



SUCCESSFUL SNACKS START HERE



READING BAKERY SYSTEMS



Collaboration. Innovation. Technology. Expertise.

All the ingredients for successful snacks



READING BAKERY

Staying ahead in an industry that never stands still

Snack food manufacturers need processing solutions that adapt with their ever-changing products. Equipment today needs to do more than just perform with little maintenance or downtime. It needs to provide value through customization and adaptability.

Reading Bakery Systems understands the dynamic nature of the global baked snack food industry. We work side-by-side with our customers to meet their process and product challenges with innovative thinking and high quality systems and components.

Our experienced people apply decades of manufacturing and food engineering expertise to help customers create successful baked snack products.

We serve our customers as a proud member of the Markel Food Group. With the combined resources of AMF Bakery Systems, Reading Bakery Systems, Tromp Group and Solbern, the Markel Food Group offers a wide portfolio of innovative and reliable production solutions for snack foods, breads and buns, pizza, pastries, pies, and other food products, as well as food product folding and container filling solutions.



A broad array of baking solutions

Reading Bakery Systems offers Thomas L. Green and Reading Pretzel high production processing lines capable of producing a wide range of snack products, innovative Exact Mixing continuous mixing solutions that support and expand the product varieties served, and Reading Thermal's SCORPION® 2 Data Logging Measurement System that ensures oven optimization and solves process problems.



Succeeding side by side

Working in close collaboration with customers, our engineering and manufacturing teams create systems that are safer, more flexible, and more efficient than ever before. And our sales and technical service groups engage and support our customers with solutions that will keep them competitive in a very challenging food market.



The science of success

At our Science & Innovation Center, a dedicated R&D facility, you can work with our team to develop new snack products; validate new ingredients; test machinery; research innovations in mixing, forming, baking and drying; and produce market samples for testing.



Science & Innovation Center

A unique place to communicate, collaborate and innovate

At our fully equipped, licensed food processing facility, a unique spirit of collaboration blurs the line between our team and yours. Goals and challenges are shared, and problems worked out together. That way you gain the confidence that you are bringing the right product to market and taking advantage of the latest technologies to make your commercial scale operation as efficient as possible.

Here at this dedicated R&D facility, you can collaborate discreetly with our experienced engineers to develop new processes; validate new ingredients; conduct shelf-life studies; test new machinery and processing techniques; research profitable innovations in mixing, forming, baking and drying; and produce market samples for evaluation and testing.

With complete process lines for making baked snacks, and many other food products, the Science & Innovation Center allows you to test a variety of batch and continuous mixing concepts as well as forming processes.

In addition, you will have access to the Reading Thermal SCORPION® 2 Data Logging Measurement System to help measure and record conditions in the processing oven. The Center also includes private customer conferencing areas, and a Quality Control Lab with analytical equipment to examine the samples that are produced.



The Science & Innovation Center includes all the process equipment needed to duplicate conditions you might encounter in full-scale production. It's the best possible way to ensure a successful manufacturing process and gain the confidence of all members of your development team.



Pretzel & Snack Systems:

Flexible, efficient, turnkey production lines for extruded pretzels and snacks

System outputs from 100-1000 kg/hr of finished product



Baking & Drying

The flexible SPECTRUM OVEN® provides a variety of heat transfer combinations within a modular design, which enables the production of different products by simply adjusting the heat transfer profile. An optional Multi-Pass Dryer provides faster oven speeds, greater production throughput, and more process control.

Batch or Continuous Mixing

Depending on the level of automation required, Exact Continuous Mixing Systems and batch mixing options are available. Continuous Mixing offers the most consistent and reliable dough to your production line, producing consistent products all day, every day.



Dough Handling

The completely automated Dough Handling System precisely portions, conditions and transports dough to the Low Pressure Extruder.



Extrusion

Our flexible Low Pressure Extruders allow for the creation of pretzel shapes, sticks and other extruded snack products on one production line.



