

Nearly everything is possible

Using **Ultracut Kondus** from Döinghaus, **Bäckerei Schmidt** from Heideck in Middle Franconia can now **cut their entire cake and pastry range with precision and certainty.**

Stefan Schütter

The Schmidt family has been baking since the 18th century, initially in the village bakery and now in the third generation in a medium-sized branch bakery. The company has regional roots and operates according to the motto “Bake the very best from nature” and uses many regional raw materials and no convenience products. Master confectioner Jörg Schmidt is responsible for cakes, ice cream and coffee roasting,

his brother Michael as master baker runs the bakery and his sister Christina takes care of sales and the associated gastronomy. The brothers share the management.

“When the Sunday baking ban was lifted, we started to open bakery cafés with the appropriate product offering of tarts, slices and cakes“, recalls Jörg Schmidt. We quickly built up a wide product range and made a good name for ourselves. From the outset, Saturdays and Sundays were the best days for cake sales. However, demand also quickly increased on working days. “As we are in the country most of our customers are regulars whom we have to retain with optimum quality. In summer tourists also arrive but we have relatively few pedestri-

an zones here so not many walk-in customers.“ The company has been producing home-made ice cream for over 25 years. The bakery now has its own coffee roasting house and offers a full restaurant service at three sites, during the week until 23.00 hours and at weekends with cocktails until 01.00 hours in the morning. “Our customers have always enjoyed a warm lunch with us and 14 years ago we started to expand our warm meals provision to a full restaurant service.“

Wide variety

Bäckerei Schmidt is well-known for its wide range of pastries and confectionery – from celebration cakes through fruit slices to the cream cake



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1 Ultracut Kondus combines flexibility and efficiency with a small height requirement of 2.2 metres and a footprint of only 2,6 x 2,6 metres with closed doors. **2** At Bäckerei Schmidt two different blade widths from the ultrasonic cutting system suffice to cover all the tray sizes and shapes. **3** When changing over products the operator simply selects the relevant program with the pen on the touchscreen to switch over the cutting machine. **4** Managing director Jörg Schmidt demonstrates the one-man operation of the machine. Whilst cutting is performed on belt one, he can prepare belt two and vice versa.



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Photo: BT / Stefan Schütter 2021



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Photo: BT / Stefan Schütter 2021

5 For tarts and other round products there are two round inserts which can be inserted into the relevant base plate. **6** The cheesecake remains on the tart plate for cutting which must be positioned with precision on the specified centring mark. **7** The product to be cut must be soft enough for it to be cut ultrasonically. This is no problem for this light cheesecake

corner. Especially popular are the large 50 cm diameter cakes which are known in Germany as Omakuchen, Bauernkuchen and Landkuchen. 20 years ago the family business was one of the first bakeries in the region to incorporate these into its product range. They are only sold on Sundays slice by slice and they continue to be popular today. So it can offer the most attractive variety possible, the company not only creates tarts and slices in triangular trays, but also in many other bakery shapes. “If we were to produce all our products in triangular trays, that would indeed be sensible, but the counter display would be really monotonous for our customers. Nor should the effect of different shapes be underestimated. A cake with the



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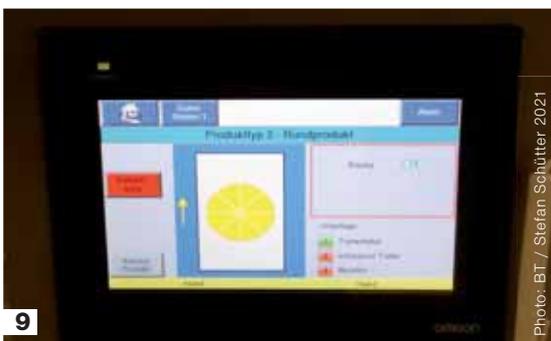
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same recipe actually tastes the same whether it is round or square, yet the taste perceptions of our customers can still differ depending on the shape.“ Production at Schmidt has always

focused on delivery runs to ensure all the products are still as fresh as possible when they arrive at the customer. In the past there was a problem in that although the bakery had



