

Tradition and modernity

A NEW INDUSTRIAL BAKERY, GANDOMDASHT MASHAD, HAS BEEN BUILT IN MASHHAD IN NORTHEAST IRAN. IT IS EQUALLY SKILLED IN THE MANUFACTURE OF TRADITIONAL AND MODERN BAKED GOODS



++ figure 1
The laminating line Menes from König Maschinen at the Gandomdasht Mashad industrial bakery

+ Bread is one of Iran's most important staple foods. Until now the breadbasket has been dominated by traditional flatbread varieties such as sangak, taftoon, barbari and lavash, which are produced mainly in households or by small bakeries. The proportion of industrial manufacturers in the Iranian bread market, up to now, has only been around 10 %, although this trend is rising. The Islamic Republic of Iran, as the country is officially known, is a young country, with the average age of the population of 75m being just about 27 years. The younger generations, especially in the towns, are now increasingly also asking for high-volume bread varieties such as baguettes, toast-bread or hearth-baked wheat loaves. However, the manufacture of these bread types is unknown

to the traditional bakers, and so the state is supporting companies who promise to meet the increasing bread demand of the growing population. Mashhad lies in the northeast of the country, and with a population of 2.5m it is the second-largest city and one of the country's religious centres. Every year, millions of pilgrims visit the tomb of the Imam Reza, and it is the most important of the Shia pilgrimage cities. People who know the city estimate that the daily consumption of bread alone here is between 1,200 and 2,000 t, and added to this is the wide range of oriental and western cakes and fine baked goods.

The companies that contribute to meeting the region's enormous demand have recently also included the Gandomdasht



++ figure 2
The Menes inflating device for Danish pastries



++ figure 3
Production of Sangak – a traditional Iranian flatbread



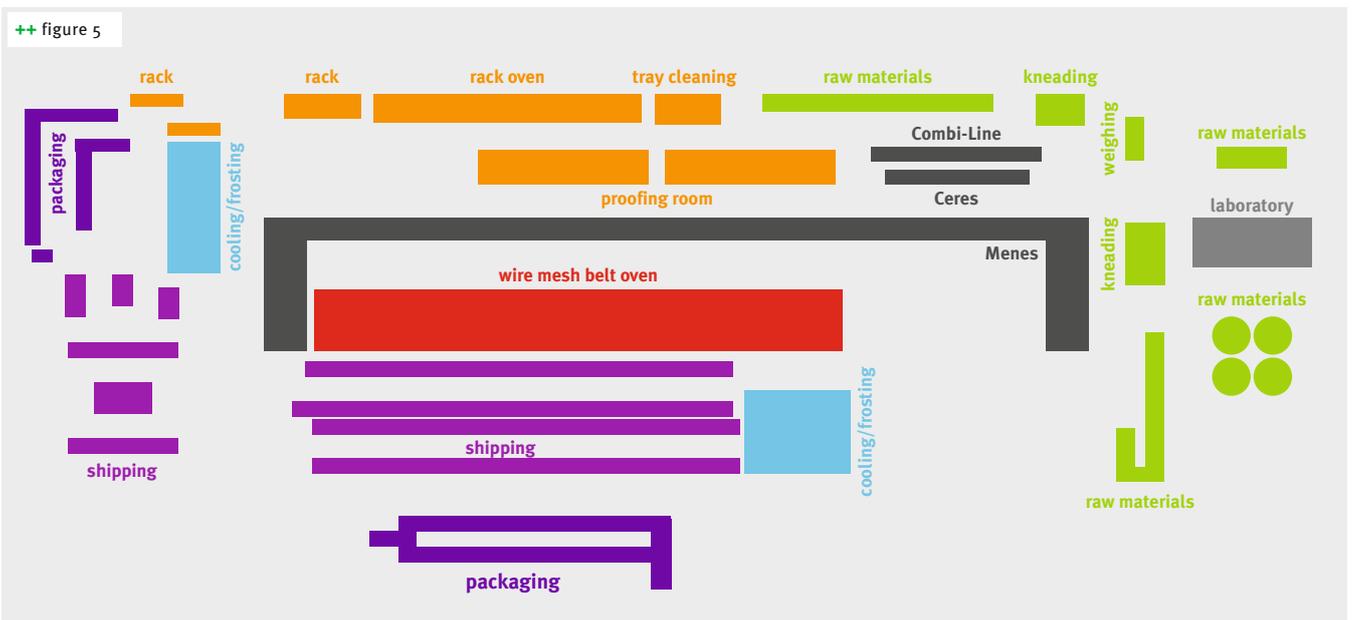
++ figure 4

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++ figure 4
The König roll plant CombiLine and bread line Ceres as a part of the dough make up unit

Mashad industrial bakery. It is owned by the Hamidi family, who employ around 2,600 staff in the region's textile and furniture industry and who, in parallel with the Gandomdasht production operation, also founded two sales companies that also, among other things, operate their own shops in the city. With a planned capacity in a 3-shift operation of 45 t/day, Gandomdasht will be one of Iran's biggest industrial bakeries.

