



# Rademaker

*Specialists in food processing equipment*



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# Rademaker

*Specialists in food processing equipment*



## *Croissant line*

When quality and quantity counts



# Three decades of experience

Thanks to croissant's buttery taste and delicate layering, they continue to gain popularity worldwide. Croissants were among the very first Rademaker bakery production lines. Rademaker is seen as the industry leader in flexible croissant lines. Delivering large quantities and an excellent return on investment without compromising product quality. Our four decades of experience becomes evident in the excellent dough quality. Straight or C-shaped, Plain or filled croissants with the finest chocolates and fillings, all croissants can be made using the same, flexible production line with capacities and quality that will exceed your requirements.

## Continuous improvement and innovation

Because we constantly strive to improve our equipment performance, Rademaker has improved our existing Croissant production lines even further. Designed according to our latest hygiene and design standards, the new Rademaker Croissant machine is truly state-of-the-art. Our continuous improvement program, together with listening to our client requests, aims to increase machine performance during operation through simplified product change-over, cleaning, sanitation, and maintenance.

## Added value

- ✓ Up to 50% easier and faster cleaning and product change-over
- ✓ Production capacity up to 240.000 pcs./hour
- ✓ Highest efficiency and yield in the market
- ✓ Improved ergonomics due to 30-70% lighter tooling
- ✓ Accurate, consistent, most robust and durable
- ✓ Hygienic design living up to the highest market requirements
- ✓ Capable to produce the smallest products in the market  
(9 gram dough weight @ 200 strokes / minute)



# Flexible layouts and capacity ranges

Rademaker Croissant lines are designed to produce the widest assortment of croissants: from mid-sized to industrial bakeries fully baked to pre-proofed and frozen croissants. Resulting from this market demand, Rademaker has numerous system configurations and product throughputs available.

The heart of a Rademaker croissant system is the cutting and turning unit – allowing us to produce capacities up to 200 strokes per minute at consistencies and yields much higher than other machines available on the market.

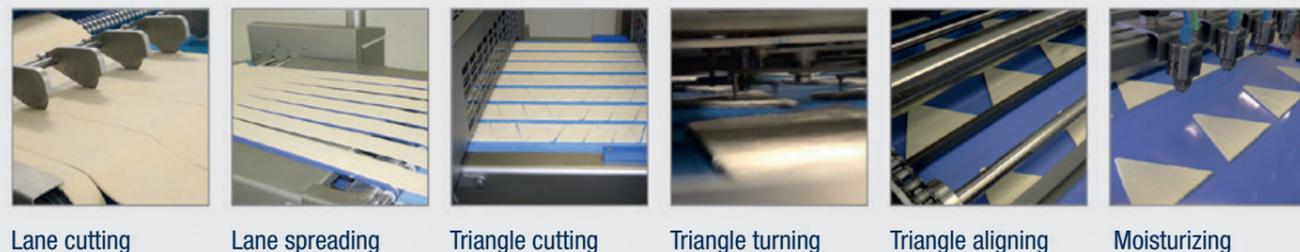


# Additional process units

The various modular process units below can be applied in combination with the Rademaker cutting and turning section to shape the required croissant type.

<b>Unfilled</b>			The Rademaker V-moulder unit can process filled and unfilled croissants.	
<b>Filled</b>				
<b>Italian Artisan</b>				
<b>Specials</b>				

## Cutting & turning production process:



	Straight	Bend	Pinched
Unfilled	 <p><b>Dough weight:</b> 9 - 150 gram <b>Max. capacity:</b> 168.000 pcs/hr* *50 x70 mm / 10 gram dough</p>	 <p><b>Dough weight:</b> 30 - 150 gram <b>Max. capacity:</b> 96.000 pcs/hr* *130 x 120 mm / 40 gram dough</p>	 <p><b>Dough weight:</b> 30 - 150 gram <b>Max. capacity:</b> 50.400 pcs/hr* *130 x 120 mm / 40 gram dough</p>
Filled	 <p><b>Dough weight:</b> 20 - 150 gram <b>Max. capacity:</b> 65.000 pcs/hr* *70 x 90 mm / 20 gram dough / 3 gram filling</p>	 <p><b>Dough weight:</b> 25 - 150 gram <b>Max. capacity:</b> 43.200 pcs/hr* *130 x 115 mm / 25 gram dough / 6 gram filling</p>	 <p><b>Dough weight:</b> 25 - 150 gram <b>Max. capacity:</b> 42.000 pcs/hr* *130 x 115 mm / 25 gram dough / 6 gram filling</p>
Unfilled & Filled Artisan	 <p><b>Dough weight:</b> 20 - 150 gram <b>Max. capacity:</b> 54.000 pcs/hr* *75 x 90 mm / 20 gram dough / 3 gram filling</p>	 <p><b>Dough weight:</b> 35 - 150 gram <b>Max. capacity:</b> 36.000 pcs/hr* *130 x 150 mm / 35 gram dough / 7 gram filling</p>	

