



COOK QUENCH CHILL 'ADAPT'









VERSATILE MODULAR DESIGN WITH OPTIMUM
PERFORMANCE



ADAPT

INTRODUCING THE LATEST INNOVATION IN COOK QUENCH CHILL TECHNOLOGY

Reduce carbon footprint with the most energy efficient CQC on the market - optimum performance whilst using the minimum amount of energy and water!

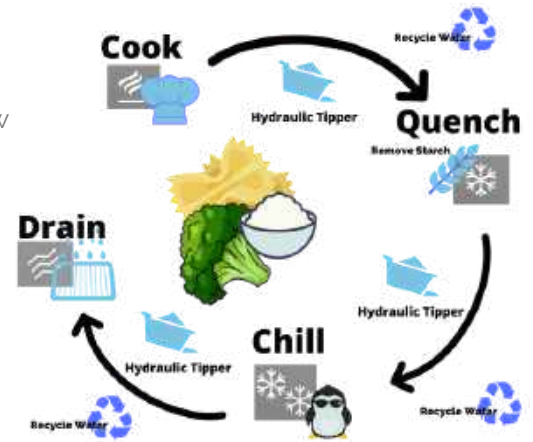
-  Maximum water savings - smaller tank sizes | variable water levels | starch removal system.
-  Patented Jet Cook™ direct steam heat system for high speed heating and cooking times, 575kgs of water from 20°C to 90°C in 8 minutes.
-  50% reduction in energy usage.
-  Reduce return on investment time due to the energy and water savings.
-  New modular design - Expand/reduce throughputs.
Reduce installation times/cost.
-  Variable Wave Agitation System - high quality, damage-free product.
-  Easy to clean with no external switches or wires. CIP system for internal pipework and heat exchangers.
-  Suitable for products such as pasta, rice, vegetables and potatoes.
Ambient, Chilled & IQF.

The Cook Quench Chill Process

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 un-loading solutions are also available.



[Book your trial in our Product Development Kitchen today!](#)



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.

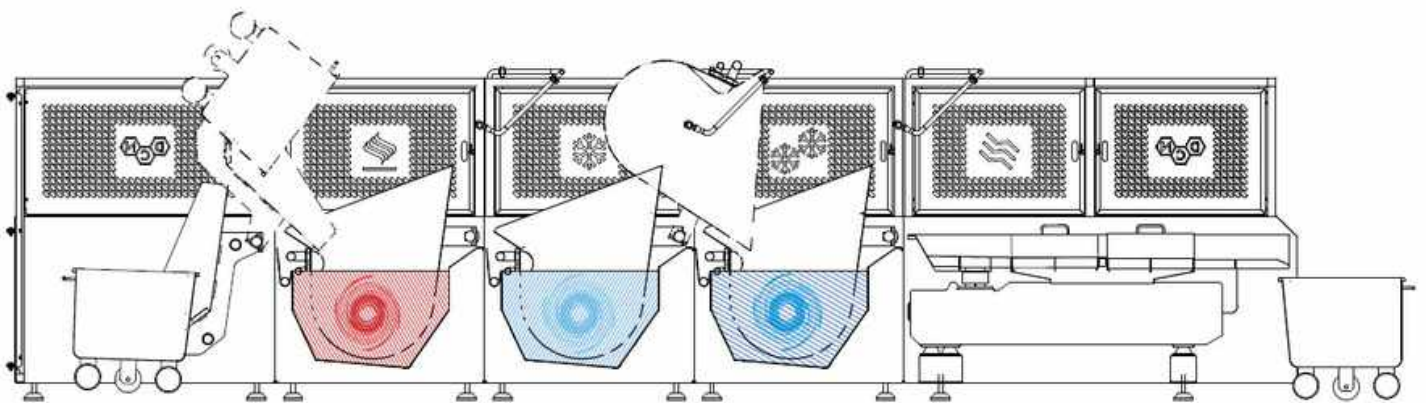


Module 4 - Chill

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.