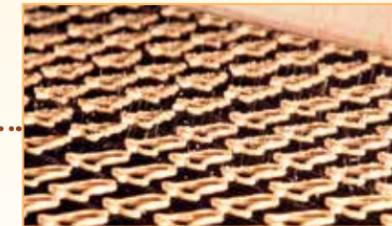
Guillotine Cutting

The single-blade design provides precise, consistent cutting and product separation of sticks and nuggets across the width of the line.



Omega I Dispenser

The Omega I Dispenser delivers salt and other granular material at reliable rates across the line and over time.



Pretzel Cooker

Designed to evenly and accurately cook pretzel products, the Pretzel Cooker ensures consistent texture, pH and color prior to the baking process.



Multi-Crisp Baked Snack Systems:

A flexible system to create snack crisps from potato, wheat, multi-grain or corn masa flour doughs.

System outputs from 250 - 1000 kg/hr of finished product



Continuous Mixing

A specialized liquid injection system and revolutionary mixer shaft design evenly distribute moisture throughout the dough, and create consistent, appealing product textures.



Dough Handling

The dough transport conveyor ensures that the dough makes it from the mixer to the 2-Roll Sheeter hopper on a first-in, first-out basis.



2-Roll Sheeting

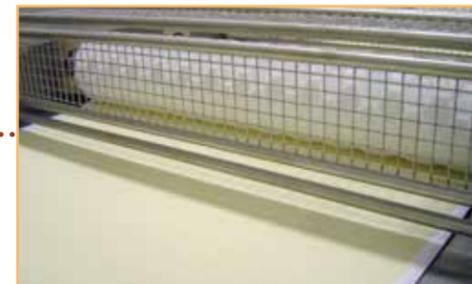
The single-reduction, 2-Roll Sheeter produces a continuous dough sheet discharged directly onto the Rotary Cutter infeed conveyor.

An optional 2-Roll Sheeter can be provided to produce crisps with a ridged appearance and crinkled product texture.



Baking & Drying

The single-pass SPECTRUM OVEN® is a proven convection baking system suitable for balanced baking and developing interesting textures in multi-crisp products. An optional Multi-Pass Dryer provides faster oven speeds, greater production throughput, and more process control.



Rotary Cutting

The die roll on the Rotary Cutter accurately and continuously cuts discrete product shapes out of a single dough sheet.



Cracker Systems:

Durable, reliable and sanitary
Thomas L. Green production systems

System outputs from
500-5500 kg/hr

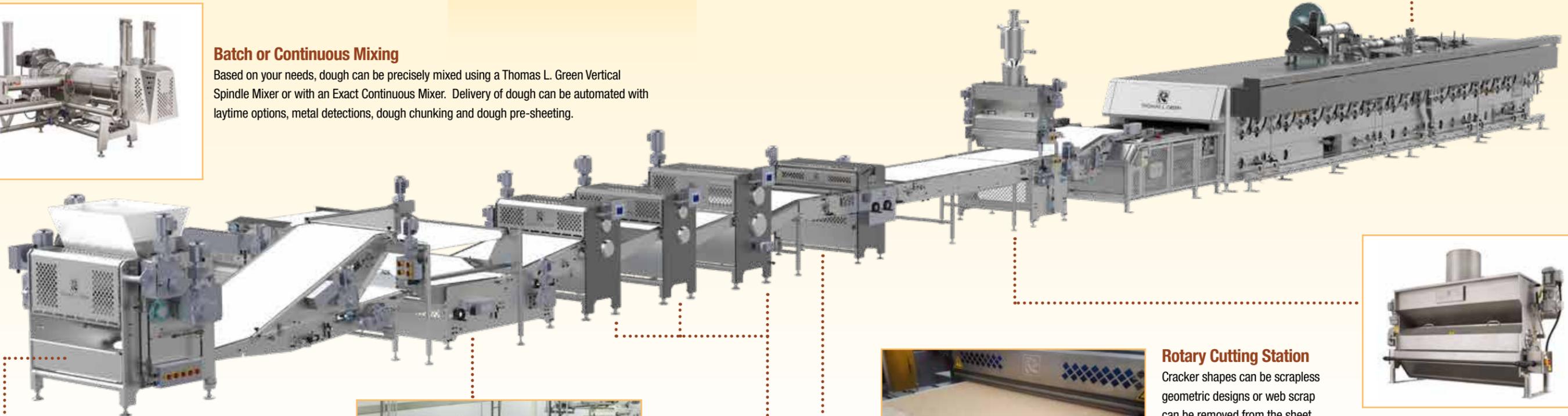
Baking

The PRISM OVEN is a powerful system for uniform baking of cracker products. Both direct gas-fired and convection oven modules are employed, providing consistent quality, color, taste and texture.



