

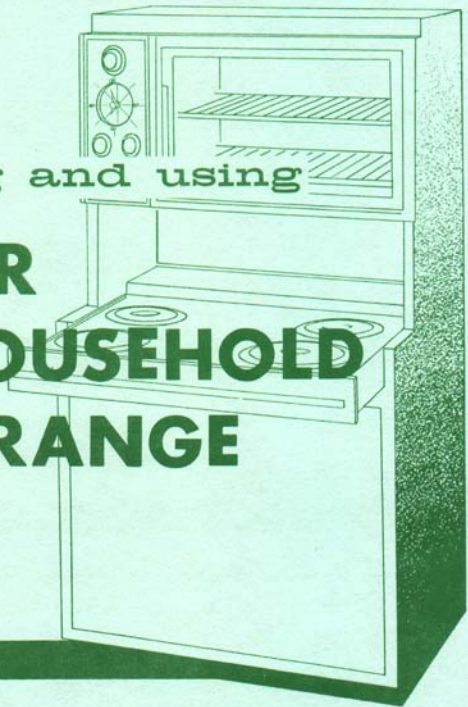
Extension Bulletin E-393
HOME AND FAMILY SERIES

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Choosing and using

YOUR HOUSEHOLD RANGE



Cooperative Extension Service
Michigan State University

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A RANGE IS A LONG-TIME INVESTMENT

Few of us trade in a range because it is worn out. We're more likely to buy a new model because we want a different style and more convenience, or because we're moving into another house.

If you're in the market for a range, keep in mind that you'll likely be using it for 15 years or longer. Take time to do some looking around before you buy. Probably no other large appliance offers so many choices of size, style, accessories, and price. Better leave your bill-fold at home when you go scouting, though, so you won't make any too-quick decisions.

Ask Yourself Some Questions

Dealers and manufacturers can call your attention to their products, but nobody can really tell you which range you should buy. So, before you start out on that shopping trip, it's a good idea for you and your family to set up some guidelines.

For example:

Is the price tag important to you? It is to most of us. Top-of-the-line models will include some extra features, but they may not do any better job of basic, everyday food preparation than the less deluxe models.

Look as far into your future as possible. Is there even a remote chance that you'll be moving out of your present house? Remember that you can't take it with you—a built-in range, that is. So this is a vote in favor of a free-standing model.

Are you considering a change from a gas range to an electric range, or vice versa? Each has its own advantages and disadvantages, as we'll point out. Such a change may mean costly installation charges for you, as well as changes in your habits of use and care.

What is there about your present range that you have found completely satisfactory? Are there any features or construction details that you would like to change? For example, have you always wished you had a double oven? Or do you have a double oven now and find that you don't really need one? Think about convenience in use, cleaning, controls, and other such items.

STYLE TRENDS AND PRICE TAGS

New trends in ranges are exciting. At first glance you'll see an amazing array of sizes, shapes, and colors. Shiny trim, fancy controls, ovens with glass doors and nickel-chromeliner—all these are much in evidence. You can choose between ranges which are tall and slim or short and wide. The styles are similar for gas or electric.

Glamor is not without its price. More than likely a high-style range carries a higher price tag than a less deluxe model. It will pay to compare models to see what the extra cost covers.

Convenience in use is an important factor, so note carefully such items as position of controls, clearance of back surface burners or units, and accessibility of storage spaces below the cooking top or oven. Picture yourself removing a large roast from ovens of various heights while all four top-surface units or burners are in use. Check on the presence or absence of special safety provisions.

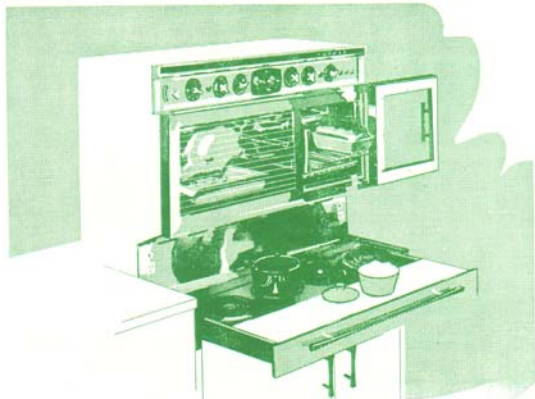
EYE-LEVEL CONSOLES

Sometimes referred to as high-oven ranges, these one-piece consoles come in a variety of arrange-

ments. Some have one oven, some have two. If there are two ovens, both may be above the cook top, or one may be above and one below.

Unlike more traditional styles, not all of these ranges stand directly on the floor. Those models which have no oven below the cook top can be mounted on some kind of a base. Separate bases may be purchased to match the range, or a wooden base may be built to match the kitchen cabinets. Both add to the price of the range. A few models can be hung on the wall, which means added installation cost.

