FOOD PROCESSING INNOVATION

DCNORRIS

DISCOVER OUR EQUIPMENT RANGE

COOK CHILL SYSTEM

The Key to Extended Shelf Life

The DCN Cook Chill System stands as an industry benchmark, demonstrating excellence in delivering high-quality cooked and cooled food. This innovative system preserves the taste, texture and aroma of freshly prepared ingredients while extending the shelf life up to an impressive 45 days.

The core of the system lies in specially engineered cooking, filling and chilling equipment that efficiently handles both small and large ingredient volumes, requiring minimal operator intervention.

The Cook Chill System possesses the capacity to generate meals in varying volumes, catering to both small and large-scale production requirements. Notably, some clients are utilizing the system to prepare upwards of 350,000 meals daily.

Extended Shelf Life & Product Integrity

The key to ensuring food safety during extended storage is the rapid chilling of cooked products, minimizing the time spent in the critical temperature “danger zone” where bacterial growth accelerates. By pasteurizing through high-temperature heating and promptly cooling, spoilage from microbial activity is effectively controlled. To maintain the highest quality product including optimal texture and aroma, strict refrigerated storage management is essential.

Cook Chill Benefits

- Centralized production for operations distributing food to off-site locations.
- Savings of 5-10% possible through precise control of ingredients inventory, and utilization of standardized recipes.
- Production can be scheduled to meet sell-by-date requirements, allowing advance ordering or just-in-time delivery of meals.
- Builds up stock of quality food for future use.
- All products are packaged at pasteurization temperatures for safety and quality assurance/HACCP controls.
- Consistent quality of finished product.
- No direct human contact during cooking or packaging.
- Labor savings due to efficient and automated processes.

COOK CHILL SYSTEM

The Process

Cook Chill follows a logical fully documented production cycle, and delivers a range of important benefits:

Cook

Utilize DCN's Steam Jacketed Kettles or Sous Vide Cook Tanks for cooking purposes. Kettle systems are controlled by our Recipe Management System which guarantees continuous monitoring
of times, temperatures, and quality parameters throughout the cooking process.

Fill

The Pump Fill Station facilitates the transfer of food within the temperature range of 185-203°F from low to high-risk areas, preventing particulate damage and enabling controlled delivery into
Cook Chill bags. These bags can be filled with varying volumes based on specific requirements, subsequently undergoing sealing, dating, and labelling processes.

Chill

Bags are conveyed into a DCN Tumble or Belt Chiller, they are then gently rotated in chilled water to rapidly drop the temperature from 203°F to below 41°F in under an hour (product dependent), with cooling times and temperatures fully logged.

Refrigerated Storage

Sealed bags are placed in chilled storage below 41°F and can be stored for up to 45 days.

Heat and Serve

For restaurants and hotels, the bags can be conveniently transported to different locations, reheated, and promptly served for immediate consumption. For supermarket shelves, the contents are emptied into a depositor and portioned on a filling line into packaging, such as Ready Meal trays. These prepared items can then be transported to the outlet and are ready for presentation to the consumer.

COOK CHILL FOOD EXAMPLES

KETTLES & TUMBLE CHILLERS

- Ready Meals
- Soups/Broths
- Ethnic Cuisines
- Sauces/Gravies
- Pie Fillings
- Casseroles
- Dressing & Dips
- Dessert Products – Custard/
- Fruit Fillings/Toppings

SOUS VIDE COOK TANK

- Beef/Pork/Ribs
- Chicken Breasts
- Ham Joints
- Fish
- Lamb, Goat & Veal Cuts
- Duck/Pheasant/Quail

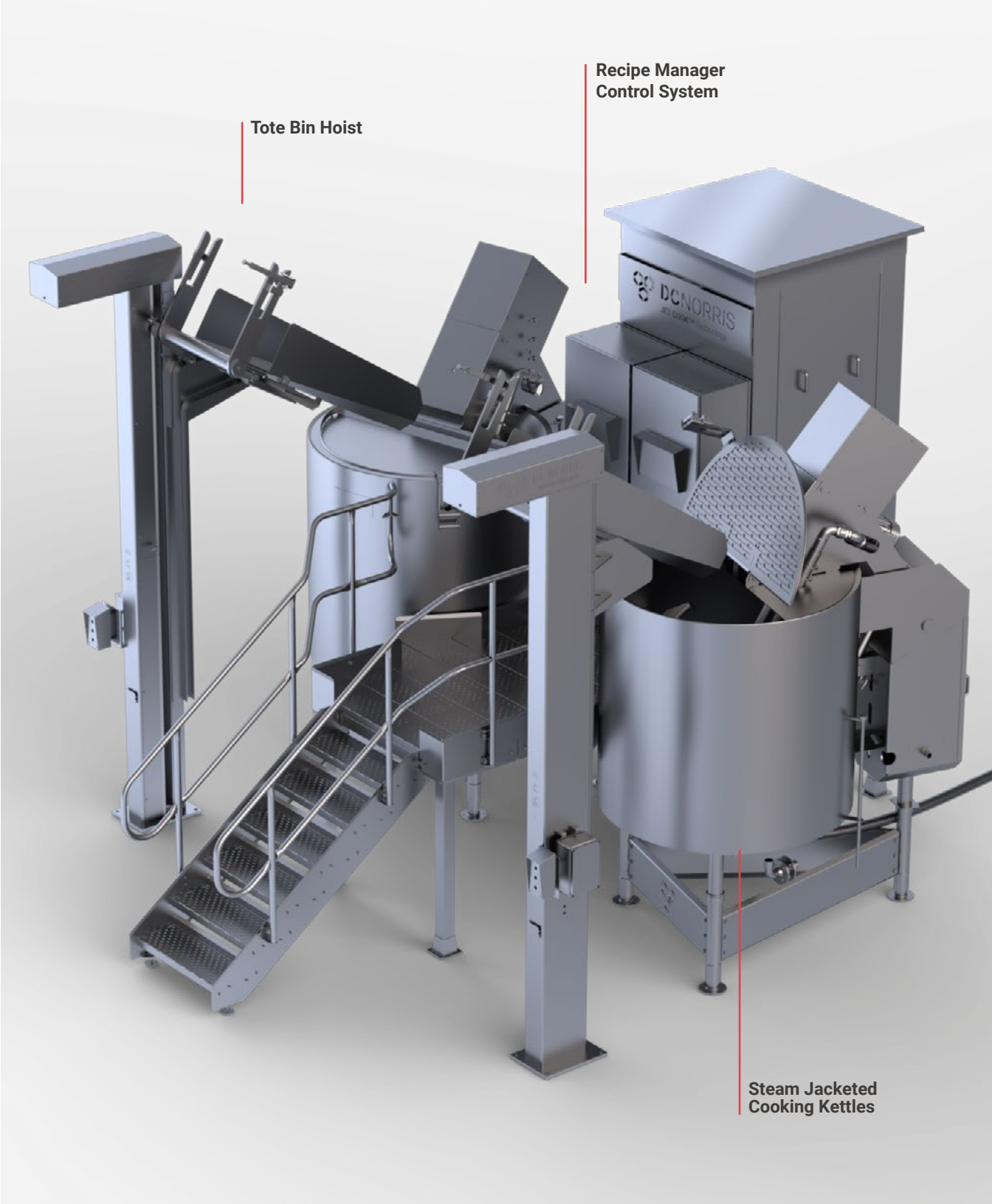
Sous Vide food products can be cooked in a sauce or marinade.