# Product variety

Every region of the world has its own croissant products and therefore unique characteristics. With decades of experience, Rademaker is able to produce these different croissant types to meet our clients ever changing demands. This technology expertise is carefully applied in our various patented production solutions. Our position as the global leader in Croissant production lines is why we can assure that a Rademaker Croissant production line will deliver the taste, texture, shape, and capacity that you and your customer expect.

Wide range of products even the smallest product possible a mini croissant 9 gram dough weight up to 240.000 pcs/hr. Can handle all dough types, from the most rigid up to the pre-fermented and sticky doughs.

## Specials

Unfilled overlap pinched Croissant	Duo Color Croissant
 <p><b>Dough weight:</b> 30 - 150 gram <b>Max. capacity:</b> 48.000 pcs/hr* *50 x70 mm / 10 gram dough</p>	 <p>Dough weight &amp; capacity depending on customer requirement.</p>
Open end filled Croissant	Long shelf life Croissant
 <p><b>Dough weight:</b> 20 - 150 gram <b>Max. capacity:</b> 36.000 pcs/hr* *70x90 mm / 20 gram dough / 4 gram filling</p>	 <p>Dough weight &amp; capacity depending on customer requirement.</p>

# Daily operation and cleaning made easy

All tools and changeover parts have been redesigned with the focus on safety and ergonomics. The result is an average tool weight reduction of over 30%\*. Through implementing lightweight, Unique-Fit-Tooling® into our machines repeatable, fast, accurate and safe positioning of tooling is guaranteed.

## High production capacity

The Rademaker Croissant line can achieve a production capacity of up to 168.000 pieces per hour, running unfilled croissants of 10 gram in 14 row production at an outfeed working width of 1200 mm. This output is achieved and proven in many industrial production facilities. Even higher speeds of well over 240.000 pieces per hour are possible in special cases, for instance at increased working width or with a dedicated rotation unit for small croissants.

## Safety & easy maintenance

Essential parts can be easily and manually removed without the need for tools. This allows for easy access during cleaning and maintenance actions. Of course all moving parts are designed within the ergonomic Rademaker Sigma® guidelines with special focus on rounded edges and process visibility. Also the access to various key parts of the unit is controlled by sensors to guarantee the best possible operator safety.

## Unique Fit Tooling®

Wrong



Right



*Efficient, error free operation and tool change-over is realized by applying Unique Fit Tooling.*

*Because of the lightweight and more compact tooling, handling and detaching the tools is as easy as possible.*

*Each tool and machine part is given a name and unique identification number. This way the person responsible for the change-over can clearly see what tool to use.*

## Accurate, consistent & durable

Accurate cutting and rotating leads to consistent positioning of the triangle shaped dough pieces. This results in accurate and consistent make up of the croissants without the requirement of a vision system. The usage of timing belts instead of chains is preferred which also results in improved production consistency, reliability and system durability.



## Increased efficiency

The new Croissant line is developed to be the most efficient Croissant production machine in the industry. This is achieved by a combination of faster change-over and reduced cleaning & maintenance requirements. Improving process functionality leads to even higher product efficiency. For example:

- The dough release sensor, which is placed on the rotary cutter, prevents pollution to occur. It stops the line when pollution is detected so the cutter can be cleaned and damage is prevented. Result is less downtime and higher efficiency. (The Rademaker Croissant line can handle all dough types, from the most rigid up to the pre-fermented and sticky doughs.)
- Non-driven knives are developed for the scrap removal system. With this improvement, cleaning can take place without stopping the production process, leading to 6.6%\* increased efficiency.

