



DCNORRIS



cook-chill
the key to
extended
shelf life



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DCN Cook-Chill System has become an industry benchmark, with food companies around the world using our ground breaking technology to create meals of the highest quality, with a safe extended shelf life.

The Cook-Chill System was developed as an economical alternative to traditional cook-and-serve methods. Food produced using the system retains the taste, texture and aroma of freshly prepared ingredients, yet may have been produced in large volumes up to 45 days in advance.

The key to safe extended storage of foods is to rapidly chill cooked product through the 'danger zone' of 5 - 63°C (40 - 145°F), to retard bacterial growth. Products are safely pasteurised as heating to a high temperature then rapidly cooling slows spoilage caused by microbial growth. The key to retaining food quality, taste, texture and aroma is controlled refrigerated storage.

Overview

Cooking, packaging and cooling equipment capable of processing both small and large volumes of ingredients with the minimum number of operators.

Combination of specially formulated bags and Tumble Chillers accelerate chilling and deliver safe, extended refrigerated shelf life of up to 45 days!

Production can be scheduled to meet sell-by-date requirements, allowing advance ordering or just-in-time delivery.

User friendly control systems monitor production and product status at all stages of the Cook-Chill process.

Benefits

- Savings of 5-10%
- Build up a stock of quality food for future use
- Consistent quality of finished product
- Large and small particulates can be processed without damage
- Products are packaged at pasteurisation temperatures
- No direct human or utensil contact during the cooking or the packaging process
- Production can be centralised for operations where food is distributed to off-site locations

cook-chill

the process

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

Cooking: Using any of the range of DCN Steam Jacketed Kettles which can be full recipe driven or manually controlled. The system ensures that all times, temperatures and quality parameters are constantly monitored.

Packaging: When the cooking cycle is complete, a DCN Pump Fill Station or fully automated Form Fill Seal Machine transfers food at 85 - 95°C (185 - 203°F) from low to high-risk areas. This avoids particulate damage and allows metered delivery into Cook-Chill bags. The bags can be filled with different volumes subject to requirements and are then sealed, dated and labelled.

Chill: Bags are conveyed into a DCN Tumble Chiller. They are then gently circulated in chilled water to rapidly drop the temperature from 95°C (203°F) to below 5°C (41°F) in under an hour (product dependent), with cooling times and temperatures fully logged. The sealed bags are then placed in chilled storage at 2 - 4°C (36 - 40°F) and can be stored for up to 45 days.

Heating and Serving: If the product is required for immediate consumption (e.g restaurant/hotel) the bags can be transported to various locations, reheated and served and will retain the quality and taste of a fresh meal. If destined for a supermarket shelf, bags will be emptied into a depositor and product portioned on a filling line into packaging such as Ready Meal trays. It can then be delivered to the outlet and is ready for presentation to the consumer.

Simple Cook-Chill System

Kettle sizes range from 300 - 1500 litres
(80 - 400 USG)

