



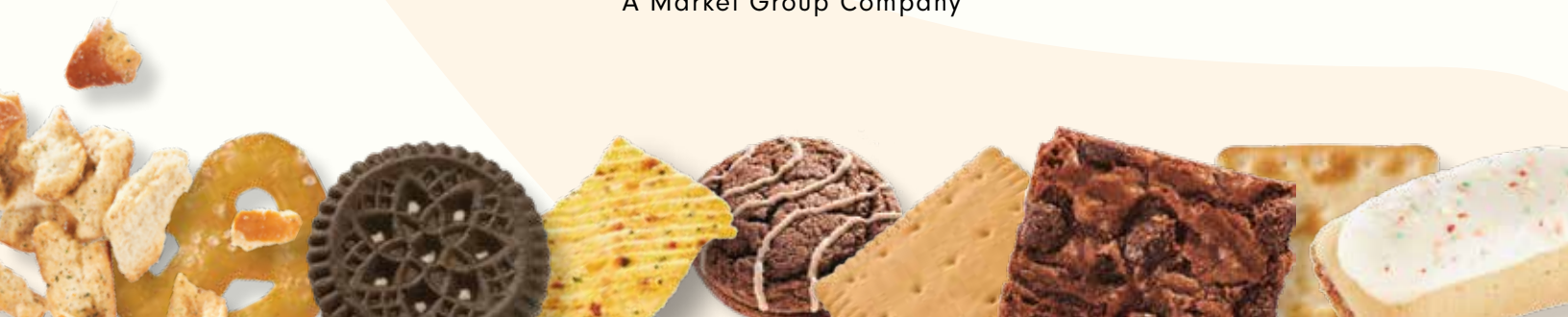
S U C C E S S F U L S N A C K S S T A R T H E R E



READING BAKERY SYSTEMS

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

A Markel Group Company



Collaboration. Innovation. Technology. Expertise.

All the ingredients for successful snacks

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.

Reading Bakery Systems is proud to be part of Markel Group, a Fortune 500 company with a portfolio of strong industrial businesses and a long-term investment approach. This support enables RBS to invest in innovation, grow our capabilities, and remain a trusted partner to customers around the world.

MARKEL GROUP

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, 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.

Maximize Efficiency, Minimize Costs

At RBS, we design our snack production equipment with a focus on Low Total Cost of Ownership—helping you achieve long-term savings without compromising performance. Our systems are engineered for durability, energy efficiency, and minimal maintenance, reducing operational costs while maximizing uptime. With advanced automation and precision engineering, RBS equipment optimizes production, minimizes waste, and delivers consistent, high-quality results.



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 our dedicated R&D facility in Sinking Spring, Pennsylvania, 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 pretzels, snacks, cookies, crackers, pet treats, and other food products, the Science & Innovation Center allows you to test a variety of forming processes, as well as batch and continuous mixing concepts.

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 **RBS Science & Innovation Center** is a state-of-the-art facility where we partner with you to bring new snack ideas to life. In a real-world production environment, we collaborate to test, refine, and optimize new products and processes—ensuring a smooth transition to 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 400-1000 kg/hr

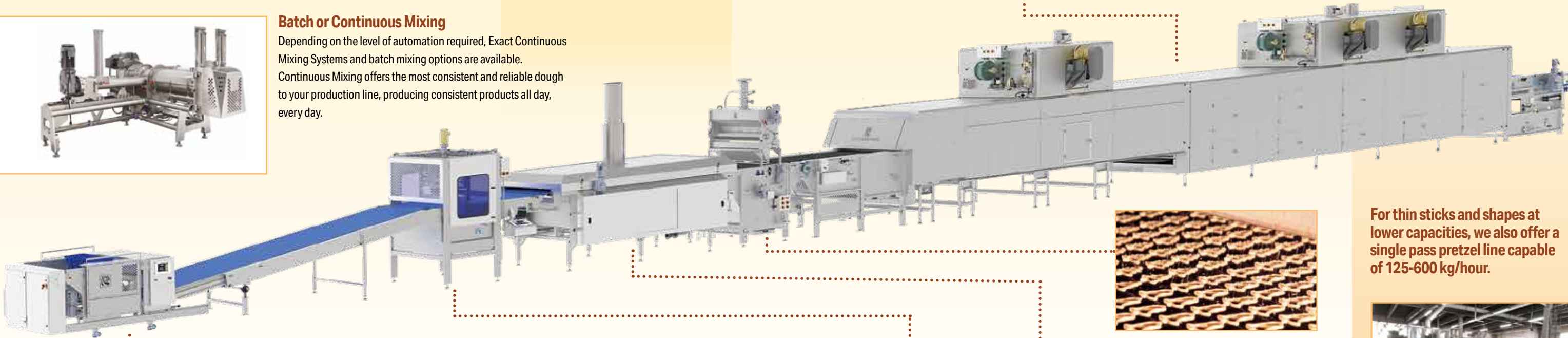


Baking & Drying

The flexible SPECTRUM OVEN® provides a variety of heat transfer combinations within a modular design. This modular approach allows for the production of different products by simply adjusting the heat transfer profile. The easy-to-use control system provides the operator with complete control of oven temperature, humidity, and product bake time. A Dryer module may be combined with an Oven to create a space efficient two-pass baking chamber.