Module 1

Module 2

Module 3

Module 4

Module 5

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 re-circulating effect (partial vacuum) in the re-circulating pipe. 99.5% of the steam is utilised 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.
- Speed of agitation is programmable through the recipe control package.

Cooling

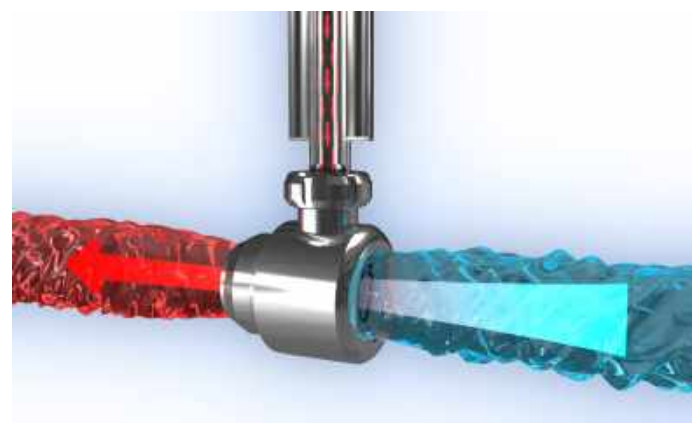
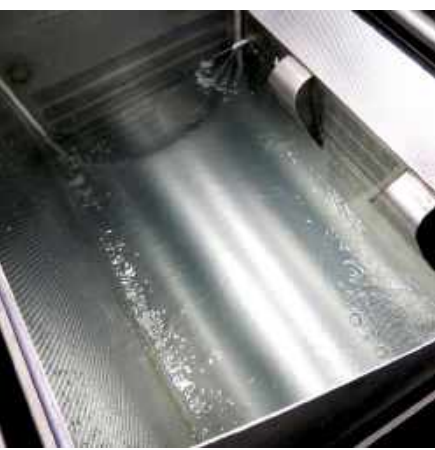
- The Quench and Chill tanks have hygienic heat exchangers which gives the ability to programme the tank temperatures down to 1°C.
- 150kw chilling unit required.
- Cooling times are reduced with smaller tanks sizes.
- Continuous water chilling and re-cycling of the water in the final chill vessel.

Cleaning

- Unique CIP system - The pipework can be cleaned-in-place using water heated by the in-tank Jet Cook system.
- Cleaning chemicals and sanitiser 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.
- Rigidised – partially perforated product baskets uniquely shaped to suit wave motion agitation.
- Standard perforation / slot sizes - 1.5mm/3mm.





Cook Quench Chill Systems are available with the option of our Process Management System and Data Capture Software offering a fully automatic cook, quench and chill programme 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 raise/lower 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.
- Control of spray ball basket rinse.

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.