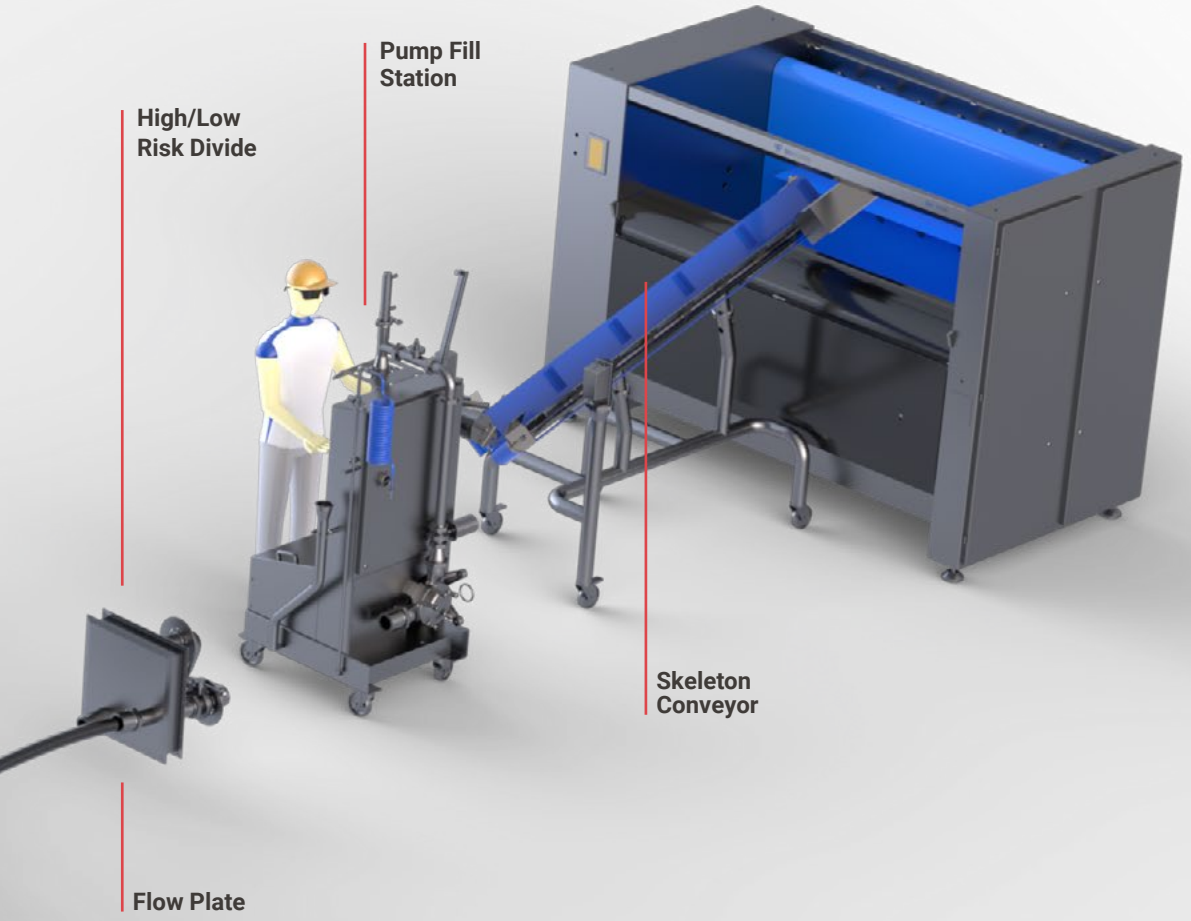
COOK CHILL SYSTEM

The DC Norris Cook Chill System offers a complete, integrated solution for high-volume food production, combining efficient cooking, pasteurization, and chilling processes.

