

Crackers and hard
dough biscuits.
**One line, endless
possibilities.**

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Consumer demands drive our business. To thrive, we need to find a balance between healthy food trends and people's need to find a moment's indulgence in a sweet treat. Specific concerns such as gluten-free or vegan diets need to be taken into consideration as well. Experimenting with local ingredients such as pulses can open up these markets, and adding vegetables to the mix turns even the plainest cracker into an exciting snack. High fiber biscuits and natural flavors complement the better-for-you trend. Not only do we provide support in innovative product development, we supply you with efficient processing solutions and high quality Meincke machines. Together, we'll ensure your future success.

Enhanced line efficiency

Highest performance guaranteed

Advanced weight accuracy

Increased efficiency and lower ingredient costs

Fast changeovers

Less downtime, significantly higher output

Low gas consumption

Greatly reduced operating costs

Long service life

Lines working for 25+ years



Our Biscuit Innovation Center in Skovlunde, Denmark is your port of call for product development and recipe refinement.

We make your ideas ready for market: with 2000 m² of innovation space, your imagination is the only limit. Our team of experts comes from a broad range of backgrounds within the food industry. Their practical experience will guide you along the way and will help you distinguish yourself from your competitors.

One line,
endless possibilities.



Process line overview.

Working closely together, we will develop the best solution for your individual needs. Key points are an efficient production, low energy consumption and minimum maintenance requirements.

Typical basic process overview



Mixing: Raw ingredients are mixed in a horizontal mixer. No fermentation time required.



Feeding: The finished dough is transferred to the sheeter hopper via a dough feeding system.



Sheeting: 3- or 4-roll-sheeters sheet the dough to a continuous dough band.



Laminating: Typically, the dough band is laminated 4-6 times at 6 mm each.



Calibrating: The lamination stack is calibrated with 3 to 4 gauge rollers, depending on speed and final thickness.



Cutting: The final sheet is cut with a single or a double cutter, depending on the docking complexity.



Decorating: The product is topped with salt or other toppings.



Baking: Depending on weight, size, etc. the product is baked around 3 to 4.5 minutes.



Oil spraying: After baking, hot oil or flavoring is added.



Cooling: The product is cooled at ambient temperature for 4.5 to 6 minutes.



Sandwiching: If desired, the products are spread with cream or other fillings and sandwiched.



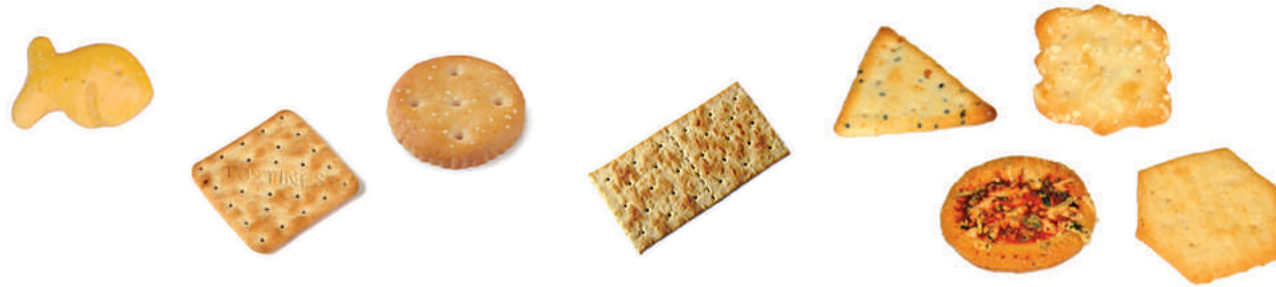
Stacking: The final products are then stacked and fed manually or automatically into packaging machines.

Line configurations.

Cracker



Examples:



Hard dough



Examples:



Lye products



Examples:



Soft dough



Examples:



Feeding. Meincke PSH pre-sheeter.



The two grooved rollers of this two-roller dough sheeter pull in the dough from the dough feeder/mixer system to preform a continuous dough sheet. This is a necessary step to ensure that the dough sheet is produced in a thickness suitable for further processing.

Features

- two grooved rollers, diameter 400 mm
- side guards, sloped roof
- motorized roller gap adjustment from 5 to 25 mm
- separate drives for each roller
- local HMI touch panel
- nickel plated side frame plates
- optional: stainless steel side plates
- optional: manual gap adjustment up to 200 mm for hygienic cleaning

Benefits

- robust construction ensures highest level of dough sheet weight control
- individual drives for each roller ensure a consistent dough sheet for feeding the forming line
- fully adjustable roller gap control for more flexibility and efficient dough feeding for all types of dough



Sheeting.

Meincke Preomat dough sheeter.



