New combination

AT IBA IN DÜSSELDORF, DFE MEINCKE WILL INTRODUCE TWO OVENS FOR BREAD: ONE IS A HYBRID OVEN THAT STARTS THE BAKING PROCESS WITH RADIATION AND THEN TURNS TO CONVECTION AND THE SECOND IS A HIGH TEMPERATURE OVEN

++ figure 1

The outstanding feature of the hybrid oven is the first zone where the products are baked in the first halve with radiation heat followed by convection heat in the second halve and all other following sections. In this way, DFE Meincke triggers a strong initial baking process ensuring proper oven spring – a process formerly performed by pre-baking ovens.

As the radiation section of the new oven does not produce any turbulence, the steam introduced at the start of the baking process has the chance of coating the surface of the bread. This facilitates the oven spring by keeping the surface flexible and supports the formation and color of the crust. It is only when the bread loaves reach the convection sections of the oven where the surrounding air is moving, that the moisture is taken away by the air allowing the crust to become crispy. Of course, this oven can also be used without the steaming process for the production of all types of soft buns.

The use of steam in this type of hybrid oven is also perfect for French baguettes, croissants and similar products, perfectly baked with a crusty and evenly colored surface.

++ figure 2

Currently, the oven is also being successfully used for the production of convenience products such as meat pies with various fillings or bread pockets.

The new hybrid oven is suitable for the entire range of rolls and bread loaves. This is reflected in the flexibility of fittings that DFE Meincke offers for its oven, from stone plate belts to wire loop belts (OGB belts). The oven is available in various working widths. It is heated with either gas or oil to a maximum temperature of 350 °C.

With a maximum temperature of 450 °C, the direct gas heated oven by DFE Meincke clearly provides higher baking temperatures.

This specific oven for sandwich buns is installed with a tight and heavy wire mesh belt. The products are baked directly on the belt. Meanwhile, most bread types are produced on stone belts or on trays on an OGB belt. The high temperature oven can be installed with all types of belts. The oven is equipped with steam spears that are automatically regulated with the use of a flow transmitter. The recipe is entered into the electric control system with touch screen operation and modem. From the control system, the valves for the stream system regulate a constant amount of stream.

A combined chimney system works with one exhaust ventilator per heating zone. The chimneys are joined in one exit which leads through the roof of the process plant, where one exhaust ventilator is mounted on the roof. The amount of steam, exhausted from the oven chamber is regulated with a fresh air damper from each zone of the oven.

Apart from in the hybrid oven which provides for a very uniform coloring of the baked goods' surfaces due to the combination of radiation and convection, the products baked in the high temperature oven will have a more vivid play of colors on their surfaces.

The DFE Meincke ovens are internally manufactured with special corrosion resistant steel and the cladding is either enamelled or fashioned in stainless steel. As an option, the oven can be specified entirely in stainless steel. The baking chamber and air ducts are as standard and made of Cor-Ten steel, which is a corrosion resistant type of steel with excellent radiation properties. Clients can also choose to have the interior of the oven in stainless steel.

In order to ease the cleaning process of the oven, each oven section is equipped with large cleaning doors to allow easy access to the inner parts of the oven.

The ovens are delivered in two meter modules, ready for installation, which gives a short and effective installation time. All ovens are manufactured and assembled on the DFE-Meincke site in Jutland.

In Düsseldorf, DFE Meincke will also launch its second generation of the Heat Recovery Unit. The first generation of the unit was presented at Interpack 2008. The new Heat Recovery Unit can reduce the energy consumption of convection and hybrid ovens. The unit is mounted in the end of the oven, in one or two zones, where the valves for exhaust air are fully open. The unit is mounted on the exhaust channel of the oven, and the warm air from the oven is let out through the pipes in the Heat Recovery Unit. Fresh air is taken in through the Heat Recovery Unit, and the two air types pass through separate pipes. The heat from the outlet air is used to warm up the pipes, and thus the air, with the fresh intake air. This functions as preheating of the intake air, before it runs through the heating exchanger. In this way, the energy consumption for the heat exchanger can be reduced. +++

++ **figure 1**
The new hybrid oven by DFE Meincke

++ **figure 2**
New high temperature oven by DFE Meincke