance in the kitchen. Standard slide-in refrigerators require no special allowances other than providing a hole big enough to get it in and cut-usually a hole 1 in. wider than the refrigerator is enough. Height allowances can be more generous: By allowing 2 in. to 3 in. from the top of the appliance to the bottom of the cabinet, you give the refrigerator a little breathing room and make installation easier. This gap is concealed with a filler strip. If floors are not level, it's helpful to have extra room so that the refrigerator can be leveled. Depths are typically 27 in. to 32 in., making the appliance project from the cabinet face by up to 8 in. If this is undesirable, a built-in refrigerator such as the Sub-Zero is a good choice. Their overall depth is 24 in., although they are generally taller than a standard model. The only mechanical considerations to keep in mind are the 110v outlet (on a dedicated circuit) and a cold-water line for the ice maker if the refrigerator has one.



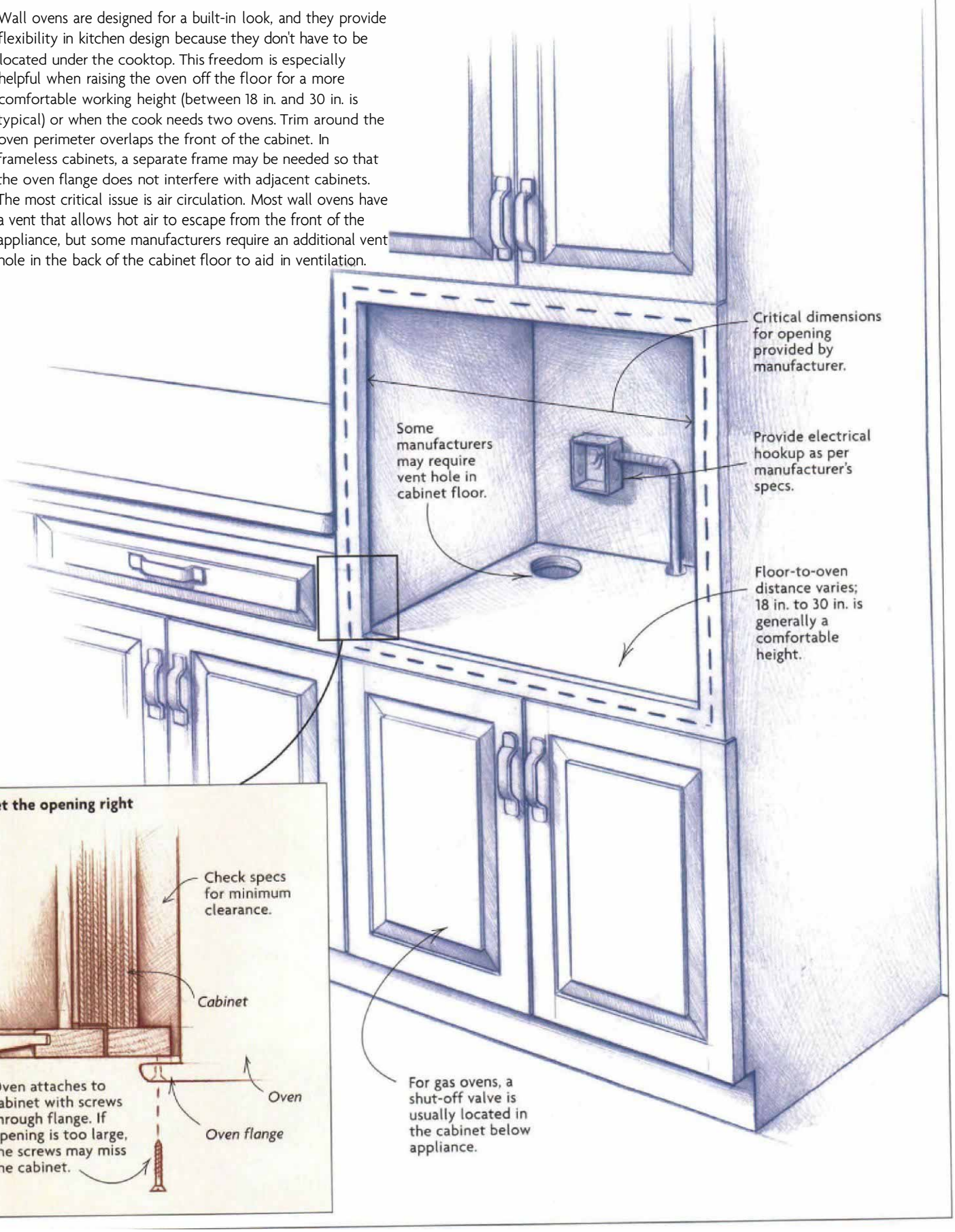
In a corner, make sure the door opens

Setting refrigerator into wall

A wall recess or a recessed outlet can reduce projection of appliance.

WALL OVENS

Wall ovens are designed for a built-in look, and they provide flexibility in kitchen design because they don't have to be located under the cooktop. This freedom is especially helpful when raising the oven off the floor for a more comfortable working height (between 18 in. and 30 in. is typical) or when the cook needs two ovens. Trim around the oven perimeter overlaps the front of the cabinet. In frameless cabinets, a separate frame may be needed so that the oven flange does not interfere with adjacent cabinets. The most critical issue is air circulation. Most wall ovens have a vent that allows hot air to escape from the front of the appliance, but some manufacturers require an additional vent hole in the back of the cabinet floor to aid in ventilation.



DISHWASHERS

For years, dishwasher openings were always 24 in. wide. Now that many dishwashers are imported from Europe, that's no longer the case. European models typically require a 23⅝-in. opening. Another key consideration is the dishwasher's proximity to the kitchen sink. Most dishwashers are installed next to the sink cabinet (it should not be more than 5 ft. away) to allow for easy access to the plumbing. Hot water should have its own shut-off valve with ⅜-in. soft-copper or braided-steel line running to the appliance. Waste water is carried by a ⅝-in. flexible rubber or plastic hose to the sink waste line. A dedicated 110v circuit is required. Most jurisdictions in my area allow dishwashers to be hard-wired, but I know of one city nearby that requires an outlet and a pigtail. It's a good idea to check that point with the local building inspector. By the way, you can eliminate the sink-mounted air gap with a wall-mounted version called a Johnson T (Johnson Industries; 800-548-6895).

