



Corn Products Systems





■ One Call Delivers!

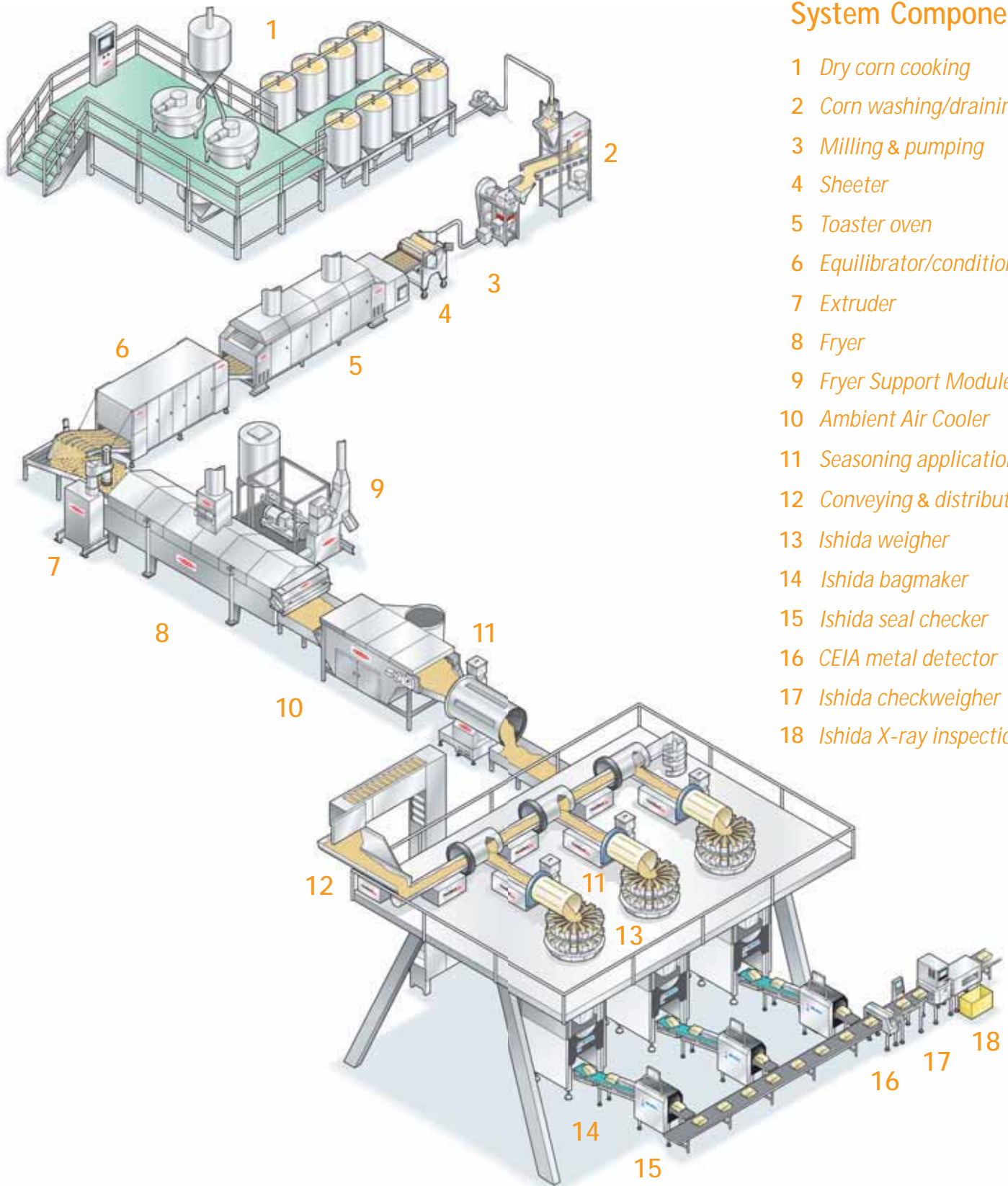
Heat and Control provides



complete systems for tortilla and corn chips, taco shells, tostadas, corn tortillas,

extruded corn snacks, and even fried corn kernels! From masa production and forming, through cooking, seasoning, inspection and packaging, our systems consistently duplicate your unique recipe and provide years of reliable service. One call to Heat and Control also delivers more than machinery: It connects you to ongoing technical support including spare parts, service, training and access to technical innovations developed from installations around the world. Call us today for the equipment systems and services that will help your business grow!