"A built-in look but not really a built-in." This describes the appearance of an eye-level range in a kitchen setup. Sides of the range may be finished or unfinished, depending upon whether the sides will be exposed or enclosed by cabinets. It would be well to consider whether you might need to move the range later to a location where the sides would be exposed. Slide-in is a term often applied to these ranges, because they can slide in or out of place without special construction or installation.



Eye-level console—Toppan

The Oven

Overall dimensions of high ovens are likely to be an inch or two less in all directions than the ovens of each manufacturer's free-standing line. Where there are two high ovens, one is apt to be quite small. Oven doors usually have glass in them. Etching or filigree pattern or color is often used on or in the glass to keep oven interiors from being too exposed to view.

Location of controls and type of door swing are important. Some doors swing up out of the way, others swing out. While it may be desirable to have surface controls up out of the way, these should be accessible whether oven doors are open or closed.

The Cooking Surface

It is necessary to provide adequate clearance between the bottom of the oven and the cooking surface below. For this reason you'll notice that many manufacturers have dropped the cook top a few inches below the usual 36-inch counter height. This lower level may be a good height for some but too low for taller people.

Manufacturers of eye-level ranges offer several arrangements of the surface units and burners. Electric units are clustered, staggered, L-shape, or in line. They are usually in pairs, two 6-inch units and two 8-inch units, or there may be three of the smaller units and only one larger. Gas cook tops often have three of the regular size and one giant burner. For safety reasons, it may be desirable to have units or burners set back several inches from the front edge of the cook top.

Most models of both gas and electric high-oven ranges have recessed cook tops. When in use the cook top is pulled out; when not in use it is pushed in or recessed. There is a safety regulation which requires that recessed cook tops must automatically cut off the source of heat to the units or burners if the top is accidentally pushed in while in use. The extended cook top may reach out 12 inches or more beyond the front of adjacent counters—something to consider if you're always bumping into sharp corners. Also you may have a longer reach up to the oven, often over burners or units which are in use. At least one manufacturer has solved this by lining up his four electric units on the back row (see fi-

gure on page 2). The front part is similar to a hinged-on shelf and can be level or lowered as desired. However, it may be somewhat difficult to use the storage space below when the shelf is dropped.

DROP-INS

Another recent arrival in range styles is the drop-in. This has no high oven and looks more like a table-top range. The cooking surface is usually several inches lower than the adjacent counters. Since most models are 30 inches wide or less, they have only one oven. At least one model is 40 inches wide and has two ovens. Like eye-level ranges, many drop-ins are mounted on some kind of a base. They generally do not have finished sides and, as the name indicates, are installed between sections of cabinets. One manufacturer offers a two-level cook top (see below); the rear units are installed in a raised surface about 2 inches higher than the front units, as shown.



Drop-in—Westinghouse

SEPARATE BUILT-INS

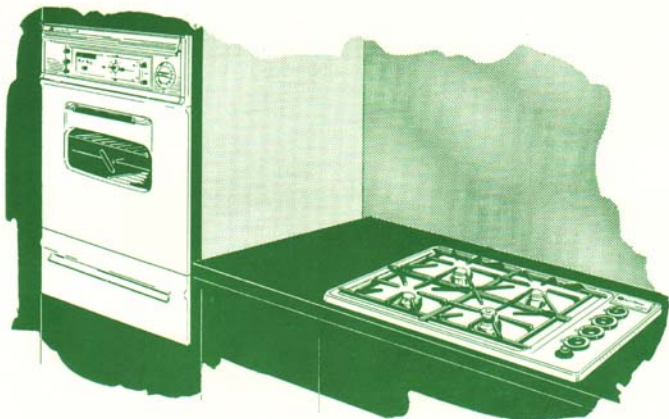
Did you know that in most homes the oven is used only about one-fourth as often as the cook top? One of the reasons that separate units have become popular is that the surface units can be installed at any spot you choose in the counter. Counter heights in kitchens are usually somewhere between 36 and 38 inches from the floor. Most builders use 36 inches because this fits in with the standard height of such equipment as free-standing ranges, chest-type freezers and dishwashers. The separate oven can be installed at a more convenient height in a less-used section of the kitchen.

There are definite installation costs for separate units. You'll need to figure an extensive cabinet changes, whether your oven and surface units are located next to each other or on opposite sides of the kitchen. Also, gas or electricity must be made available at both locations.

Surface Units

Both gas and electric cooking tops come with two, three, or four cooking areas. The electric units are 6 and 8 inches, the same size as in other ranges. Gas burners are the regular and giant sizes specified by the American Gas Association. The individual units or burners are set into either a stainless steel, porcelain enamel, or satin-finish chrome area. Controls often are located somewhere within this space. In some cases, controls may be located below the surface units on the range front, or at the back on the wall, or in the adjacent counter. Total width of the cook top varies from 13 to 45 inches.

