

The large selection

IN-STORE BAKING HAS BECOME COMMONPLACE ALMOST EVERYWHERE IN THE WORLD, THE PROPER OVEN MUST BE CAREFULLY SELECTED



+ In-store baking is the most effective method to convince the customer about the freshness of the products offered. The flavor of freshly baked goods is tempting even to the most discerning customer.

No matter whether the store prefers to stock

- + products made with low amounts of yeast and a long production time, chilled or not
- + unproofed frozen dough pieces
- + proofed frozen dough pieces
- + par-baked frozen goods
- + vacuum-chilled goods refrigerated for a couple of days.

The technology behind the industrial production of these bake-off products is technically proven. The crucial points in general, are the qualifications of the employees in the shop and their ability to handle the more or less precise time tables for the final production of rolls, Danish pastries, baguettes, etc.

The less time and attention that the employees have for handling the dough pieces; the more par-baked products are used. In the past few years, the degree to which goods are baked has

been increased so that the products have almost reached the point of being completely done. Critical people sometimes call the remaining step purely a heating-up process instead of a baking-off.

It is inevitable that the degree of par-baking determines the time of freshness after bake-off. The longer the par-baking process, the shorter the freshness after bake-off. In general, however these products are consumed almost immediately so that their freshness is not the decisive factor. Intensely par-baked goods have another advantage besides the one that nobody has to check the proofing and determine the proper time for putting the pieces into the oven: in-store baking ovens do not need elaborate steaming equipment. This is why the most simple in-store circulating ovens do not need to be connected to a water supply. The steaming unit, if available, is supplied from a built-in water reservoir.

The second question in the decision process for an in-store baking oven concerns the capacity or the heating performance of the oven. If one load after the other needs to be baked-off,

the heating aggregates must be powerful enough to heat up the baking chamber immediately after the products are removed and be ready for the next baking trays. There are also the aspects of quality and also price to be considered when viewing the in-store baking oven options.

Together with the heating performance, the air distribution or air convection inside the oven determines the quality of the baking process. The temperature curve near the door for example is important because this is the area where heat losses occur when the door is opened and where more power is required to reach the proper baking temperature. The number and location of the fans for air circulation and the flow patterns they generate are different from one oven supplier to the next. Baking trials in ovens are the most practical way to find out.

An oven meeting all the requirements mentioned so far is capable of baking. Everything else can be important but is not a priority.

Point 1 concerns the safety of the operators. Is it easy to burn yourself or did the oven designer take care by using ►

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++ figure 1

Multisserie by Fri-Jado: loading of this small rack oven couldn't be easier. The baking trays are accessible from three sides, and the rotor positions itself automatically to the right when the door opens

++ figure 1**++ figure 2**

Pikkolo by Wachtel: a specialty oven in terms of heating capacity. The in-store deck ovens can be equipped with the so-called STIR technology (STIR = selective transformed infra-red). The ceramic coating inside the baking chambers increases the proportion of infra-red radiation and thus reduces the baking time

++ figure 2**++ figure 3**

Dibas by Wiesheu: the door disappears when it is not required. When opening this oven, the door does not block any space but slides away sideways

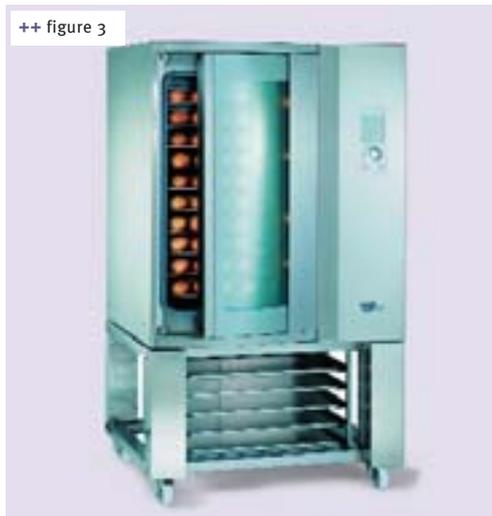
for example safety glass in the door or design an operator-safe door. Take for example Dibas, the oven made by Wiesheu, Affalterbach, Germany. It is fact that for all other ovens the doors swing open into the room, disturbing processes and blocking space whereas their triple-glazed oven door disappears inside the housing, simply and elegantly.

