WILLIAMS REFRIGERATION

GUIDE TO COOK-CHILL

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The Cook-Chill system is one of the most important foodservice developments in recent times – arguably THE most important.

The benefits the cook-chill system brings are potentially even more relevant today than they were back in the 1970s, when the first systems were created. Cook-chill can enhance food safety, reduce stress in the kitchen, improve productivity and deliver better quality meals. It's the answer to many of the challenges facing today's foodservice operator – from staff shortages to food safety.

Those first cook-chill systems were designed for large catering operations such as hospitals and were often complicated to operate. Today's systems are quite simple, using much of the equipment you already have in your kitchen. Advances in technology means that catering establishments of all sizes and types can now benefit from using cook-chill systems.

At the heart of today's cook-chill system is the blast chiller or blast freezer. Williams leads the way in designing and manufacturing blast chilling and blast freezing systems worldwide.

From the smallest catering site to the largest production unit in the foodservice industry – on land and even at sea – Williams provides the innovation and flexibility to answer your needs. We continually invest in product design and development to bring you the highest quality engineering, performance and reliability.

Using the latest control systems and technology, the Williams range of blast chillers, blast chiller freezers and blast freezers are all driven by our unique and simple to use 1-2-3 Control Panel. Staff will find its 3-step control easy to operate with just moments of basic instruction. In fact, many users need no training at all – it's that easy!

In a fast-moving world with increasing caution over food hygiene you can be assured that Williams has you covered. The range of Williams blast chillers, blast chiller freezers and blast freezers will help you to show due diligence and comply fully with UK and international food safety regulations, hygiene guidelines and HACCP.

(See ISO 22042:2021(en), Blast chiller and freezer cabinets for professional use — Classification, requirements and test conditions.)

This guide provides a comprehensive overview of cook-chill and the benefits it can bring to your business. It also dispels the myths that surround the technology. As you will see in the following pages, cook-chill systems can save you time and money, and increase your turnover and profitability. What's more, your Environmental Health Officer will be happy! We hope that you find this guide useful and informative.

WILLIAMS: MARKET-LEADING REFRIGERATION

Williams Refrigeration is a market-leading manufacturer, delivering quality refrigeration solutions to meet the most demanding commercial catering and foodservice requirements, worldwide. For over 40 years Williams has been producing high quality, award-winning professional refrigeration equipment, exceeding international quality and performance standards.

With extensive manufacturing facilities in the UK, Australia and China, Williams has built an outstanding global reputation for reliability. Our comprehensive range includes high performance cabinets, counters, blast chillers and freezers, coldrooms, merchandisers and bakery equipment, all carrying ISO standards of quality and design.

Our commitment to our customers is absolute. Not only do we offer the widest product range on the market, we also provide specialist help and advice on choosing and installing the right equipment. Our technical and after-sales support offers a total solution for every refrigeration requirement.

COOK-CHILL EXPLAINED...

WHAT IS COOK-CHILL?

Cook-chill is a simple, controlled system of advanced food preparation designed to provide more flexibility in foodservice. The technique involves the full cooking of food, followed by very rapid chilling and then refrigerated storage, at carefully controlled temperatures, for up to five days. The food must be regenerated (reheated) before service.

A well-managed cook-chill system is simple to operate and absolutely safe – so long as food safety guidelines and HACCP regulations are followed. Cook-chill systems have the added benefit of maintaining food quality, nutritional value, flavour and appearance. Installing a cook-chill system also offers the caterer the potential for added flexibility, productivity and profitability.

WHO USES COOK-CHILL SYSTEMS?

Thousands of establishments throughout the whole spectrum of the catering industry use cook-chill systems. For example, anyone who has eaten at a top restaurant or hotel, at a banquet or on an aeroplane is likely to have eaten a cook-chill meal. The systems are also used by many institutional caterers such as hospitals, universities and in the armed forces. Ready meals are created by food manufacturers with cook-chill systems – so the biggest user of cook chill meals is the consumer buying them at the supermarket!