It is possible to install drop-down double electric units on top of a counter. When not in use, these fold up against the wall between the base cabinet and wall cabinet. This leaves the counter top free for other uses when the units are not needed.



Separate built-ins — Whirlpool

Ovens

While a separate oven can be installed under a counter top, this defeats one of the main advantages of buying separate units—namely, a convenient height. Most people find the oven easiest to use when the lowest rack position is about the same height as the counter. Moving a large roast or a turkey to a high rack can be awkward and requires considerable effort. Installation recommendations given below are based on research conducted at the U.S. Department of Agriculture¹.

Separate electric ovens: Install so that the bottom interior is 32 inches above the floor. This will bring the lowest rack position on most models to about 35 inches, and the normal broiling position up to about 40 inches.

Separate gas ovens: Install so that the bottom interior of the oven is 34 inches above the floor. This usually brings the lowest rack position to about 37 inches. Since the broiler may be a separate compartment below the oven, this height would bring the broiler rack position to about 28 inches above the floor.

FREE-STANDING TABLE-TOP MODELS

Table-top ranges vary little in height and depth. The range height may be listed as the standard counter height of 36 inches, or it may include the extra 7 to 15 inches of the control panel.

Range widths vary from the 20-inch apartment size to the 30-, 36-, and 40-inch sizes, with an occasional inbetween width. In recent years the 30-inch model has become increasingly popular. If your space is limited, these dimensions will be an important factor in your choice of a range.

Free-standing ranges have the advantage of being movable. They are not built in and merely need to be connected to be put in service. Styles vary somewhat in appearance, due mainly to size and extra features or trim. Even though colors and chrome-plated models are available, white porcelain enamel is still the favorite. The oven(s) is below the top cooking surface, which means bending over to use it.

¹ See reference, page 16.

GAS OR ELECTRIC?

You already may have decided whether your new range is to be gas or electric. Buyers offer many reasons for preferring one type over another. Some want a gas model because it is generally less expensive to buy, model for model, and in many localities it is less expensive to operate. Some prefer electricity because it doesn't have an open flame. Some prefer gas because it gives instant heat. Perhaps the above reasons are well founded. We suggest that you read further to determine other advantages and disadvantages

of electricity versus gas before making final judgment.

It is important to realize that there are new and wonderful developments in both electric and gas ranges. Both offer more sensitive and more accurate controls. Yet there are basic differences which you will want to consider, including a quick comparison of electricity and gas as sources of heat.

OBVIOUS DIFFERENCES BETWEEN GAS AND ELECTRIC RANGES

ITEMS TO CONSIDER	GAS RANGE	ELECTRIC RANGE
Basic installation requirements	Proper installation of gas lines and of pressure regulating devices	240-volt wiring in a 240-volt range circuit with individual cutoff, either by circuit breaker or fuse; wall receptacle to which range "pig-tail" is connected
Source of heat	Combustion process between some type of gas and the oxygen of air	Electric current which flows through coils of wires
Method of heating (heat transfer)	By direct contact with the flame and/or by heated air moving upward	By direct contact with tubes or by radiation from hot coils
Heat efficiency	50% efficient, 50% heat loss	80% efficient, 20% heat loss
Hazards	Open flame; spillover can extinguish flame Possible danger of carbon-monoxide gas under conditions of incomplete combustion (reason for proper adjustment) Electrical "shorts" not a factor	No flame Not a factor Possible electrical "shorts" (reason for proper grounding)
Use	Size and shape of surface utensil of little importance to efficiency Oven utensils little affected by radiant heat Pilots cause heat in kitchen Pilots go out due to drafts, spill-overs and low gas pressure; check especially the method and ease of relighting pilots in oven compartments and broilers	Surface utensil needs to be flat to make contact and should fit the unit Oven utensils greatly affected by radiant heat from electric coil Not a factor Not a factor
Usual location of broiler	Compartment below generally slow and inefficient; ranges with separate broiler compartments usually have improved radiant-type broilers. This arrangement also allows more room inside the broiler compartment	Part of main oven and generally most satisfactory for broiling

SIMILARITIES

There are many respects in which gas and electric ranges are alike. Both usually have:

- four top-surface cooking spaces; on electric ranges these are referred to as units; on gas ranges these generally are called burners.
- one thermostatically controlled surface burner or unit on the higher-to-middle-priced lines.
- low-temperature oven controls—gas as low as 140° F., electric as low as 150° F.
- automatic oven controls which can be set to turn on and shut off as desired.
- accessories available on the more deluxe models, such as rotisserie, griddle, automatic meat thermometer.
- porcelain-enamel finish on cook tops, doors, side panels, and on liners of oven and broiler.