This example setup shows twin 260 Gallon Steam Jacketed Kettles, although we can provide larger or smaller systems to suit specific throughput requirements. Starting with a **Tote Bin Hoist**, ingredients are effortlessly lifted and loaded into the kettles, where precise temperature control ensures consistent cooking. The system incorporates a **Flow Plate** to manage product transfer between high and low risk areas, maintaining strict hygiene standards. Once cooking is complete, the kettles are emptied, and the product is transferred to the **Pump Fill Station** and filled into bags of up to 13lb before being conveyed to the **Belt Chiller**. This rapid cooling, combined with effective pasteurization, helps extend shelf life by quickly reducing the product's temperature to safe levels, preserving both food safety and quality.

Throughout the entire process, our advanced **Recipe Management Automation Software** controls each stage to ensure repeatability, traceability and to minimise the risk of errors and downtime.




Belt
Chiller
Pump Fill
Station
High/Low
Risk Divide
Skeleton
Conveyor
Flow Plate

DCN JET COOK™ SYSTEMS

Revolutionizing Food & Beverage Processing

DCN Jet Cook™ employs high-performance steam technology to provide rapid, versatile and efficient solutions for processing liquid food, beverages, and wet pet food.

Unmatched Efficiency & Quality

Reduced Processing Times: Achieve significant reductions in production cycles.

Energy Savings: Lower energy consumption without compromising quality.

Streamlined Cleaning: Minimize clean-in-place demands.

Jet Cook™ technology enables food manufacturers to carry out multiple functions simultaneously during the cooking process, including:

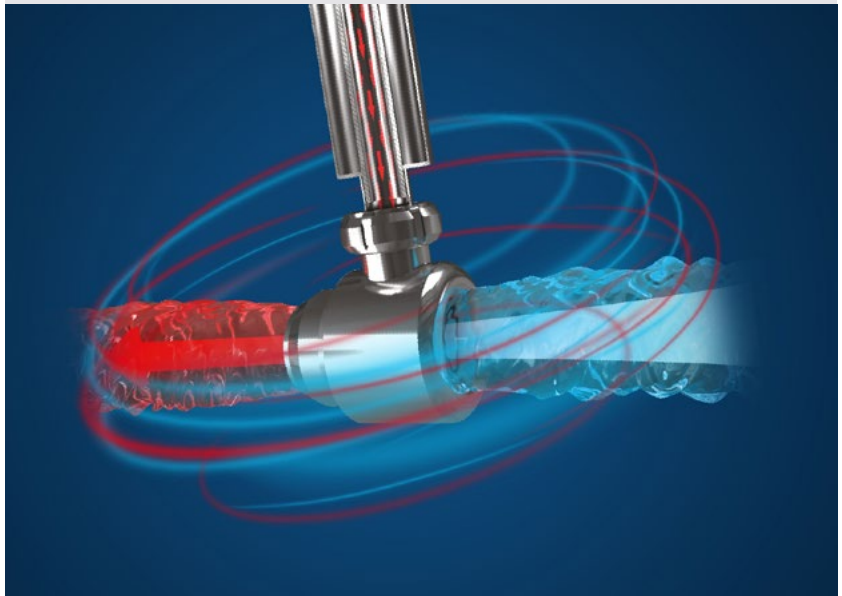
- **Heating**
- **Pumping**
- **Emulsifying**
- **Entraining**

Versatility for Diverse Production Needs

Jet Cook™ technology enhances throughput with a compact footprint, offering flexibility to produce a wide range of products on the same system. It efficiently handles both small and large batches of smooth and particulate sauces.

Adaptable Integration Options

- **In-Tank Batch Cooking:** Integrates within a DCN Kettle for the batch cooking of products such as soups and sauces.
- **In-Line Integration**: Ideal for pet food, condensed milk, beverages, single-pass or recirculation heating in continuous processes.
- **Retrofit Capability:** Easily adaptable to existing systems.



Benefits of Jet Cook™ Technology

Reduced Cooking/Processing Times
- Achieves at least a 50% reduction in cooking and processing times.

Significant Energy Savings
- Demonstrates a 52% reduction in energy consumption compared to traditional cooking methods.

Enhanced Product Quality & Particulate Integrity
- Quick heating and mixing capabilities minimize thermal impact on the product.
- Operates without moving parts, preserving the integrity of particulates.

Reduction in Ingredient Quantities
- Allows for variable reductions in salt, starch, gums, dairy and spices based on recipe requirements.

Minimized Batch Contamination
- Significantly reduces the risk of contamination in batches.

Reduced Cleaning & Chemical Usage
- Eliminates the need for extensive cleaning and chemical usage.
- No moving parts or burn-on contamination, contributing to cleaner processes.

Systems installed globally – including Australia, Middle East, USA, Japan, Mexico, Azerbaijan, Europe, Central and Southern Africa.

greencore prepared meals

"We purchased our first Jet Cook™ system for the production of meat and particulate sauces for ready meals. We then ordered another 2 systems within 6 months."

Robert Graham
General Factory Manager

STEAM JACKETED KETTLES

Classic Collection

Our stainless-steel, scraped surface Steam Jacketed Kettles range from 80 to 800 Gallons. These can form part
of the DCN Cook Chill System or be used independently.

Advanced Design

Our kettle design uses a one-piece pressing technique to ensure uniform heat distribution across the cooking surface, resulting in faster heat-up times and reducing the risk of localized hotspots.

