

Laminating dough and producing pastry products



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**RONDO
DOGE®**

Rondo-Doge – your partner



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At Rondo-Doge we have for many years devoted our entire attention, wealth of ideas and energy, to the preparation and processing of doughs of all kinds. This has made us specialists in this field.

Thanks to our worldwide experience in the manufacture of machines and systems for laminated dough items and pastries, pizza, artisan breads and regional specialities, we are definitely the right partner for you. Especially when it's a matter of planning and supplying optimum production methods and the appropriate systems for these.

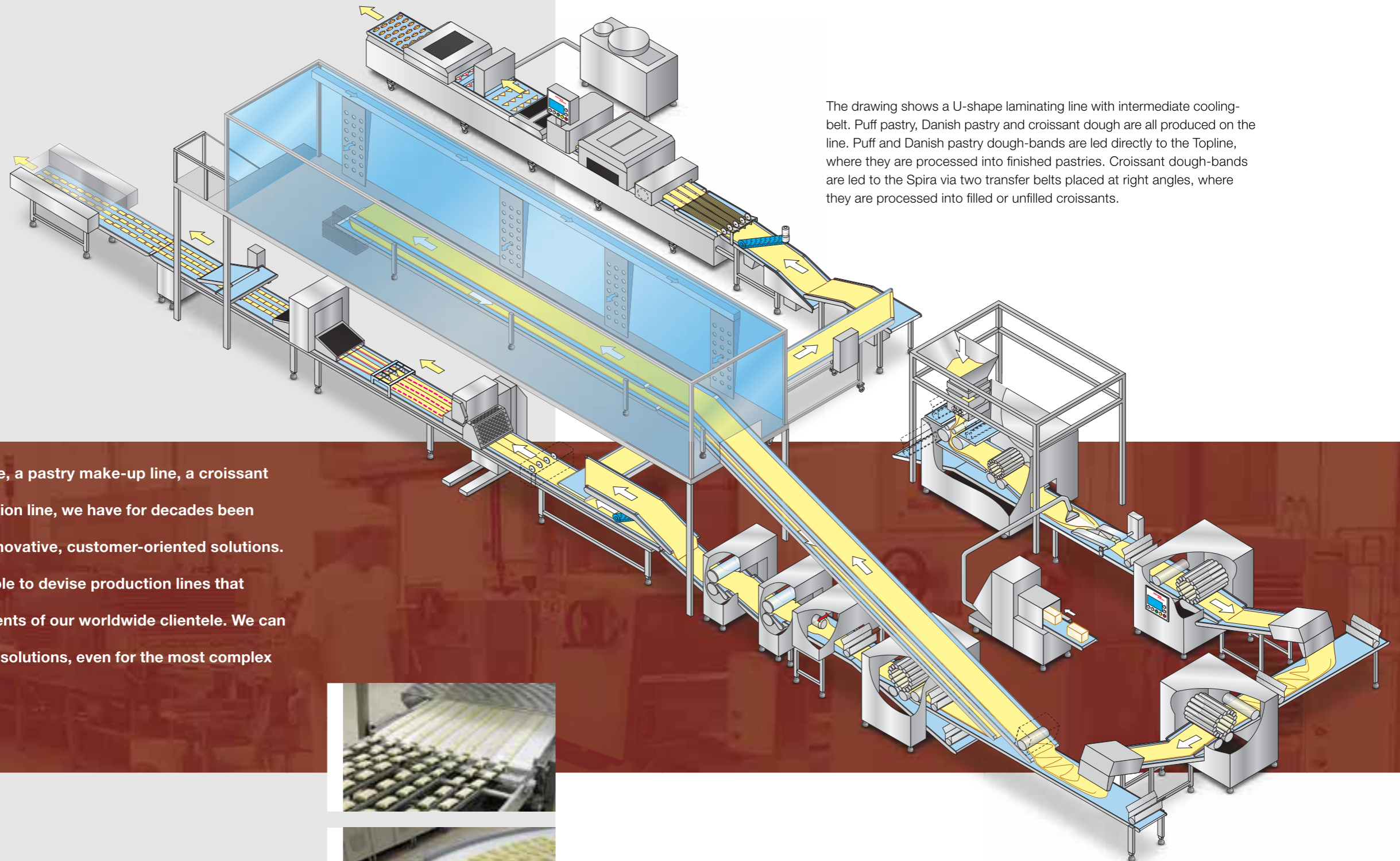
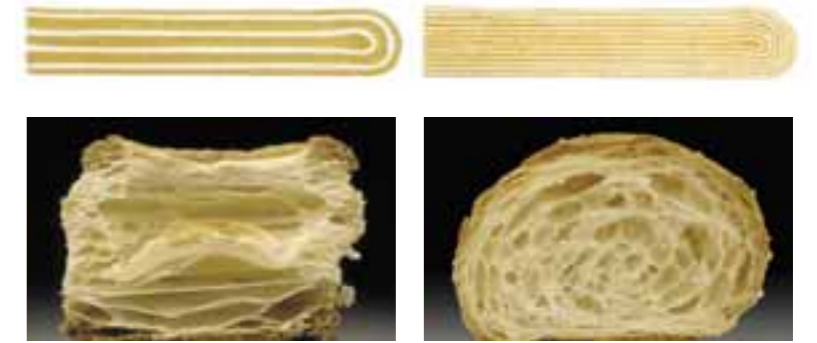
Thanks to the concentration of all our forces on our core business – a business of which we are masters from A to Z – at Rondo-Doge you obtain the right solution for your enterprise, both with regard to quality and in terms of the latest technology and design efficiency.