The fluted roller pair of the four-roller dough sheeter pulls in the dough and builds up a defined pressure in the chamber formed by the fluted roller and calibrating roller pairs. The bottom gauge roller pair produces a continuous dough sheet of a certain thickness that can be processed further.

Features

- top grooved roller pair, diameter 400 mm
- bottom smooth roller pair, diameter 300 mm
- nickel plated side frame plates
- motorized roller gap adjustment from 5 to 25 mm
- separate drives for each roller
- local HMI touch panel
- optional: manual gap adjustment up to 200 mm for hygienic cleaning
- optional: stainless steel side plates
- optional: additional gauge roller pair
- optional: pressure sensor in between dough chambers
- optional: level sensor in inlet hopper

Benefits

- individual drives for each of the four rollers provide enhanced flexibility, process control and efficiency
- optional cleaning mode opens up the gap between the rollers up to 200 mm wide to provide easy access for cleaning, resulting in less downtime for cleaning
- automatic control of the pressure applied to the dough sheet for consistent and accurate dough sheet production



Laminating. Meincke LAM cut-sheet laminator.



The Meincke LAM cut-sheet laminator produces a laminated dough sheet using the cut and lay principle. The layering conveyor is mounted on a carriage that moves forward above the discharge conveyor. The sheet is cut at the desired length and the carriage retracts to place the sheet onto the discharge conveyor below.

Features

- setting up to 9 dough layers
- pneumatic cut sheet knife system
- main HMI touch panel
- optional: string transport for 90° inline dough sheet turns
- optional: cream duster device Meincke FSTV with transfer conveyor

Benefits

- modular design enables flexibility in plant design to ensure the most suitable configuration for your production needs
- full servo control for highest levels of dough sheet position control resulting in enhanced weight control of the final product
- tangential dough sheet knife for accurate dough sheet edges, ensuring better weight control and density of the final dough sheet



Calibrating. Meincke Duomat gauge rollers.



Two rollers reduce the dough sheet to a thickness between 0.5 mm and 20 mm.

Features

- roller diameter 300 mm, cast iron (duo 300)
- motorized roller gap adjustment
- fixed roller scraper
- local HMI touch panel
- optional: ambient air blower (with heating unit)
- optional: anti-stick coating
- optional: roller diameter 400 mm, cast iron (duo 400)
- optional: independently driven rollers
- optional: motorized bottom roller scraper

Benefits

- enhanced efficiency through automatic dough sheet thickness control
- roller slewing system for more accurate thickness control, best-in-class weight control and negligible dough waste
- three durable chilled cast iron rollers for accurate end products and more efficient cleaning



Cutting.

Meincke Duocut roller cutting machine.



The Meincke Duocut embosses and cuts hard dough biscuits and crackers. In a twin roller operation, the first roller embosses the custom designed pattern, biscuit name and/or company logo. The second roller cuts out the contours. The two rollers are synchronized via servo motor and adjustable via the PLC. In a single roller operation, the first roller idles or is removed and, in a slower process, the second roller works both as die and cutting roller.

Features

- tool-free manual clutch for roller removal up to 1600 mm working width
- cutting roller diam. 205 for 1000mm, 1200mm; diam. 300 for 1500mm, 1600mm, 1800mm
- ambient air blower system
- optional: manual rubber roller adjustment
- optional: conveyor extension for mounted dough-separation and coating devices
- optional: extension for pretzel products

Benefits:

- independent servo-driven cutting and embossing rollers provide ultimate accuracy and efficiency
- automatic pressure control for consistent product quality and enhanced cutter belt life
- fast cutter belt change for easy, fast changeover ensuring less downtime for cleaning and maintenance



Molding.

Meincke GF-ST rotary molder.



This combined molding and cutting machine forms or cuts dough pieces with either a molding or a cutting roller. If used for molding, the dough will be fed in a hopper and the grooved roller presses the dough into the forms of the molding roller. A scraper evens the amount of dough in the molds. A moisturizing unit helps to remove the dough pieces from the molds. If used for cutting, the combined cutting and embossing roller will press the engraving into the dough band and cuts out the dough pieces. Screw jacks underneath the belt can be used to adjust the pressure of the rubber roller.

The Meincke GF-ST can also be used to bypass preformed products.

Features

- molding/cutting roller diam. 250 for up to 1200 mm; diam. 300 at 1500mm, 1600mm, 1800mm
- open frame conveyor
- adjustable belt scraper with removable catch tray
- dough level control
- main HMI touch panel
- optional: driven transfer shaft
- optional: web moistening device Meincke AF
- optional: separate drive for molding roller
- optional: root press and wire cut attachment
- optional: drive and motion unit for wire cut

Benefits

- the possibility of cutting or molding with the same machine makes quick changeovers easy and takes up less space
- ideal for multipurpose lines



Baking.

Meincke Hybrid DGF-IFC tunnel oven.