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.

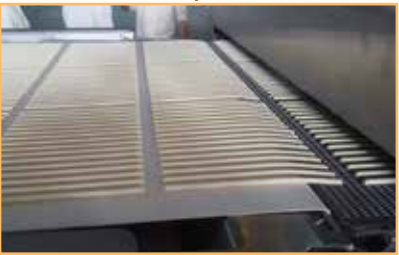


For thin sticks and shapes at lower capacities, we also offer a single pass pretzel line capable of 125-600 kg/hour.



Omega I Dispenser

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



Guillotine Cutting

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



Dough Handling

The completely automated DoughBot 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.



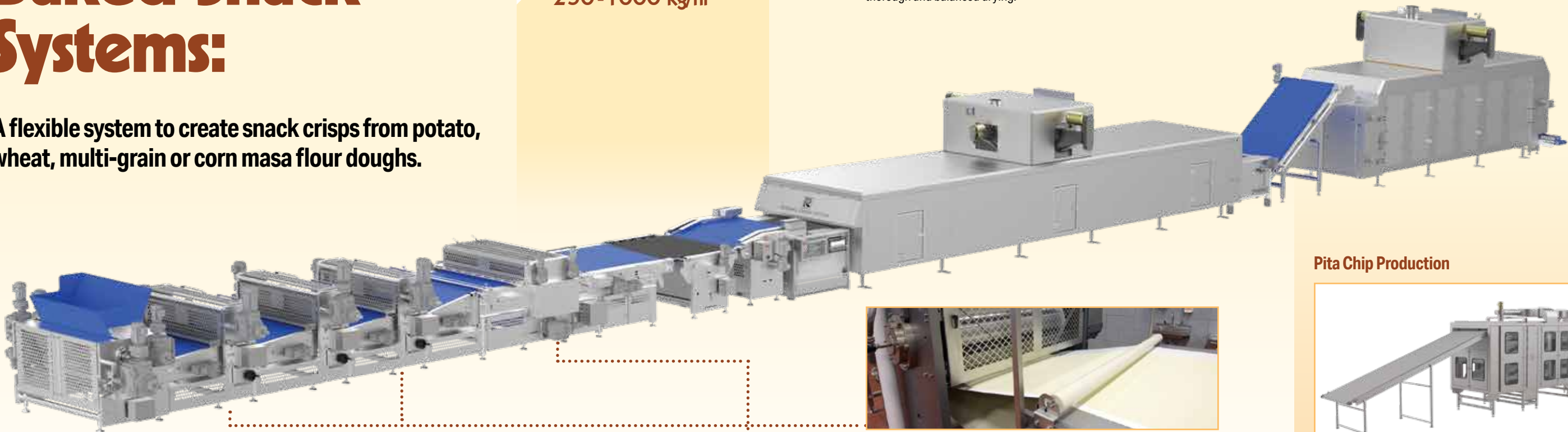
Multi-Crisp Baked Snack Systems:

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

System outputs from 250-1000 kg/hr

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. Products are baked on an open mesh, or the oven can be supplied with an optional "wavy belt" to impart a curl to the product for improved bag-fill. An optional Multi-Pass Dryer provides faster oven speeds, greater production throughput, and more process control. The product is bedded while passing through the dryer and turns twice while drying for thorough and balanced drying.



Batch or Continuous Mixing

Depending on the product type and level of automation required, RBS offers batch and continuous mixing. Continuous mixing is often recommended because it ensures consistent hydration of the dry ingredients, which is critical for producing baked crisps. The streamlined process minimizes time between the mixer and sheeter, eliminating batch cycle variations resulting in more consistent and appealing product textures. Operator involvement is minimized, and batching errors eliminated. With this recipe-driven system, final product quality is automated and fully repeatable from shift to shift.



Dough Handling

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



Sheeting

The Thomas L. Green 3-Roll Sheeter generates a consistent dough sheet ready for further thickness reduction. Gauging Stations ensure a gentle reduction in sheet thickness prior to shape forming. The parallel, hardened, solid steel rolls of the Gauging Stations typically reduce the dough sheet thickness by a 2:1 ratio from infeed to discharge. For potato-based products, a single reduction 2 Roll-Sheeting produces a continuous dough sheet that is discharged directly onto the rotary cutter infeed conveyor. If desired, a separate wavy profile gauge roll can be added to produce chips with a ridged texture.



Rotary Cutting

The Rotary Cutting Station accurately and continuously cuts distinct product shapes out of a single dough sheet. It can be designed with two or more die rolls for complex shape production or used independently for different products on the same line.

