

# More than just pretzels

GERMAN PRETZEL MAKER DITSCH, THE INNOVATIVE FAMILY COMPANY, HAS TURNED INTO A EUROPEAN PRODUCER OF DOUGH PIECES



++ figure 1

++ figure 1  
Plant manager Andreas Paulsen checks the quality of the pre-proofed croissant dough pieces



++ figure 2

++ figure 2  
The dough bands are layered with a paddle system in a way to mimic the dough layers that originate during manual folding

++ figure 3  
About 40 tons of flour are used each day in the Oranienbaum plant. The flour is stored centrally in five internal silos and distributed via a central conveying system to the lines after it has passed the sieving equipment

++ figure 4  
Prior to feeding the pretzels into the multi-level proofing room, they are manually twisted. This line for par-baked, frozen pretzels has an hourly capacity of 7,000 pieces

++ Within the past six years, the pretzel bakery Ditsch GmbH, Mainz, has developed from a local pretzel maker into one of the most important distributors of dough pieces. Among its customers are bakeries, catering and food service companies as well as 180 of its own shops. 250 million pretzels are made each year at both production sites in Mainz/Rhineland and Oranienbaum/Saxony. However pretzels are only one product in Ditsch's portfolio, but the most significant one. The history of expansion started in the former craft bakery Ditsch with so-called pretzel men: people walking through the city of Mainz, equipped with a tray carried around the neck and selling fresh soft pretzels in shops, restaurants, pubs and Beer gardens. In the mid-70s, Ditsch exclusively focused on the semi-automatic production of pretzels.

The advent of freezing technology used to preserve dough pieces made it possible for Ditsch to separate production and sales in terms of time and space. Ditsch shops sprout-

ed mainly at large train stations and other top sales locations in Germany and Austria. The shops are supplied using a sophisticated logistics system. Each shop acts as an independent sales agency.

## The somewhat different product range

Next to the classic soft pretzel which still takes up to 50% of the entire production quantity, Ditsch's shops offer a broad range of savory and sweet croissants, innovative snacks such as Triangle, but also pizza and other classic products. Pizzas made from fresh dough as well as pizza pieces are now main products of the Ditsch range because they are freshly made and lavishly covered to the rim.

"The feedback provided by our 180 independent sales agencies is the key to customer-optimized quality," explains sales director Frank Kreienburg, and continues to describe the Ditsch philosophy "We are not just a processor of dough like many others. In our market niche



++ figure 3



++ figure 4

# Focusing on: Batch Tracking

we are something special with our overall quality and our innovative products. This is our goal.”

With its Triangle snack, Ditsch created a savory snack with a 1:1 ratio for filling (tomato-mozzarella or spinach-feta cheese) and dough. It is a highly technological achievement that the filling remains in the product during baking. Another example for the unusual quality of Ditsch's products is the range of filled croissants. While almost all competitors position the filling via injection onto the dough triangle, Ditsch applies the filling in the form of a strand. “We tolerate only 1.5 cm at the ends of the baked product to be without filling,” says Keienburg. The improved distribution of filling in the croissant increases the eating pleasure, but with a filling weight of 22 g in each croissant, it is also an expensive enjoyment.

## More pillars for more power

Bretzelkönig is the Swiss subsidiary of Ditsch and specializes in pretzel-roll sandwiches. Ditsch now has five of these shops in Germany as well.

Since the mid-90s, Ditsch also supplies frozen products to the wholesale trade. From there, the products are delivered to bakeries, restaurants, food service and catering companies. This pillar of the Ditsch business now amounts to about half of their total sales. The core range comprises of 30-40 products. Special customer requests are taken into consideration starting at a minimum amount of 100,000 pretzels or 50,000 pizzas a month.