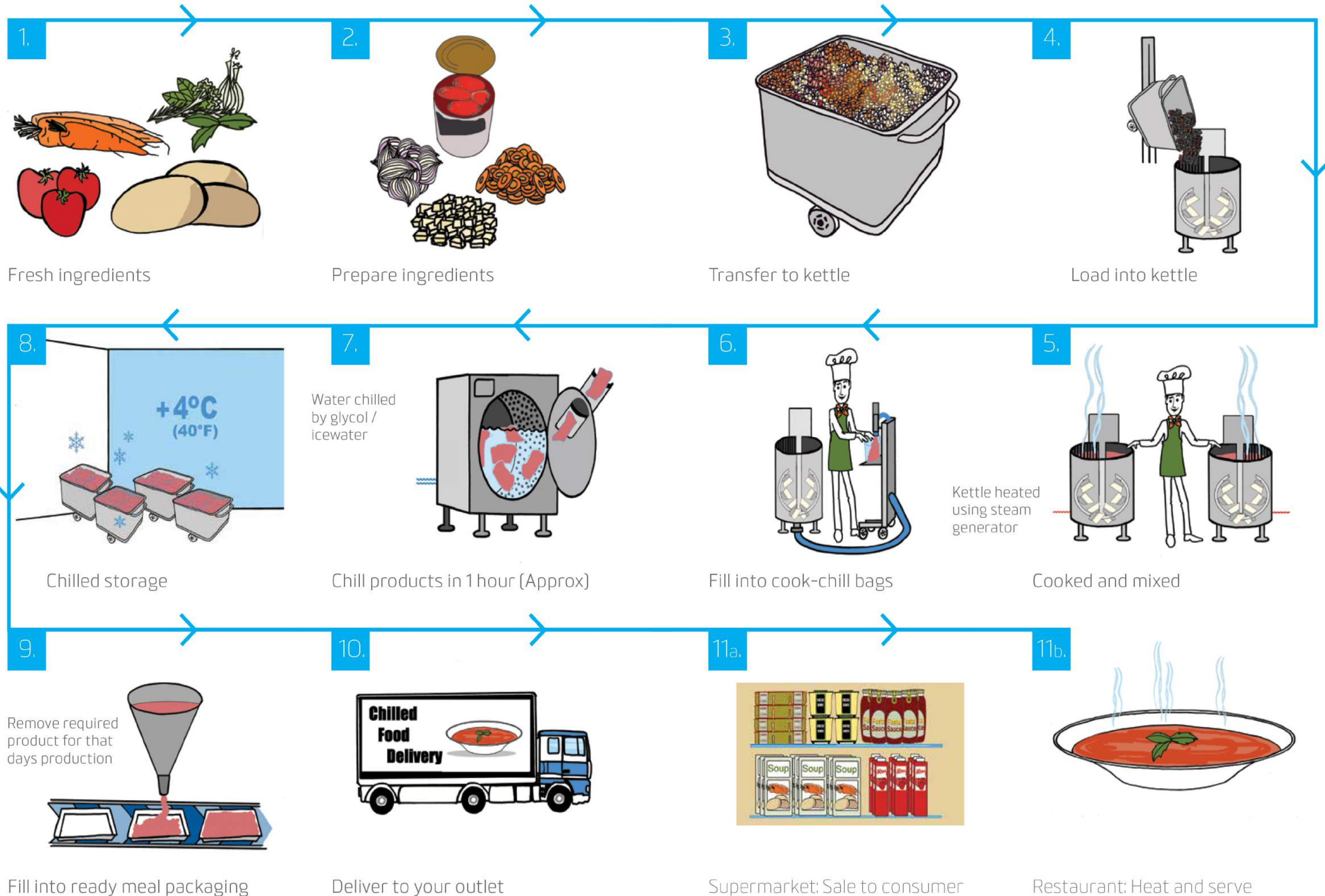
Accessories include:

Homogenisers, mixers, blenders, full controls, CIP, steam injectors, valve packages and gantries.

- A** Steam Jacketed Kettle
300 litre ready-2-cook kettle shown suitable for smaller quantities / foodservice
- B** Pump Fill Station
- C** Tumble Chiller



Soups & Sauces - Example Production Process



dcn cook-chill innovations

To compliment our Cook-Chill System, DCN are continually working on new technologies to achieve faster cooking and cooling times and an improved production process.

cook-chill sample menu items

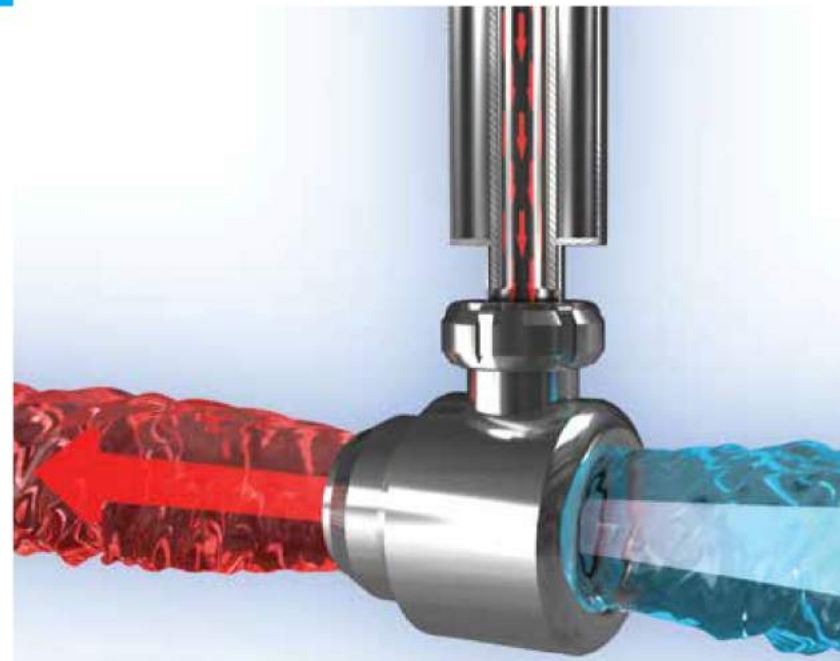


Jet Cook System

DCN have developed a new system incorporating all the best features of DCN cooking technology to cook and heat at incredible speeds. This innovation can be installed into new Cook-Chill Systems or retro-fitted into existing equipment.