Pita Chip Production



The flexible Multi-Crisp System is also capable of producing pita chips, pita crackers, and more. For pita snacks, a Multi-Pass Proofer and Dicer can be incorporated into the production line.



Cracker Systems:

Durable, reliable and sanitary
Thomas L. Green production systems

System outputs from
500-5500 kg/hr

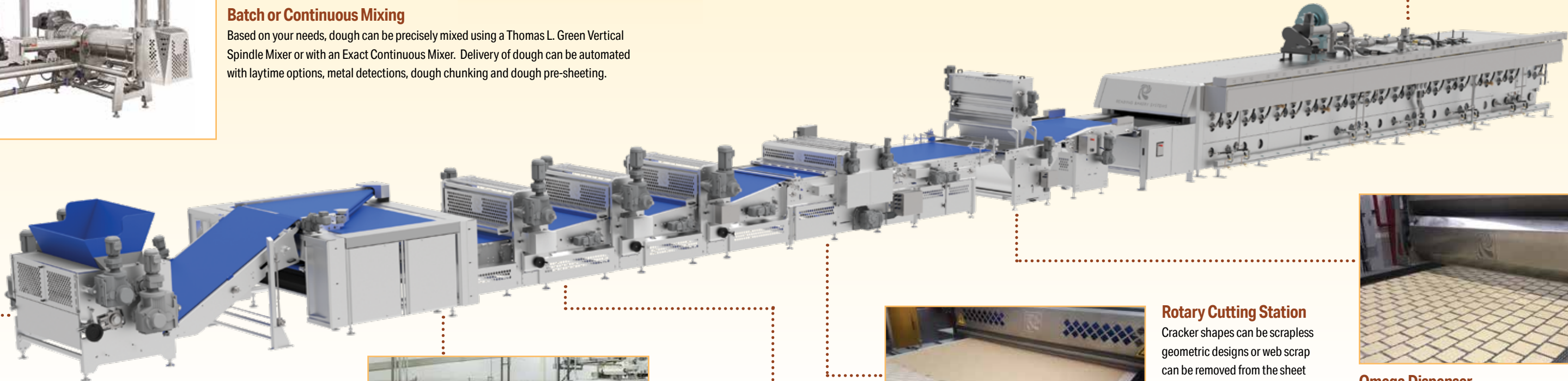
Baking

The PRISM OVEN is a powerful system for uniform baking of cracker products. Direct gas-fired, convection and Emithermic® XE 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.



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.



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.



Rotary Cutting Station

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



Gauging Stations

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



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.



Hard & Soft Biscuit Systems:

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

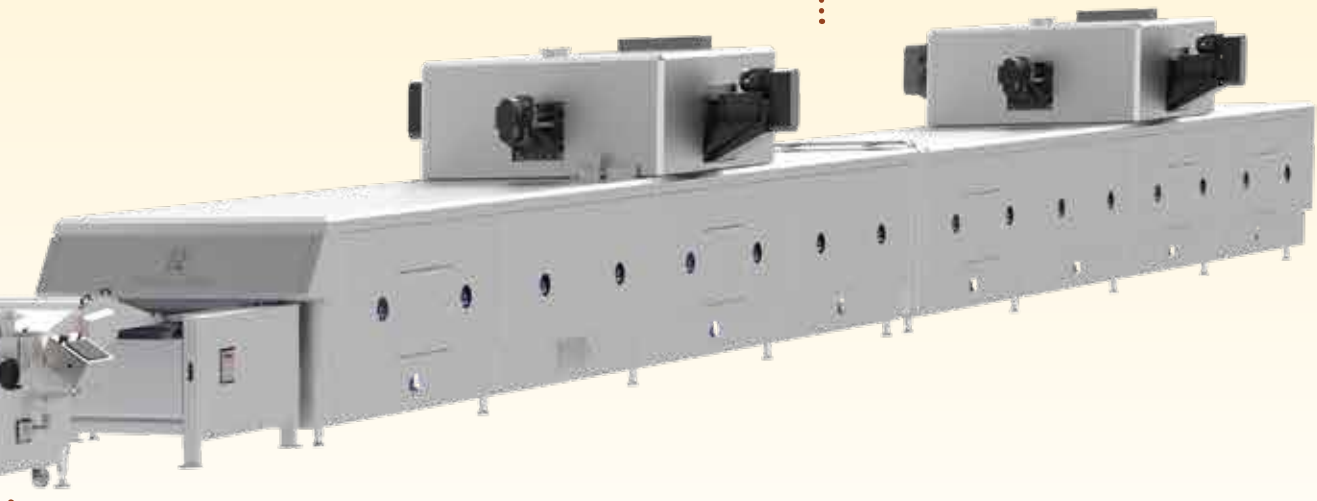
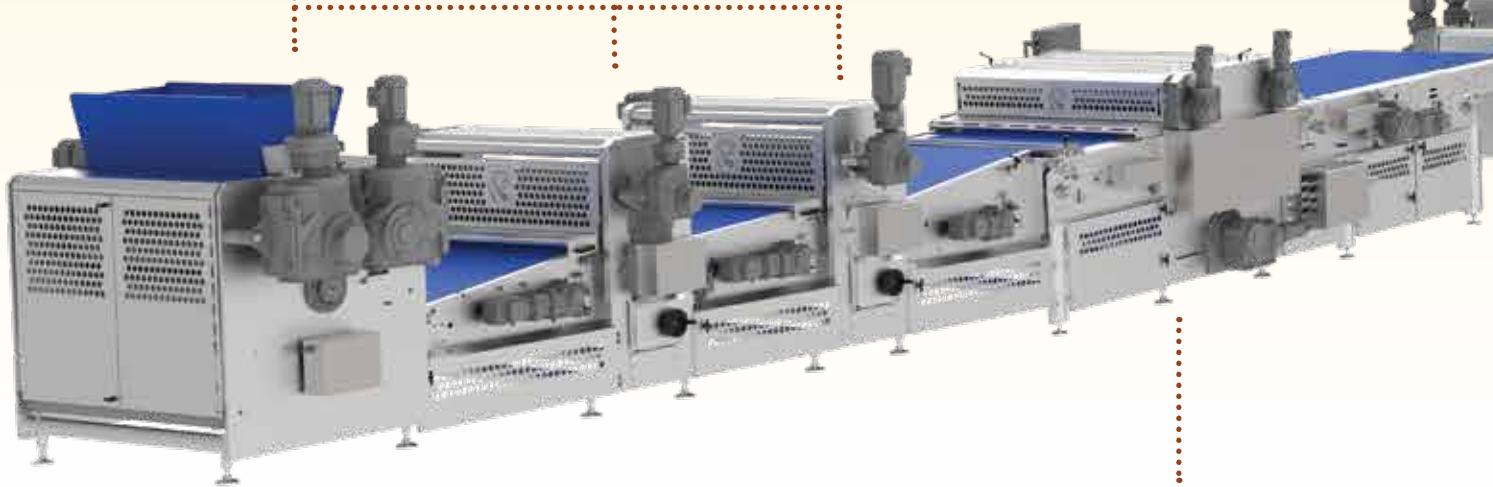
System outputs from
500-2500 kg/hr