In total a production efficiency increase of 11%\* is achieved compared to the previous generation Rademaker croissant systems.

## Robustness & Stability

Focus on robustness during equipment design results in highly reliable industrial production and extreme durability. Furthermore by using a servo driven rotate unit, high stability interaction with the cutting roller is achieved. With the Fully CAM driven process we are able to obtain the most exact & precise positioning possible AND due to high amount of pick devices, the Rademaker rotating unit is running at a relatively slow and controlled movement.



## Hygienic design

The system is designed according to the Rademaker Sigma® design guidelines. These guidelines are directly derived from various highend requirements for hygiene & cleanability such as the GMA standard and EHEDG recommendation. With excellent machine surface finishing, tilted upper surfaces, rounded frames, food approved blue plastic parts and eliminated hinges and bolts, the unit will meet the highest industrial expectations for hygiene.



\*Calculations bases on internal trails and operational data.

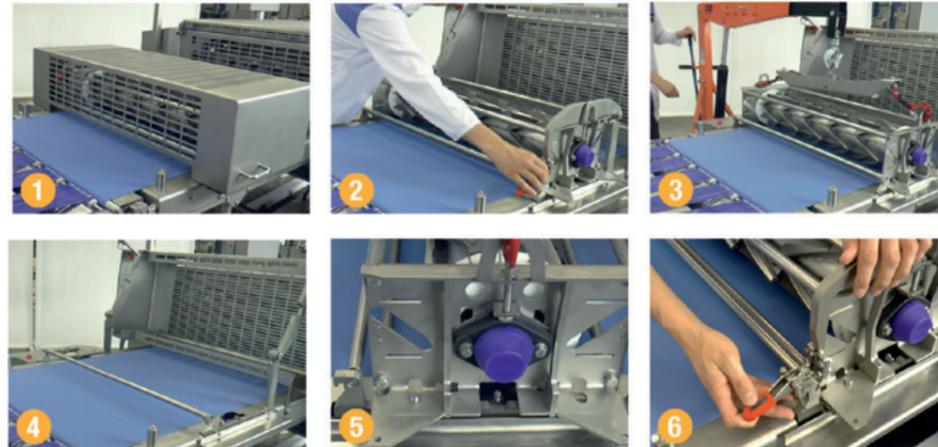
### Reduced change-over time

Faster and easier product change-over is accomplished due to the Rademaker Unique Fit Tooling®. Because of the lightweight and more compact tooling, handling and detaching the tools is as easy as possible. Therefore cleaning and change-over can be done significantly faster; up to 50%\* faster compared to competing machines. Underneath two change-over examples are shown:

- Rotary cutter change-over

(1 person: 2 minutes)

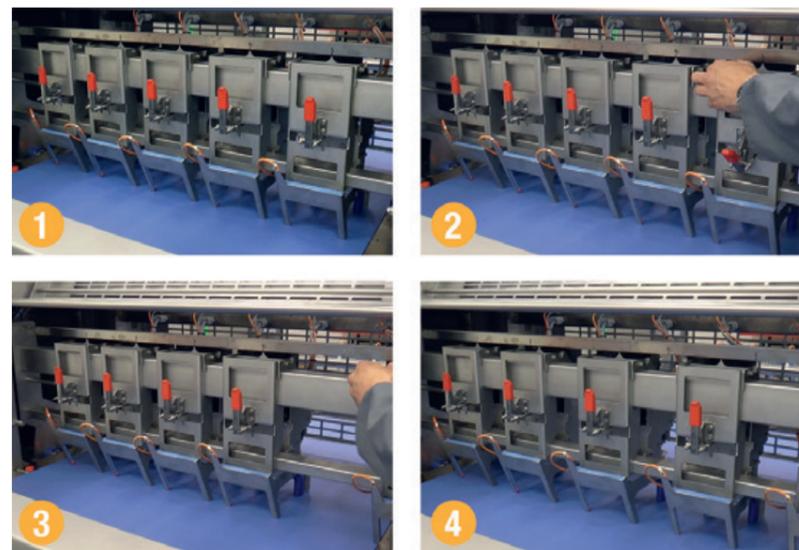
\*Calculations based on internal trials and operational data.