Whether you need us as a specialist for optimising your production, or as a generalist for devising a process for new products, you can always rest assured: Rondo-Doge is the right partner for you.



The new Competence Centre in Schio adjacent to the main Doge building.

**Bakery-product manufacturers
all over the world put their trust in
Rondo-Doge systems**



The drawing shows a U-shape laminating line with intermediate cooling-belt. Puff pastry, Danish pastry and croissant dough are all produced on the line. Puff and Danish pastry dough-bands are led directly to the Topline, where they are processed into finished pastries. Croissant dough-bands are led to the Spira via two transfer belts placed at right angles, where they are processed into filled or unfilled croissants.

Whether an individual laminating line, a pastry make-up line, a croissant machine or a fully automatic production line, we have for decades been specialists in the development of innovative, customer-oriented solutions. By using modular systems we are able to devise production lines that meet all of the wishes and requirements of our worldwide clientele. We can offer our partners made-to-measure solutions, even for the most complex production processes.

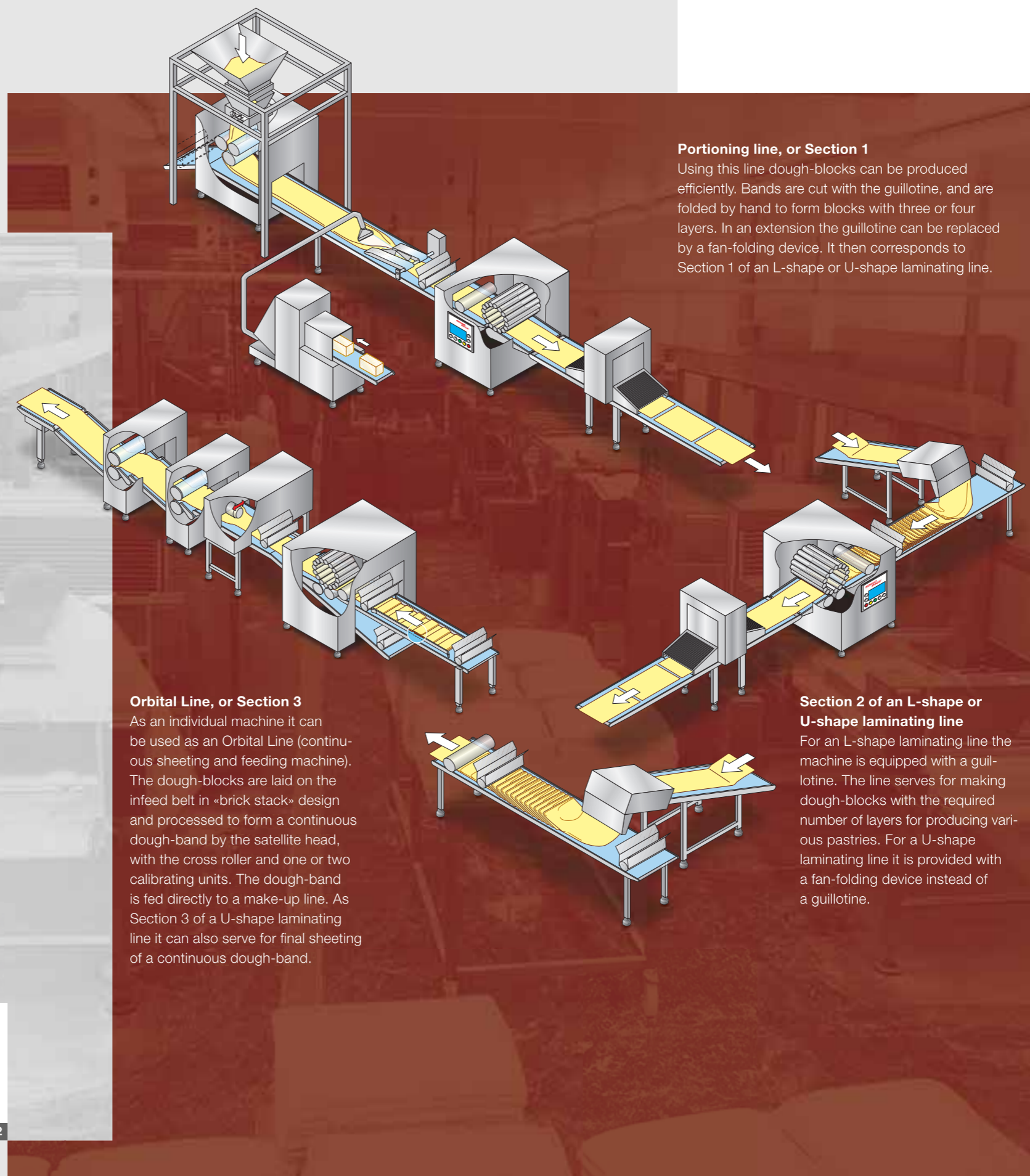


Modular systems for step-by-step sustained growth



Thanks to the modular design of our machine units, Rondo-Doge is able to offer a wide variety of line configurations for all needs, applications and levels of automation. The lines can grow with the business, i.e. additional units can be added to them at any time, increasing the level of automation. Newcomers to industrial production can start with a small capital investment. All options for the growth of their operations remain open. The systems shown are suitable for all kinds of booked dough.

A Rondo-Doge system is the best investment in a successful future.



Portioning line, or Section 1