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8 Inserting the trays is very easy as it uses a plug&play system. The control unit displays the relevant plate for the program selected. 9 The user interface of the touch screen control unit has a clear design and is intuitive to use. It is also very easy to create or adjust the programs. 10 Ultracut Kondus requires an average of 1.5 seconds for every cut. This time may vary depending on the product. 11 The 50 cm diameter raspberry Landkuchen is cut cleanly. Schmidt has been producing these big round cakes for 20 years and they are still popular today. 12 The cutting machine has been in use since March 2020, here cutting a cherry and vanilla cake. It runs daily for about five hours from Monday to Saturday and for seven to eight hours on Sundays.

a cake cutter, it only could cope with two tray sizes. All other cakes, tarts and slices not baked in these trays had to be cut by hand. So that despatch did not have to wait until everything was cut and picked, product cutting was therefore outsourced to the individual branches. “By doing this we spread this work step across many people with the added benefit that the products were cooling whilst they were being delivered to our stores. At the end of the day it is impossible to cut a cake fresh from the oven, and especially not by hand – it’s far too unstable.” However, to ease the workload on

our sales staff we ultimately took the decision to bring cake cutting back into production. Since the production area had benefited from a big extension in 2018 we were able to set up a work area for cake and tart cutting near to despatch. When Döinghaus launched the newly developed Ultracut Kondus, the double-belt machine was exactly the right solution for Bäckerei Schmidt. “We explored all the cake cutting solutions available on the market, but we had been in contact with Döinghaus for a long time as we were very pleased with the ultrasonic technology.” The installation of Ult-

racut Kondus required us to be more specific in our planning as to which products we should produce at what time and which products also needed to be cut. This led to a reorganisation of the processes in the bakery and specifically of the oven loading plan, so that all products to be cut could cool sufficiently in a sort of interim cake store. “Thanks to the specialist staff in the bakery and the structured processes, this reorganisation led to a 50 percent time-saving when compared to the cutting time in the branches.” This is mainly explained by the fact that cutting larger quantities



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one after the other with one machine is simply more efficient than cutting just a few trays in the individual branches. “Our sales staff were very pleased about the easing of their workloads and immediately noticed that our products are more precise and cut identically every single day.”

Flexible cutting

Schmidt uses many different tray sizes and shapes. Ultracut Kondus cuts all of them without having



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13 As standard Ultracut Kondus can cut products with heights up to 80 millimetres. On request larger heights may also be possible. **14** With the appropriate base plate the advocaat cream can be cut directly on the base with a pedestal so it can be displayed later on the counter without moving it again.

to change blades part way through. “This cannot be taken for granted. Therefore, in our opinion it is the most flexible machine on the market and flexibility is essential for cutting our product range.” The Ultracut Kondus control unit stores a corresponding

program for each product. When configuring the system the bakery specified the tray sizes to be used for all products to be cut. Further parameters included the desired number of pieces, the cleaning cycle of the blades, cutting height and cutting speed

At a glance



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Managing Directors: Jörg Schmidt,
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Turnover 2019: not specified
Employees: Not specified
Flour consumption/year: Not specified
Export: none
Own sales outlets: 31
Certifications: ISO 50001 Energy
Management



Photo: BT / Stefan Schütter 2021



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15 The stracciatella and cherry cream slices are laid on a PVC plate on the base plate. A laser cross helps with the precise positioning of the product. 16 As shown here for stracciatella and cherry cream slices, Döinghaus determines the optimum temperature for every product in joint tests together with the customer.