We combine different heating systems to create the best oven configuration for your needs. The most common hybrid oven for crackers and hard biscuits is the combination of a direct gas fired oven with a convection oven.

Benefits

- trademark modular design which lets us adapt your Meincke oven to the exact specifications necessary for best baking results
- oven recipe management system for easy set-up via the HMI and more efficient baking, quicker changeovers and faster production start-ups
- the baking chamber's durable anti-corrosive material ensures a long service life



Oil application. Meincke Sole oil sprayer.



After passing through the oven, the products are transferred to a stainless steel wire mesh band and run through the spraying chamber. Rows of oil discs rotating above and optionally below spray the product with oil or flavor.

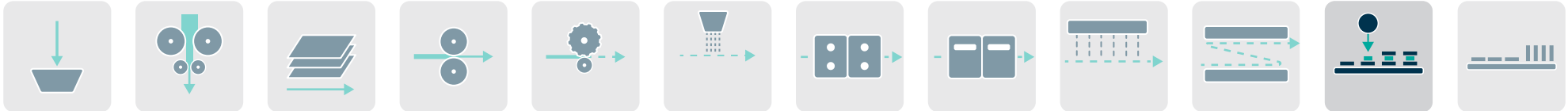
Features

- superior rotating discs with separate drives on a working width up to 1800 mm
- upper oil circuits with double jacketed pipes and lobe pumps
- movable oil container with rod heating system and filter
- oil container capacity approximately 75 l
- adjustment of each disc via manual valve
- joint adjustment of all disc via the control panel
- controlled via the main oven's local HMI
- optional: lower rotating discs with separate drives



Sandwiching.

Meincke SWM sandwiching machine.



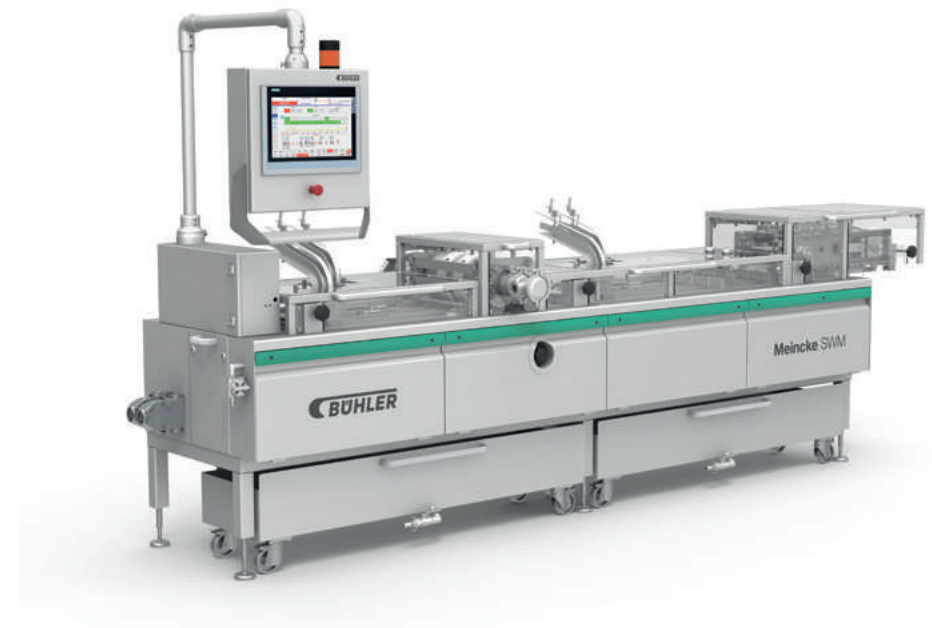
The bottom biscuits are placed onto a chain conveyor which transfer the product below a rotating cream head. The cream depositing head deposits a preset amount of filling mass onto the bottom biscuits. After the cream application the top biscuits are placed onto the cream deposit and pressed down to achieve a uniform sandwich height.

Features

- frame mounted on stainless steel with height-adjustable feet
- equipped with one or two depositing heads in one to four rows
- sandwiching between 600 and 1200 sandwiches per minute
- product length 35-65 mm, product width 35-65 mm
- driven by the packaging machine via pneumatic coupling or servo motor
- operating panel with touch screen
- optional: vertical packaging Meincke SWM-V
- optional: inline packaging Meincke SWM-R

Benefits

- adjustment of cream volume and deposit centering during standstill and operation, eliminating downtimes for adjustments
- quick, simple exchange of the nozzle ring minimizing downtimes
- automatic tensioning and lubrication of the transport chain for a longer service life





From expertise
to excellence.



Our process.

How we execute your project.

A Innovation.

Your first stop is our Innovation Center, where our food technologists help you define your goals. Whether you are looking to refine an existing product or to develop a new idea, we'll figure out your needs and determine our next steps.

