

# The different way to the dough piece

HE INVENTED THE HIGH PRESSURE JET DOUGH MAKER RAPIDOJET AND SHOWED THE BAKING WORLD THAT DOUGH CAN BE PRODUCED WITHOUT LONG MIXING. AND NOW THE SWABIAN INVENTOR DR. BERNHARD NOLL HAS PRESENTED A NEW PROCESS FOR THE PRODUCTION OF PIZZA BASES WHICH IN COMBINATION WITH THE RAPIDOJET HAS ALREADY PASSED THE PRACTICAL TEST

**+** The principle of this new dough sheet production includes a Rapidojet, a dough feeding pump and a die-plate made from metal and coated with Teflon which shapes the incoming dough by cutting and folding it to form a sheet with a width of 36 cm. In order to achieve this, the dough fed by an eccentric screw is pushed through upright standing blades which produce dough strips that also stand upright. The strips are moved on and then laid next to each other in such a way so that the edges “grow together” again. The thickness of the dough sheet depends on the die-plate used. As a result



of the free cross section being constantly maintained at the feeding section of the die, tension does not develop inside the die-plate or at the discharge section, neither lengthwise nor crosswise. Consequently, the dough sheet does not require a relaxation time and it does not shrink as has been proven in practical tests. The baked pizza base also does not shrink, according to Dr. Noll. This is verified with a ring placed around the baked pizza (see figure). The pizza base keeps its round shape during baking as well. The surface of

**++ figure 1**  
Transfer point between die plate and transport belt

## Fritsch BTT: In-line proofing and pan pizza without the pan



A PROCESS HAS BEEN DEVELOPED BY THE COMPANY FROM MARKT EINERSHEIM, GERMANY, TO ACHIEVE THE TYPICAL “FRYING EFFECT” OF AMERICAN STYLE PAN PIZZA WITHOUT USING PANS ON THE PRODUCTION BELT

**+** Fritsch BTT is one of the leading suppliers of industrial pizza lines. The company almost exclusively opts for production from dough sheets. In theory, it would also be possible to install a line that uses pressed dough chunks since the Impresa line by Fritsch is able to deliver the required dough balls. However, this would not be the most cost efficient way of dough feeding. Alternatively, if the pizza production is operating parallel to baguette production, this gives a completely different picture.

The fact is that Fritsch produces the pizza bases from dough sheets and also applies the so-called in-line belt proofing process prior to die cutting. In general, this pre-proofing process lasts for 10 minutes for frozen pizza bases. The dough is then die cut and an edge is formed, if needed. In order to achieve this, dough from the center of the base is pushed outward thus forming an edge which is similar to the process applied in manual production. A stamp is required for



++ figure 2



++ figure 3

++ figure 2  
The pizza base does not shrink between cutting and baking

++ figure 3  
Die-plate

the dough sheet is slightly rugged which is due to the release process from the edge of the die-plate. If a very smooth dough surface is needed, the dough sheet can of course be sent through a calibrating roller prior to the cutting of the dough sheet. One die-plate has an hourly capacity of up to 500 kg dough which is equal to 750-1,500 pizza bases per hour, depending on the thickness of the dough sheet. For higher performance rates – the Rapidojet has a capacity of three tons per hour – several die-plates are used parallel to each other.

Similar to the Rapidojet, Dr. Noll also attached importance to a small footprint, low energy consumption and low wearing design. The combination of Rapidojet, conveying screw and die-plate that do not contain any mechanical parts present only a low risk of wear. The entire line weighs about 200 kg and has a small footprint. The input rating is 3 kW. +++



++ figure 5

++ figures 4 + 5

Up to 16 proofing belts on top of each other offer sufficient space for the in-line intermediate proofing process of the dough prior to die-cutting

this which moves down inside the cutter so that the center is not compressed but rather pushed outwards. With this method, it is possible to produce very thin Italian-style pizza as several lines at the Italian market leader Manuta have proved, as well as producing flexible Turkish-style pizza which is rolled up prior to eating. If the pizza bases are not intended for frozen storage but are to be sold from the chilled counter, the stamp can be replaced by a heated model. The surface of the dough will then gelatinize slightly which keeps the moisture from the tomato paste from migrating quickly into the base.