IF YOU HAVE DECIDED ON A GAS RANGE

If, by now, you think you'll buy a gas range, you are ready to look closely at features offered by various manufacturers. To set the stage, let's review quickly the basic facts about using gas.

Three Requirements for a Gas Flame

Gas itself — There are four types of gas available—namely, natural, manufactured, mixed, and liquid petroleum (LP). Of these, natural gas accounts for almost 95 per cent of that used in households. LP gas, commonly referred to as bottled gas, is generally used in rural areas. We pay our gas bills based on the number of therms (100,000 Btu*) of gas we use. The homemaker makes gas available by turning a valve, which regulates the flow of gas to the burner.

Air — For complete combustion it is necessary to have the gas supply mixed with a proper amount of air. Adjustment of the burners is made at the time of installation. If adjustment is needed at a later date, it is advisable to have this made by a competent serviceman. In most cases the local gas company will do this without charge.

Flame — Gas pilot lights usually serve to ignite the gas-air mixture, once the burner is turned on. The burner flame will have a blue, cone-shaped appearance if you are supplying the proper gas-air mixture.



Gas flame

If there is too much air in the mixture, the flame will skip on and off the burner or "dance." If there is too little air, patches of yellow will appear in the blue flame. Dust in the air often makes red or bright yellow streaks in the flame.

Methods of Lighting — Pilots

All AGA approved gas ranges (as of January 1961) have automatic ignition to the burners. Most surface burners now have a standing pilot which burns continuously at a very low setting. There may be one center pilot, approximately 500–650 Btu, if all four burners are clustered together. If burners are divided into pairs, there may be two pilots, approximately 350 Btu each. In some cases there is a pilot for each burner, approximately 125 Btu each.

Safety-type ignition systems are mandatory for oven and broiler compartments. This means that, in case the pilot light goes out there will be no gas flow to the oven or broiler burner even though the control valve is turned on. In some cases gas to the pilot light also is cut off. This is known as 100 per cent safety ignition. There are various methods for relighting a pilot, usually by applying a flame. In some cases an electric coil is turned on. The red-hot coils light a pilot, which in turn lights the main burner.

* British thermal unit.

Surface Burners

Manufacturers offer a variety of burner shapes, ranging from round to star shaped. The gas mixture is delivered to the burner ports (holes or slots) through a mixing tube. Some burners are designed so that the flame will burn only at the edge of the burner. Others are equipped with two burners in one—a center simmer burner inside the main one. At full heat both burners are on. At the lowest setting only the center burner is used.



Center simmer burner

For years, the flame on gas burners has been adjusted by turning the valve handle higher or lower. This is still done, although some manufacturers provide definite clicks to help guide the user. As yet, there are no pushbuttons on gas ranges.

Position of surface controls — On most free-standing and some console-model gas ranges, the burner controls are placed on the front of the range below the burners. This is within easy reach of small children as well as the operator—hence a problem for some families. Several manufacturers have models on which the control valves are on the top surface. Some controls are lined up in a row from front to back.



Controlled top burner

Thermostatically controlled burners have been available for several years. Most higher-to-middle-priced models have one of these automatic burners and three regular burners. A raised disc in the center of the automatic burner is sensitive to the temperature of the utensil it touches. As soon as the food reaches the desired temperature, the sensing element reduces the gas flow automatically. The flame thus goes up and down as needed, and there is no burning or sticking if the utensil and setting have been properly selected for the food. At present, medium-gauge aluminum utensils are recommended by many manufacturers for automatic burners. The pan must be flat on the bottom to make good contact with the sensing element.

Oven Controls

Oven temperatures are regulated by the amount of gas permitted to reach the flame. As the temperature rises, the valve slowly closes until just the proper amount of gas is available to maintain the temperature selected.

You'll recall that heat in a gas oven comes from one direction only. Since heat rises, the gas burners are placed below the bottom liner of the oven. This is the reason that the broiler on many gas ranges is below the oven.

Low-temperature oven controls are relatively new; the gas-oven controls permit temperatures to be maintained at a very low level. Oven temperature is regulated by a thermostat. Thermostats now available make it possible to set your oven as low as 140° F. Such low temperatures



Low-temperature oven control, gas

permit the holding of prepared food at serve temperature for several hours after baking, without additional cooking or drying out. Some manufacturers provide an automatic device that will cut the temperature back to the desired low "holding" temperature without having to reset the control at the end of the baking period. A recent study verifies that foods can be held at this low temperature safely for several hours.²

IF YOU HAVE DECIDED ON AN ELECTRIC RANGE

In some ways, an electric range is less complicated than a gas range. There is no mixture of gas and air to regulate, and there are no gas pilots. You simply turn a switch, or press a pushbutton, and the electricity flows to produce the heat as set.

