

SpiralOven

Steaming, cooking and grilling



- Wide product variety
- Perfect control of cooking parameters
- High product quality and safety

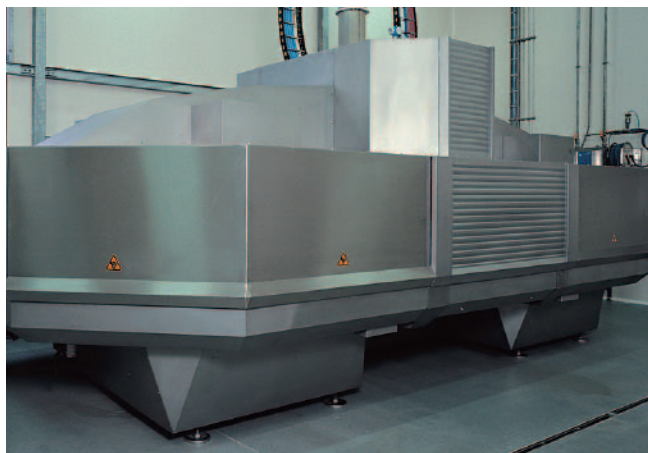


Steaming, cooking and grilling: the 3-in-1 concept of SpiralOven

SpiralOven is a hot air system with a unique 3-in-1 concept allowing product to be steamed, cooked or grilled. It is possible to process a wide range of products, from very small products like nuggets to whole chicken, giving them all the same correct colour, bite and flavour. Depending on the execution chosen, the product to be handled and the product characteristics required, such as color and core temperature, the capacity of the SpiralOven can vary between 500 and 3,000 kg per hour.

Perfect control of cooking parameters

Spiral Oven allows you to regulate very accurately all relevant parameters such as pass time, air temperature, air humidity and air velocity. Via a user friendly touch screen you enter the recipes to get the best combination of yield, color, crispiness, juiciness, bite and flavor, all depending on your end product requirements. All relevant production data are stored for review.



Controlling the macro and micro climates

To meet each customer's wishes and requirements an ideal macro and micro climate in the oven must be created. By micro climate we understand the required air temperature, air humidity and air velocity directly round the product.

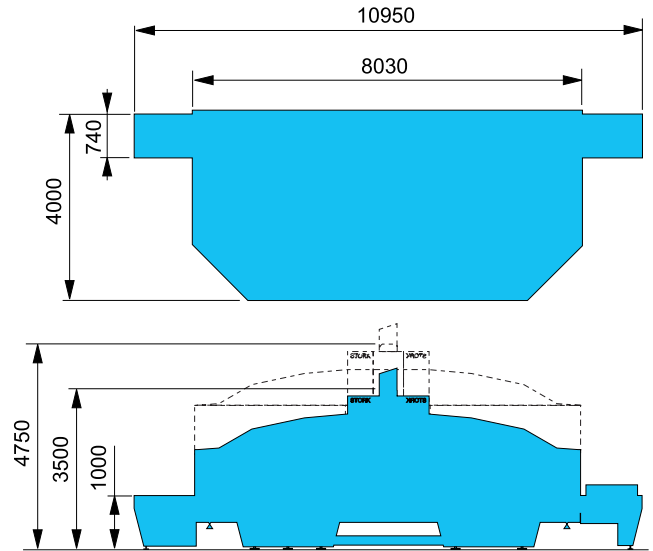
This micro climate will therefore interact directly with the product unlike the macro climate, which is the climate in the oven more than two centimetres away from the product but which interacts with the micro climate. Around the macro and micro climates are climate generators, which determine it – heat, moisture and air velocity. The SpiralOven is built around this total process of climate control. The technology around the product was the starting point for the design of the oven.

Perfect dew point control

Because of the high temperatures involved the parameter relative air humidity is not suitable for dosing or releasing steam. Relative air humidity always depends on air temperature. The parameter dew point is directly related to the quantity of moisture in the air regardless of temperature. Measuring dew point and using it as a controlling factor is therefore much more accurate. Thanks to a dew point measuring system,



The SpiralOven in the open position providing excellent access

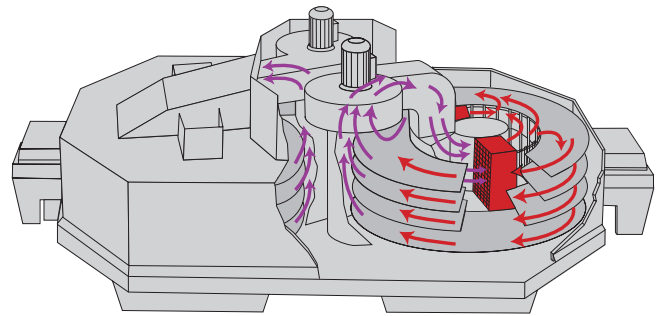


a central servo controlled valve and powerful steam injectors, it is possible to accurately control air humidity at all temperatures.