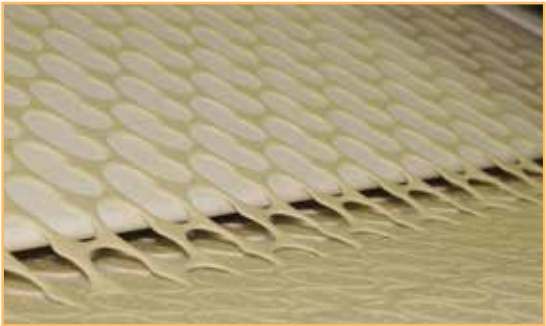
Baking
The PRISM OVEN is a single-pass, flexible baking platform designed for balanced and consistent baking of a wide variety of biscuit products. Depending on product type, direct gas fired, Emithermic® or convection oven zones can be used. The operator controls product moisture removal to maximize quality.



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.



Forming Equipment – Soft Biscuits
The GenesisPro Series 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. For the most efficient baking, both Emithermic® and convection oven zones are employed. The operator has control over 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 GenesisPro Series Wirecut Machines create a wide range of products including wirecut cookies, “frozen” cookie dough, multi-dough cookies, filled products, bars, pet treats, novelty shaped cookies, and more. They are designed to provide piece-weight accuracy and reliability, and are best for non-descript shapes. RBS offers three different Wirecut Machine options depending on your needs for control, flexibility, safety features and sanitation. Frozen dough applications are also available.



Pet Treat Systems:

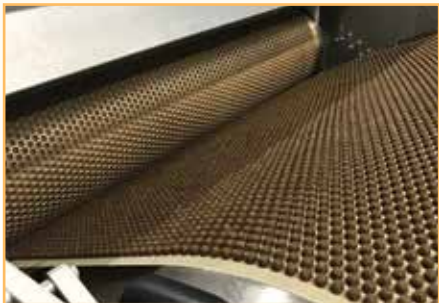
Automated, flexible and efficient systems for baked pet treats and baked kibble

System outputs from 125-2500 kg/hr



Mixing and Dough Handling

Depending on your level of automation, RBS offers batch or continuous mixing and fully automated dough handling solutions. Continuous mixing provides more consistent dough to your production line, improving process efficiency and product consistency. This process also heats to the proper kill temperature in the mixer. The dough can be quickly heated to the kill temperature within a range of 1 degree and then cooled. The Exact EX Continuous Mixer is ideal for both soft, chewy and hard, crunchy pet treats.



Forming Equipment

For rotary moulded pet treats, the Thomas L. Green Rotary Moulder efficiently produces high definition, three-dimensional shapes by pressing dough into a die roll. The interchangeable die roll is made of engraved brass and can be supplied with segmented rings for simultaneous, multiple shape production. RBS also offers equipment to create extruded, sheeted and cut pet treat products.