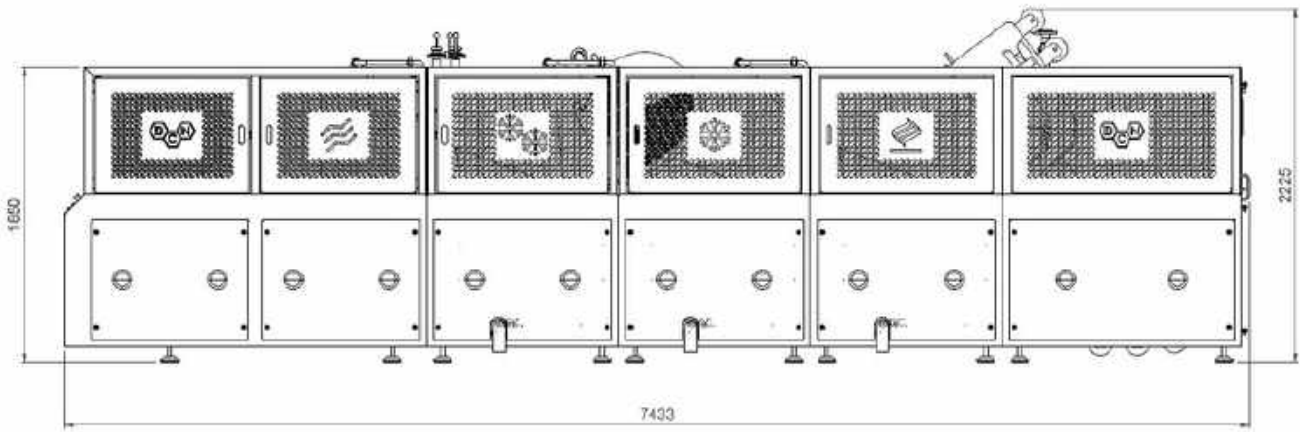


Product Cooking & Cooling Trial Data

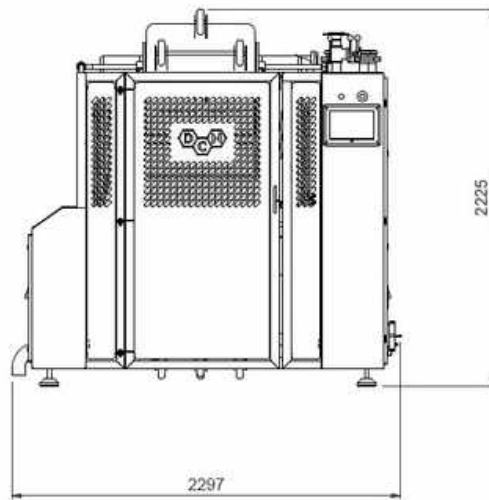
PRODUCT	DRY WEIGHT (kg)	COOK TIME (mins)	COOK TEMP	QUENCH TIME (mins/secs)	QUENCH TEMP	CHILL TIME	CHILL TEMP	COOKED WEIGHT (kg)	TOTAL TIME (mins/secs)	COOKED WEIGHT (p/h kg)
Spaghetti	50	9	90°C	3	10°C	2	3°C	110	15.5	600
Macaroni Pasta	50	6	91°C	1	11.8°C	1.5	4°C	75	10	560
Fusilli Pasta Dry	50	14	95°C	3	10°C	2	4°C	116	20.5	348
Pasta Conchiglioni	50	11	92°C	1.5	8°C	1	1.9°C	75	15.5	300
Long Grain Rice	60	20	92°C	1.5	17°C	1	3.7°C	180	25	540
Basmati Extra Fine	65	16	92°C	2	17°C	2	3.5°C	195	23	585
Jasmine Rice	100	14	98°C	3	16°C	3	3.9°C	200	24	600
Rice Noodles Flat Dry	30	4	80°C	3	9°C	2	3.8°C	75	12	300
Vermicelli Noodles Dry	28	4	90°C	2	9°C	2	2.9°C	50	10	300
Carrots 10mm Diced	50	13	90°C	2	11°C	2	5°C	50	18.5	150
Cauliflower Florets	50	6	90°C	2	8°C	1	2.9°C	50	10.5	300
Tenderstem Broccoli (2 Baskets)	90	6	90°C	2	9.2°C	2	3.9°C	90	15	450
IQF Carrots 10mm	75	9.5	92°C	1	9°C	1	3.9°C	71	12.5	375
IQF Garden Peas	100	2	90°C	2	9°C	2	2.7°C	100	7.5	1000
IQF Savoy Cabbage	75	8	90°C	2	15°C	2.5	4°C	76	15	380

Data is not minimum or maximum batch sizes.
Recorded from actual customer trials.





Standard 3 tank system



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

	300-2	300-3	300-4
Baskets/Tanks	2	3	4
Vessel (water)	575	575	575
Basket Capacity	300	300	300

Approximate Capacities

Service Requirements	
Steam	800kg/hr @ 7 barg
Air	6 barg 0.3 m ³ /hr
Power	100 Amps per phase (full load)
Water (mains)	525L/min @ 2 barg
Glycol Chiller	3 barg 400L/min 0°C Maximum cooling duty - 150kW

Service requirements for a standard 3 tank system including de-watering discharge conveyor



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