Intensive cleaning for optimum hygiene

Internal cleaning of the system is done by a CIP system, which can be controlled entirely automatically via the touch screen.

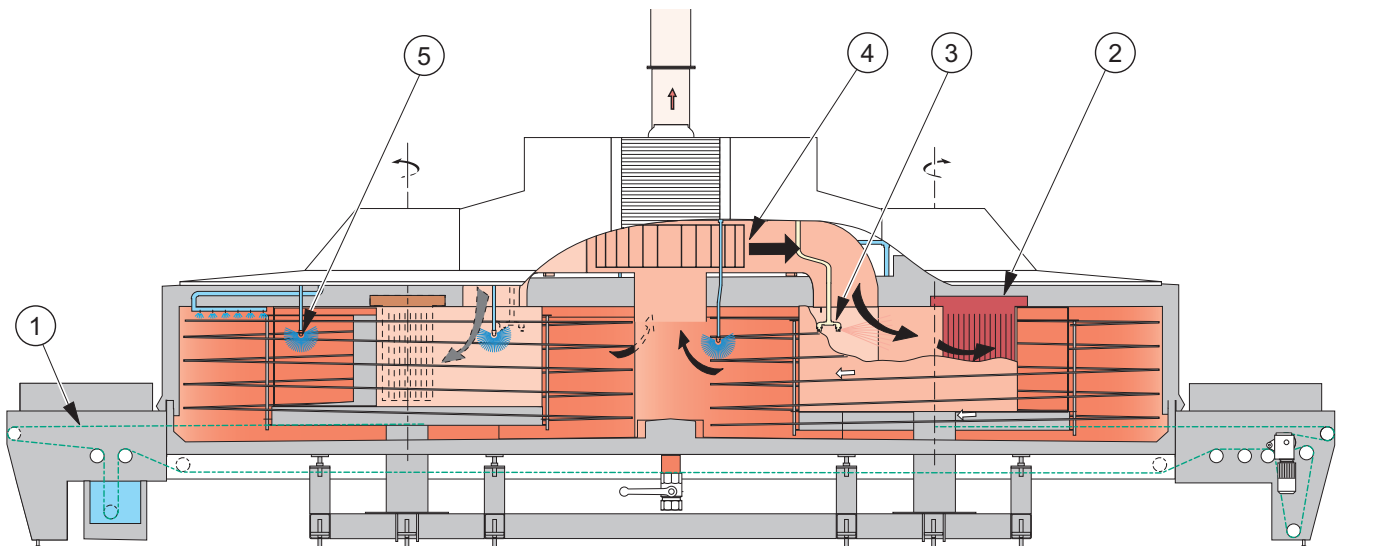
A separate belt washing system has also been built into the unit. Depending on the process cleaning is done in two stages. First of all the belt is soaked in a soaking section to allow contaminants to soak. The belt then goes through a high pressure spray installation, where all contaminants are removed.



SpiralOven in operation

Products are transported through the SpiralOven on a belt conveyor (1). The oven consists of two compartments allowing the creation of two different temperature zones. Preparation of the products is regulated amongst other things by the heat

given off to the air by the heating elements (2). Air humidity can be regulated with the help of steam injection (3). Fans (4) ensure optimum and uniform heat transfer. The CIP cleaning system (5) carries out internal cleaning of the machine.





Advantages at a glance...

- Products of consistent and uniform quality
- Temperature and air velocity divided evenly over the entire width of the belt
- Highly efficient heat transfer
- High weight yield
- Optimum control of all cooking parameters
- Optimum cleanability
- Minimum warm-up time
- Excellent air flow without blind spots
- Efficient energy use
- Minimum egress of steam and vapours thanks to “stopper” effect
- Very high loading density



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Marel is the leading global provider of advanced equipment and systems for the fish, meat and poultry industries.