High-Temperature Cooking

Our kettles support high-temperature cooking with steam pressure up to 10 bar and meet PED/PE(S)R/ ASME Section VIII Div.1 or equivalent codes.

Comprehensive Installation

Fully fabricated kettle systems are installed on DC Norris' specially designed support gantry and flooring with our Star Deck Tread Plate.

DC Norris offers a diverse selection of kettles tailored for various applications, each of
which can be personalised with
an extensive array of accessories.

- Atmospheric Kettles
- Vacuum Cooking
- Pressure Cooking
- Fully Aseptic
- Ready-2-Cook Kettles
- Cook Chill Systems
- Jet Cook™ Kettle Systems

READY-2-COOK KETTLE

Simply Connect to Services & Cook

Streamline Your Food Production with Ease

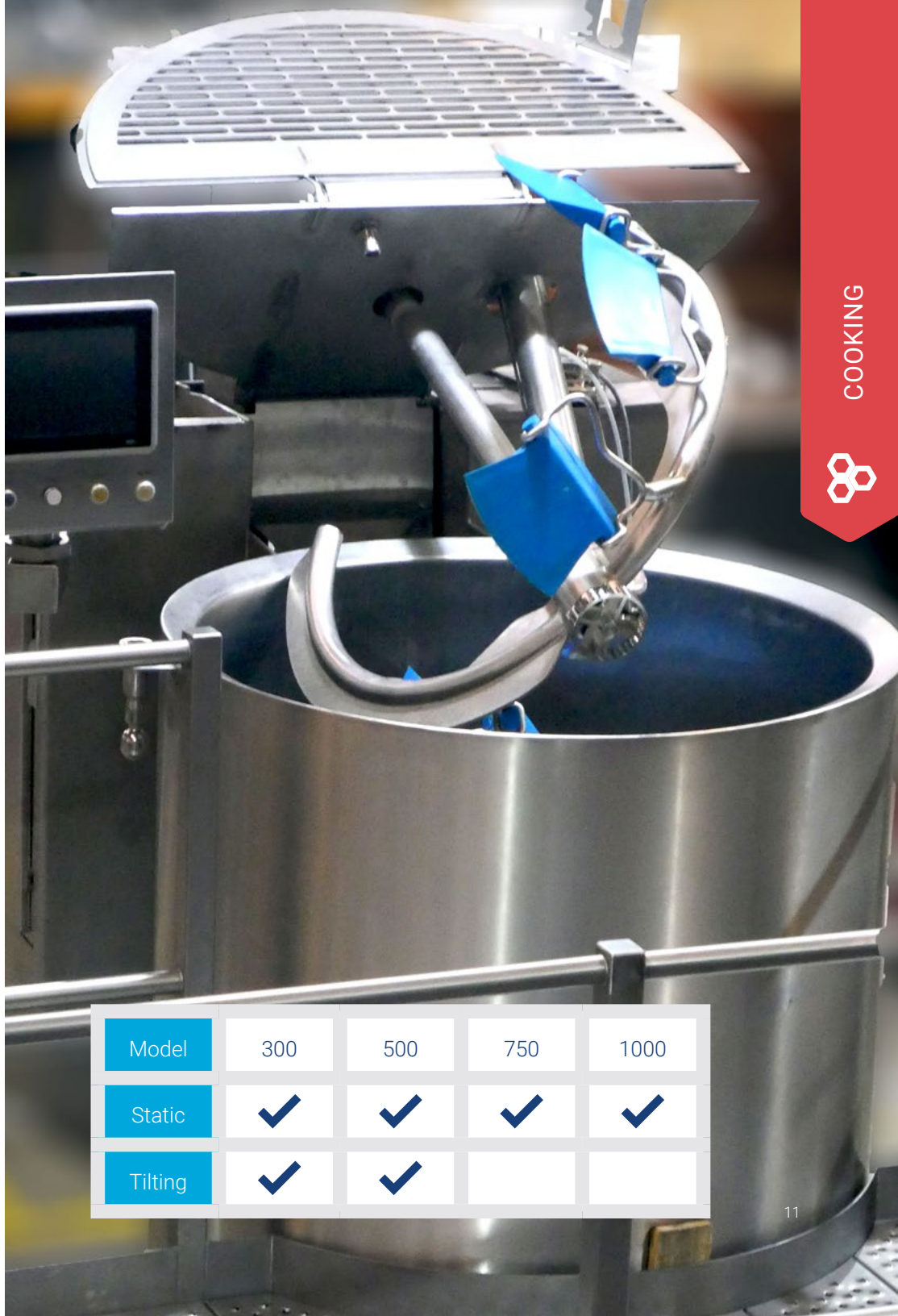
The Ready-2-Cook Steam Jacketed Kettle range offers manufacturers a seamless path to food production, embodying the exceptional quality standards you expect from DC Norris. With minimal installation requirements, you can start cooking right away.

Versatility At Its Best

Perfect for an effortless transition to industrial cooking, pilot plant and recipe testing, or augmenting production capacity alongside larger kettles, Ready-2-Cook is incredibly versatile. Its compact, self-contained design includes a steam valve package, controls, and standard cooking and mixing features — all fully piped for your convenience.

Options to Suit Your Needs

Available in both tilting and static versions, the Ready-2-Cook Kettle is ideal for preparing a diverse range of food and beverage products. Whether you're looking to enhance your current setup or embarking on new culinary ventures, this kettle range is the perfect solution.



Model	300	500	750	1000
Static	✓	✓	✓	✓
Tilting	✓	✓		

KETTLE OPTIONS

Customizable Kettles for Enhanced Production Efficiency

Our kettles are tailored to meet individual customer requirements, equipped with a variety of features and accessories. Leveraging our industry expertise and extensive product and process experience, these features are crafted to enhance both production efficiency and product quality.

