

Oven Buying Guide



Conventional Ovens

Conventional range ovens heat the interior oven air and walls with burners or heating elements usually placed at the bottom of the cavity. The food cooks from the outside in as naturally occurring currents of hot air pass around the food.

Several factors however decrease the efficiency of conventional ovens:

- 2 Food naturally holds a cold pocket of air and moisture around its exterior, deflecting the heated currents of air passing randomly around the cavity.
- 2 Different configurations of food items cause differing patterns of air currents, which in turn can affect the cooking process. Since heat rises, food in the middle racks is often undercooked while the food closest to the burner and the top is well done.
- 3 Cooking times for conventional range ovens tend to be long and capacity limited, restricting food production efficiency.

Accelerated Cooking Ovens

The technologies of microwave and air impingement ovens combine to cook food from the inside and outside simultaneously. Microwaves penetrate the food and activate the fat and water molecules, effectively cooking the food from the inside. Both the microwave and impingement systems can be independently programmed to accommodate specific foods.



The pros and cons of accelerated cooking ovens:

Pros

- Food cooks up to 15 times faster due to being simultaneously cooked from the inside and outside
- Food production increases proportionately with the faster cooking time
- Increased moisture retention due to concurrent cooking of inside and outside
- Programmable for standard menu items, further reducing time spent on cooking process
- No special cookware is necessary

Cons

- Oven size is fairly limited.
- Small oven cavities limit the amount of food able to be cooked at once.

Oven uses:

Limited only by its size, accelerated cooking ovens produce high quality results for all food products. Capable of **toasting, poaching, baking, roasting** and **steaming**, these ovens are programmable up to 8 steps to uniquely combine microwave and impingement modes for specific food products.

Combi Ovens

Available in both gas and electric models, combi ovens join together convection and steam heat in one machine. Increasing flexibility and versatility, combi ovens provide the option of cooking with steam only, convection only, or a combination of the two. In essence, a combi oven is three ovens in one, saving space while increasing productivity and quality.

The pros and cons of combi ovens:

Pros

- Steamer, convection oven, and combination of the two in one machine



- Combination of functions frees up floor space
- Reversible fan for exceptionally even cooking
- Eliminates transfer of flavor among differing food products cooking simultaneously
- Programmable control panel capable of storing 250 multiple step recipes
- Rethermalizing function for previously cooked and chilled foods
- Automatic, hands free cleaning system

Cons

- High initial cost of purchase
- High cost of ownership

Cooking results of combi ovens

Steam mode

The steam mode of the combi oven never exceeds 212°F. As a result, vegetables retain their color, taste and nutrients and the delicate flesh of seafood is preserved with its entire flavor.

Convection mode

The convection mode is perfect for baking. The butter in baked goods loses its moisture faster, becoming flakier and crisper. By more evenly distributing the ovens heat with a reversible fan, the convection mode uniformly cooks all sides of baked goods.

Combi mode

The combi mode combines the steam and convection modes together. Meats and poultry are perfectly browned from the convection heat and the steam heat prevents moisture loss by as much as one third.

The Combi mode is ideal for the following:

- Roasting and grilling meats and poultry with 1/3 less moisture loss
- Baking hard crusted breads and rolls
- Frying breaded and battered food using residual oils in the batter
- Rethermalizing previously prepared frozen food without moisture loss

Convection Ovens

Convection ovens use a **fan mounted in the oven wall**, forcing the heated air in the cavity to move around. The forced air pushes aside the bubble of colder air that surrounds the food item, reducing the cooking time. More even cooking is achieved by the constant current of heated air around all sides of the food. And unlike conventional ovens, multiple food items cook evenly in convection ovens due to the fan's removal of hot and cold spots.

The advantages of convection cooking:

- Food cooks up to 25% faster
- Up to 30% reduction in temperatures
- Saves energy
- Increases food production
- Even heat distribution, eliminating hot and cold spots
- Cooks multiple food items evenly



Cooking results of convection ovens

Convection ovens produce superior cooking results in all foods with its fast, even cooking. The removal of hot and cold spots and the insulating layer of air around the food mean better taste for baked goods, poultry, vegetables, and red meats.

- The butter in **baked goods** loses its moisture faster, becoming flakier and crisper.
- **Poultry** renders its fat quickly to produce a well browned skin while sealing the juices in.
- **Vegetables** rapidly caramelize for crisp outsides and moist, flavorful insides.
- Browning happens quickly for **red meats**, sealing in the juices.