B Project management.

We implement projects according to the stage-gate process. Each project is accompanied by a dedicated project manager who is also your single point of contact. The project manager and their team make sure that every detail is thought of, from the beginning of the project all the way to the Site Acceptance Test. They coordinate the timelines, help implement third party equipment into Bühler lines, facilitate the addition of machines to an existing order and support the Factory Acceptance Test. They also arrange communications to other departments, e. g. trainers and food technologists.

C Commissioning.

Your project manager is still your one point of contact for the coordination and planning of resources during the installation phase. Additionally, our dedicated, highly skilled engineers accompany commissioning every step along the way. They ensure a smooth process during the installation of components and complete lines, testing the process for performance and stability and recording results. After the final takeover, the project is handled by our Customer Service.

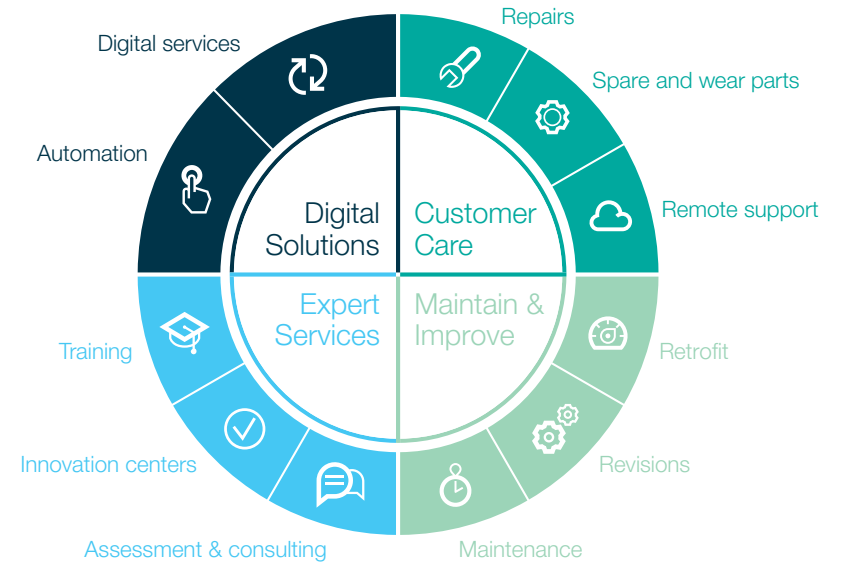
Customer Services.

Bühler stands for more than just high-quality machinery and best value for money. We also stand for lifetime partnerships. To continuously keep your production at the highest productivity level, our customer service supports you in all service dimensions.

We accompany you through the entire lifecycle of your products and offer an all-round service from consulting to individual spare and wear part solutions and retrofits.

Expand your knowledge base and gain a competitive edge: find out just what it is that makes the perfect biscuit or cracker so delicious in our Biscuit Innovation Center and take part in technical training courses at our Training Center or directly at your site.

Let's work out a service solution tailored to your specific needs. Feel free to e-mail us at service.bhbc@buhlergroup.com



Facts about our Biscuit Innovation Center

2000 m²

Workspace for innovation

We support you with a complete cookie line and a fully equipped cracker line, additional equipment and our own expertise.

5

Food technologists and a fitter

Our technologists are at your service, from the first idea to the finetuning of your products during commissioning of your plant.

300

Days per year

Our Biscuit Innovation Center supports and trains you all year long. We spend most days sharing our expertise and conducting tests.

Equipment monitoring system. **Your access to industry 4.0.**

Our equipment monitoring system supports your staff in keeping production stable. The various needs of different user groups are taken into consideration: optimize production, manage necessary maintenance and keep operations running smoothly. Keeping an eye on productivity levels can help you save time, money and valuable resources.

Equipment monitoring

The maintenance team can proactively service the machine as needed.

Real-time performance indicators

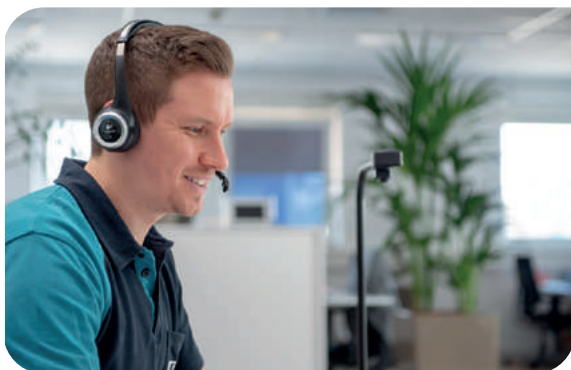
Your operator immediately reacts to take corrective measures.

Managing KPIs per shift

Monitoring your systems enables production managers to accurately plan the output.

Centralized line overview

Keep track of all your machines for highest line effectiveness.





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