Innovative Systems for Optimal Performance

Jet Cook™ System: Incorporate energy savings and optimize processing.

Braising Bar System: Enhance meat and onion flavour profiles.

Multiple Aperture Discharge System (MADS) removes liquids and fats from products while cooking.

Versatile Agitator Options

We offer a variety of agitators in both fixed and tilting fittings, enabling gentle lifting, folding or heavy-duty contra-rotating of ingredients. Additionally, application-specific agitators are available to meet unique production needs.

Additional Options

- Assisted Wash
- High Shear Mixer/Emulsifier
- Recipe Management System
- Virtual Chart Recorder
- Access Platform
- Flush-fitting Outlet Valve
- Load Cells
- Tumble Chiller/Belt Chiller
- Pump Fill Station

Protected by Patents Exclusive to DC Norris:

- Jet Cook™
- Braising Bar System
- Vapor Reduction System
- CIP Shovel Scraper Blades

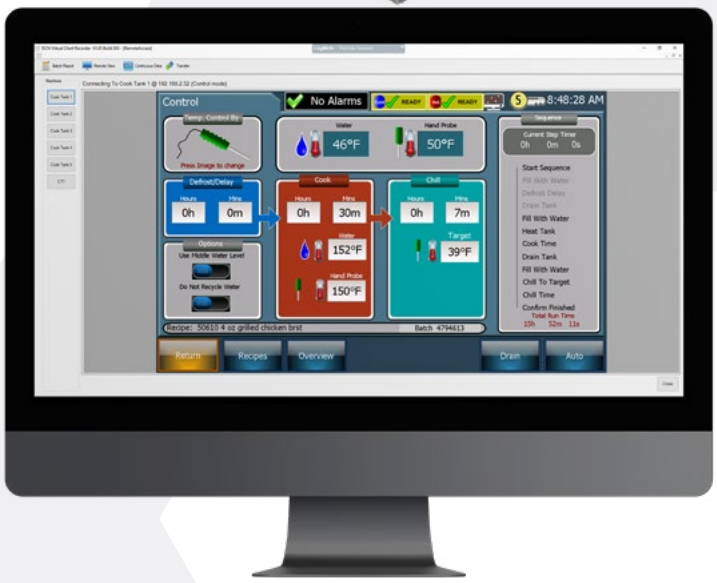
SOUS VIDE COOK TANKS

Elevate Flavor, Perfectly Cooked Every Time

Sous Vide entails cooking food in vacuum-sealed pouches submerged in a precisely controlled water bath. Our Sous Vide Cook Tanks maintain a low, steady temperature, ensuring each dish emerges perfectly cooked, every time.

From small-scale producers to global food manufacturers, we offer a diverse range of Cook Tanks, available in various sizes and equipped with both steam and electric options.

SIZES AVAILABLE	APPROXIMATE CAPACITIES
Model CT-1	120 lbs
Model CT-5	551 lbs
Model CT-10	882 lbs
Model CT-20	1764 lbs



SOUS VIDE COOK TANKS

Key Benefits

- **Enhanced Flavor and Texture:** Slow cooking at low temperatures intensifies flavors, improves texture and preserves nutritional quality.
- **Consistent Results:** Rigorously controlled times and temperatures guarantee uniform results, easily replicable with every batch.
- **Versatile Cooking:** From succulent steaks to tender chicken breasts and delicate fish, proteins can be infused with marinades or sauces for added flavor.
- **Cooling Function:** In-tank chilling to achieve shelf life.
- **Convenience and Reliability:** Enjoy the convenience of unattended overnight cooking, delivering consistent and reliable results every time.

CT-1 Commercial Sous Vide Cook Tank

The CT-1 is specifically designed for small-scale food manufacturers, food service operations and restaurants. This compact 50-gallon electric system is user-friendly, simple to install and easy to operate. Its sleek design allows it to fit seamlessly into kitchens of any size, delivering delicious slow-cooked foods with precision and ease.

CT-1 Commercial Sous Vide Cook Tank

COOK TANK TUMBLE CHILLERS

Experience Versatility & Efficiency with the Dual-Purpose Cook Tank Tumble Chiller.

Originally tailored for institutions like schools and care homes, our Cook Tank Tumble Chiller ensures a steady supply of meals that can be reheated and served with ease. It's designed to slow-cook solid items such as beef and chicken overnight, unattended, while rapidly cooling kettle-cooked liquid products like soups and sauces during the day.

Innovative Design

Featuring an internal drum, this machine offers dual functionality: stationary for Cook Tank Mode and rotating for Tumble Chiller Mode.

Sous Vide Cook Tank Mode

Solid items are cooked Sous Vide style in the water bath, sealed in specially formulated plastic bags, and placed in the drum for slow cooking at low temperatures. After cooking, hot water is replaced with ambient water, chilling the product evenly to below 39°F.

Tumble Chiller Mode

The internal drum gently rotates hot filled bags of kettle-cooked product in chilled water. As part of our Cook Chill method, this ensures extended shelf life.

COOK QUENCH CHILL SYSTEMS

DCN Cook Quench Chill Systems are designed to achieve precise cooking, quenching, and chilling of a variety of products, such as short and long pasta, rice, vegetables, noodles, grains and pulses.