Jet Cook steam injection system looks like a jet engine and performs in the same way; it heats and pumps drawing product through the internal jet stream. Products are then cooked and heated atomising steam to extract the maximum energy. We have three models available depending on your product type and factory set-up.

- Fast Cooking Times
- Uses approximately half the energy of standard cooking methods resulting in huge savings
- Reduced Cleaning Times
- High Quality Product
- Elimination of Burn-on
- Great Taste, Texture & Appearance
- Quiet in Operation



Other Innovations

- **Emulsification and Powder Entrainment** - less wastage occurs as starches are activated without any damage. Oils, purees and powders can be drawn in using the vacuum created by the Jet Cook
- Built-in **Homogeniser** for pureeing
- **Odour Extraction Unit**
- **Caramelisation System** for cooking onions and searing meats
- **Inclined Agitator** for keeping product in suspension
- **Recipe Management System**

DCN Cook-Chill Systems can produce a large range of convenience foods, here are just a few examples:

Soups / Chowders

Sauces:
Curry - Chicken Tikka
Pasta - Tomato & Basil
Cheese
Béchamel
Watercress
Parsley
Smoked Mornay
Baby Food / Purees

Pie Fillings:

Chicken and Ham / Beef and Ale
Beef Casserole / Stews
Dressings & Dips:
Ketchup
Mayonnaise
Dessert Products:
Custard
Chocolate Sauce



Case Studies

Béchamel Sauce

Goal: Improve the emulsification of the sauce and reduce the noise of the customers current system.
Method: All ingredients added together and cooked using the Cook-Chill System fitted with a Jet Cook Nozzle.
Result: 500kg (132 USG) of sauce reached 95°C (203°F) in 8 minutes, greatly reducing the customers current production times. Far better emulsion was achieved with an improved taste and texture. Vibration and noise was reduced dramatically and the customer replaced his existing equipment with a Jet Cook System.

Chicken Korma

Goal: Improve taste and texture of Korma produced by a leading Indian Curry Manufacturer.
Method: The sauce was cooked using Cook-Chill and Jet Cook System, cooling was achieved using Glycol through a Jacketed Vessel.
Result: Cooking and cooling times were exceptionally faster when compared with those recorded using standard equipment. Results collated from a taste test showed that the cooling process eliminated fat crystallisation in the Korma, resulting in enhanced taste and texture of the final product. The trial showed a massive energy saving compared with conventional cooking systems.

Cheese Sauce

Goal: To reduce overall cooking batch times, minimise the level of 'burn-on' and maximise product consistency without compromising the quality or flavour.
Method: Using the DCN Cook-Chill method, the Cheese Sauce was cooked in a Steam Jacketed Kettle. Once the ingredients were added, the kettle was brought up to temperature using the Jet Cook. The product was then homogenised to create a smooth texture. Once ready, sauce was transferred into cook-chill bags using the Pump Fill Station. They were then cooled in a DCN Tumble Chiller.
Result: The sauce was cooked in a third of the normal time. Once emptied, the kettle revealed absolutely no burn-on.

development kitchen



Testing and product development is crucial to the success of your business. To demonstrate our commitment to you, DCN has invested heavily in an on-site Development Kitchen facility.

Fully equipped with a range of DCN equipment for Cook-Chill and Jet Cook trials along with a kitchen/leisure area which can be used for tasting, training and discussion. Here we can rigorously test equipment and cook and cool customer products in a food factory environment.

Services available include steam, chilled water, air, refrigeration and electrical power. Our experienced team are always on hand to assist in recipe development and to give customers the opportunity to fully assess equipment before they decide to order.

Once an order has been placed and completed we can also use the test kitchen to conduct full pre-delivery trials to ensure the equipment is running to its full potential.

Customers can also use this as a great opportunity to be fully trained on their equipment in advance of delivery and installation.



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