Surface Units

There are two sizes of surface units, 6 and 8 inches, comparable to the two sizes of gas burners. Open coils rarely are seen these days. They have been replaced by metal tubes, through which the coils run.

Not all manufacturers make surface units alike. There are units with two tubes and units with only one. Some tubes are narrower than others. Narrow tubes have one thickness of coil inside, while the wider tubes have three. Because there is relatively more metal and less air-space in the wider tube units, these will heat and cool more slowly than the units with narrow tubes. Wider tubes are less subject to warping and may be easier to clean.

Evenness of heat is important. Remember that for every tube end there will be a cooler spot. There will be four cooler areas if there are two tubes in a unit, or only two if the unit has just one tube. The two-tube units are sometimes

Manufacturers' directions for temperature and holding time should be observed carefully.

Automatic oven clock — Although automatic clocks are not new, they are available only on medium-to-higher-priced models on most makes. These are no longer a puzzle to operate — they can be set simply and relied upon to operate correctly.

arranged so that one tube is in the center and one on the outside. With this arrangement of the tubes, you need have only the center coil turned on if a small utensil is being used. This is similar to the center simmer burner on some gas ranges.

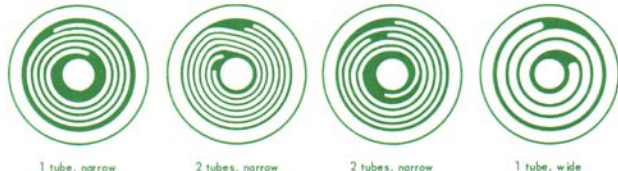
Most units offer either five or seven heats. Heat is selected by a rotary switch on many models, or by pushbuttons on the more deluxe ranges.

There are special types of units available on some ranges, usually the higher-priced models:

Infinite-heat units — Infinite heat is provided by a rotary switch that can be stopped anywhere between the usual heat settings. This allows an "infinite number of settings," comparable to a gas burner. Pushbuttons cannot be used for infinite heat.

Speed units are designed to give high or extra high heat almost immediately once a unit is turned on. This also is similar to a gas burner. As many as 4000–5000 watts may operate momentarily to give a fast start. Then the wattage drops back to its regular setting, perhaps 2100 watts. Advantage of a speed unit is for short, fast cooking, rather than for long, slow cooking where it is not important to save an extra minute. Not all manufacturers provide a speed unit.

² See reference, page 16.



1 tube, narrow

2 tubes, narrow

2 tubes, narrow

1 tube, wide

Controlled surface units — very similar to controlled gas burners in operation. A raised, center disk makes contact with the center of the utensil. Control of temperature is regulated by this element, which is a type of thermostat. Electricity goes on and off as heat is needed.

The Oven

Electric ranges usually have two heating elements in the oven—one at the bottom of the oven, the other at the top. Part or all of the top element may be in use during baking or pre-heating. During broiling, all of the top unit is in use, as the sole source of heat.

BROILERS

Broiling often is, and should be, an important method of preparing food. Foods frequently are more attractive when broiled than when prepared by other methods. In a broiler, food is subjected to intense heat for a short period of time. True broiling is done by direct (radiant) heat; the food is placed close to the heat source. Cooking

Oven controls — An oven thermostat is a delicate bit of equipment. To be useful it must be accurate. When your new range is installed, whether electric or gas, you have a right to insist that the thermostat be checked. There should be no more than a 25-degree variation above or below indicated temperatures. A serviceman usually can adjust (calibrate) the thermostat unless it is defective.

Automatic oven clocks are available. Again, new clocks are much easier to operate than the more complicated older models.

Low-temperature controls are found now in electric range ovens also. Electric oven thermostats can be set as low as 150° F.

time and degree of doneness are determined by the distance between the food surface and the heat source, and by the thickness of the food. For instance, a 1-inch steak is placed closer to the heat than a 2-inch steak. Also, a steak that is to be rare will be placed closer than if it were desired well done.

For purposes of comparison, let's look at gas and electric range broilers together.

BROILERS	GAS	ELECTRIC
Usual location	Separate compartment below main oven	Top of main oven
Heat source	Some burners that serve oven	Top oven element only
Alternate location of broiler in more deluxe models	Separate compartment beside and at same height as main oven; often called waist-high broiler	Same as gas
Heat source	Burners in top of small oven; may use some type of reflector or heat distributor such as ceramic or mesh radiants	Coils in top of small oven; also may have some type of heat distributor
Position of door during broiling	Closed; auxiliary source of air supplies necessary oxygen for the flame	Open to broil-stop position; closed door would cause thermostat to cycle off as temperature reached 550° F.
Pre-heating	None, or 5–10 minutes; follow manufacturer's directions for pre-heating; if you pre-heat, remove broiler pan first	Usually 5–10 minutes; if your oven has a high-speed unit, no pre-heating may be recommended; even so, tender cuts may respond better if the oven is pre-heated

A broiler feature highlighted by gas range manufacturers is the advantage of "smokeless" broiling. The auxiliary source of air in gas ranges permits the flame to burn, even with the broiler door closed. The flame consumes the smoke, hence the term smokeless broiling.