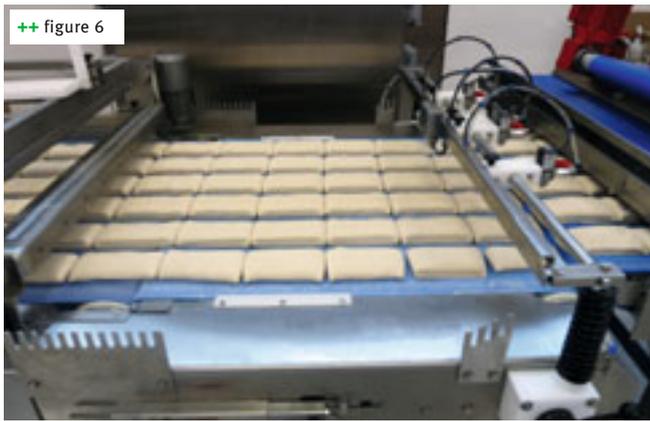
The induction phase for the 170 employees, of which 74 work in the production unit, is currently taking place. Thin flatbreads such as lavash, Arabian flatbread, hearth and pan-baked loaves, bread rolls, cakes and fine baked goods are being manufactured. Entry into the production of frozen dough pieces is also planned, which will probably make Gandomdasht a pioneer on the Iranian baked goods market. Most of the ▶



++ figure 5

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++ figure 5
König's turn key project at the Gandomdasht Mashad industrial bakery – from dough production, production lines, proofing and baking to cooling, packaging and shipping



++ figure 6
Production of Ciabatta – porosity is due to minimum stressing of dough



++ figure 7
Traditional flat bread as well as baguettes are produced with the Menes

products are sold fresh in the company's own shops, in supermarkets and to hotels and the catering trade via wholesalers. The production technology in Mashhad originates mainly from the Austrian bakery machine builder König Maschinen Gesellschaft m.b.H. in Graz, which also planned the entire installation and constructed it as the prime contractor (see layout on page 53). Five spiral mixers with a rated capacity of 240 kg of dough are responsible for the dough manufacture. The dough make-up unit, which is supplied by lifter-tippers, consists of three König lines, a Ceres bread plant and a Combi-Line bread roll plant with a Classic Rex Futura divider-rounder, which produce small baked goods varieties such as chocolate Kaiser rolls, sandwiches, hamburgers, hot dogs and the so-called housky bread rolls, a kind of yeast dough plaited loaf, as well as a Menes laminating plant. The Menes has the star role in this trio. Its modular design, together with a large number of tools for cutting, pumping, filling, pressing, rounding, rolling, wrapping, folding, decorating, seeding, depositing etc. give it a high degree of modularity. For example, at Gandomdasht Mashhad it supplies not only the traditional flatbread varieties such as taftoon or sangak, but also baguettes, ciabatta, toast, doughnuts and filled Danish pastries. According to König's project manager Eduard Rauch, "The main challenge in this project was to optimize the lamination plant to the local Iranian products in order to fully retain their artisan visual appearance. For example, to do this we integrated handmade embossing rolls into the line. Another challenge was to design the flexibility in such a way that the retooling to produce the fresh goods, which are manufactured up to three times a day, can be carried out with the minimum possible effort.

Thus a total of 22 different varieties of baked goods are produced on the Menes plant."

An important feature that distinguishes it from other laminating and dough sheet plants on the market is the Menes plant's TwinSat double satellite head. Instead of running against one or two lower rollers as on almost all dough sheet plants, the upper satellite head of the König development runs against a lower satellite head. According to the Graz expert, this reduces the severe mechanical stressing of the dough to a minimum and largely prevents tension in the dough. Doughs for flatbreads, for example, can be cut and shaped immediately after rolling out, and can be baked or frozen without any dough resting time. High-volume breads such as sandwich, baguette, toast-bread, fine baked goods etc. are diverted out of the plant upstream of the oven and taken to the required fermentation process. However, thanks to this technique the plant is capable of processing doughs with a dough yield of up to 185 and a bowl proofing time of up to 180 minutes.

Whereas the other two lines deposit onto baking trays or into pan clusters which are moved onward by rack trolleys to two push-through proofing rooms each holding 48 rack trolleys and from there into the battery of twelve Roto Passat rack ovens, the Menes is part of an overall line that fully automatically supplies flatbread produced daily in large amounts to a wire mesh belt oven with an area of 111 m² from the Italian oven builder Mondial-Forni in Verona. The temperatures in the oven's caking zone are up to 440 °C and the total baking time is controlled according to the product. Baking times are from less than 5 minutes up to a maximum of 40 minutes. +++



++ figures 8–10

At Gandomdasht, high product varieties are produced for the Iranian market e.g. toast, chocolate Kaiser rolls and flat bread

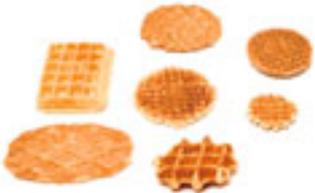


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