Warm Solutions for a Cold Kitchen

By Joe Stoddard

During the past 20 years, there has been a consistent trend toward larger, more comfortable, kitchens. Informal eating areas are often combined with the kitchen, and most customers try to include as many cabinets as possible when remodeling their kitchen. As walls are removed to accommodate these larger kitchens and cabinet runs are extended, it's often necessary to eliminate portions of existing heating supply registers or radiators.

If a run of hot water baseboard or forced-air register is removed, it's important that this "heat loss" is replaced. In these situations, an under-cabinet, or kickspace heater, can provide the required makeup heat without busting the budget. Kickspace heaters can also be used in new construction, when a long run of cabinets consumes the baseboard heating area on an exterior wall.

There are two common types of kickspace heaters available: electric and hydronic. Both use a fan-forced delivery system; the type you choose will depend on the central heating system design.

Hot Water

If there is a hydronic central heating system, the logical choice is a hydronic kickspace heater (see Figure 1). Operating costs are low and piping will be nearby. The Toester T series from Turbonics (see manufacturers list at end of article) includes four models that range in output from around 4,000 Btu/hr. to 19,000 Btu/hr. (depending on water temperature, flow, and fan speed). I like these units because they use multiple "pancake style" fans instead of one larger squirrel cage blower, and as a result, run quieter and require less maintenance.

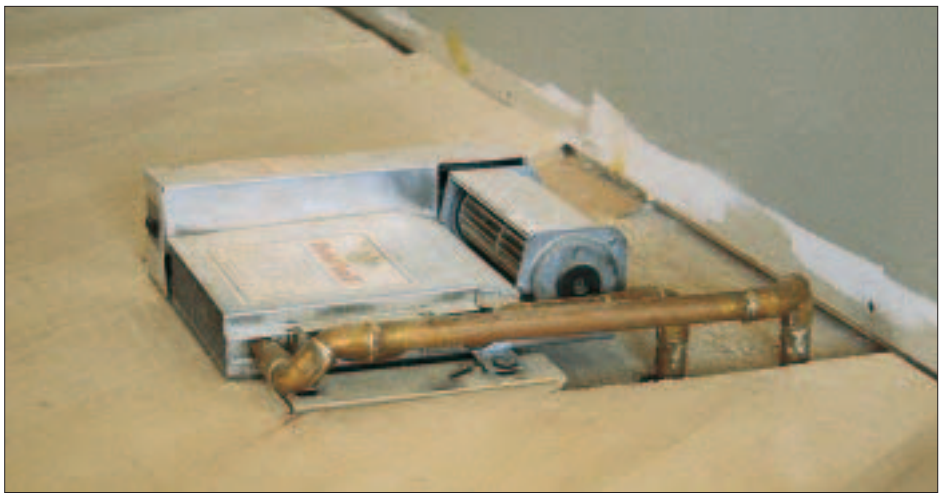

Figure 1. *Hydronic kickspace heaters (above) require careful layout and plumbing to fit precisely in a base cabinet bottom (left).*

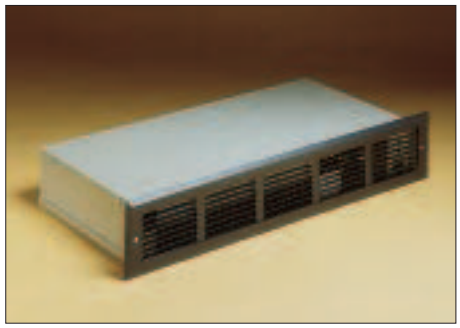

Figure 2. *Electric kickspace heaters are easy to install, but more expensive to operate than hydronic. Most can be wired for either 110- or 220-volt operation.*

Typical hot water baseboard fin tubing produces 500 to 600 Btu/hr. per lineal foot. To calculate the Btu output of the heater needed, multiply the length of any heating runs you are removing by 600 (see "Sizing Kickspace Heaters," next page).

Careful layout is important with these heaters. The smallest models require a 17-inch-wide minimum clear space under the cabinet, while the largest units require 31 inches. The average two-door sink base has plenty of room, but make sure you plan carefully for units that are going under smaller cabinets.

These units require a service access panel in the bottom of the cabinet. The panel must be securely fastened in place, because the fan depends on the confined area of the kickspace for return air, and also because the fan blades are exposed.

Don't forget to provide a 110-volt power source to run the fan. One caution: Make sure you're dealing with a hot water system and not steam. Steam boilers have sight glasses to check water levels; hot water boilers do not.