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which can be adjusted in phases as required. For example, in bee sting cake, it makes sense to start by slowly cutting the hard top, yet for soft yeast dough layers with cream it is very easy to increase the cutting speed. However, for bakery products with a hard shortcrust pastry base, cutting at the top has to be faster and then proceed more slowly as the cut descends in order to avoid the shortcrust pastry base breaking. Accordingly, a specific cutting profile can be stored in the control unit for every bakery product. In general ultrasonic blades have the advantage that in comparison to traditional cutting processes, they exert 90 percent less force on the products and in contrast to a saw cut, no crumbs are created and trays remain undamaged as there is no aluminium abrasion. Consistent with the respective programs, the base plate system can accommodate products in all imaginable shapes. Therefore the assigned base plate specifies the respective cutting pattern which means the machine does not need a camera system. Instead, the different base plates centre the products in a reproducible manner. The cutting head then moves to the defined positions for cutting. "Individual plates have also been customised for some of our special products. The entire project with Döinghaus was implemented very smoothly." The relevant programs were already stored in the machine's control unit when they were delivered. All the on-site staff at Schmidt had to do was a little fine-tuning here and there. When adjusting the programs to the products the integrated remote maintenance was particularly helpful. Döinghaus also took care of providing employees with comprehensive training. "Our employees then quickly got to grips with the Ultracut Kondus. The machine is very user-friendly and its cutting speed and cut quality is excellent." To enable continuous cutting, the machine has two

return belts. Whilst one product is being cut on the left belt, the user can load the right belt with the next product and vice-versa. This avoids any occasional downtimes. For even higher volumes Döinghaus offers the Universal Cutter also as a conveyor and/or with two cutting heads as and when required.

Ultrasonic cutting system

The cutting portal is the same for all products and can contain up to four blades that can move independently. For an optimum oscillation rate the blades only use selected geometries. Only the best oscillation behaviour ensures the best cut and the best possible blade cleaning. A detailed distinction must be made between the two oscillation behaviours: longitudinal oscillation in the cutting direction is responsible for the clean cut, whereas transverse oscillation also ensures a cleaning effect since product residues do not remain on the blade but fall off. Döinghaus therefore advises every customer and recommends a suitable blade configuration. For Schmidt two blades suffice to cover all the products. The two 190 millimetre and 315 millimetre-wide ultrasonic blades are computer-controlled, adjustable to each other and oscillate at 20,000 Hertz. They operate without any special grinding or coating which could suffer wear and tear. Instead, the blades are manufactured from high-quality titanium that excels through a high fatigue strength. As the ultrasonic blades do not wear, they do not need regrinding. A blade protection system also provides for a long operating life. For example, if a blade encounters a bent tray edge or a foreign body in the product, Ultracut Kondus switches off automatically to avoid damage to the blade. A well-practiced employee can cut a tart or slice tray in one minute by hand and the machine needs about the

same amount of time. However, whereas the employee is a little tired when it comes to the last trays and perhaps needs two minutes, Ultracut Kondus is always finished after one minute. And every single time it cuts exactly the same way, irrespective of the operator. Conversely, each employee always cuts by hand a little differently to his colleagues. A big difference to manual cutting is that the employee can carry out another task in the meantime because the machine works autonomously.

Clean edges

“The big value-add for us is the precision cut because yet again it raises our products to a higher quality level. The ultrasonic blades cut through all baked products safely and cleanly, without tearing, pulling or pressing

and the machine does not make mistakes, so there is no waste. You just can't achieve this high standard manually.“ As chocolate glazes splinter very easily you have to be very careful when cutting by hand and also work with a heated knife. Such coatings are no problem for Ultracut Kondus ultrasonic blades. “This assumes of course is that the glaze is at the right temperature and has been processed correctly.“ The machine can even handle plum cakes and the comparatively hard skins of the fruit and even if there is a layer of crumble on top of the plums. In other systems the skin can cause the fruits to be displaced or torn during cutting. And that won't be a good look. “We have no products that we cannot cut with Ultracut Kondus. Even honey cakes, gingerbread and shortcrust pastry plates that we make during the Christmas time period

pass through the machine. All cream and custard products are cut with particular precision.“ The splashwater protected machine can be cleaned carefully with the hose. Moving parts can also be cleaned in the dishwasher and the belts can be quickly slackened and cleaned with a damp cloth. The blade is cleaned automatically in an integrated cleaning station, where firstly the blade moves into a water pan with an inlet valve which adjusts the water intake depending on the product. For example, to remove chocolate residues, it is sensible to let the water run for half a second longer. Then a compressed air curtain blows off any residual water and a drain removes the dirty water. “We are absolutely delighted with Ultracut Kondus. Should we have a problem we can always use the short channel to Döinghaus“ sums up Jörg Schmidt.