WILL MY BUSINESS BENEFIT FROM COOK-CHILL?

With the advances in modern technology, notably the development of compact blast chillers, no catering operation is too small (or large) to adopt a cook-chill system. If your business is serving hot meals then you will almost certainly benefit from one.

No matter the size of the business, the principles and advantages of a cook-chill system are the same. The only difference is that small to medium sized operations won't need to invest in equipment designed to deal with large volumes. For smaller cook-chill systems, all you need, in addition to the equipment you already have in the kitchen, is a blast chiller or blast freezer, suitable refrigerated or freezer storage, and an understanding of how to use cook chill/freeze systems.

WHY DO CATERERS USE BLAST CHILLERS/BLAST FREEZERS?

The main feature of blast chillers or blast freezers is the ability to rapidly reduce the temperature of hot foods, down to safe storage temperatures of +3°C for chilled food and -18°C for frozen. Basically, Williams blast chillers help to take the risk of contaminated food out of your operation and make it easier for caterers to comply with Food Safety and Temperature Control Legislation. Not to mention the benefits afforded by cost savings and increased efficiency!

AVOIDING THE RISKS OF FOOD POISONING

Food poisoning can be incredibly dangerous, particularly to vulnerable groups such as the very young and the elderly. However, everyone can potentially be affected and failure to maintain proper hygiene standards can lead to litigation and prosecution. As bacteria can divide into two every 20 minutes even a small amount can quickly become dangerous without correct treatment. Williams blast chillers rapidly chill food through the danger zone – between 63-5°C – where bacteria grows the fastest, ensuring the safety of any food processed with it.

HOW QUICKLY WILL I RECOVER MY INVESTMENT?

Introducing a cook-chill system will instantly begin to reduce your businesses overheads. It will help to lower labour costs and reduce waste while maximising efficiency and increasing your turnover. All these factors will help to recover your investment quickly.

COOK-CHILL – THE MYTHS AND MISCONCEPTIONS

THE COOK-CHILL BENEFITS

- Suitable for any foodservice operation
- Improved kitchen efficiency
- Effective resource management
- Improvement in service
- Flexibility in service
- Menu extension
- Reduced food wastage and improved portion control
- Increased profitability
- Fantastic opportunity for expansion
- Guarantee of food safety and HACCP guidelines

Cook-chill is dangerous because it's complicated.
Not true on two fronts. For one thing, there's no known case of someone suffering as a result of eating a correctly prepared cook-chill meal. So it's definitely safe - safer than conventionally produced food in many cases.

Secondly, it's not complicated. Most of the equipment used in modern cook-chill systems has been specifically designed to be as easy to use as possible – including our blast chillers and blast freezers, with their simple 1-2-3 Control Panel.

Cook-chill equipment is large and expensive.
There's a huge range of equipment suitable for cook-chill systems, in a huge range of sizes and designed for a wide range of budgets. Okay, the equipment required by hospitals and institutions producing high volumes of food has to be large and can therefore be expensive. However, this is not the case for small to medium sized establishments. Many of these caterers will already have suitable ovens and storage facilities, so they will only need to invest in a blast chiller – and our smallest one fits under a counter!

Cook-chill is only for high volume catering.
Not so, the development of compact appliances means that cook-chill systems can be used in every sector of the foodservice industry, including restaurants, primary schools, clubs, pubs, cafes and QSRs.

Cook-chill undermines the skill of the professional chef.
This one is just patently ridiculous. Many top restaurants use cook-chill – and they don't lose their star over it! Cook-chill gives chefs more time to utilise their skills more effectively than any other method.

Instead of spending valuable time on mundane tasks, chefs can use that time to improve presentation, create new dishes and menus, and attend to all the other tasks that make a successful operation.

ADVANTAGES OF COOK-CHILL

SUITABLE FOR ANY FOODSERVICE OPERATION

Cook-chill can be utilised effectively by establishments of any size or type.

