

INDUSTRIAL  
**COOK QUENCH CHILL**  
**'ADAPT'**

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**DC NORRIS**  
NORTH AMERICA



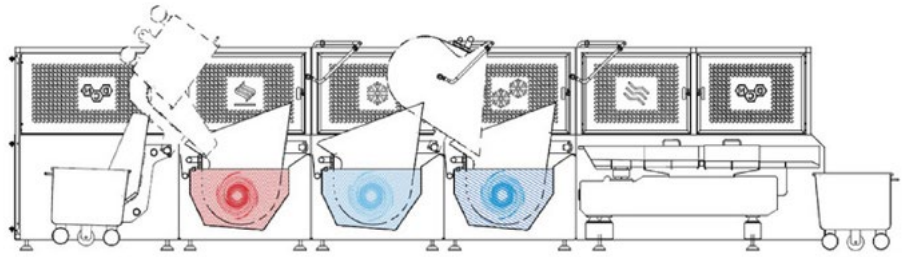
Introducing the latest  
cook quench chill innovation  
from DC Norris

# COOK QUENCH CHILL 'ADAPT'

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Reduce your carbon footprint with the most energy efficient CQC on the market. The CQC 'Adapt' delivers optimum performance while using minimal energy and water.





MODULE 1 2 3 4 5

# THE COOK QUENCH CHILL PROCESS

## Module 1: Product Loading

Hydraulic Euro Bin tipping unit integrates into the CQC at the Cook Position. Can be lowered to operator level for product loading, and raised for loading into baskets.

## Module 2: Cook

Product is cooked quickly and evenly using Jet Cook™ Technology, achieving 100% energy into the water. The variable flow wave agitation system ensures even cooking and removes clumping issues.

## Module 3: Quench

The Quench vessel is loaded with cold water to stop the cooking process and to rinse / wash the product prior to the chilling phase.

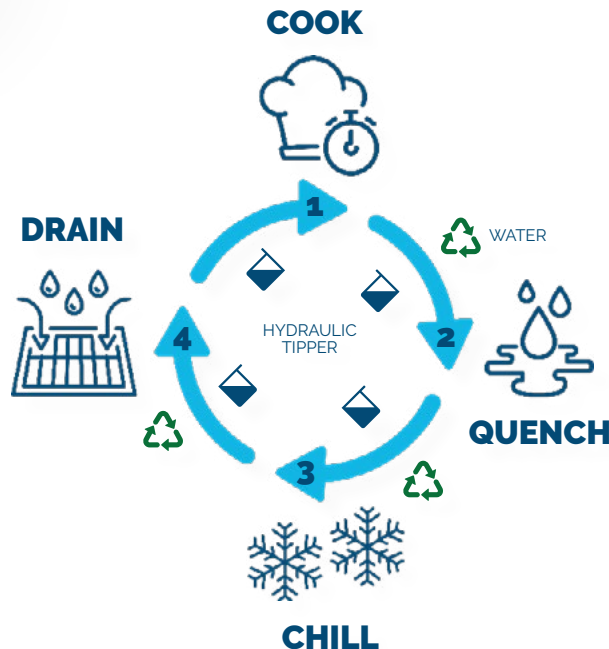
## Module 4: Chill

Rapidly reduces the product temperature to below 3 °C. The Chill Vessel is initially filled with cold water from the mains and the temperature is lowered by circulating through a heat exchanger.

## Module 5: Unloading

Vibratory De-Watering Conveyor. Stainless steel trough vibrating conveyor drains water from the product before discharging into a standard tote bin or customer product trays.

The process uses a series of vessels arranged in-line, and can have a low to high risk divide. The product is contained in baskets that tip into each other, and ultimately into a suitable receptacle at the end of the line. The standard CQC is made up of three main parts, 'Cook', 'Quench' and 'Chill'. However, the versatility of the 'Adapt' series means that modules can be added or removed according to throughput. Flexible / optional loading and unloading solutions are also available.



# COOK QUENCH CHILL 'ADAPT' FEATURES:

## GENERAL

- All 3 tanks have a separate weir to allow the starch to be run off during each change meaning less frequent water changes.
- Save water and energy with three water level options according to product and batch size.
- Energy-saving pumps.

## HEATING

- Jet Cook™ water heating speeds up processing and cleaning.
- The Jet Cook operates by collapsing steam into the product at high velocity through a specially designed nozzle. As the steam collapses it pulls the product (liquid) through, creating a recirculating effect (partial vacuum) in the re-circulating pipe. 99.5% of the steam is utilized and then collapsed into the product ensuring huge energy savings.
- Jet Cook™ replaces Heat Exchangers which can scale and impact heat up times.
- Sterile steam filter arrangement.
- Temperature probe and instrumentation to maintain correct water temperature.
- Hygienic EHEDGE and AAA approved pumps.

## AGITATION

- Variable Wave Agitation System pumps hot water from the Cook Tank through to the wave nozzles positioned at the rear of the cook basket.

## COOLING

- Speed of agitation is programmable through the recipe control package.
- The Quench and Chill tanks have hygienic heat exchangers which gives the ability to program the tank temperatures down to 1°C.
- 150kw chilling unit required.
- Cooling times are reduced with smaller tanks sizes.
- Continuous water chilling and re-cycling of the water in the final chill vessel.

## CLEANING

- Unique CIP system - The pipework can be cleaned-in-place using water heated by the in-tank Jet Cook™ system.
- Cleaning chemicals and sanitizer are added to each of the baskets via a programmable CIP. Wave pipework connections and basket rinse out pipework connections within product baskets.
- Integral spray balls wash out each of the 3 baskets.
- Hydraulic lifting cylinder for raising and lowering of the product baskets.
- Distinct Low Risk – High Care Division.

