

Deck Ovens Vs Conveyor Ovens

Which is right for your operation – a deck or a conveyor oven?

Both have features that provide unique benefits for operators.

Choosing which is best for your operation depends on individual needs and often requires making choices and accepting compromises.

Deck ovens lend themselves to a much wider variety of menu items. When properly managed, chefs can determine the proper doneness of nearly any menu item, often cooking several different products simultaneously. This does, however require greater skill and almost constant oven tending on the part of the operator/chef.

Conversely, conveyor ovens require less skill to operate, thus providing labor savings and access to a greater, less expensive labor pool. Since conveyor ovens require a lower degree of skilled kitchen labor, operators found that they could save money by hiring less expensive labor while reducing training requirements. High turnover in restaurant personnel continues to be a major challenge in most restaurant businesses and makes training a particularly difficult problem.

Since the conveyor does not require constant tending, kitchen staffs can multi-task providing additional labor savings. Operators discovered that employees could load food products at one end of the conveyor and perform other chores while the product traveled through the conveyor.



Restaurateurs found that by pre-setting time and temperature functions, conveyors produce consistent bake results. This consistency also provides standardization of product taste and appearance so important to chain operations. However, this consistency is not automatic. Contrary to popular thinking, conveyor ovens did not eliminate user error nor make results 'fool-proof'. Since bake times and oven temperatures are pre-set for specific menu items, portion control and consistency of preparation of ingredients are critical for consistent bake results. Consistency is gained only when product consistency exists during preparation. Portion control is critical. Even pre-bake/cook holding temperatures can have a significant impact in the final results. It is also critical that products passing through the conveyor oven are allowed to finish their complete cook cycle and not be removed early from the conveyor oven. Low-cost, inexperienced labor contribute to inconsistencies in product quality.

Deck ovens can also provide great consistency; however, baking conditions are dynamic in a deck oven and will fluctuate under varying load demands, future requiring a mindful and skilled oven operator.



There are three primary types of conveyor oven cooking technology; radiant electric elements, infrared electric elements and forced air impingement, in either gas or electric. Forced air impingement technology is the most widely used because it reduces bake times by 20% to 25% compared to non-forced air ovens. One down side of forced air impingement ovens is that they are usually very loud making them less user friendly and not suitable for use in customer areas. Furthermore, conveyor oven air panels are fixed on most impingement ovens, thus they are difficult to change making them less flexible for a variety of menu items.

Radiant conveyor ovens, like deck ovens, are extremely quiet making them very user friendly and ideal for kitchens where customers are near.

And since time, temperatures, and particularly air-flow, are not easily adjusted on most types of conveyor ovens, they have proven most applicable for high volume operations with limited menu options. For this reason, conveyors have become most widely used in the take-home and delivery chain pizza businesses. Deck ovens can cook and bake nearly any menu item, thus are applicable for casual family dining and full-service, larger-menu operations as well as pizza operations.

Limitations in the menu flexibility of conveyor ovens can be partially mitigated by alterations in recipe formation, as well as through the use of split or dual belts operating at different speeds, through the use of multiple ovens or with new variable air-flow technologies. To compensate for these limitations and to increase the flexibility for a larger variety of menu items, conveyor oven manufacturers developed split-belts and multiple stacked ovens. Split belts allow the operator to have two different belt speeds, or cook times, with one belt set faster or slower than the other belt inside the same oven. Each belt is then used for different menu items.

Both deck ovens and conveyor ovens may be stacked allowing the operator to increase production volumes without taking more valuable space within the kitchen. Most ovens may be stacked two, three or sometimes even four decks high. While flexibility is a mainstay with deck ovens, stacked conveyor ovens allow the operator to configure different ovens at various cook times, temperatures and air-flow volume, providing increased flexibility for menu diversity.

Deck ovens typically provide superior gourmet quality production, especially for crust in baking, be it pizza, flat breads or loaves as the dough is imbued with an old-world crispy quality when baked directly on the hearth deck. The forced air of an impingement style oven can have a drying effect on the product, although steps to compensate for this during recipe formulation and planning, can help overcome this tendency.



There are, however, some benefits to this drying effect. Forced air impingement speeds the cook / bake process by stripping the moisture from the product's surface. Thus bake times may be reduced by as much as 20% to 25%, much like convection ovens speed the cook/bake process when compared to conventional ovens.

While forced- air impingement reduces cook time; deck ovens will deliver considerable greater production capacity at much less cost and within a smaller foot-print. Typically, a deck oven will provide double the production of a conveyor oven at 1/2 to 1/3 the cost when purchasing new equipment. Though designed for higher production, a deck oven must be tended properly to deliver these higher levels of production.

Conveyor ovens are 'high-tech' while deck ovens are 'low-tech' and simple by design. Deck ovens have no expensive moving parts, motors, and fans and are thus less prone to service issues and downtime, nor do they require the same level of skill by the service technician.

As a general rule, conveyor ovens are more expensive to purchase, require more room in the kitchen, are more prone to break, require more maintenance, are harder to clean, produce less volume, and usually use more energy than traditional ovens. However, the benefits of minimizing labor cost, using less skilled labor, reducing training requirements and producing consistent bake results have given operators sufficient reasons to embrace their benefits.

Lastly, deck ovens have greater ambiance and theater for applications requiring display cooking and in exhibition kitchens. With the advent of stone, brick and tile facades, arched openings and visible open-flames, deck ovens are often the center piece of restaurants themes and provide a great attraction for customers.

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