Batch or Continuous Mixing

Based on your needs, dough can be precisely mixed using a Thomas L. Green Vertical Spindle Mixer or with an Exact Continuous Mixer. Delivery of dough can be automated with laytime options, metal detections, dough chunking and dough pre-sheeting.



Rotary Cutting Station

Cracker shapes can be scrapless geometric designs or web scrap can be removed from the sheet and returned to the Sheeter.



Omega Dispenser

Several options are available for applying salt or other topping material to the top of cut dough pieces. Recovery of excess material is also available.

Gauging Stations

Following the Laminator, multiple Gauging Stations ensure a gentle reduction in sheet thickness prior to shape cutting at the Rotary Cutting Station.



Laminating

Thomas L. Green Laminators accurately cut, stack and deliver sheets of dough for unique product textures. The precise and gentle placement of cut sheets provides uniform dough density at both the edges and center of the finished cracker sheet.

Sheeting

The process begins with a primary Sheeter producing a hole-free sheet at a uniform density, which is critical to automated packaging systems after the oven.



Hard & Soft Biscuit Systems:

Flexible, reliable and efficient
Thomas L. Green biscuit production systems

System outputs from
500 -2500 kg/hr



Forming Equipment – Hard Biscuits

The Thomas L. Green 3-Roll Sheeter generates a consistent dough sheet ready for further thickness reduction. The Gauging Stations ensure a gentle reduction in sheet thickness prior to shape forming.



Baking

The PRISM OVEN is a single-pass, flexible baking platform designed for balanced and consistent baking of a wide variety of biscuit products. The operator can control product moisture removal to maximize quality.



Forming Equipment – Soft Biscuits

The Rotary Moulder efficiently produces high-definition, three-dimensional biscuits, cookies, sandwich cookies, and pet treats. The interchangeable die roll is made of engraved brass and can be supplied with segmented rings for multiple shapes.



Rotary Cutting Station

Scrapless geometric shapes and distinct biscuit shapes can be formed by the Rotary Cutting Station. All Rotary Cutter die rolls are easily and quickly changed for increased product flexibility and decreased production downtime.



Wirecut Cookie Systems:

Reliable, efficient and cost-effective
Thomas L. Green cookie production systems

System outputs from
200 -3600 kg/hr

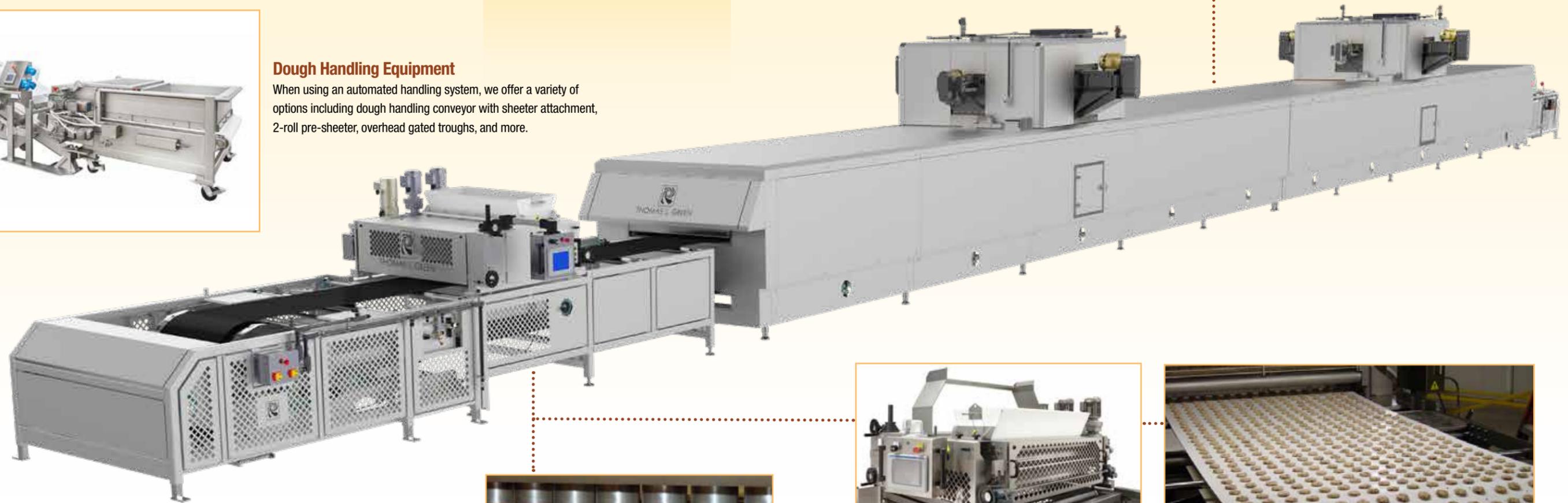


Baking

The PRISM OVEN is a single-pass, flexible baking platform designed for balanced and consistent baking of a wide variety of biscuit and cookie products. The operator can control product moisture removal to maximize quality.

Dough Handling Equipment

When using an automated handling system, we offer a variety of options including dough handling conveyor with sheeter attachment, 2-roll pre-sheeter, overhead gated troughs, and more.



Forming Equipment

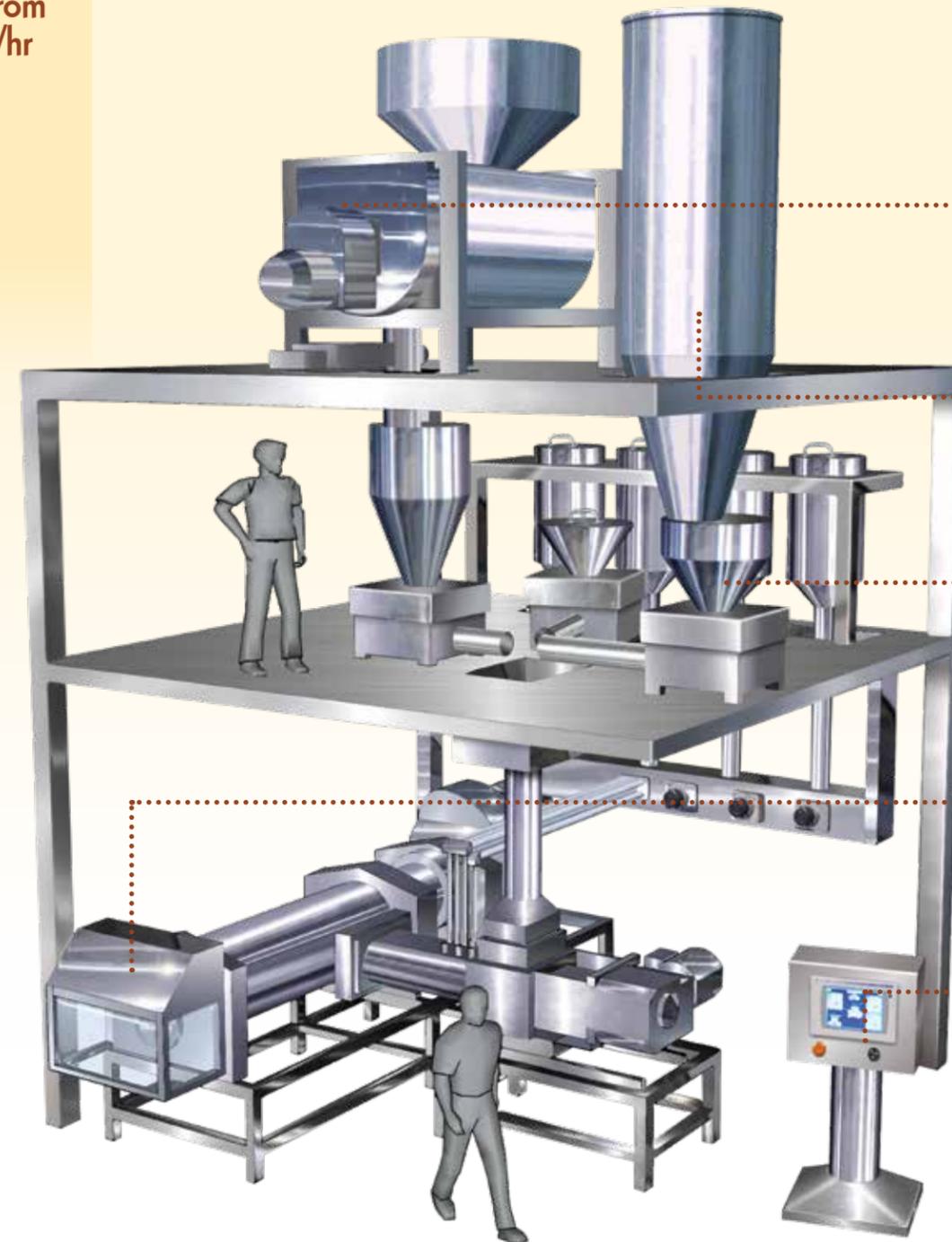
The Wirecut Machine creates a variety of cookies, biscuits and bar products. It's designed to provide piece-weight accuracy and reliability, and is best for non-descript shapes.