## PRODUCT BASKETS

- Baskets interchangeable for a variety of different products.
- Basket rinse system offering minimum product retention during transfer from tanks.
- Rigidized – partially perforated product baskets uniquely shaped to suit wave motion agitation.
- Standard perforation / slot sizes - 1.5mm/3mm.





# CQC 'ADAPT' CONTROLS

**The CQC 'Adapt' integrates with our Process Management System and Data Capture Software option for a fully automatic cook, quench and chill program including draining, discharge and CIP.**

The user-friendly system allows customers to create step-by-step cooking and cooling process with individual basket agitation speed control, and user access security with all processes stored to a relational database. The system maintains full records of product cooking and cooling times and temperatures.

## LOW-RISK AREA

- Fully recipe controlled with data capture option.
- All motor controls including hoist, conveyors (option) & pumps.
- PLC control of all machine functions.
- Emergency Stop and Safety relays to category 4.
- System reset.
- All manual basket controls.
- Cook/Quench.
- Beacon sounder.
- Sounder reset.

## HMI Touch Screen with following features:

- Temperature set points on all vessels.
- Adjustable engineering parameters – password protected.
- Draining function on each vessel.
- Recipe selection by product name, automatic loading of parameters.
- Semi-automatic basket control.
- Main steam control.
- Data logging, (option if chosen)
- Control of water levels.
- Control of water temperatures.
- Control of chilling water.
- Control of wave system flow rates.

## HIGH-RISK AREA

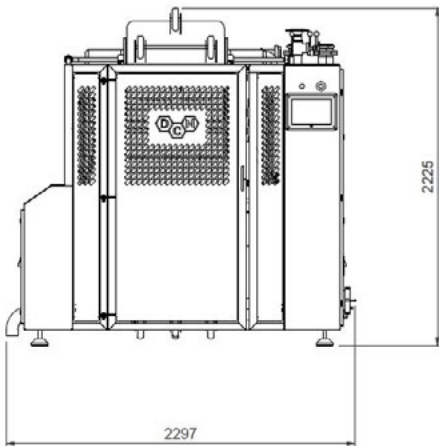
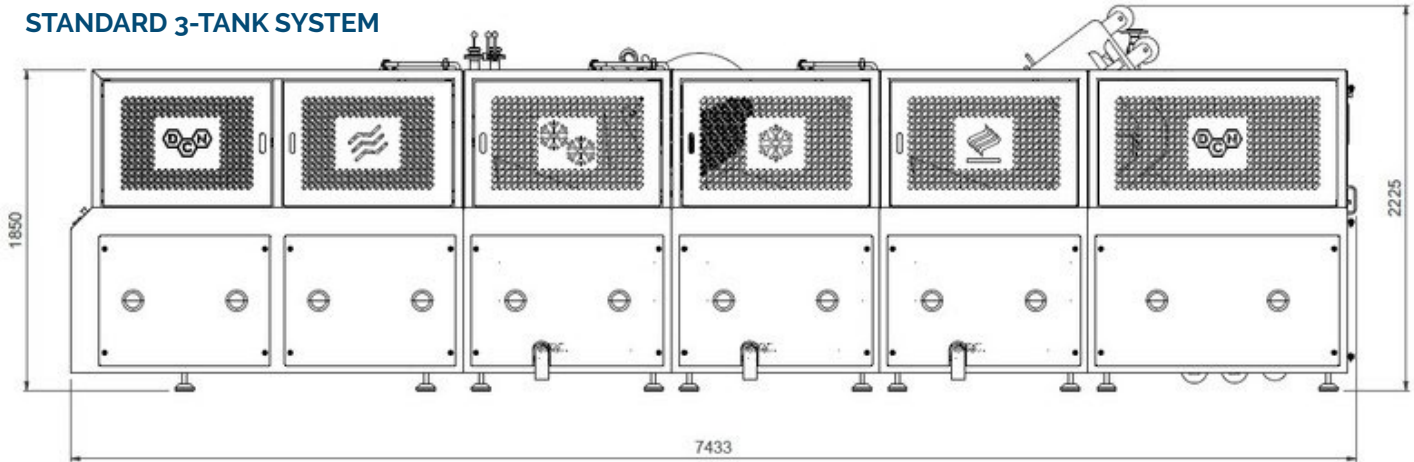
- Control of vibratory & de-watering conveyor.
- Emergency Stop.
- Manual raise/lower of chill basket.
- Draining of chill basket.
- Sounder mute.
- Beacon/Sounder operator alert.



# MODULAR TANK SYSTEM

The Adapt System can be customized in modules of each tank (Cook/Chill) according to production throughput requirements.

## STANDARD 3-TANK SYSTEM



	300-2	300-3	300-4
<b>BASKETS/TANKS</b>	2	3	4
<b>VESSEL</b>	575	575	575
<b>BASKET CAPACITY</b>	300	300	300

# SERVICE REQUIREMENTS

- **STEAM:** 800kg/hr @7 barg
- **AIR:** 6 barg .3 m<sup>3</sup>/hr
- **POWER:** 100 amps per phase
- **WATER (MAINS):** 525 l/min @2 barg
- **GLYCOL CHILLER:** 3 barg 400l/min 0°C Maximum cooling duty - 150kW

# WE'RE HERE TO HELP YOU LEAD THE EVOLVING NORTH AMERICAN FOOD MARKET

The processing equipment manufactured by DC Norris leads the global food production industry. So too, do our teams. Our commitment to partnership with our clients is what truly drives global food cultures forward. Together, we innovate to feed the world the best foods possible and to make continual strides in convenience and accessibility by improving efficiency, lowering cost, and minimizing environmental impact.

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