■ The Complete System



System Components

- 1 *Dry corn cooking*
- 2 *Corn washing/draining*
- 3 *Milling & pumping*
- 4 *Sheeter*
- 5 *Toaster oven*
- 6 *Equilibrator/conditioner*
- 7 *Extruder*
- 8 *Fryer*
- 9 *Fryer Support Module*
- 10 *Ambient Air Cooler*
- 11 *Seasoning application*
- 12 *Conveying & distribution*
- 13 *Ishida weigher*
- 14 *Ishida bagmaker*
- 15 *Ishida seal checker*
- 16 *CEIA metal detector*
- 17 *Ishida checkweigher*
- 18 *Ishida X-ray inspection*



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■ Partnership & Progress



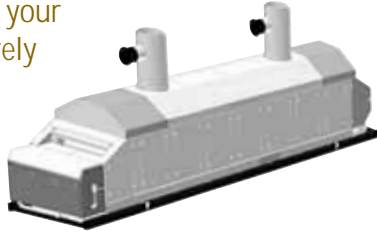
Think of Heat and Control as your business partner who designs and builds machinery that produces the finest corn products at the lowest cost. Guided by your goals, we manufacture systems that exceed expectations for performance, ease of cleaning, low maintenance and reliability. We also stand behind our machinery with a commitment to ongoing technical support that is rarely found in modern industry. Serving processors of corn products and snacks since 1950, Heat and Control has become the one-stop source for innovative processing, seasoning, inspection, conveying, weighing and packaging systems. With Heat and Control, you have a partner in progress...
from start to future!

■ Get every advantage with Heat and Control

Pioneering Technology

Many Heat and Control developments, such as externally heated frying, continuous oil filtration, FastBack horizontal motion conveying and Ishida multihead weighing, have become the standards for efficient food processing and packaging. We strive to create safe, reliable machinery that delivers products of the highest quality at the lowest cost. For solutions to your toughest challenges, rely on Heat and Control.

Computerized modeling and analysis allow us to perfect designs before construction.



Global Solutions

Worldwide, we maintain seven manufacturing plants and over 25 sales and service offices. Linked to an SAP resource management system, our personnel are in constant communication so we quickly share ideas, talent and experience to develop the optimal process and equipment system for your application. One call delivers local expertise supported by a world of engineering, manufacturing, training, service and technical resources for processing, product handling, inspection and packaging systems.

Packaging Centers

Test your products on Ishida weighers, bagmakers, X-ray systems, checkweighers, CEIA metal detectors, and a variety of conveyors. Without interrupting the production schedule at your plant, our test centers let you conveniently evaluate product flow, speed, accuracy and other characteristics of our equipment before you buy.



Technical Support

From process development to new equipment start-up, we support you all the way by providing operational assistance, documentation, service, training and parts.

Service

Electronically or in-person, our experienced service technicians do whatever it takes to keep your line running at peak efficiency. Equipment start-up, adjustment, safety audits, troubleshooting, repairs and modifications are just a few of the ways we help to minimize downtime and improve performance.



Parts

E-mail and toll-free phone service give you instant access to our experienced technicians who quickly identify and deliver parts when you need them.



Training

Our classroom and on-site training programs help your staff learn safe and efficient procedures for equipment operation, maintenance, sanitation and adjustment.



Technical Manuals

In addition to spare parts recommendations and technical drawings, we provide documentation outlining production, safety and sanitation procedures, plus equipment service and maintenance programs.





■ Corn Preparation & Masa Forming

Control every step of your masa production to assure consistent quality of your corn products. Our processing systems enable



you to duplicate your masa recipe every time, whether you use pre-dried masa flour or dry corn. Then our extruders and sheeters accurately form and transfer your products without work-altering the masa's texture and flavor. Whether you produce hundreds or thousands of pounds per hour, get the best quality and production efficiency with Heat and Control.



■ Corn Cooking

Masa Production Systems

Give your products one-of-a-kind flavor and texture by cooking your own corn.

Manual, semi-automatic or fully automated systems are engineered for your process and budget. Systems can include corn and lime feeding equipment, steam-jacketed simmering kettles, corn receiving tanks, soak tanks and all interconnecting valves, piping, platforms and controls.



Best of all, our systems allow you to duplicate your special masa recipe consistently, within each batch and from batch to batch.



Corn Washer

Thoroughly remove hulls and soak water from cooked/soaked corn before milling. Fresh water sprays wash corn before it is transferred to a drain conveyor for delivery to the corn mill. Add a vibratory separator to remove hulls from drain water, a booster pump to increase wash water spray pressure, and a platform to facilitate access to the washer drum.



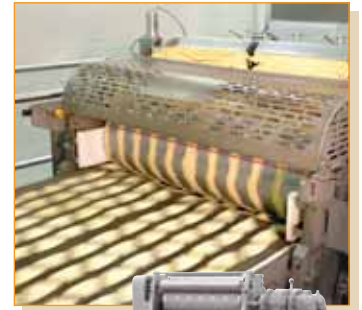
■ Masa Forming

Sheeters

Rugged construction and the innovative features of our Paragon sheeters assure consistently uniform product piece weight with minimal maintenance. Hinged supports of the rear roll maintain precise roll alignment and roll gap adjustment over years of service.