- Pinching unit

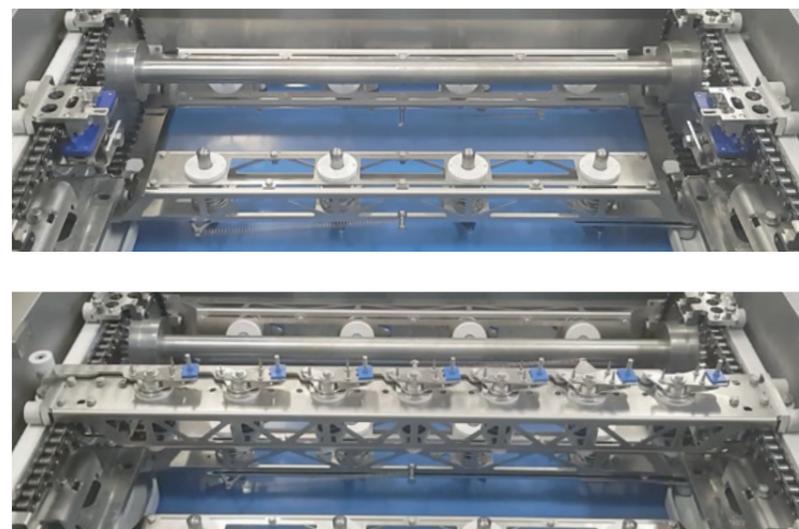
(1 person: 1 minute) change-over from 5 to 4 production rows.

Changing including full cleaning of the rotary cutter used to take 60 minutes. With the current improvements this is reduced to 15 minutes.



### Quick change-over of the product related panels

Our latest design of the Rotate and Aligning unit features a new design which enables quick change over of the product related panels. Due to the new design and our already standard lightweight tooling the change over process can be performed by one single operator. The new concept also prevents wrong orientation of the panels making it the most robust, versatile, stable, user-friendly and lowest wear concept.



# Customer satisfaction is key

Based on 40 years of Rademaker expertise, our production lines are considered as a sublimation of technological excellence gathered over time resulting with high product quality at the lowest possible cost of ownership!

## Unmatched 24/7 Service

Rademaker supports your production process every way we can, 24 hours a day, 365 days a year. Our service doesn't stop after the delivery and installation of your equipment. We can provide a full range of services to cover all system and process related issues through the operational lifetime of the machinery.

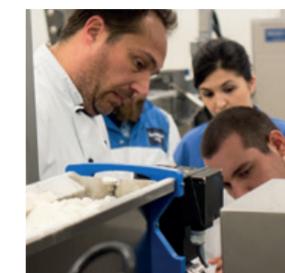
- ✓ 24/7 Service Helpdesk
- ✓ Customer Training
- ✓ Preventive and corrective maintenance
- ✓ Spare parts
- ✓ Upgrades, refurbishing & optimising

## Technological support

To be your partner for new product development and consultancy, we have, since 2006, opened the Rademaker Technology Centre (RTC). Here, the development process of a Rademaker production line starts. It features several pilot lines for any bakery product. The testing rooms are climate controlled, so the customer's production situation can be created. Rademaker technologists develop the products that the customers demand. Eventually, these products are translated into a Rademaker production line.



## Rademaker Academy: training & sharing know-how



Technology know-how is one of the key items that is required when a production line is installed, and the production process starts. More specifically the detailed know-how on sheeting processes, production line operation and dough processing are often lacking. This lack of know-how can result in problems affecting the overall cost and time to market. But also, raw material suppliers who see the traditional bakery industry shift more and more towards sheeting technology require more knowledge. This is why the Rademaker Academy started; to preserve and share bakery knowledge through education and training.

## Turn-key solutions

The Rademaker Handling System is developed to process a wide variety of (artisan) bread products for mid-sized to full industrial bakeries. Gentle product handling is achieved at high output and great flexibility is offered to handle many different bread products on one system. We can also deliver a complete bread production solution. Our Systems Integration Division is the result of our client's desire to have Rademaker take control and responsibility for a part or the complete bakery system. The benefit being our clients can leverage Rademaker's decades of international bakery experience while focusing on their day to day operations and core business. Additional advantages being one point of responsibility, innovation of system design using tier one equipment suppliers, and efficiency of communication.

