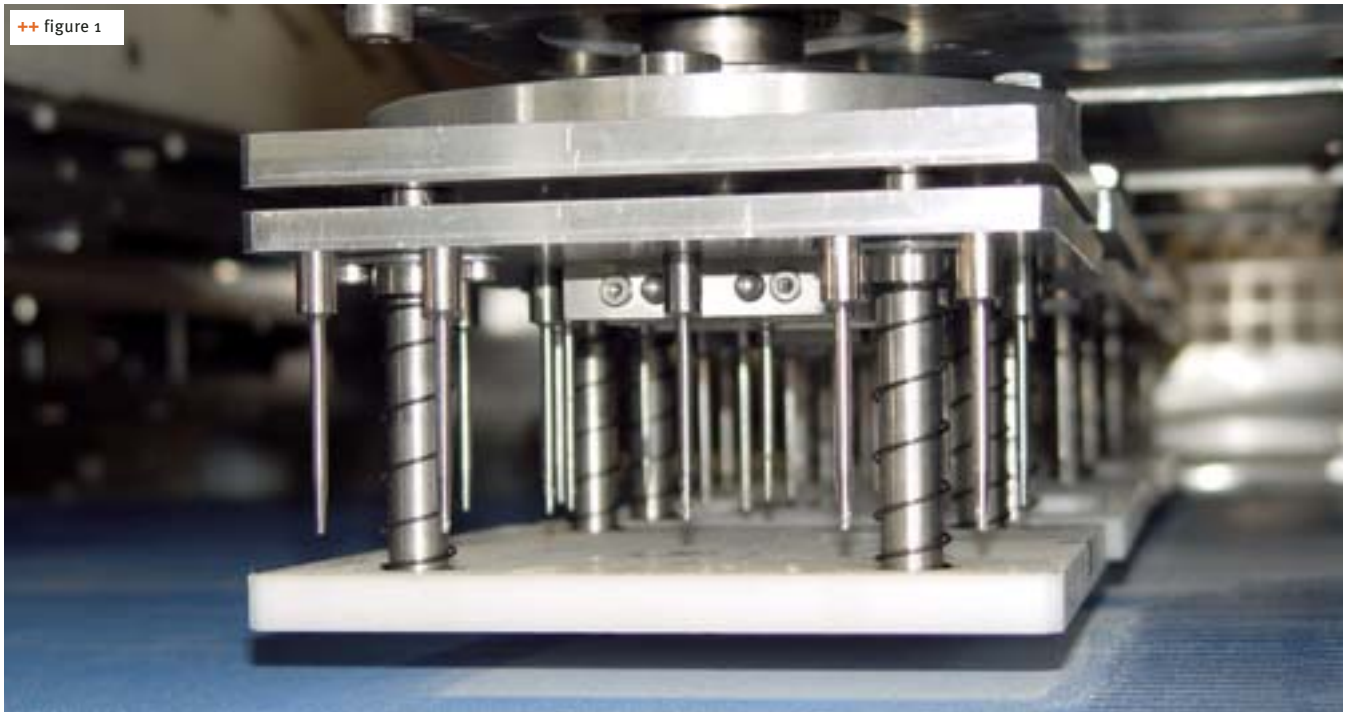
Revolving revolution

MAGICLINE IS A MODULARLY DESIGNED LAMINATING PLANT BY WERNER & PFLEIDERER LEBENSMITTELTECHNIK GMBH, DINKELSBÜHL, GERMANY

++ figure 1



++ figures 1 + 3
The needle plate of the forcer is pneumatically moved up and the needles disappear in the scraper plate

++ figure 2
Diagram of the laminating plant including satellite rollers and revolving cutter

++ figure 4
The revolving punch head including blades. Each blade sits in a scraper plate which prevents the dough pieces from being pulled up when the blade retracts

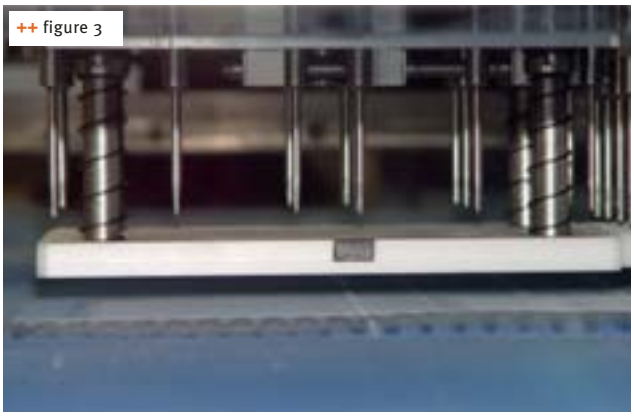
At Europain, in Paris, the WP Group presented, for the first time, its MAGICLINE laminating plant with new functions for the production of pastry products. The presentation was only in video. Nevertheless, it was exciting as the production of croissants on this line was shown for the very first time. The equipment includes a revolving punch head whose tool bar can be equipped with a maximum of four different blade combinations. The shape of the dough piece is determined by the geometrical form and the arrangement of the punching blades. Prior to the punching process, the punch head is automatically positioned in such a way to ensure that the correct blades are located in their operating position above the dough sheet. The next step is the punching. For this, the entire punch head including the blades and the plates are moved downwards electro-mechanically.

Before the upwards movement, the entire punch head, with the blades, travels briefly along with the belt for a short distance. Each blade sits in a bar which prevents the dough piece from being pulled up when the blade retracts. This ensures that the dough is actually punched and not cut. The edges remain closed which prevents any possible problems with sticking during the subsequent coiling of the dough.

The length of the dough piece is automatically determined by the interval between the two punching processes. For rectangular dough pieces, the same blade design is used for each

++ figure 2

++ figure 3



punch. However, for dough pieces that are not rectangular, e.g. triangles or trapezoids, two different blade bars are used on which the punching blades are arranged differently. Between the two punching strokes, the punch head must be turned by 90° to allow the two different blade arrangements to do their work.
The advantage of the revolving punch head is that there is no manual retrofitting of individual cutting tools upon product change. If a third shape is required, the machine operator only has to replace the board with the blades. The clean punching process ensures gentle dough handling and easy cleaning. Added to that, a precise setting of the product weight is possible via exact adjustment of the length of the dough piece.

Innovative forcer

After the punching, the forcer ensures that the dough pieces, still positioned next to each other are spread and turned, if needed. The 4-forcer consists of four independently driven spreading and turning heads with a needle plate which guides the dough pieces. To achieve this, the heads move on gliding rails with the tool in the down position in the running direction. During the movement, the heads drift apart from each other and turn, if necessary, until the dough pieces have reached their defined position. The needle plate is then moved pneumatically upwards and the needles disappear completely into the scraper plate. The dough pieces are then moved on to the belt or to a coiling machine. The hourly performance of the plant is dependent on the number of cycles and rows. Up to 27,000 dough pieces could be produced on this plant. +++

++ figure 4