A new innovation at Fritsch is the development of a line for American-style pizza without using pans but still creating the “frying effect” at the bottom which com-



16th International Trade Fair  
for Bakery & Confectionery

- > Leading trade fair in Russia
- > Number 1 for new business contacts
- > Join the best in the industry

[www.modernbakery-moscow.com](http://www.modernbakery-moscow.com)

**INNOVATIONS**  
FOR BAKERY & CONFECTIONERY

**MODERN  
BAKERY  
MOSCOW**



>> **OCTOBER 12 – 15, 2010**



OST-WEST-PARTNER GmbH  
Phone: +49 (0)961 38977-70  
[www.modernbakery-moscow.com](http://www.modernbakery-moscow.com)

Market information:  
**owpbakery.com**  
International Business Portal for Russia

International premium media partner:  
**f2m**

In cooperation with:

- Ministry of Agriculture of the Russian Federation
- ASSAGROS
- Russian Bakery Association
- Union of Flour Mills and Cereal Plants
- National Scientific Institution
- "National R&D Institute of Industrial Bakery"
- International Industrial Academy, Moscow
- Nutrition Research Institute of the RAMS
- SRC of Confectionery Industry of the RAA

**EXPOCENTRE**

monly originates from the oiled pizza pans. Here again, the dough is proofed in-line, this time for about 20 minutes to its final proof.

The bottom of the dough is oiled and the dough piece baked in a special oven with hinge plate belts at 200-220 °C. The advantage of this is that pans or pan handling are not re-

quired while the pizzas still show the desired frying bubbles on the bottom surface with fat pick-up being also minimized. A maximum of 6 g of oil at most is used for each pizza. The hinge plate belt needs frequent cleaning to remove the oil residues despite the relatively low baking temperatures. +++

## Alitech: Thin as Italian and pressed like American

ONE OF THE MAJOR SUPPLIERS OF ITALIAN PIZZA EQUIPMENT IS ALITECH SRL FROM ROVERETO IN NORTHERN ITALY. CURRENTLY, THE COMPANY IS DEVELOPING A NEW LINE PRODUCING MORE THAN 8,000 CLASSICAL THIN ITALIAN-STYLE PIZZA BASES PER HOUR BY USING THE PRESS TECHNOLOGY



**+** The cross pinning method is the most traditional technology for producing the classical Italian type pizza: thin crust with crisp edges made from well fermented and proofed dough. The dough, after having rested for a few hours, is divided into dough balls which are proofed for a time ranging from 45 minutes to 1 hour. After proofing, the dough balls are laminated in two steps in one direction to reduce the thickness, and then further on in two more steps in a cross direction to reach both final thickness and roundness.

The shaped pizza base then receives a tomato sauce topping before moving into the oven for a very short but intense baking time at a high temperature. In order to obtain the most authentic product, a stone plate baking oven is strongly recommended. The Alitech cross pinning line can produce up to 9,000 pizza/h in the standard size of 250/270mm diameter. With a few accessories, the line can also produce larger or smaller diameters.

The American-style pressed pizza is typical technology used for the thick American style pizza. Normally the dough ball is pressed, proofed and baked in baking pans greased with a thin oil film; this gives the classical “fried” consistency to the bottom of the pizza base. Baking is soft; only a few minutes at a moderate temperature. The pressed pizza line can



**++ figure 6**  
Press head – normally used for American-style pizza, Alitech now also uses press heads for Italian-style pizza

**++ figure 7**  
Cross lamination – the standard way to produce Italian-style pizza

produce up to 10,000 pizzas/h of the standard 10” size and is highly versatile although a dedicated set of dies and pans is needed for each size.

A recent innovative application of the press technology, developed in cooperation with a major European customer of Alitech, is the use of this technology for producing a classical pizza Italian-style with a distinguished character. Riccardo Azzolini, sales manager of at Alitech, explains, “The combination of the two technologies results in a very soft, “meaty” base, with a thin crisp and crunchy crust.”

The dough is fermented for a few hours and proofed after division and rounding, just as in the Italian tradition. After proofing the dough is pressed into its final shape on a heat resistant belt, without using pans. The pressed pizza is proofed again for a short time before moving into the high temperature stone plate oven for fast baking. The capacity of this line is 8,000 pizzas/h. The expansion of this capacity to 10,000 pizza bases and more is currently being investigated. +++

Our Industry Proven Pan Coating Technology has the  
**World's Longest Release Life & the  
World's Best Release Characteristics**  
**GUARANTEED**



**DuraShield Europe offers the most effective  
pan coating removal and recoating process in existence today.**

- Proprietary coating removal process does not degrade the strength or integrity of pan
- Exclusive nanotechnology provides unparalleled corrosion protection

**DuraShield coating consistently delivers more releases,  
sometimes twice the releases, than all other competitors worldwide.**

- Thousands of releases without recoating
- PFOA Free Fluoropolymer
- Excellent dough flow and bake characteristics

TÉL +33 (0)3 27 84 23 38  
[WWW.DURASHIELDEUROPE.COM](http://WWW.DURASHIELDEUROPE.COM)