Exact Continuous Mixing Systems:

Improve consistency, reduce labor and simplify your mixing process

System outputs from 50 - 10,000 kg/hr



Minors Blending

To reduce costs, increase flexibility and simplify the process, some minor ingredients are automatically pre-blended before metering.

Materials Handling

We work with vendors who specialize in solutions, including dilute phase, dense phase, vacuum and pressure processes. We can also customize input methods to your individual process needs.

Ingredients Metering

Gravimetric, Loss-in-Weight technology provides precise, uninterrupted dry ingredient metering to the Continuous Mixer. Flow-meters connected to the closed loop control system ensure that liquid ingredients are accurately delivered to the Mixer.

Continuous Mixer

Continuous mixing is the process of continuously metering ingredients directly into the mixing chamber. The mixing may be done in stages to ensure all ingredients are incorporated properly.

Operator Interface

All metering and mixing procedures are monitored and initiated by the control system so the operator is always able to confirm and modify as needed.



The **EX Continuous Mixer** produces low absorption dough for products such as pretzels, bagels, cookies and crackers.



The **MX Mixer** is our most versatile mixer. It is well suited for a wide range of products including cookies, snacks, batters, icings and pastes. The MX Mixer is also an ideal first-stage mixer for processes that require creme up and pre-blend stages.



The **FX Continuous Mixer** is a high intensity mixer that produces dough typically used for wheat, potato, corn masa flour and multi-grain snack products.



The **HDX Continuous Mixer** is designed for low temperature dough requiring two stage mixing and high development. Products made on the HDX Mixer include buns, breads, rolls and most products with absorption above 60%.



Expanded Snack System:

A single screw extrusion system for producing expanded snacks from corn, rice and other cereal ingredients.



Dry Ingredient Ribbon Blender

The Ribbon Blender creates a homogenous blend of dry ingredients for a variety of recipes that can be run through the extrusion system. It may also be used to evenly distribute oil or increase the moisture level of the dry ingredient blend to promote better processing and higher system throughput.



150-400 kg/hr of preseasoned product



High-Pressure Extruder

The High-Pressure Extruder mixes and cooks the raw ingredients to produce expanded shapes. The flexible design enables quick and easy changeover of the screws, barrels and product dies. This allows for a wide variety of formulations to produce interesting textures and flavors in different shapes, including curls, balls, ribbons, popcorn shapes, rings and more.



Slurry Applicator

The Slurry Applicator coats the dried product with an oil-based seasoning blend to add flavors to the final product such as cheese, butter, or a variety of other savory combinations.