Whether or not good use is made of a broiler depends on several factors. Ease of use is impor-

tant—convenient location, ease of adjustment, ease of cleaning. Not the least of the items to check carefully is the broiler pan. Manufacturers offer various types, ranging from a shallow pan with a grid on top to a two-layer deep pan which looks like an oversized double boiler. Provision should be made for the fat to run down from the grid into the pan without spattering up or smoking seriously.

CONSTRUCTION

Regardless of type, you want a range that is sturdy, dependable, easy to use, easy to clean, and safe. It will be worth your while to investigate the following before you buy:

Exterior finishes — These vary in appearance, cost, and serviceability. Most common is some type of porcelain enamel over steel. Porcelain enamel should be acid resistant for the cooking top. The steel framework, generally finished with synthetic baked enamel, should be pretreated to guard against rust. Some of the more deluxe ranges, particularly built-in ovens, may have stainless steel or chrome-plated steel as part of the exterior. Cooking tops are porcelain enamel, stainless steel, or they may be chrome-plated steel. Stainless steel is almost foolproof, but it is expensive. It is attractive but will darken when direct heat comes in contact with it.

Spillover trays — As you look at ranges, check to see whether one or more drip trays are available under the cooking top. If the units or burners are clustered, there may be a single full-width tray; if units are divided, there may be a tray below each pair. These trays serve a very useful purpose. They should be easy to pull out and put back in place (try it before you buy), easy to clean, and adequate for the job they are meant to do. Individual bowls under top-surface burners or units are common but may not be fully adequate to catch spillovers.

Ovens — Lining materials change with styles. Currently, a light-grey porcelain enamel is more popular than the dark blue of a few years ago. The advantage of the lighter color is that you can see better when cleaning, and it may aid in reflecting radiant heat, especially in electric ovens. Some models have a shiny metal interior, usually nickel-chrome plating, which reflects the

heat back from the walls. These models are usually in the higher price range. Most ovens have provisions for venting. Electric ovens often are vented through an opening leading to one of the surface units. Gas ovens generally are vented through an opening in the control panel. While ovens are in use, there often is a slightly hotter temperature right next to the vent opening. So it's a good idea to avoid placing utensils here, if possible.

Regardless of color or material, select a range with an oven which is as easy to care for as possible. One manufacturer has a pull-out oven lining on some models, which adds to ease of care. Linings should be smooth and have rounded corners. Rack supports which are an integral part of the oven liner will keep the racks more level than the removable type. Glides for racks



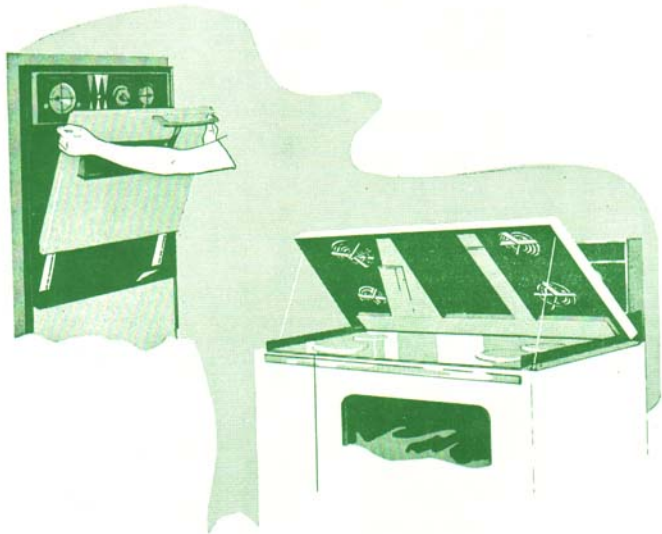
Pull'n clean oven

need be only about 1½ inches apart. Some racks provide a higher or lower level, depending upon whether they are placed in upside down or in the usual position. Oven racks need to be sturdy and rust resistant. The metal ribbons or rods should be close enough together to prevent utensils from tipping. There should be a "positive stop" on each rack to allow the rack to remain rigid and level when pulled part way out.

Ovens vary in size. The 40-inch range may have two ovens of equal size, or one larger and one smaller, or there may be only one oven and a storage space. The largest oven is apt to be found on the 30-inch range. Here the oven width will be about 25 inches, compared with 21 inches or less on many other ranges. If you like to bake and broil food at the same time, or bake often at two different temperatures, you may prefer a double-oven model.