IMPROVED KITCHEN EFFICIENCY

Cook-chill gives caterers the ability to organise daily tasks more efficiently. For example, prime cooking can be done during quieter times, leaving more time to handle busier periods as well as providing a safer, more controlled working environment.

EFFECTIVE RESOURCE MANAGEMENT

As well as allowing more efficient use of labour and equipment, cook-chill means you can take advantage of economies of scale by buying ingredients in larger quantities. It also allows one kitchen to prepare meals for several establishments.

IMPROVEMENT IN SERVICE

More food can be prepared in advance, meaning caterers have more time to finesse the presentation of dishes and improving customer experience.

FLEXIBILITY IN SERVICE

As all the dishes only need simple regeneration before they are served, caterers can offer a wide variety of meals, even when the number of customers fluctuates throughout the day.

MENU EXTENSION

The flexibility of cook-chill allows you to prepare a greater selection of dishes, giving customers more choice without compromising on quality. By preparing meals in advance you can afford to take more time, which helps to reduce product loss and waste due to mistakes.

REDUCED FOOD WASTAGE AND IMPROVED PORTION CONTROL

Cook-chill allows you to control portion size precisely, and as only the meals ordered need to be regenerated this means little or no food is wasted.

INCREASED PROFITABILITY

All of this helps to make your operation more efficient, meaning you're able to cope with larger numbers of customers, at shorter notice. This means increased turnover, and higher profits.

FANTASTIC OPPORTUNITY FOR EXPANSION

If your business turnover is currently limited by the number of meals you are able to prepare conventionally, cook-chill is a great way to increase capacity without necessarily needing to expand your kitchen or employ more staff.

GUARANTEE OF FOOD SAFETY AND HACCP GUIDELINES

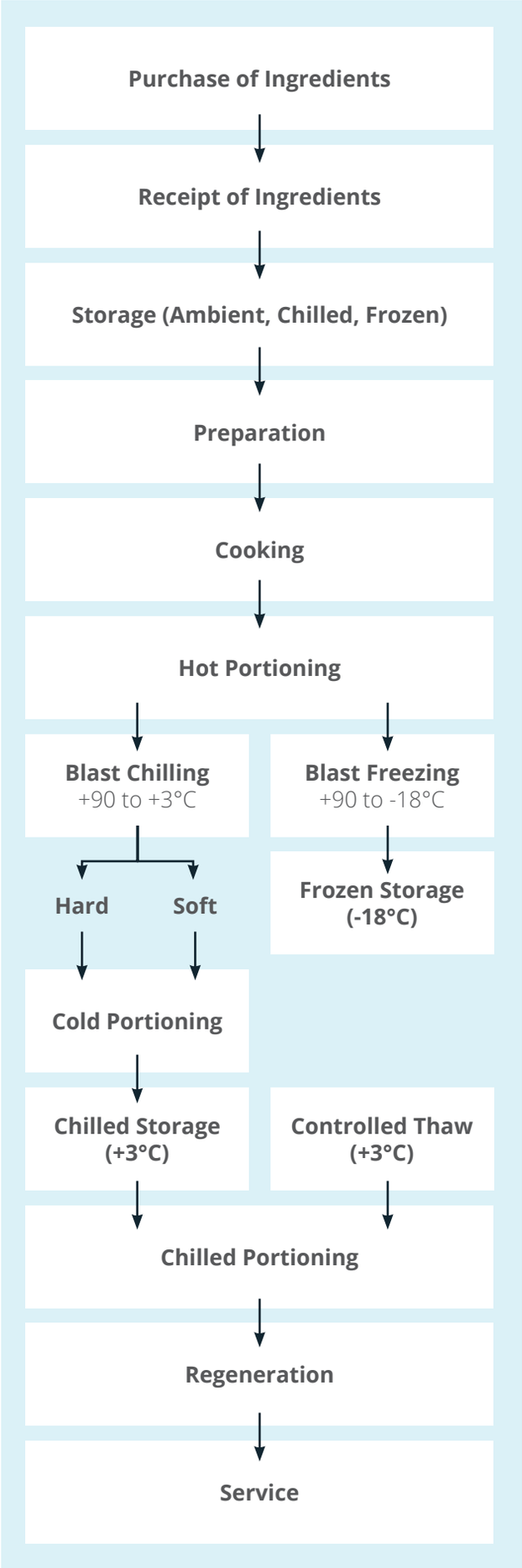
With a well-managed cook-chill system, meals stored will remain in perfect condition until they are ready to be prepared and served. Williams blast chillers and freezers automatically record all operational data, making it easy to maintain HACCP records.