Using this line dough-blocks can be produced efficiently. Bands are cut with the guillotine, and are folded by hand to form blocks with three or four layers. In an extension the guillotine can be replaced by a fan-folding device. It then corresponds to Section 1 of an L-shape or U-shape laminating line.

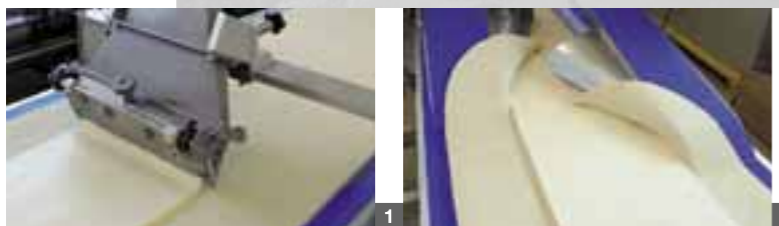
Orbital Line, or Section 3

As an individual machine it can be used as an Orbital Line (continuous sheeting and feeding machine). The dough-blocks are laid on the infeed belt in «brick stack» design and processed to form a continuous dough-band by the satellite head, with the cross roller and one or two calibrating units. The dough-band is fed directly to a make-up line. As Section 3 of a U-shape laminating line it can also serve for final sheeting of a continuous dough-band.

Section 2 of an L-shape or U-shape laminating line

For an L-shape laminating line the machine is equipped with a guillotine. The line serves for making dough-blocks with the required number of layers for producing various pastries. For a U-shape laminating line it is provided with a fan-folding device instead of a guillotine.

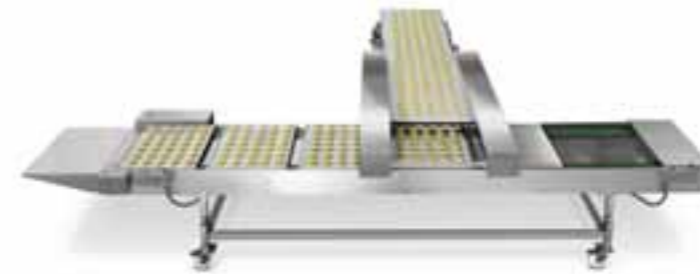
1. Dough-band and fat-band are adjustable in width and thickness and have practically the same consistency. This gives ideal conditions for perfect layer formation. The fat/dough ratio remains constant, the quality uniform.
2. The fat-band is completely enclosed. No fat escapes during subsequent sheeting. On request, the dough-band can be cut lengthwise and overlapped by means of a toboggan.
3. Sheeting of the dough-fat-dough sandwich to form a band. A satellite unit with one or two bottom rollers is used, depending on the requirements. The dough structure is preserved. Product quality is enhanced.
4. Using the vertical fan-folding device, between 4 and 12 clean layers are formed. For widths of over 700 mm, a horizontal folding device with retracting belt is used.
5. The cross roller rolls the dough-band out to the desired width. The cross-roller speed is adjusted continuously to suit the type of dough, thus keeping the side trim to a minimum.