Differential speed rolls eliminate the need for a rear stripping wire. Simple pneumatic controls enable quick and repeatable setting of the front stripping wire, cutter roll, brush and discharge conveyor. Choose from free-standing or oven-mounted sheeter designs. High-capacity models are also available with automatic piece weight control.



Masa pre-sheeters are available to maximize sheeting efficiency.



Extruders

For corn chips and other fried or baked corn snacks, we offer a variety of semi-automatic and fully automated extruders.





■ Ovens & Frying Systems

When you want efficient, reliable cooking systems, our name says it all:



Heat and Control.

Our ovens and fryers evenly distribute

heat and give you precise

control of cook time and temperature.

They give you the most from every BTU to conserve fuel and optimize thermal efficiency. Equally important, our cooking systems are designed and built to deliver decades of reliable performance, simple cleaning and maximum productivity of consistent, high-quality corn products. It all comes back to the name you can trust for excellence and ongoing support:

Heat and Control.



■ Ovens

Tortilla Toaster Ovens

Compact three-pass, single-pass, or small capacity models: Heat and Control ovens are designed for uniform toasting, fuel efficiency and years of reliable operation. We also build spiral, convection and impingement ovens for baked snacks and other corn products.



Single-pass oven maintains product orientation, making it ideal for tortilla and taco shell production!



■ Equilibration & Cooling

Corn Products Conditioner

Equilibrate the moisture content of tortilla chips before frying to prevent blisters and oil pockets. Single or multi-tier models provide adjustable conditioning times and require minimal space.



Ambient Air Cooler

Cool products after frying to immediately stop cooking and to reduce temperature for safe packaging. Models are also available utilizing chilled or tempered air.



■ Fryers

Indirect-Heated

Renowned for high quality and reliability, our continuous fryers provide precise control of oil flow, temperature and cook time for corn chips, tortilla chips and tostadas of consistent quality. Specialized fryer systems are also available for continuous production of taco shells and tostadas.



Direct-Heated

Economically fry chips, pellets, extruded and other snacks using our continuous direct-heated fryers. Thermal fluid, gas-fired and electric heated models are available for a variety of production capacities.

Oil Heating & Filtration

Gentle, responsive oil heating with the highest possible thermal efficiency are provided with our space-saving vertical, horizontal and pollution control heat exchangers. For maximum energy efficiency, add our Booster Heater or Combustion Air Pre-Heater system.



Continuous oil filtration assures superior product quality and clean frying. For any product and capacity, we build efficient and reliable primary and secondary oil filters.

Fryer Support Modules

Dramatically reduce the time and cost of indirect heated fryer installation and start-up. Oil filters, pumps, heat exchanger, storage tank and piping components are pre-assembled on a user-friendly compact skid with single-point utility connections.





HEAT AND CONTROL



■ Product Handling & Seasoning

Move your products where and when you need them.



Convey, feed, fill, elevate, inspect, accumulate, apply seasonings and

distribute product in proportional quantities to multiple locations with less breakage, waste, and unscheduled cleaning downtime. We manufacture and supply all types of conveyors, distribution gates, platforms and seasoning applicators. What's more, we integrate everything into a compact, easily controlled system that meets all your product handling needs.



■ Conveyor Systems

FastBack® Horizontal Motion

Reduce product breakage up to 60% compared to vibratory conveyors. FastBack's gentle slow-forward, fast-back motion prevents product damage, coating loss, and eliminates hard-to-clean buildup in the pan. Low 70 dB operation improves workplace comfort. Choose FastBack conveyors for weigher feeding, inspection, proportional distribution, accumulation and seasoning application.



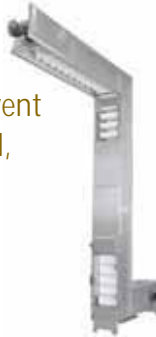
Flighted Incline

Space-saving incline conveyors are available to elevate products vertically or at any angle. Flighted plastic or stainless steel mesh belt prevents spills and product fall-back. Heavy-duty construction assures trouble-free operation and easy cleaning.



Varilift™ Bucket

Buckets are maintained upright to prevent product spills and jamming. Horizontal, S or C configurations are available for conveying or product accumulation. Optional multiple infeed and discharge points allow you to receive or deliver product to more than one location.



Container Fillers

End product loss and unscheduled cleaning downtime using one of our compact, high-speed filling systems to transfer product from a weigher into trays or cartons on a continuous conveyor.