THE COOK-CHILL SYSTEM

If you are already serving hot food, the additional equipment you will require for a small to medium sized cook-chill operation is a suitable blast chiller or blast freezer. You will also need a suitable refrigerator, freezer or coldroom for the storage of the finished product.

As with any cooking operation, a cook-chill system requires care to ensure that food does not become vulnerable to harmful bacteria.

It is easiest to view a cook-chill system as a series of stages. Each of these stages should be regarded as equally important to guarantee safety and food quality. Staff should be given specific training on the cook-chill operation, in addition to basic food hygiene training. Williams Refrigeration and its dealers are able to help you with this.



HOW IT WORKS

1. SELECTION OF RAW INGREDIENTS

Poor quality raw ingredients will have a significant effect on the quality of the finished/final product. Choose ingredients of an appropriate quality and, if possible, audit the supplier's storage, handling and distribution methods.

2. STORAGE OF RAW INGREDIENTS

Raw ingredients need to be stored safely and in prime condition until they are needed. This means following basic food hygiene and HACCP principles to ensure they are stored at the correct temperature and humidity levels.

3. PREPARATION

At the preparation stage, basic food hygiene regulations and HACCP Guidelines apply. Separate surfaces/areas and implements should be used for the preparation of products such as raw fish, meat and poultry to prevent cross-contamination and the spread of bacteria.

Raw ingredients that arrive frozen should be thoroughly and safely thawed before use. We recommend a dedicated thawing cabinet for this purpose as rapid high temperature thawing can encourage the growth of pathogens and may leave cold spots at the core of the food.

To make blast chilling more efficient after cooking, joints or packs of meat should not weigh more than 2.5kg, or measure more than 100mm in thickness. For dense foods such as lasagne, shepherd's pie, stews and mashed potato, we recommend no more than 50mm thickness.

4. COOKING

It is not necessary to alter your traditional recipes for a cook-chill system. However, it is essential that the food is cooked thoroughly for the correct amount of time. This is to ensure that any pathogenic micro-organisms that may be present are destroyed. (Check the accuracy of all thermometers used, every three months and recalibrate if necessary).

5. PORTIONING

Once the food is cooked, the chilling process must start as soon as possible, and at most within 30 minutes, which leaves time for hot portioning prior to chilling. Alternatively, dishes can be assembled from individual components after chilling.

Usually, the ideal containers for chilling food should be no more than 50mm deep. In blast chilling, the material that containers are made from is important, since it can insulate the food, thereby affecting chilling times. Covered containers and vacuum packages can also increase chilling times.

If disposable containers are used, it is essential that they have been stored under hygienic conditions.

6. RAPID CHILLING OR FREEZING

A blast chiller must be capable of chilling hot food to below +3°C within 90 minutes of placing it in the unit and commencing the blast chill cycle. This is not only to ensure safety, but also preserves the appearance, texture, flavour and nutritional value of food. Large joints of meat may not chill as quickly and the temperature of the joint must be reduced to +10°C or below within 150 minutes, and then portioned before final chilling to between 0°C and +3°C.

Blast freezing needs to be able to chill hot food to -18°C within 240 minutes. A blast freezer transforms the liquid present in the food into microcrystals which do not damage the tissue structure of the product. This ensures the quality of the food is maintained.