90% of all Ditsch products are made with classically refined flour (German type 550), while for the remaining 10% specialized flour or flour made to customer's specifications is used. “With our frozen product range, we have established ourselves just in time into one niche of the strongly developing market for baked products,” says Keienburg. Ditsch's customers are not just located in Germany. The products are exported into all European countries, the United States and into the Asian region. About 10% of the total sales are generated in the export business. The company has the goal to grow in multiple segments (traded goods, export, and own shops). ▶

### ++ figure 5

The dough pieces intended to be formed into pretzels later are cut from dough, turned and separated (see picture). Then the rhombuses are rolled into strands and automatically cut to precise length



## Invest in long-term viability

Manufacturers today, who value insight into their production process and the ability to document and track ingredient usage, invest in ingredient automation and process IT that are optimally suited to each other for long-term viability. It's our best bet to be prepared for EU ordinance 178/2002 in force beginning 2005.

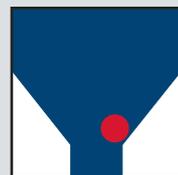
## Document traceable

All data on raw materials and minor ingredients used are recorded, filed and made available on push-button command as desired.

## Find out and get the competitive edge

Visit our website to discover how to make your entire production process transparent from receipt of raw material to finished product: [www.azo.de](http://www.azo.de)

Visit us in Nürnberg:  
October 11–13, 2005  
Hall 9, Stand 305



POWTECH 2005

AZO GmbH + Co. KG  
D-74706 Osterburken  
Tel. + 49 (0) 62 91/92-0  
Fax + 49 (0) 62 91/92-9500  
info@azo.de  
[www.azo.de](http://www.azo.de)

  
**Right to the point.**



**++ figure 6**  
Medium and minor components are automatically dosed at each line while the required flour is taken from the central silo storage

**++ figure 7**  
Pre-proofed dough pieces on their way into the shock freezer

**++ figure 8**  
Immediately after proofing and skin formation and prior to the feeding into the tunnel oven, the pretzels are brushed with lye

**++ figure 9**  
Discharge of ready-baked pretzels, mainly destined for the export business



### Production in Oranienbaum

The production was set up in Oranienbaum in 1999 in addition to the already existing production facility in Mainz mainly for two reasons. Firstly, the production in Mainz had nearly reached its capacity. Secondly, Berlin with its urban agglomeration and the markets in northern Germany were much closer and easier to supply from this location. Ditsch invested about 25m Euros and started production with two lines in one building with adjacent facilities and a frozen goods storage that could accommodate 2.000 pallets. Recently, the building has been expanded and line no 5 has started operation. The frozen goods storage now has a capacity of 8.000 pallets. There is still sufficient room for three more lines and it is expected that this space will be occupied no later than 2007. "We are growing above-average in markets that are fairly new to us," explains Keienburg. This means in the food service and catering fields, as well as the export business. At the beginning of the expansion in Oranienbaum, Ditsch was very careful and invested only in multi-functional equipment because nobody knew whether the new products would be successful or not or whether the lines would have to be retrofitted

for completely different products. Therefore, line 1 is suitable for the production of croissants, sticks or rolls. "Today we would design such lines as mono-product lines only," explains plant manager Andreas Paulsen. The equipment provided by the German Fritsch GmbH, Markt Einersheim, has an hourly capacity of 10,000 filled croissants. For unfilled croissants, the capacity is 25% higher. "However, we do not operate our plants at the limits, because to us quality is more important than producing 500 or 1,000 pieces more per hour," says Paulsen. The line is equipped with an automatic belt proofing room. The products leave the line fully proofed and are shock-frozen prior to packaging."

Lines 2-5 are exclusively used for the production of soft pretzel dough pieces. The main differences between the lines are their age and the design of the twist robots. While in line 2 eight robots of the second generation can handle 1,500 twists per hours which amounts to a total hourly capacity of 12,000 pretzels, the latest robots in the new line have an hourly performance of 1,800 pieces and thus the line produces 15,000 soft pretzels per hour. Forming the pretzel with the older robots means that the twisting head is turned





++ figure 10



++ figure 11

to form the pretzel. In the latest models, the pretzel dough piece is turned inside the twisting head. “The new twisting robots allow a 25% increase in capacity without having to increase the personnel,” explains plant manager Paulsen. “And the quality remains the same.”