Baking

This single pass high velocity convection SPECTRUM OVEN® is designed for balanced and consistent baking of pet treats. Control of the exhaust, air temperature and circulation velocity allow the operator to control the product moisture removal rate for maximum quality assurance.



Drying

An optional SPECTRUM Multi-Pass Dryer provides faster oven speeds, greater production throughput, and more process control. The Dryer efficiently reduces product core moistures, improving overall quality and storage characteristics.



Popped Snack Systems:

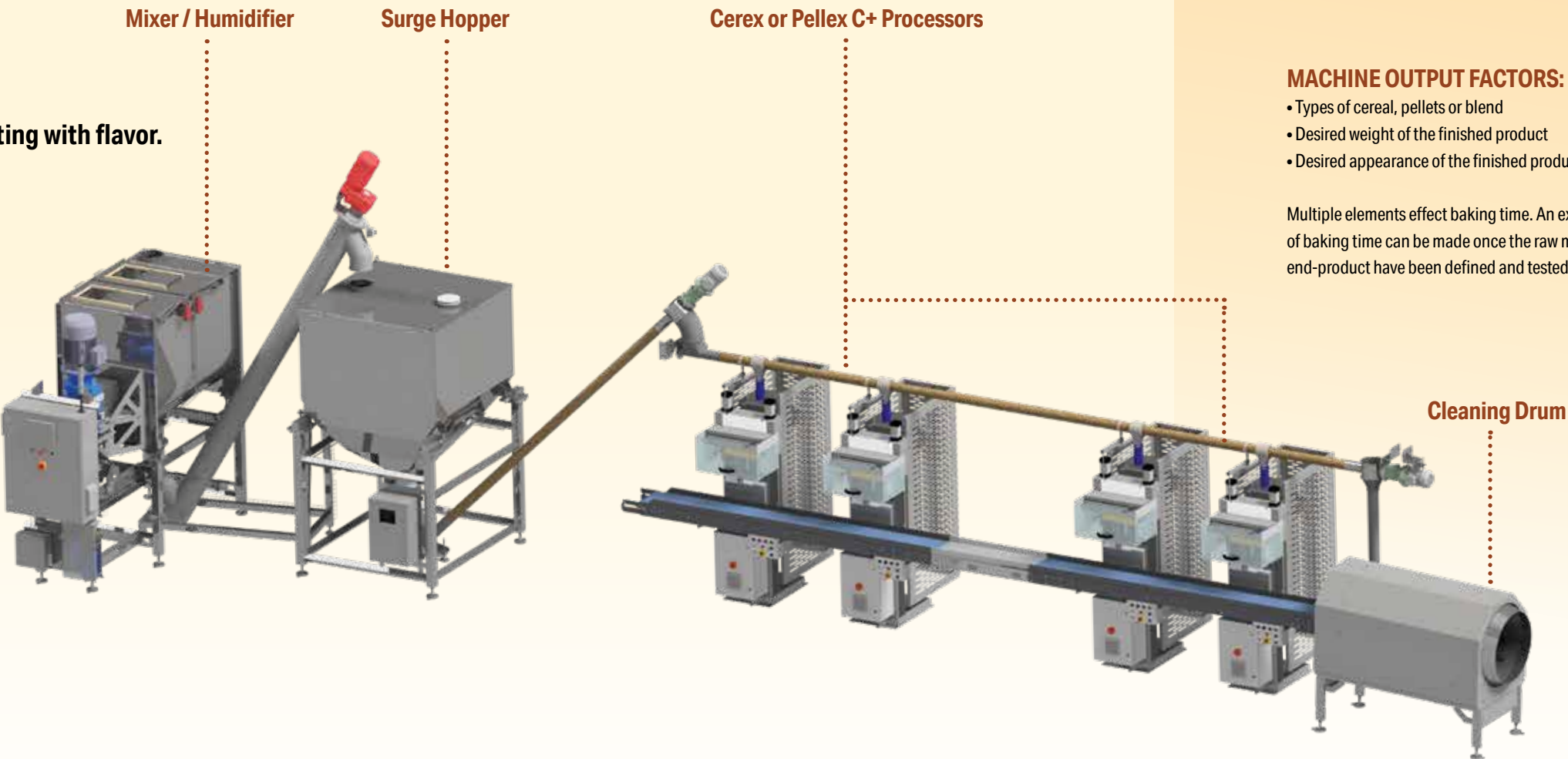
A system to create healthy baked snacks that are bursting with flavor.

Reading Bakery Systems and Incomec now offer a system to create popped snacks. These healthy snacks are baked, not fried, so they lack oil, but burst with flavor.

The system includes a Pellex C+ or Cerex Processor depending on your desired product. Production capacity depends on your product and the number of processors in the line. The line is scalable, so you can always add processors to your line as your business grows.

