

# Multifunctional and modular

THE SFI, BY KÖNIG, ALLOWS THE PRODUCTION OF A LARGE RANGE OF SQUARE, ROUND AND ROLLED PRODUCTS. THE EQUIPMENT RANGE GROWS ALONGSIDE THE BAKER'S DEMANDS



**++ figure 1**  
Baguettes are automatically deposited onto special trays

**+** At the end of the 1990s, König Maschinen Ges. m. b. H., Graz, Austria, carried out an in-depth examination of new developments in the bakery trade. In addition to the undisputed high quality line for small baked goods including dough divider, pre-proofer, stamping, punching and cutting station which gave König high market relevance, new equipment was designed for producing baked goods from a dough band. Four differently sized machine concepts belong to the artisan family of SF plants (SF stands for stress free).

The smallest machine, SFC, is a compact and economical unit for the production of small baked goods in different shapes. The dough band is applied manually, different cutting rollers produce different shapes of the square products. The next larger machine, SFR, can handle up to 600 kg dough per hour. The dough band is produced on the machine without trimming waste. Round and square products can be made. This machine can be used as solo equipment, but can also be integrated into an automatic process with up – and downstream units from crate lifter to duster/sprinkler and tray loading unit. The range becomes very versatile when combining the SFR unit with a classical roll plant, for example ECO-Twin. With this arrangement, square, round, stamped, long-moulded, or cut dough pieces can be produced.

In the medium to upper segment, König has the SFI unit. Depending on the configuration

and the product, this machine can handle up to one ton of dough per hour, which is a good performance.

## Expandable upon request

The success of the SFI is based on its modular design. The basic machine, which produces a 350 mm wide dough band is fed via crate lifter or bowl lifter. The advantage of a crate lifter is the handling of the cost-efficient plastic crates which can simply be stacked. This way, a prolonged dough resting time – for example overnight in the cooling chamber – can be achieved. Only a small amount of dough is transferred into the pre-portioning hopper each time. This way the air bubbles in the dough, originating from the fermentation process are not destroyed.

Just as a “grown-up” laminating plant, the SFI unit also consists of a sophisticated system of transfer belts, forming hopper, cross rollers and satellite heads for producing a uniform continuous dough band. With easily exchangeable cutting rollers, the dough band is cut longitudinally. An adjustable spreading belt enables the easy arrangement of several rows; depending on the product, 9 or more rows are possible. A downstream scaling unit and guillotine produce dough pieces of the desired size and weight. The retracting unit for depositing the square products onto trays completes this basic equipment.

Due to the very gentle dough band production followed by a subsequent clean cutting without compressing, dough with a long resting time and high amount of sponge dough can be processed. Depending on product, raw materials, recipe and process, the dough hydration can be up to 85%. This corresponds to a trend described by Helmut Martell, managing director of the Association of German Plant Bakeries and Secretary General of AIBI as "going north". The popular Mediterranean breads, predominantly baguettes and ciabatta capture Central European, Nordic and overseas markets.

SFI's entire benefits can be experienced in combination with various downstream units. König can rely on a wealth of experience, product knowledge (even with regional specialty products) as well as on an immense number of system parts' which have proven their worth in thousands of classical plants. There is virtually no SFI that is ordered without duster/sprinkler. The right solution for the specific application is available: dusting

++ figure 2



++ figure 2  
Artisan SFI with basic unit, guillotine and retracting belt

or sprinkling from above or below with different topping materials and automatic return of excess material is almost standard.

Often, the SFI is combined with a rounder, the same one used in the classical roll plant Industrie Rex by König. Since the dough pieces are never pressed through a piston but only cut, the texture of the baked goods made from normal standard dough is remarkable. The dough pieces can – after rounding – be transferred into a pre-proofer followed by the common stations such as long-moulding, stamping, cutting etc. ▶

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++ figure 3

**++ figure 3**  
Round and square: Top; the bypass for the square pieces, below; the proven rounder of the Industrie Rex. The rounding drums can easily be exchanged



++ figure 4

**++ figure 4**  
Clear layout, easily accessible and simple: The cutting rollers are integrated into a pull-out slide for each replacement

After the rounding, which of course can be by-passed, a winding station can follow where e.g. Kornspitz rolls can be produced. With the long-moulder, consisting of rolling net and pressure table with motor-driven top belt, even baguettes can be made: in one row, in two rows as “half baguettes” or in more rows as baguette rolls. The baked items can have pointed ends, if desired.

The next stations can be used for sprinkling or dusting and cutting. It is also possible to continue the processing in a final proofer. The proofing trays can be loaded automatically with the tray loading unit “Servomat” into a rack wagon or they can be automatically transferred into an oven, cooling spiral or similar. A Servomat can handle up to 200 trays per hour. When placing two Servomats on either side of the retracting belt, the performance doubles to 400 trays.

Due to the modular design, the individual

units can be arranged around the SFI and integrated into the control. This allows for the option of providing tailor-made equipment for each customer. Later, an expansion of the system is possible without problems. For example, a starting installation with an SFI, wetting/dusting unit and depositing device, can later be enlarged step-by-step with a long-moulder, rounder and Servomat. In this way, bakers can plan their automation steps and investments in advance while also being able to react quickly to new market requirements. Klaus Bernhard, marketing manager at König, emphasizes that the SFI is able to process classical dough as well as dough with high hydration and /or long resting times. Due to its compact design, the SFI needs less space than a laminating plant. “There is hardly any other equipment on which such a comprehensive product range in terms of shapes and weights in such high quality can be produced.” +++

**++ figure 5**  
One row operation: Square pieces for baguettes which are formed in the downstream long-moulding unit



++ figure 5