Line 3 produces pizzas with toppings to the rim, pizza pieces, triangles and other snacks with savory toppings or fillings, with an hourly capacity of 10,000 pieces. Line 4 reflects a new approach. Ditsch tried to make ready-to-eat soft pretzels and soft rolls on this one – successfully. This baking line is the only one that has two batch mixers instead of a continuous mixing system. It is designed for batch operation, because that makes it much more flexible for testing other products as well. Dough make-up is not done from a dough band. An adapted roll plant by German Werner & Pfleiderer, Tamm, produces dough balls which are then proofed and cut to make soft rolls or rolled and manually twisted into soft pretzels. After make-up, the dough pieces are transported into a multi-level proofing chamber with a loading mechanism similar to the one of multi-level tunnel ovens. The dough is finally baked in a heating gas convection oven. For rolls, the line has an hourly capacity of 10,000 pieces, for pretzels the capacity goes down to 7,000 pieces due to the manual work labor required for twisting the pretzels.

### Higher level quality

The production at Ditsch is certified according to IFS Higher Level. Quality control and quality management are not just words, as can be experienced in the production but also in the adjoining QA laboratory. In many production companies, packaging and commissioning are a bottleneck. But Ditsch sets on automation, where it makes sense. Next to

numerous packaging machines which pack dough pieces and baked pretzels into bags and then into card-board boxes, the logistics’ heart is the pallet storage. Two fully automatic robots take over the storage and retrieval of pallets from the storage including transport to the dispatch area. A computer-controlled storage management makes sure to follow the “first in, first out” principle despite the chaotic storage system. Both robots move with breath-taking speed through the storage area at -32 °C. Humans have access to the area for maintenance works only. “To be on the safe side in case of malfunction, we have a back-up computer system which also stores all data and can take over the tasks of the original control system if needed,” explains plant manager Paulsen. A similar back-up system exists for the control of the individual lines as well, except that there is no individual computer for each line. Nevertheless, if a system breaks down, Ditsch is capable of remedying the trouble by exchanging the hardware in a short time.

The entire production covers an area the size of two soccer fields, which is 2 times 5,600 sqm. Operation is done in three shifts with a total of 190 employees at least five days a week (in the main location in Mainz, 70 people are employed in the production and 40 in the administration). Day 6 is used as a possible buffer in case of increased demand or to keep up with production back-logs after malfunctions. “Prior to an expansion of a line, often the line is operates six days a week for a certain period. Only if we reach a capacity utilization of nearly 100%, we invest in a new line. But then rather quickly,” says Frank Keienburg. The responsible managers are already thinking about the possibility of three additional lines. In the past 10 years, about 10% of the sales have been continuously invested into new lines or into expansion of existing ones. +++

### ++ figure 10

These products are preserved by cold temperatures as well, but gently because they are frozen after they have cooled down. But you miss the salt? Freezing and thawing can only be done without salt which would otherwise melt in the condensed water during the thawing process

### ++ figure 11

Quality has priority at Ditsch. Therefore, samples are taken from each batch and evaluated in the company’s own laboratory. Here, new product developments are also tested for taste, stability, texture and enjoyment

### ADVERTISEMENT

Waste-, Energy- and  
Environmental-  
Management

**Dr. Thomas  
Modzel**

Harbachstraße 26  
53489 Sinzig, Germany  
Phone +49(0)2642 99 22-03  
Fax +49(0)2642 99 22-04  
www.modzel.de

Contact:  
Dr. Thomas Modzel  
Phone: +49(0)2642 99 22-  
05  
info@modzel.de

Core products / services:  
· Waste concepts and consultancy