PROCESS STEPS

1. Ingredients are fed through a hopper, volumetrically metered and introduced by a feed-slide into the heated mould.
2. The Processor then pressurizes the ingredients for a short period of time. This pressurization allows the ingredient moisture to be converted into steam, resulting in expansion, or popping.
3. The mould is opened slightly, which allows the ingredients to expand and form the product.
4. The finished products are ejected onto a conveyor, which leads them to a Cleaning Drum to remove unpopped ingredients and fines, then onto flavoring and packaging.



FLAVORING

A seasoning system can be added to apply a variety of oil-based slurries and dry seasonings onto the popped product.

MACHINE OUTPUT FACTORS:

- Types of cereal, pellets or blend
- Desired weight of the finished product
- Desired appearance of the finished product

Multiple elements effect baking time. An exact calculation of baking time can be made once the raw material and end-product have been defined and tested.



PELLEX C+ Processor

Food processor for popped chips

The Pellex C+ Processor is capable of converting micro pellets and dry ingredients with high free starch levels such as broken rice, corn grits and potato-based materials into a crunchy and wavy chip.

CEREX Processor

Food processor for puffed cakes

The Cerex grain processor is designed to convert untreated grain, pellets and cereal blends with high free starch levels into unique popped products. Traditional rice cakes, as well as biscuit and cracker-like products of varying sizes, can be produced with quick and simple changes of the forming dies.



Exact Continuous Mixing Systems:

Improve consistency, reduce labor and simplify your mixing process

System outputs from 50-10,000 kg/hr



The **EX Continuous Mixer** produces low absorption dough for products such as sweet goods, crackers, and pet treats, and is also well suited for all but the lowest viscosity powder/liquid mixtures.



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%.



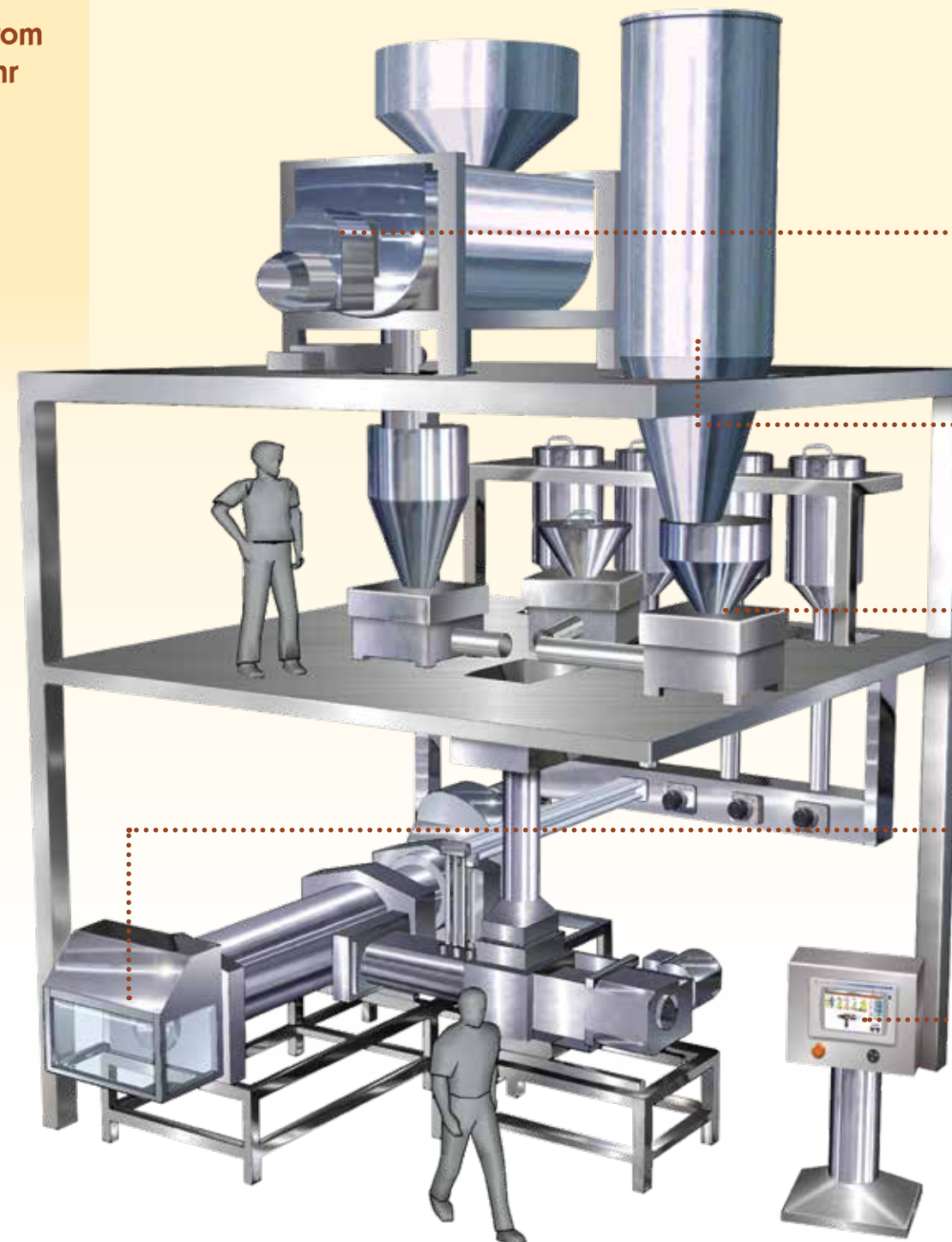
The **FX Continuous Mixer** is a high intensity mixer that produces dough typically used for wheat, potato, corn masa flour and multi-grain snack products.