Benefit from the unique advantages offered by Rondo-Doge machines

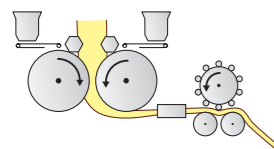


Production systems and lines consist of individual machines. Every machine that is integrated into a Rondo-Doge system is the result of intensive development work, and our great experience in the field of industrial dough processing over many years is reflected in every machine. All the machines get the highest marks for their level of performance, ease of use, ease of cleaning and maintenance. We proudly present and explain here some of these key machines.



Panning machines

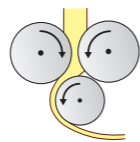
Placing products on trays by hand is a labour-intensive activity. Production costs can be greatly reduced by the use of Rondo-Doge panning machines. Rondo-Doge can provide suitable panning systems for automatic panning of the most diverse products. The in-line panning machine forms the basis for this. It can be equipped with an automatic tray-feed and tray-removal systems. For maximum panning rate a double panning system can also be used, with two machines set up at right-angles to each other.



OSCAR "O" Stress Calibrated Adjustable Rollers

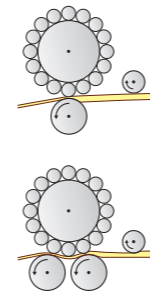
The patented universal dough-band former for zero stress processing of puff, Danish and croissant pastry, also accommodates sweet yeast-dough and highly-hydrated yeast-dough, with or without pre-proofing, for special types of bread such as ciabatta, baguette, etc. When dough is to be formed into a band very gently, with no adverse effect on the

gluten structure, OSCAR is the ideal machine at the head of a laminating line. Two hexagonal rollers and two large rollers with shallow ribbing shape the dough-band. Flour is sprinkled on the two large rollers, each by its own flour duster, adjustable for amount, so that even extremely sticky doughs can be worked. The speed of the two pairs of rollers can be programmed individually. Two lateral paddles bring the dough-band to the desired width, by means of an oscillatory movement. A satellite head with 9 freely-rotating upper rollers and two bottom rollers progressively roll out the dough, without stress, to form a dough-band.



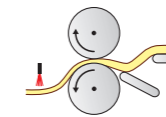
Three-roller dough-band former

The three-roller dough-band former is primarily suitable for making booked doughs. The gaps between the rollers can be adjusted individually. The upper pair of rollers, and the lower roller have their own motors. The speeds can be adjusted individually and precisely to each other, so that the dough is drawn in and formed into a dough-band with very little mechanical stress.



Satellite head

For Section 1 the satellite head is usually used with one bottom roller. For Sections 2 and 3, to achieve especially gentle sheeting, we use the satellite unit with two bottom rollers. This has the great advantage that reduction takes place progressively. The layers remain intact, even with a high sheeting-ratio of up to 10:1.



Calibrating unit

The dough-band is brought to the exact required final thickness by means of the calibrating unit.

1. To ensure that neither too much nor too little tension can build up in the dough-band, the band speed is controlled automatically by means of sensors, on both the infeed and the outfeed side.

2. On the outfeed side a laser probe measures the dough-band thickness. If variations are detected, the roller gap is automatically corrected. Practically tension-free dough-bands with an identical thickness from start to finish are the best pre-requisites for uniform, top-quality products.



Topline – unsurpassed versatility



Rondo-Doge has been building pastry make-up lines for businesses of all sizes since the 1960's. With the Topline we fully meet the needs of the modern, successful industrial bakery business, in terms of production rate, flexibility and quality of the end product. Topline is available for working widths of 700 and 900 mm. It fulfils all of today's high standards for performance, ease of use, hygiene and reliability and is designed on the modular principle. Topline can be integrated into a continuous production line, but can also be used as a stand-alone machine.



Guillotine

The electro-mechanical in-line travelling guillotine, is designed for high performance: up to 120 strokes/min when cutting, up to 70 when stamping. It is built with extremely sturdy construction, and operates very quietly. In order to ensure a clean, vertical cut even at the highest band speed, the system that operates the guillotine is motor-driven. A driven sledge with integral counter-pressure plate runs at the same speed as the main transport belt. This prevents a possible «bunching» of the dough-band ahead of the guillotine.



Over the years Rondo-Doge has developed a large number of accessory devices for a wide variety of products; we will propose the appropriate equipment for automatic, high volume, production with top quality.