1 COOK

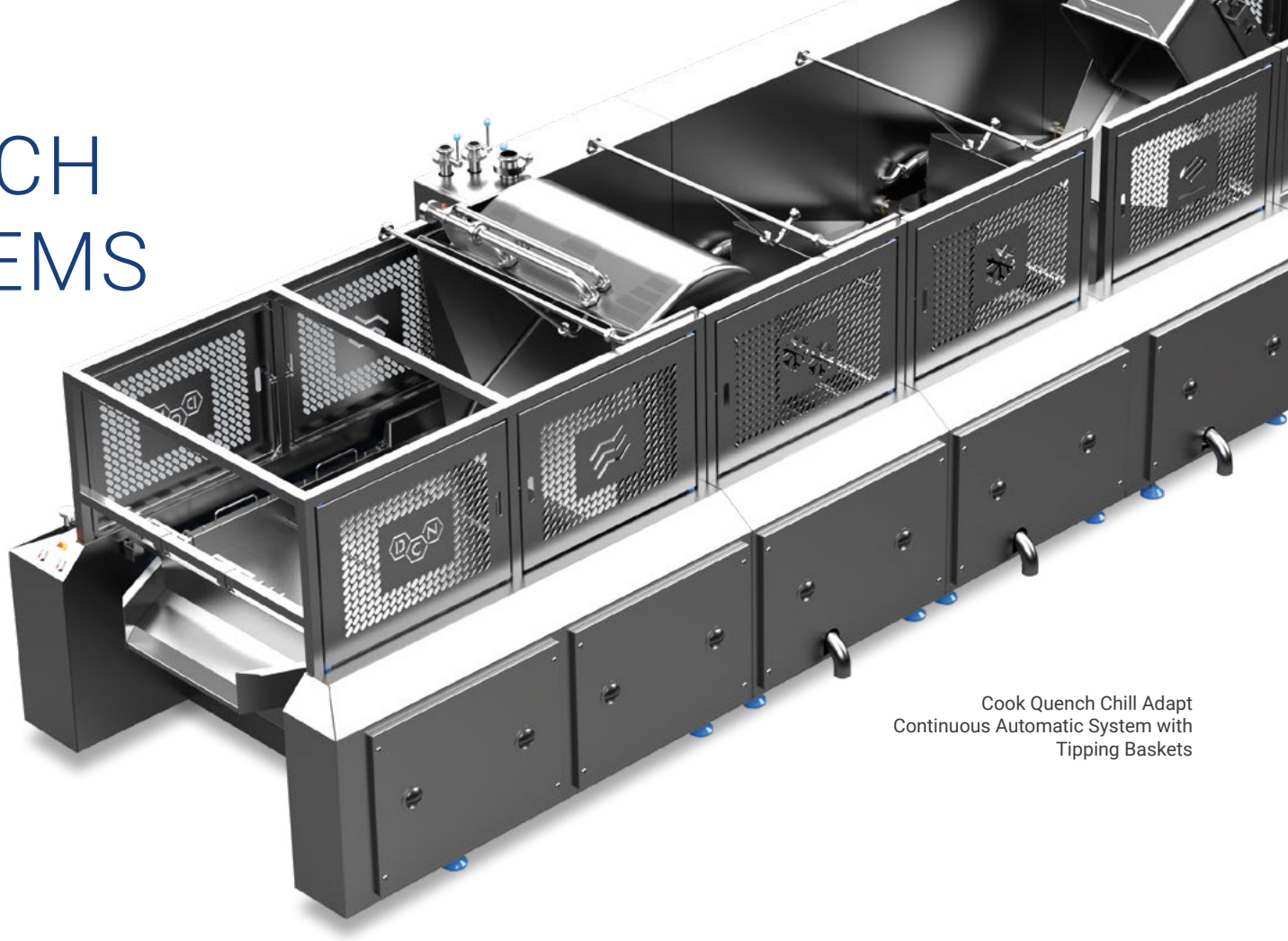
The initial stage of the process heats and cooks the product in water in the first basket/tank.

2 QUENCH

The product is transferred to the second quench tank containing ambient water to take the bulk heat out of the product, stop the cooking and refresh the product.

3 CHILL

The final tank contains chilled water and completes the cooling process.



Cook Quench Chill Adapt
Continuous Automatic System with Tipping Baskets

FRESHCUT FOODS

"The 'Adapt' uses a fraction of the amount of water and energy compared to our existing linear system. We have seen significant improvements in overall plant and labo r productivity through increased batch sizes, reduced cycle times and line manning."

Chris Copestake
Chief Executive – Freshcut Foods

COOK QUENCH CHILL ADAPT

The innovative Cook Quench Chill Adapt Series combines advanced high-speed cooking technology with a flexible modular design, setting new benchmarks in food manufacturing.

Modular Design

Food Manufacturers have greater flexibility with the modular construction; the Cook Quench Chill can be installed over a high care/low-risk barrier, or it can be used as a single unit and expanded at any time to give a larger capacity and throughput. Additional modules can be Cook or Chill, giving flexibility for products. Installation is simplified with the modules attaching easily together before connecting to services.

Faster Cooking Times

Products such as pasta, rice, potatoes and vegetables are cooked or blanched continuously at faster speeds due to the addition of two patented Jet Heat direct steam heat systems.

Quality Products

Product quality is assured with the Variable Wave Agitation System which produces a damage-free product and prevents product clumping.

Water-Saving

Engineered for optimal water conservation, the system is designed with smaller tank capacities and adaptable water levels to accommodate varying batch sizes. The incorporation of a Starch Removal System allows for the reuse of the same water in subsequent batches. Internal heat exchangers maintain precise control over the Quench and Chill water temperature, facilitating water savings through continuous recirculation.