Oven doors may be provided with stop positions. Or they may be counterbalanced to allow stopping at any desired position. Try the oven handle to make sure it is comfortable to grasp and use without knocking your knuckles against the hot surface. Some ovens have a glass in the door and an interior light which lets you see inside without opening the door. Some people like glass in the oven door, others don't. There is liable to be more heat loss through glass, and this could add more heat in the kitchen. Some ranges feature a removable door; on some models this can be taken off and replaced easily during cleaning, on others it is difficult. Care must be taken to prevent chipping the porcelain.

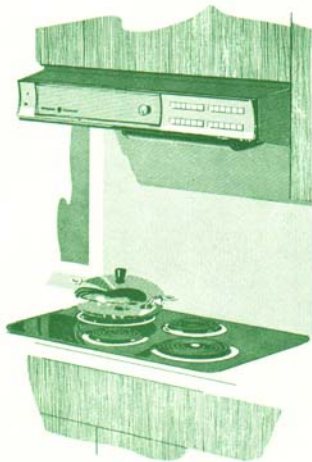
Tilt-top is a typical term applied to ranges which have a hinged cook top. When cleaning, the entire top can be lifted at the front.



ACCESSORIES

As we move toward the top-of-the-price-line ranges, we'll see special features and accessories not found on less deluxe models. Automatic clocks have been mentioned earlier. Along with these deluxe features there will likely be more expensive and glamorous styling, panel lights, fancy switches, more use of chrome or stainless steel, often more color. Double ovens, instead of single, and more types of automatic controls are common. Occasionally, a ventilating hood is included, although these usually are purchased separately.

Some features are built in, others come as accessories. A few are available either way. Provisions for some of these must be built into the range, of course. If you are going to pay more for a range in order to get these extras, you'll want to make good use of them. So let's look at a few of these from the viewpoint of use and care.

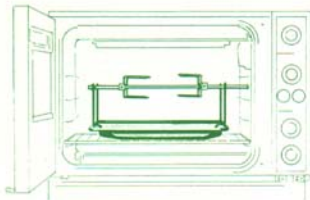


Exhaust hood

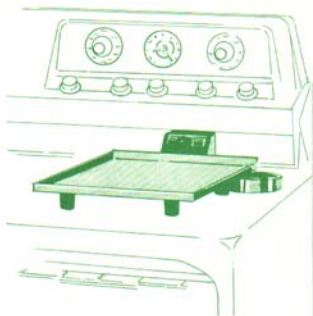
Rotisserie - This is perhaps the most popular, certainly the most talked-about special feature. As the name indicates, a rotisserie rotates. Ranges vary in the provision for attaching the spit to the motor. One gas range has the spit attached to the door; when the door is opened, the rotating stops. Some motors start when the end of the spit is inserted, others are operated by a switch.

The rotisserie may operate in a large oven or in the smaller compartment of a double-oven range. If the small oven is a special rotisserie compartment of an electric range, it will likely have a low-wattage broiler element. Note that the broiler compartment of a double-oven eye-level range will be especially small.

Rotisserie cooking is more like baking than like broiling. The oven door is closed and the temperature is usually from 325° F. to 375° F. In electric ovens, and some gas ovens, temperature is regulated by a thermostat set according to the food and the desired doneness. On other gas ovens temperature is regulated by adjusting the flame. Since use and care are big items, you will need to consider carefully the cleanup after using the rotisserie. Before you buy, note such items as size and shape of the broiler pan and its grids, lining of the oven or rotisserie compartment, and whether you could reach and see into the oven easily. If you're not willing to clean it often, maybe you won't care whether your range has a rotisserie or not.



Rotisserie



Automatic plug-in grill

Griddle - Here's a feature which may be built into your range or may come as a separate accessory. If separate, it may be either the plug-in or the set-on type. If built in, it is a permanent part of the range cook top and will have its own provision for heat—sometimes the burner is thermostatically controlled.

Successful griddle use depends on two factors—one of these is even distribution of heat. Some griddles brown food nicely in the center or directly over the heat source, while food at the edges may be undercooked. These hot spots are due in part to the heating arrangement. To supply an even distribution of heat, most manufacturers have made griddles of cast aluminum; these may or may not have a chrome finish. In fact, those without chrome finish may be more satisfactory, since open pores will hold more grease and thus result in less sticking of food.

Good draining is the other essential for griddle cooking. Unless the grease can drain off the surface, food may be cooked in fat. Some griddles have grooves around the sides for draining. Some have a slightly lower groove at one corner to collect grease and keep it available for basting. Built-in griddles usually have a grease cup below one corner to catch grease. Some of these work better than others, depending upon adequate size, placement, and slant toward the grease cup.