Tumble Dryer

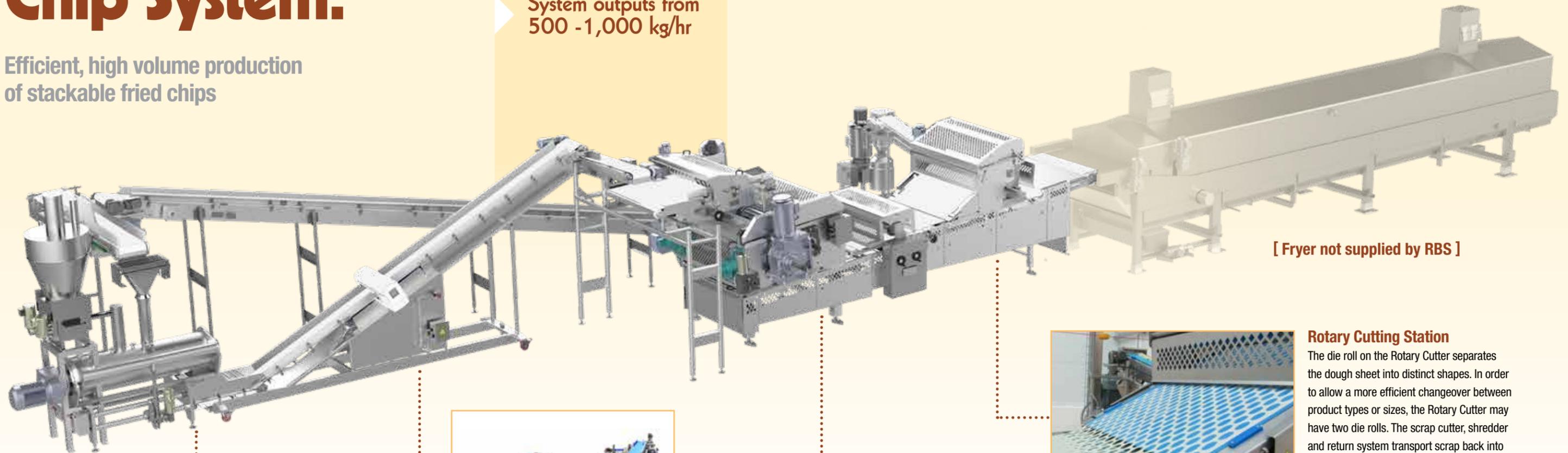
The Tumble Dryer reduces the moisture of the product to the proper, finished level, typically 1.5% to 4%. The dryer is designed for gentle tumbling action and allows for variation of residence time and temperature to control the exact process parameters required for different products.



Stackable Chip System:

Efficient, high volume production of stackable fried chips

System outputs from 500 -1,000 kg/hr



[Fryer not supplied by RBS]



Rotary Cutting Station

The die roll on the Rotary Cutter separates the dough sheet into distinct shapes. In order to allow a more efficient changeover between product types or sizes, the Rotary Cutter may have two die rolls. The scrap cutter, shredder and return system transport scrap back into the mixer to be reused.

2-Roll Sheeter

The single-reduction, 2 Roll-Sheeter produces a continuous dough sheet that is discharged directly onto the Rotary Cutter infeed conveyor. The rolls of the 2-Roll Sheeter are provided with unions for chilled water supply to maintain roll surface temperatures during production. Dough level is automatically maintained in the hopper for consistent dough density in the final sheet.

Dough Handling

The dough transport conveyor ensures that the dough makes it from the mixer to the 2-Roll Sheeter hopper on a first-in, first-out basis. As an option, a metal detector can be provided to the dough feed system to protect the dough sheeting rolls. Metal detectors monitor the final product before packaging for consumer protection.

FX Continuous Mixer

The Exact Mixing FX Continuous Mixing System was specifically designed for this chip process. The FX Mixer evenly distributes moisture throughout the potato dough by using a specialized liquid injection system along with a revolutionary mixer shaft design. With this recipe-driven system, final product quality is assured and is fully repeatable.