We also offer Manually Operated Linear & Rotary Cook Quench Chill Systems

The baskets are transported between the three vessels using a manually operated hoist system that traverses over the top of the tanks.

COOK CHILL BAG COOLERS

Rapid Cooling: Extended Shelf Life

Our Tumble Chiller and Belt Chiller rapidly cool large batches of food in flexible plastic casings to below 40°F, extending refrigerated shelf life for up to 45 days. Post Kettle Cooking, the bagged product is immersed in chilled water and gently circulated to ensure thorough cooling with minimal product damage.

BELT CHILLER

New Innovative Design

Minimize carbon footprint with the Belt Chiller, delivering optimal performance by utilising the minimum amount of energy and water. Engineered for enhanced efficiency through accelerated cooling and unloading, this chiller empowers food producers with significant savings on overall production times, costs and labor.

- **Efficient Cooling:** Cools liquid foods from 185°F to below 4°C in just 30-60 minutes, extending shelf life.
- **Rapid Unloading:** 1,100lb batch unloaded in just 60 seconds, saving 25 minutes per batch.*
- **Gentle Handling:** A flighted belt massages filled Cook Chill bags whilst circulating them in chilled water, with additional water sprayed on top of the bags during the cycle.
- **Automated Unloading:** The self-unloading system lifts bags out of the water, depositing them directly into the customer's tote bin at the end of the cooling cycle.
- **Resource Conservation:** Chilled water is recycled for multiple batches, eliminating the need for a surge tank for emptying and refilling. The chiller is immediately ready for reuse once a batch has been unloaded.
- **Labour-Free Operation:** Eliminates manual handling, reducing the risk of RSI.

AVAILABLE IN 3 STANDARD SIZES
1,100lb
2,200lb
3,300lb

* Cooling times are approximate and dependent on product and viscosity.

TUMBLE CHILLER

Original Design

Efficient, reliable, and resource-friendly, the Tumble Chiller rapidly and uniformly cools products, preparing them for refrigerated storage and ensuring extended shelf life.

Key Features

- **Precise Control:** The easy-to-use HMI screen with temperature display eliminates operator error, with cooling times and temperatures fully logged for accuracy.
- **Batch Traceability:** The Optional Virtual Chart Recorder logs times and temperatures, ensuring comprehensive batch traceability.
- **Resource Conservation:** Recycling surge tanks save and reuse chilled water, conserving resources and reducing costs.

COOLING TIMES	
Thin Viscosity Products	45 minutes
Thick Viscosity Products	90 minutes

PRODUCT CAPACITIES	
Model TC-30	80 gallons
Model TC-50	130 gallons
Model TC-75	200 gallons
Model TC-100	265 gallons

*Times and capacities can vary and are product dependent.

EFFICIENT, RELIABLE, AND RESOURCE-FRIENDLY

READY-2-COOL

The Ready-2-Cool Static Batch Cooler is our latest solution for large batch cooling needs in standalone vessels. This innovative cooler boasts a cutting-edge design that maximises cooling surface area relative to the product, resulting in significantly faster cooling times.

Compact & Self-Contained

The Ready-2-Cool Static Batch Cooler is designed for simplicity and efficiency. All valves and controls are integrated into a single, self-contained unit, making installation quick and easy. Its compact design ensures it fits into existing processes including DCN Cook Chill Systems, enhancing your production line's efficiency and flexibility.

AVAILABLE IN CAPACITIES
130 gallons
260 gallons

- Vacuum Filling System
- Over-Pressure Discharge System
- Cooler Control System
- Sprayballs for Automated Cleaning
- HMI Control
- Data Capture via Virtual Chart Recorder
- Scraped Surface Agitators

Versatile and Customisable

The Ready-2-Cool Static Batch Cooler is available in multiple configurations to meet your specific process requirements:

- **Atmospheric as Standard**
- **Pressurised for Over-Pressure Assisted Discharge**
- **Air Evacuation for Vacuum-Filling**

Additionally, it can be equipped with a variety of unique scraped surface agitators to ensure optimal performance and product consistency.

Key Benefits

- **Rapid Cooling:** The large surface area-to-product ratio ensures quick cooling times without damaging particulates or compromising quality or taste.
- **Gentle Transfer:** Products are gently moved to the coolers using our vacuum transfer system, with the cooling cycle closely monitored to prevent thermal shock or separation.
- **Minimal Product Loss:** Once cooled, the product can be gravity, over-pressure or pumped into transfer vessels before being taken to the filling line, minimising damage and reducing losses.

ADDITIONAL FOOD PROCESSING EQUIPMENT

DC Norris offer the supply and installation of an extensive array of additional food processing equipment and accessories, including:

- Transfer/Holding Vessels
- Wok-Style Braising Pans
- Can-Openers
- Can-Crushers
- Conveyors
- Star Deck Tread Plate