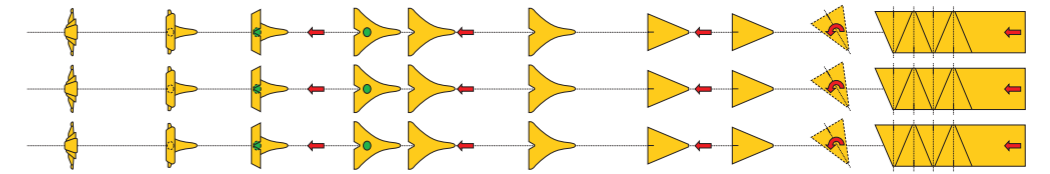
Spira – Industrial production of filled and unfilled croissants equal to the best hand-made quality



The demand for fresh filled croissants has grown strongly in many markets. With the new Spira, industrial manufacturers can produce top-quality filled and unfilled croissants in large numbers.



Spira is normally integrated into a production line consisting of a laminating line and resting belts for cooling the product. But it can also be fed by an Orbital Line. A continuous dough-band of the prescribed width and thickness is fed to Spira, where it is processed into croissants. These are then placed automatically on baking trays or on conveyor belts.



Function principle

The dough-band is cut into strips. These run via spreading belts and are laterally separated from each other. Then triangles are cut and turned. The triangles are stretched in length and width, by means of special devices. Before filling, the tips of the triangles are moistened with water, so that the croissants stay closed after curling. The dosing machine delivers a precisely defined amount of filling. Viscous filling materials such as creams, jams, etc. can be dispensed. Curling of the triangles takes place in two stages. This step-by-step, progressive process ensures reliable roll-up. No filling is pressed out of the croissants; the equipment remains clean. The products can now be automatically transferred to conveyor belts, or placed in precise positions on baking trays, as desired.



3000 croissants per row, per hour. With 5 rows this gives 15000 filled or unfilled croissants, with 6 rows 18000. Actual performance depends on the triangle sizes.



Rondofiller – the universal filling depositor



With the Rondofiller, producers of pastry products are provided with a filling machine which can dispense practically all fillings: from soft, liquid to hard fillings, including those containing whole pieces of vegetable or meat, and fillings which do not break off by themselves, and even fibrous fillings. The fillings can be dispensed in any desired form; individual spots, discontinuously or continuously.

The Rondofiller is a combined mechanical and pneumatic machine. The most suitable technique can be selected, depending on the pattern of delivery and type of filling. The machine operates very gently. Pieces of fruit, vegetable, or meat are not squashed during dispensing, but retain their original shape. The Rondofiller is built for a high delivery performance of up to 130 kg per hour, per exit. The machine is made from stainless steel, and meets the highest standards of hygiene. Hopper and screw housings can be taken off and replaced without tools, in a few movements. As a result cleaning takes only a few minutes. The Rondofiller can also be used on other manufacturers' make-up and pastry lines, for working widths from 600 mm to 700 mm.



1./2. The same housing is used for both feed-screws and pistons. Feed-screws and pistons can both be connected and disconnected individually. As a result the number of exits can be changed very quickly.

3. With the final-cut off device, fillings which do not break off by themselves and those which have to be forced out can be dispensed cleanly and in exact quantities, in a spot pattern or discontinuously.

4. For extremely fibrous fillings, a wire-cut device can also be fitted.

Only the right control system makes a plant into a reliable production robot

In modern industrial operations with complex, interlinked production lines and a high level of automation, flexible, reliable and easy-to-use control systems make a decisive contribution to process reliability, line and production management, and to maximising efficiency.



With the aid of simple graphic displays, the control panels show the individual line sections and units, indicating the number, position and status of each motor. The desired pages can be selected via the main menu. All motors are controlled and synchronised by means of cascade control. Control panels can be supplied in a wide range of different sizes and versions including touch panels.

We use PLC controls from the leading suppliers. Whether control systems from Siemens, Allen Bradley or Mitsubishi are used is determined entirely by customers' needs and wishes. The customer can also specify the level of convenience and automation. For example, complete control of the production process by programming the speed and roller-opening parameters, by storing the recipes, by diagnosis and maintenance programmes, through to management of the production data. On request we also fit our plant control systems with a modem, for rapid remote diagnosis.

Remote control
With the aim of simplifying the work of the line supervisor, and saving him long walks from the central control position to the individual units and back again, and also to be able to check the effect of a correction directly at the relevant machine, we now offer a control system based on wireless transmission. For this we use the latest WIFI technology, which allows operation at long range. The operating device is a palmtop terminal. Exactly the same data and diagrams appear on its screen as on the main screen. It is also possible to employ several terminals on one system, so that several people can take action from different points along a production line. This can be a major advantage, particularly in very large systems.