Plug-in meat thermometer

Automatic meat thermometer - Such terms as roast-guard and meat-minder are used by manufacturers to describe their plug-in meat thermometer. There is no need to open the oven door to check the temperature inside the meat or poultry, as with a separate meat thermometer. You plug the thermometer coil into a special outlet inside the oven. During baking, the internal temperature of the meat is recorded on a dial which is located on the range control panel. In some cases you can operate this in connection with the automatic timer, so that a buzzer or signal informs you when the meat is done. A few manufacturers have a thermostatic-type thermometer. As internal temperature rises, oven temperature decreases and shuts off when the meat reaches the pre-set point. This feature is expensive. Roasting also can be done successfully with an inexpensive portable-type meat thermometer.

USE AND CARE

By this time, you may have narrowed the field down to a choice between one or two ranges. It's especially important now that you consider the use you'll make of the range and the care it will require. Let's do a little comparing.

Gas burners produce fairly even heat at most settings. Some hot spotting may occur when only the small center flame is being used on the two-in-one-type burner. This is especially true when thin-gauge metal pans are used. It is also true when using utensils which conduct heat slowly, such as glass, pyroceram, or stainless steel. Gas burners can be taken apart and washed in the dishpan. However, this is quite a job, especially if a spillover has burned food around some of the ports.

Electric units, with the exception of a few manufacturer's ranges*, generally are not removable. Some can be lifted up for easier cleaning, but one end remains hinged. There are no parts to catch spillovers. Food can be burned off the electric unit quickly, and the unit can be wiped clean when cool.

High-oven ranges are easier to see into than low-oven models. But the surface units or burners on some high-oven models may be more difficult to use because of limited clearance up to the bottom of the oven. There is a possibility that steam from surface cooking may condense against the oven bottom and cause inconvenience.

Controls are located in various positions. Since you'll be using them often, be sure they are easy for you to see and reach. They also should be comfortable to grasp and easy to clean. Many handles are removable for cleaning.

Oven interiors. Manufacturers usually recommend a method for cleaning ovens. Always follow these directions. Cleaning after each spillover and after broiling is important. Baked-on soil will interfere with proper reflection of heat and may cause off-flavors later. Avoid scouring when possible, particularly on shiny metal oven linings. Some of the commercial oven cleaners on the market are very potent. If there is any exposed metal, such as a chipped section, these cleaners may cause rusting.



Removable unit

COSTS

Purchase price — Generally speaking, table-top models are least expensive, then separate built-ins, then high-oven models. There are variations in each group, of course. Average prices paid for gas ranges usually are somewhat lower than comparable electric models.

Cost of operation depends on efficiency. You'll recall that gas is only 50 per cent efficient, compared with electricity at 80 per cent. However, in most areas local rates for gas are lower than electric rates. You can learn to use both gas and electricity to save on operating costs.

SAFETY

Each manufacturer builds safety into his products. When you are using electricity or gas it is particularly important that the product be safe for use. Most of us would be amazed if we could see the rigid tests to which each manufacturer subjects his line of goods.

To make sure that these products meet certain requirements, safety or otherwise, a number of organizations have set up standards. Many of these give a seal of approval, and this is something you will want to look for. Among these are:

The American Standards Association (ASA), the National Electrical Manufacturers' Association (NEMA), Underwriters' Laboratories (UL), and American Gas Association (AGA). The AGA gives a gold star which indicates that a range has passed certain qualifications even above those required for many ranges. These qualifications fall into the deluxe class and may be desirable but not essential.

* For example — Kelvinator, Kenmore, Monarch, Tappan, Westinghouse, Whirlpool have removable units.

IT'S UP TO YOU

You can see that there's more to buying a range than just selecting an appealing model. Your pocketbook will help to limit your choice. The space in your kitchen will be another factor. Regardless of style or brand name, you'll want to consider service and the manufacturer's guarantee, as well as your dealer's warranty. Make sure you understand the service provisions which come with the range—and have them in writing. Find out how long this service is available free. And find out who pays for the service calls. Consider safety, but also remember that a careless user can offset all the provisions for safety which are built into your range.

We think there are many excellent ranges on the market. Your satisfaction during the years of use will depend greatly on the range you select in the first place. So look carefully, choose wisely, and use well. We've tried to give you a few tips here; the rest is up to you.

REFERENCES

1. *Human Energy Expended in Using Built-in Ovens at Different Heights*, McCracken and Richardson, U.S. Department of Agriculture.
2. *A Research Study on Low Oven Temperatures*, Stevenson and Hull, *What's New in Home Economics*, September, 1960.
3. Electrical Merchandising Week
1963 Specifications for Gas Ranges
1963 Specifications for Electric Ranges
4. Consumer Bulletin
High-Oven Electric Ranges, October 1962
Built-in Electric Cooking Appliances, April 1961
5. Consumer Reports, January 1962
Built-in Kitchen Ranges
6. Peet and Thye, *Household Equipment*, 1961, John Wiley and Sons, 5th Edition.



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