

# Completely twisted

THE INDUSTRIAL WAY OF MAKING PRETZELS HAS BEEN MADE FAIRLY SIMPLE WITH FRITSCH EQUIPMENT, BUT NOW THEY ALSO OFFER TWISTING BY MACHINE

## ++ figures 1 + 2

A one-row band twister has an actual hourly capacity of 5,000 pieces based on 470 x 18 mm dough squares. Considering a weight of 70 g for each strand of dough, the processed amount of dough will be about 400 kg/h

++ figure 1



✚ Even if they are purchased at the discounted food stores, they look appetizing, are crunchy and the noble snack has several varieties. These are the twisted puff pastry sticks and a type of Danish pastry in pretzel form filled with pudding. Up to now, the production of such specialty products was either done manually or on industrial scale plants with an hourly capacity of more than 10,000 pieces. The Fritsch Company from Markt-

Einersheim, Germany, now offers a solution for larger craft bakeries or semi-industrial production. A precondition for the semi- or even completely automatic production of twisted products is a baking line for fine wares, for example the AT-line, or a make-up line.

This line produces a dough sheet made of puff or Danish pastry which is then gauged to a working width of 400 or 450 mm. The thick-

++ figure 2



ness of the dough sheet depends on the type of product. For twisted pudding-filled pretzels with XXL size, the dough sheet may be up to 15 mm thick, whereas for puff pastry sticks a thickness of 8 mm is sufficient. The dough sheet runs underneath a guillotine which cuts the dough into strips with approximately 120 strokes per minute. The strips have the same width as the thickness of the dough sheet. For an optimum twisting process, it is important that the dough profile is almost square. An uneven product would result if the dimensions were largely out of line.

### Separating and twisting

The process described so far is worked on an existing line for fine bakery wares. This has an operating belt speed between 2 and 2.5 m per second. At this point the dough strands have to be separated. Therefore, they fall onto a feed belt which runs underneath the transport belt of the fine bakery wares line and are then fed to the twisting station. This belt moves at a speed of up to 20 m per second thus providing for the necessary buffer which then allows the processing of the dough strands. In the actual twister the product is twisted with a simple technical trick: The underneath belt has a slight tread and makes sure that the grip is right (as carmakers would say about their tires). Above this are three to four shorter belts distributed over the entire belt width which also have a tread. These belts run in the opposite direction to the transport belt. As a result the dough is stalled from underneath for a moment while it is turned from above. The segmentation of the top belt makes sure that the dough is stopped/pressed more at the spaces from above. This imitates the twisting movement of hands.

The adjustment of such a plant is strongly dependent on the product as the belt speeds, the pressure applied by the top belts as well as the treads of the belts must be adapted to the individual properties of the dough. To ensure that the dough is as uniform in texture as possible from one batch to the next, the dough temperature and environmental temperature must not deviate very much because this affects the processing properties of the sheeted dough thus requiring a new adjustment of the machine.

The twisted dough pieces almost fly out of the twister. They do not land at a right angle to the belt but rather at an acute angle due to the tension introduced into the dough during twisting. Now, the twisted products are either picked up manually from the belt or placed on baking sheets or into moulds or they are manually formed into a pretzel or they move to another machine which positions the twisted sticks into a certain pattern or a precise row. This is important if the products are to be automatically deposited onto sheets. This arrangement also has the highest degree of automation and also allows the cutting of the twisted strands with an additional guillotine or with cutting rollers. +++

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