Electric Heat

There are many electric kickspace heaters available, and the good news is they are versatile and easy to install (Figure 2). The bad news is that in

Sizing Kickspace Heaters

It's important to match the kickspace heater to the existing heating supply outlet you are replacing. The formulas below provide workable approximations:

___ ft. electric baseboard @ 850 Btu/ft. = ___ Btu

___ ft. hydronic baseboard @ 600 Btu/ft. = ___ Btu

___ forced-hot-air registers @ 7,000 Btu = ___ Btu

most areas of the country they are expensive to operate. Many electric resistance heaters are field switchable for a variety of heating outputs, but limited to around 1,500 watts at 110 volts and 1,800 watts at 220, which translates to 5,000 to 6,000 Btu. Do your customers a favor and wire these heaters for 220 volts; the units will cost half as much to operate at the higher voltage.

Be sure to order wall-mount thermostats for any of the electric heaters you decide to use. Otherwise, you'll be stuck with thermostats mounted directly on the unit, which are not very effective for a kickspace installation.

Forced-Air Systems

This is the only type of heating system that may offer a "redirection" option. Whether it's new construction or remodeling, it's fairly easy to extend the forced-air duct out of the floor through the cabinet bottom to the kickspace (Figure 3).

Keep in mind that you will be restricting the airflow; therefore, what worked fine before the remodeling project may now be a little undersized. If access to the ductwork is limited, or the reduced airflow created by a kickspace transition requires supplemental heat, an electric may be the best choice.

If a cold air return is eliminated during a remodel, the return should be relocated outside of the kitchen area. This helps keep kitchen odors out of the rest of the house. If the cold air return happens to be on an interior wall, one simple solution I've used is to cut in the new return on the opposite side of the wall (Figure 3).

Maintenance Is Required

Be sure to explain to your customer that kickspace heaters should be cleaned and checked for proper operation at least once a year. These heaters draw their makeup air directly from the kickspace, and eventually become clogged with dirt, hair, and all sorts of kitchen related toe-jamb.

And no matter which type of heater you choose, remember to position kickspace heaters so they don't blow directly on someone's feet when they're working at the stove or the sink. ■

Joe Stoddard is a Professional Building Designer and former homebuilder in Elkland, Pa.

Forced-Air Kickspace Register

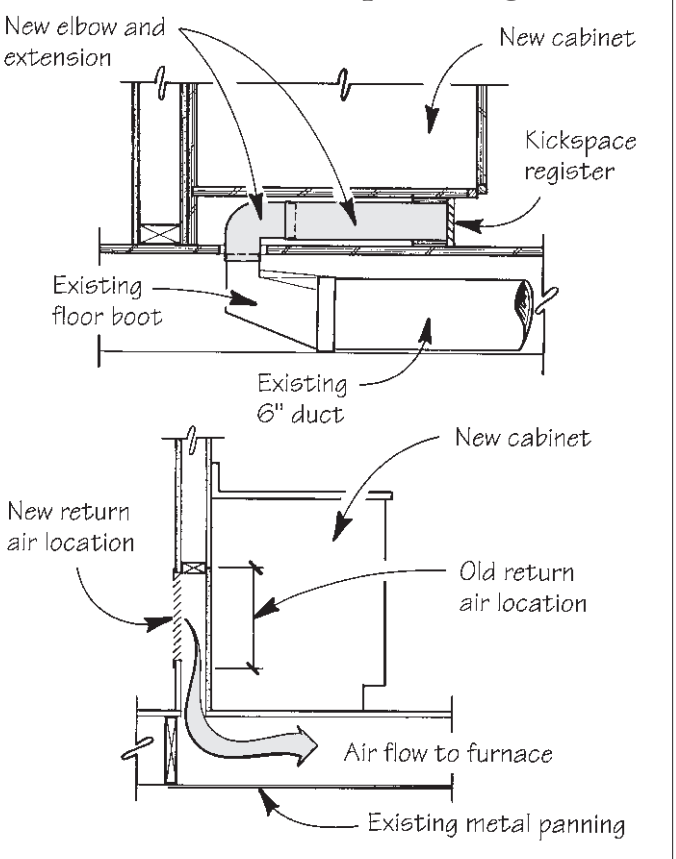

Figure 3. *A forced-air floor register can be redirected in a cabinet kickspace (top), although airflow will be slightly reduced. If a kitchen remodel covers an existing cold air return, it may be possible to relocate the return on an interior wall (bottom).*

Manufacturers of Kickspace Heaters

Hydronic

Turbonics Inc.
4001 Pearl Rd.
Cleveland, OH 44109
216/741-8300

Electric

Marley Electric Heating
470 Beauty Spot Rd.
East Bennettsville, SC 29512
803/479-4006

Markel
P.O. Box 4973
Johnson City, TN 37602
800/682-3398

NuTone
Madison and Red Bank Roads
Cincinnati, OH 45227
800/543-8687
800/582-2030 in Ohio