AUTOMATION CONTROL SYSTEMS

Recipe Manager

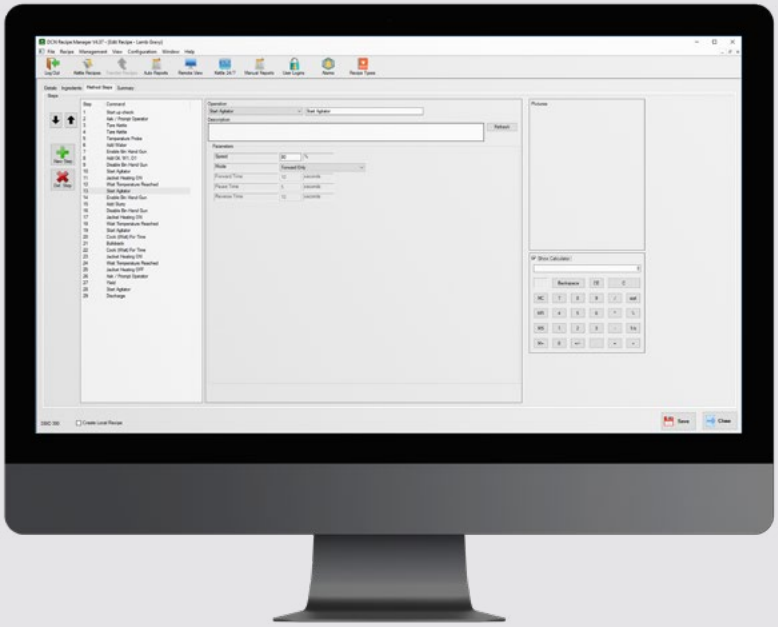
Precision & Repeatability Made Simple

Working closely with our customers to understand and identify what they require, we have developed the very best system in the market.

Key Features

- **Comprehensive Recipe Creation:** Create detailed ingredient lists, step-by-step processes, and manage user access security, all stored in a Microsoft SQL database.
- **Seamless Integration:** Transfer recipes to individual kettles with automatic ingredient scaling for any batch size.
- **Detailed Tracking:** Maintains full records of time, temperature and kettle yields.
- **Automatic Supervisor Notifications:** Supervisors receive instant email/SMS alerts for any process deviations outside recipe parameters.

- 1-32 Kettles.
- Calculates pasteurisation values for pathogenic microorganisms (PU/PO).
- Temperatures, cook times and agitator speeds are automatically controlled by the recipe.
- Visual display of plant layout and fault notification.
- Records all weights, temperatures, sequences, deviations and errors.
- Creates batch reports in text and graph formats.
- Piped additions are batched in automatically and verified by either load cell or flow meter.
- Touch screen for operator use.
- Displays machine operator HMI screens in real time (remote view).



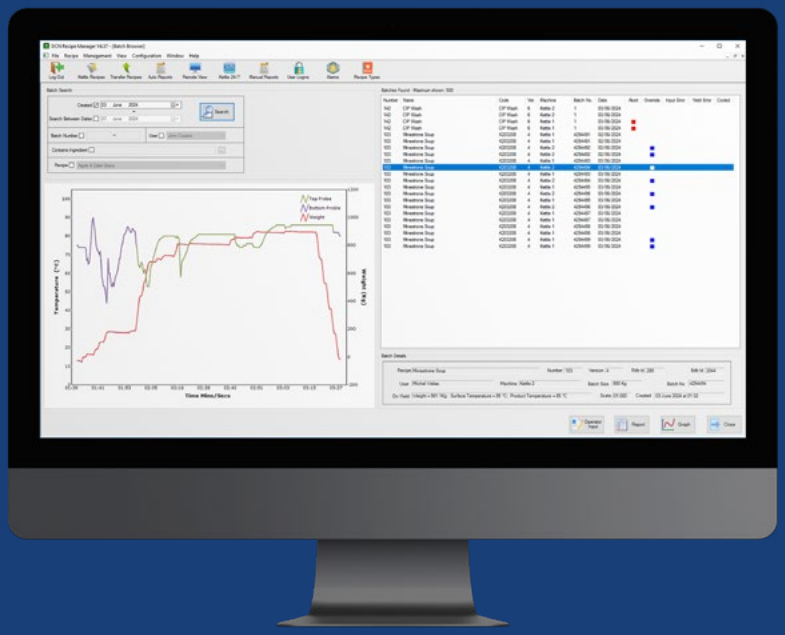
DATA CAPTURE FOR HACCP

Virtual Chart Recorder

Seamlessly Recording Every Production Detail

The Virtual Chart Recorder System is designed to retrieve and record both analogue and digital data throughout your production cycles.

- **Comprehensive Data Logging:** Capture detailed information on temperature changes during any cooking or cooling process.
- **Easy Data Access:** The software stores data in a database, enabling you to quickly generate historic cycle records and trend reports.
- **Enhanced Traceability:** Effortlessly produce detailed process documentation for customers, ensuring transparency and quality control.



- Date
- Time (start, finish, total)
- Yield
- Batch number numerical
- Operator ID
- Product ID

The system utilizes a Microsoft SQL Server database which allows all batch records to be searched, viewed and analysed. Data can be exported to Excel or similar as well as simple image formats.

RECIPE TESTING, SPARES & SERVICE

Seamless Manufacturer Relationship
DC Norris North America works directly with DC Norris in the UK to ensure a smooth process from installation through the full life of your equipment.

Recipe Testing Access
Clients can use the DC Norris test kitchen for recipe development and product trials, refining processes before committing to full-scale production.

Parts When You Need Them
Our U.S. warehouse carries a robust inventory of spare parts for immediate dispatch. We also provide direct access to DC Norris's extensive UK parts inventory for rapid fulfillment.

Expert On-Site Support
Our experienced service engineers understand every system we supply. They can be on site to resolve technical issues, recommend the right parts, and handle installations.

Reliable Performance

With local expertise, fast parts availability, and manufacturer-backed support, we help ensure your equipment runs at peak efficiency for consistent, high-quality results.

DCNORRIS
FOOD PROCESSING INNOVATION

For purchase inquiries in North America:

D C Norris North America
1564 Northern Star Drive
Traverse City, MI 49696

www.dcnorrisna.com
T (231) 935 - 1519
E mail@dcnorrisna.com