Our pre-assembled modular support platforms reduce packaging system installation costs!

■ Accumulators

MinuteMan™

Providing up to 90 cubic feet of storage space, MinuteMan significantly reduces product breakage. Simultaneous fill and discharge rates are synchronized to eliminate delays.



SwitchBack™

Requiring no gates or pneumatics, this simple accumulation-transfer conveyor reduces product damage and cleaning costs. Its compact design saves floor space while providing up to 45 cubic feet of inline storage.



FastBack conveyor-accumulators and large capacity storage systems are also available.

■ Seasoning Applicators

FastBack Revolution™

Apply a different seasoning at each weigher. For on-machine and packaging line applications, Revolution uniformly applies salt and seasonings with less waste and breakage. Changeovers and cleaning require minimal time because the drum and applicator are easily removed without using tools.



Roll Salter

Uniformly meter salt over product conveyors up to 78" wide. Roll Salters fit most conveyors and are available with automatic salt feed and dust extraction systems.



Ask about our seasoners for special applications.



HEAT AND CONTROL[®]

■ Packaging & Inspection Systems

With Heat and Control, you get the most efficient inspection, weighing and bagmaking systems available, all backed by our commitment to provide the industry's best technical support. As a supplier of processing and packaging machinery, we provide components and controls designed to work together to maintain the highest product quality - all the way from corn preparation to your shipping dock.



■ Weighers & Bagmakers

Ishida Multihead Weighers

Ishida weighers are unmatched in reducing product giveaway, cleaning and maintenance costs. Ishida invented computerized multihead weighing and leads the industry with new technology for the fastest, most accurate, most reliable weighing.



With more product application experience than any other company, Heat and Control/Ishida provide the right system for your packaging needs, backed by parts and service centers on both coasts.



Ishida Snack Bagmakers

Package snacks faster with consistently perfect seals and a low lifecycle cost using Ishida vertical form-fill-seal bagmakers. Adjustable for a wide range of bag sizes, Ishida bagmakers allow rapid changeover and, depending on model, are available with automatic film splicing, network control, integrated metal detection and code dating. There's even an Ishida bagmaker that easily makes pillow, gusseted, flat bottom and hem seal bags.



Compact Ishida iTPS systems provide optimal weigher-bagmaker interface without the costly support structure.

Ishida iTPS Net links the Ishida weigher, bagmaker, seal checker, checkweigher and other equipment for efficient network control and data management.



Ishida Strip-Pack Applicator

Automatically produce hanging strips of bags for point-of-purchase sales. Ishida's Flexible Strip-Pack system applies a variety of bag sizes and weights using any bagmaker.



■ Inspection Systems

Ishida Checkweighers

Ishida checkweighers maximize quality control and customer satisfaction with accurate verification of package weight and product count. Single and multiple lane models feature abundant product memory for fast changeovers.



Ishida X-Ray

Safely and reliably detect foreign objects and product defects for superior food safety. Ishida's unique image processing technology precisely detects metal, glass, plastics, product damage and incorrect weights.



CEIA Metal Detectors

Economically and reliably detect all metal, including stainless steel, in falling, conveyed, pumped and packaged products. CEIA metal detectors feature ultra-high sensitivity, compact size and multiple product memory for fast changeovers.



■ Controls

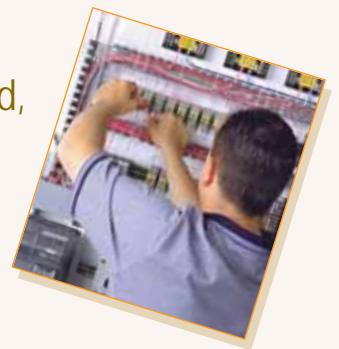
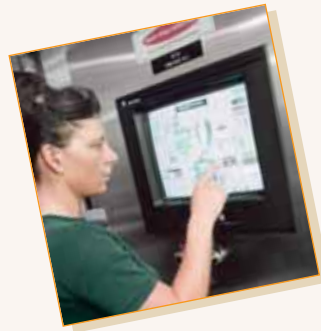
Microprocessors, graphic operator interface devices and other electronic wonders have given us the ability to control and

analyze mechanical operations and delicate processes with ease and precision that were unthinkable just a few years ago. As a systems integrator and builder of control centers, we create complete control and data collection systems for your line.

Design, engineering, PLC and computer programming, database and information system configuration: We provide all services, plus start-up and training.

As a manufacturer of processing and packaging machinery, we possess the expertise which makes it all work as an integrated system. Best of all, you will enjoy the peace of mind that

comes from working with one experienced, reliable supplier: Heat and Control.



The logo for Heat and Control, featuring the company name in white capital letters inside a red oval.

HEAT AND CONTROL

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