The **MX Continuous Mixer** is our most versatile mixer. It is well suited for a wide range of products including pizza, 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 **LDX Continuous Mixer** combines all ingredients except flour in the creme up stage. In the first stage, special mixing elements cut the fat into the other ingredients. The flour is added before the development stage where the final dough is created. This mixer is ideal for most types of cookies or any application where ingredients are blended before the flour is added.



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

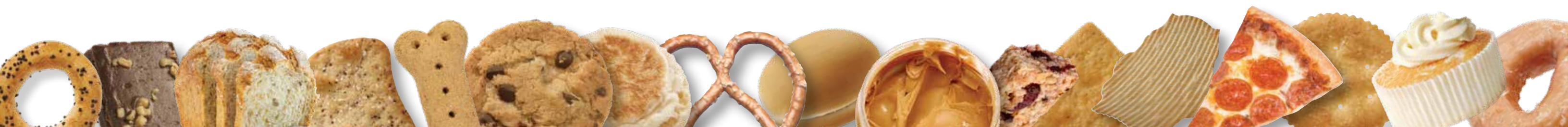
Gravimetric, Loss-in-Weight technology provides precise, uninterrupted dry ingredient metering to the Continuous Mixer. Flow-meters connected to the closed loop control system ensure that liquid ingredients are accurately delivered to the Mixer.

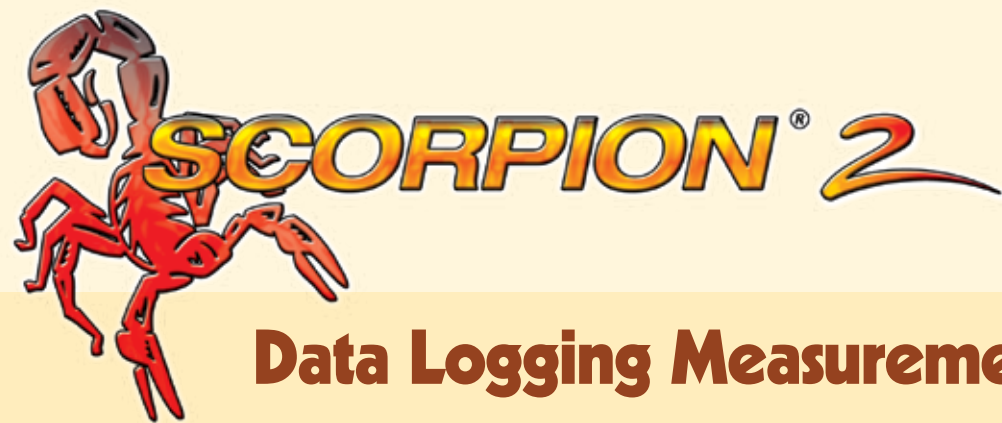
Continuous Mixer

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.