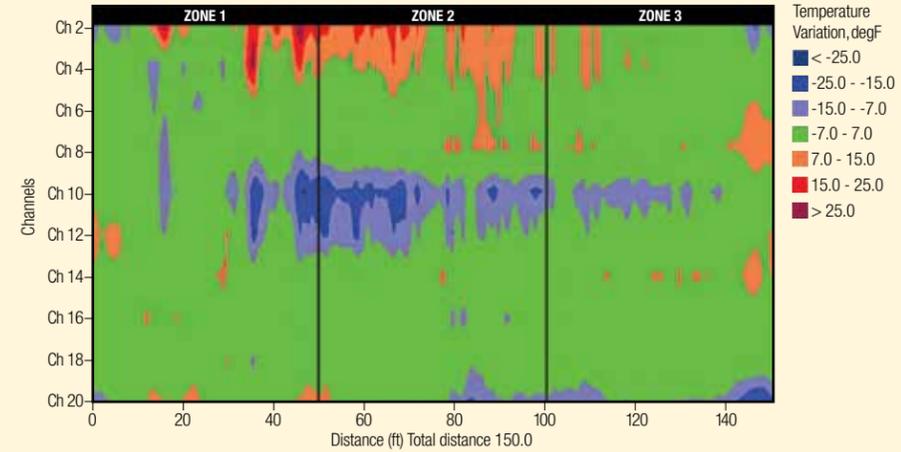


SCORPION[®] 2

Data Logging Measurement System

SCORPION[®] 2 with SMART SENSOR TECHNOLOGY™

This technology enables you to monitor real-time in-process conditions, giving you the critical information you need to correct problems and maintain perfect process conditions in your oven, dryer or cooling tunnel.

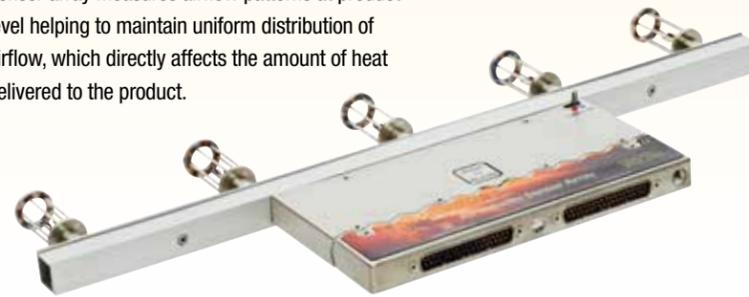


Heat Flux Sensor :

Sensor measures both convective and radiant heat flux enabling the control of finished product characteristics across multiple lines.

Air Velocity Sensor Array

Sensor array measures airflow patterns at product level helping to maintain uniform distribution of airflow, which directly affects the amount of heat delivered to the product.



Temperature Sensor Array

Sensor array measures side-to-side temperature variation across the width of the conveyor allowing for precise temperature adjustments to eliminate unevenly baked product.

Humidity Sensor

Sensor measures moisture content of the thermal environment in heating and cooling processes, yielding a precise profile of moisture experienced by the product.

R&D Smart Sensor™

This multi-element sensor enables you to collect 4 key parameters (temperature, airflow, product core temperature and energy transfer) in a single-pass through a process.



Optimize food safety and throughput

Controlling internal food temperature is key to achieving food safety. Today's food processors must also document how they are meeting food safety requirements with data. The SCORPION[®] 2 Data Logging Measurement System makes both jobs easier. The SCORPION[®] 2 Data Logger with R&D Smart Sensor and Product Probes simplifies the measurement of environment temperature, airflow, energy transfer and internal product core temps. Plus the SCORPION[®] 2 Software (SV8) calculates and displays the % kill for a specified pathogen reduction level.



Global Representation



READING BAKERY SYSTEMS

THOMAS L. GREEN | READING PRETZEL | EXACT MIXING | READING THERMAL

A Markel Food Group Company

380 OLD WEST PENN AVENUE | ROBESONIA, PENNSYLVANIA 19551 USA | (01) 610.693.5816

FAX (01) 610.693.5512 | INFO@READINGBAKERY.COM | READINGBAKERY.COM