++ figure 4

Carat by Werner & Pfleiderer: in terms of capacity, most in-store deck ovens are similar to the so-called "pastry ovens" and are thus suitable for baking a broad range of products. They come close to the traditional image of a bakery oven

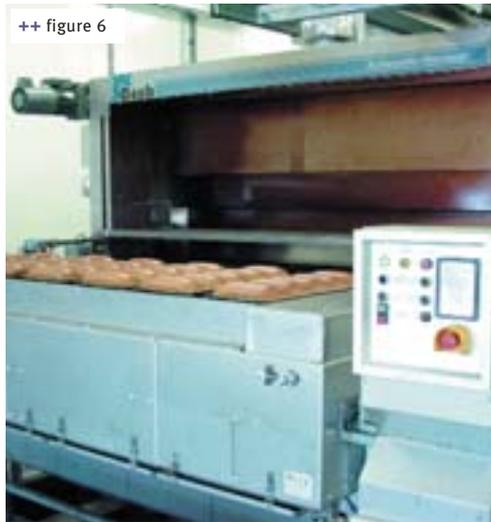
Point 2 is the oven control. Should it be manual with a rotating wheel, digital or computer-controlled? Should the parameters be set individually or only entire programs and who is authorized to change the program? Almost all oven suppliers offer a broad range of convenience and safety features which protect the oven control from over-creative use by untrained service people. For example, Werner & Pfleiderer offer the so-called Navigo controls for their in-store baking ovens. These controls belong to a uniform control concept which is also used in the other ovens that they manufacture and which is completely suitable for networking.

Next to the classical heat circulation ovens, which are in general, electrically heated, there are a number of other oven types to choose from. The most common ones are small deck ovens available in different sizes. Similar to their big brothers in industrial production, they are selected for their radiation heat transfer and the quieter baking atmosphere which is better for some products than the admittedly quicker heat transfer by convection. For larger in-store baking installations, rack ovens are becoming the norm. A number of manufacturers such as Sveba Dahlen, Fri-Jado, WP, Mondial etc. offer small variations in mid-size. The unchallenged advantage of these ovens is the simple and quick loading. Instead of manually pushing sheet after sheet into the opened oven – as required for circulating ovens – here small racks with up to 10 baking trays are placed into the oven all at once. All attempts to bring loading systems for the classical circulation ovens into the market up to now have failed. Therefore, the rack oven remains the only concept for efficient

++ figure 3**++ figure 4**



++ figure 5
Small rack oven by Sveda-Dahlen: made for in-store bakeries and bake-off stations



++ figure 6
Thermo-oil heated tunnel by Daub: ovens as this one are rather uncommon, but can be partly built as reverse oven to save space

loading of in-store baking ovens. Another feature which is not disadvantageous after all, is that the rack rotates inside the oven which is attractive to consumers.

Tunnel ovens are seldom seen in in-store bakeries. Such ovens are only profitable for relatively large supermarkets such as the thermo-oil tunnel oven by Daub which can be seen in a Dutch supermarkets.

Another oven type increasingly appearing in the in-store bakeries is the one that can be heated directly or indirectly with wood. But this is a different story because the products are baked in this oven from start to finish, thus requiring a technically experienced operator.

Check list for in-store baking ovens

- + what quantities need to be baked per hour, how large are the batches and what sizes should the baking trays be
- + do the products have to be baked-off immediately one after the other or is there time for the slow reheating of the oven

- + which steam capacities will be needed and within which time
- + how uniform do the baking results need to be and how does the air need to be distributed within the oven
- + how is the heat loss that occurs when the door is opened being compensated
- + how much risk is there for the service personnel to receive burns in the case of inattentiveness
- + which type of control is needed, manual or computer-controlled
- + does the oven need to be networked
- + loading of the oven with individual baking trays or multiple-sheet loading using a mini rack
- + manual cleaning or integrated fully automatic cleaning system
- + how much design is required, will proofing cabinets and other ovens have to be in the same design or are "old fashioned" units required
- + connected load, energy consumption per kilogram of baked good +++

++ figure 7
Miwe Backcombi: the purchasers can benefit from the advantages of both oven systems. Chain stores that rely on a broad product range to be baked at site without compromising quality will use the combination oven which circulates heat and is also a deck oven

++ figure 8
Medium sized rack oven by Mondial Forni sp.A: rack ovens in in-store bakeries are always small. However, models like this one are not just a miniature version of an industrial oven but a completely new construction where the air flow has been particularly adjusted to the baking chamber