Data Logging Measurement System

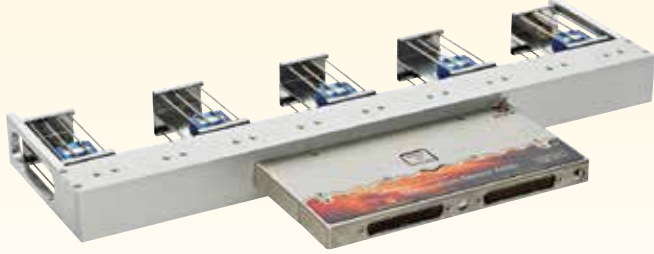
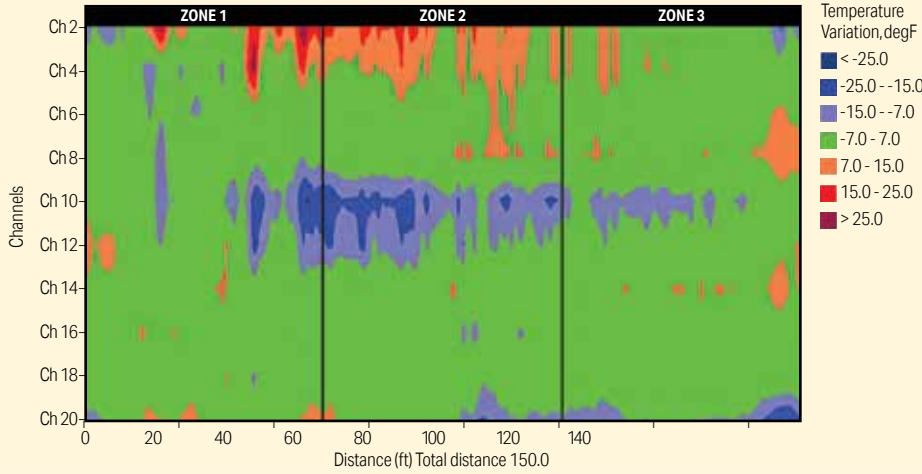
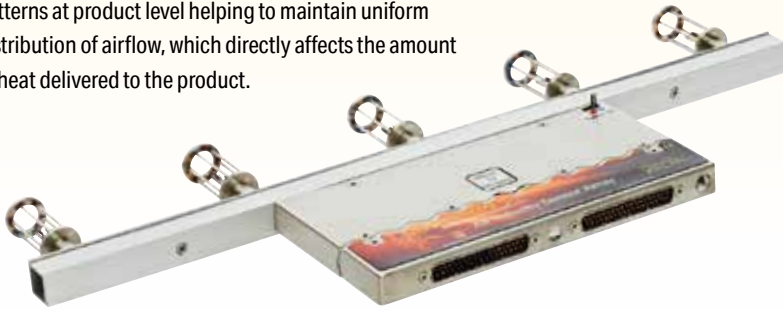
SCORPION® 2 with SMART SENSOR TECHNOLOGY™

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.



Air Velocity Sensor Array

The Digital Air Velocity 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

The Temperature 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

The Digital Humidity Sensor uses proprietary Anti-Saturation Technology™ to increase accuracy in measuring humidity in ovens, proofers, dryers and cooling tunnels.

SCORPION® 2 with Heat Flux Sensor

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



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.



RBSConnect Control Systems

Smarter Controls for Better Production



RBSConnect

RBSConnect is our advanced control system platform designed to improve communication and efficiency across your production lines. By integrating smart technology with real-time data collection and process monitoring, RBSConnect delivers actionable insights that help operators make faster, more informed decisions. From system-wide dashboards to remote monitoring and mobile access, RBSConnect ensures that the right information gets to the right people at the right time—keeping your line running smoothly and efficiently.

Performance-Driven Tools to Optimize your Operation

Built on a scalable platform, RBSConnect provides custom designed control systems from project management, design and construction, through installation and commissioning. We offer flexible options to match your operational needs. Features include real-time process control, trending and alarms, preventative maintenance tracking, and access to machine documentation and training materials. With optional energy usage monitoring and recipe management capabilities, RBSConnect helps reduce operating costs, improve product consistency, and support proactive maintenance planning. Our controls team stays up to date on the latest technologies, safety and controls specifications to provide reliable, safe and efficient production.

- Allen Bradley or Siemens platforms
- Easy-to-use touchscreen interfaces
- Recipe control system for equipment runtime parameters
- Machines are pre-wired to local junction boxes
- Wiring schematics and cable schedules provided for all equipment
- PLC code provided to end user after start up
- Ethernet based controls network with the option for remote troubleshooting

Support Services

Our global team delivers expert service, training, and support to help you maximize performance, reduce downtime, and keep your operations running at their best.

Keeping your production lines running at peak performance is our top priority. That's why RBS offers global support with experienced spare parts support and service technicians available around the clock. With experts around the world, we ensure timely local support whenever you need it.

- **Technical Service / Field Support**
- **Installation / Start-up**
- **Training**
- **Project Management**
- **Maintenance Packages**
- **Upgrades / Retrofits**
- **Service / Parts Program**

Upgrades and Retrofits for Improved Performance, Flexibility, and Compliance

We offer equipment and plant upgrades that help you take full advantage of the latest technical advancements—whether you're targeting improved performance, compliance with latest safety standards or introducing new products. Upgrades may include new equipment, updated control systems, or the integration of advanced processing technology.

The benefits are significant: reduced manufacturing costs, extended equipment lifespan, increased productivity through minimized downtime, and enhanced performance. Upgrades and retrofits can also lower energy consumption and support your emission reduction goals. With minimal capital investment and rapid implementation, our optimization solutions provide the flexibility you need to keep your existing equipment running long into the future.



RBS

eZone

Parts & Service Portal

The **RBS eZone**, an interactive online portal, gives you anytime access to interactive 3D models of your equipment so you can easily select the parts you need and request quotes. It also allows you to see how to assemble and disassemble your machines and access machinery manuals, drawings, and schematics.



WORLDWIDE LOCATIONS



MIDDLE EAST/AFRICA

Technopark, 3rd Floor, Office 20
Jebel Ali Free Zone Area
Dubai, UAE

CHINA

No.10, Huanghai 2nd Street
TEDA, Tianjin
China, 300457

SOUTH EAST ASIA

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READING BAKERY SYSTEMS

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

A Markel Group Company

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