Models, sizes and capacities of convection ovens

Convection ovens are available in both countertop and floor models to accommodate all food establishment production needs and space availabilities.

Countertop models

- Ideal for smaller establishment
- Ventless for easy installation
- Electric power supply
- Four baking sheet capacity

Floor models

- Available in both gas and electric
- Full size models accept standard sheet pans (18" x 26" x 1")
- Half size models accept half size sheet pans (18" x 13" x 1")
- Bakery depth models hold standard pans lengthwise for even better airflow around sides of oven cavity

Conveyor Ovens

Conveyor ovens move food along a **conveyor belt** from one side opening, through the oven, and out the other side. Conveyor belt speeds and temperatures are adjustable for consistent cooking of a high volume of similar products. The food is cooked using either impingement or radiant heat.



Advantages of conveyor ovens:

- Efficiently and consistently cooks large quantities of the same food product
- Stackable up to three units for greater production without taking up more floor space
- Roasts or bakes wide range of food including pizzas, bread, sub sandwiches and meats
- Requires little expertise for use

Impingement conveyor ovens:

Impingement conveyor ovens use pressurized hot air forced through nozzles located above and below the conveyor. This method guarantees fast, even cooking by pushing past the insulating layer of cold air and wrapping all sides in heat. Cooking time is two to four times faster than radiant heat cooking.

Radiant conveyor ovens:

Radiant conveyor ovens use heating elements located above and below the conveyor belts. These elements heat the air inside the oven as well as the interior walls, creating radiant heat to cook the food in the manner of conventional ovens. Conveyor belts and food production

Conveyor belts are made of wire chains, allowing excellent heat circulation around food items. The belts range in width from 10" to 32" and length from 40" to 95". The combination of length and width determines the amount and size of food items able to be cooked at once. As the width and length of the belt increases, the food production capability increases.

Pizza Ovens

Gas pizza ovens bake using conventional radiant heat provided by burners located on the bottom of the oven cavity. The heated deck crisply cooks the bottom of the pizza while the radiant heat in the shallow cavity cooks the rest. The 7" height of the cavity helps equalize cooking time between toppings and crust.

Electric pizza ovens have an added heating element at the top of the oven cavity which acts as a broiler to bake the top of the pizza. Like gas pizza ovens, the deck is generally made of stone, brick or ceramic tiles to simulate brick ovens.



The pros and cons of deck pizza ovens:

Deck ovens are for establishments wanting to produce high quality, traditional pizzas. Equipped with wide cavities for baking of multiple pizzas, deck ovens have full length, front mounted doors hinged at the bottom for easy loading and unloading of

product. The low 7" height of deck oven cavities match the low profile of the pizza to perfectly cook the toppings while the deck cooks the crust. The average deck oven can bake six 12" pizzas at once.

Pros

- High quality, traditional taste
- Crispy crust

Cons

- Requires expertise
- Labor intensive
- Cooks slowly

Countertop pizza ovens

These ovens are made for smaller operations, cook one or two pizzas depending on the model. The cooking principals are the same as deck ovens with low cavity heights to promote even cooking of product. Doors are hinged at the bottom for easy loading and unloading.

Generally, countertop models bake 12" pizzas, though some models cook 14" or 16" pizzas.

Toaster Ovens

Toaster ovens have fast warm-up infrared heating elements at the top and bottom of the oven cavity and have one or two wire racks. Models are available with convection heat or radiant heat. With convection heat a fan continually forces the heated air to move around, promoting more even toasting. Radiant heat relies on natural air currents to heat the food.



The placement of heating elements at both the top and bottom promote even toasting on both side of the food item.

Toaster oven uses:

Toaster ovens' practicality extends beyond toasting slices of bread and bagels. They are quite effective for **melting cheese**, **toasting sandwiches**, **warming** and **reheating**. Usage of a toaster oven frees the kitchen's main oven for other uses and also requires 50% less energy.

Finishing Ovens

As the name suggests, finishing ovens give food its finishing touch by glazing, melting or browning the top layer. Heating elements installed at the top of the finishing oven direct the heat only to the top surface of the food item.

For different finishing needs, models are equipped with either an adjustable top or a movable wire shelf for the perfect concentration of heat. Power can also be adjusted to half or full power as needed.



Finishing oven uses:

For flawless presentation, finishing ovens are the last step for many food items. Onion soup receives a **melted cap of cheese**, **desserts** acquire glazing, and **meats** are browned just before delivery to the restaurant patron.