Your blast chiller, blast chiller/freezer or blast freezer should be equipped with a food probe or probes so that you can monitor the temperature of the food.

Hard and soft chilling

Every dish has its ideal cooking method, to suit its density or structure. This applies to blast chilling and blast freezing, too. It is important to have the options of 'Hard' or 'Soft' blast chilling available, to ensure food is not damaged in the process and the quality is maintained.

Hard blast chilling is suitable for dense, large products, which are difficult to chill and have a higher fat content, such as meat based sauces, meat joints, mashed potato and lasagne. During a hard blast chill the air temperature in the cabinet drops below freezing point, to ensure the product reaches the required +3°C within the 90 minutes, however the careful controls ensure there is no risk of freezing or damaging the food.

During soft blast chilling the air temperature remains above 0°C. It's ideal for delicate and light products such as fish, rice, vegetables, cream, desserts, cakes and fried foods. The soft blast chilling cycle gently reduces the product temperature to +3°C, within the required 90 minutes, with no risk of damaging the delicate product.

With both hard and soft blast chilling, the speed at which chilling takes place will be affected by the shape, size and density of the food, its moisture content, heat capacity and entry temperature.

7. STORAGE OF CHILLED FOODS

It's very important to ensure your cooking, chilling and storage equipment are all compatible with the containers you use (typically Gastronorm / GN sized).

Chilled food should be stored in a dedicated refrigerated storage cabinet at a temperature of between 0°C and +3°C, to control the growth of micro-organisms.

Chilled food may be kept for up to five days (including production and regeneration days). To ensure that produce does not exceed this time span, a system of 'first in, first out' (FiFo) stock rotation should be employed. One popular method is to use colour-coded labels, a different colour for each day with a 'use by' date, production date and product description marked on each label. If, for any reason, the food reaches a temperature over +5°C but no more than +10°C, it should be consumed within 12 hours.

Should any food in stock exceed its expiry date or reach a temperature over +10°C, it should be destroyed immediately as it will be unsafe for consumption.

8. DISTRIBUTION

If you intend to operate a centralised cook-chill system and supply food to one or more other locations, the dishes must be transported to the other site whilst in their chilled state (kept below +5°C). The use of refrigerated vehicles is recommended, or at the very least, pre-chilled insulated containers for short journeys. If chilled food is being transferred to other sites, it must be kept refrigerated until required.

9. REGENERATION

Cooked and chilled foods that are to be eaten cold or at room temperature should be consumed within 30 minutes of removal from storage. If the food is to be regenerated, this should start no more than 30 minutes after the food is removed from chilled storage. Regeneration must take place close to the point of consumption.

Ensure regenerated food is heated thoroughly, this can be checked by using a probe thermometer to monitor the internal temperature.

Any food that has been regenerated and allowed to cool should be destroyed immediately. They should never be reheated or returned to chilled storage.

10. SERVICE

Once food has been regenerated to the required temperature, it should be served and consumed as soon as possible, and preferably within 15 minutes of regenerating.

CHOOSING THE RIGHT EQUIPMENT

BLAST CHILLER, BLAST FREEZER OR BLAST CHILLER/FREEZER?

The first question is, do you want to blast chill, blast freeze or do you want the capacity to do both? One thing to bear in mind with blast chiller/freezers is their capacity to freeze.

Williams blast chiller/freezers can chill or freeze the same volume of food so, for example, a WBCF30 can blast chill or blast freeze up to 30kg of food.

Before making a buying decision, check the performance criteria of the chosen model, as some manufacturers' blast chiller/freezers only freeze much smaller volumes than they can chill.

Another factor is whether a roll-in, using trolleys, or a reach-in format will best suit your operation.

Williams offers a huge range of models, from our compact WBC10 reach-in unit to roll-in models with capacities up to 320kg.

For even larger capacities, we have developed a range of modular roll-in blast chillers, blast freezers and blast chiller/freezers.

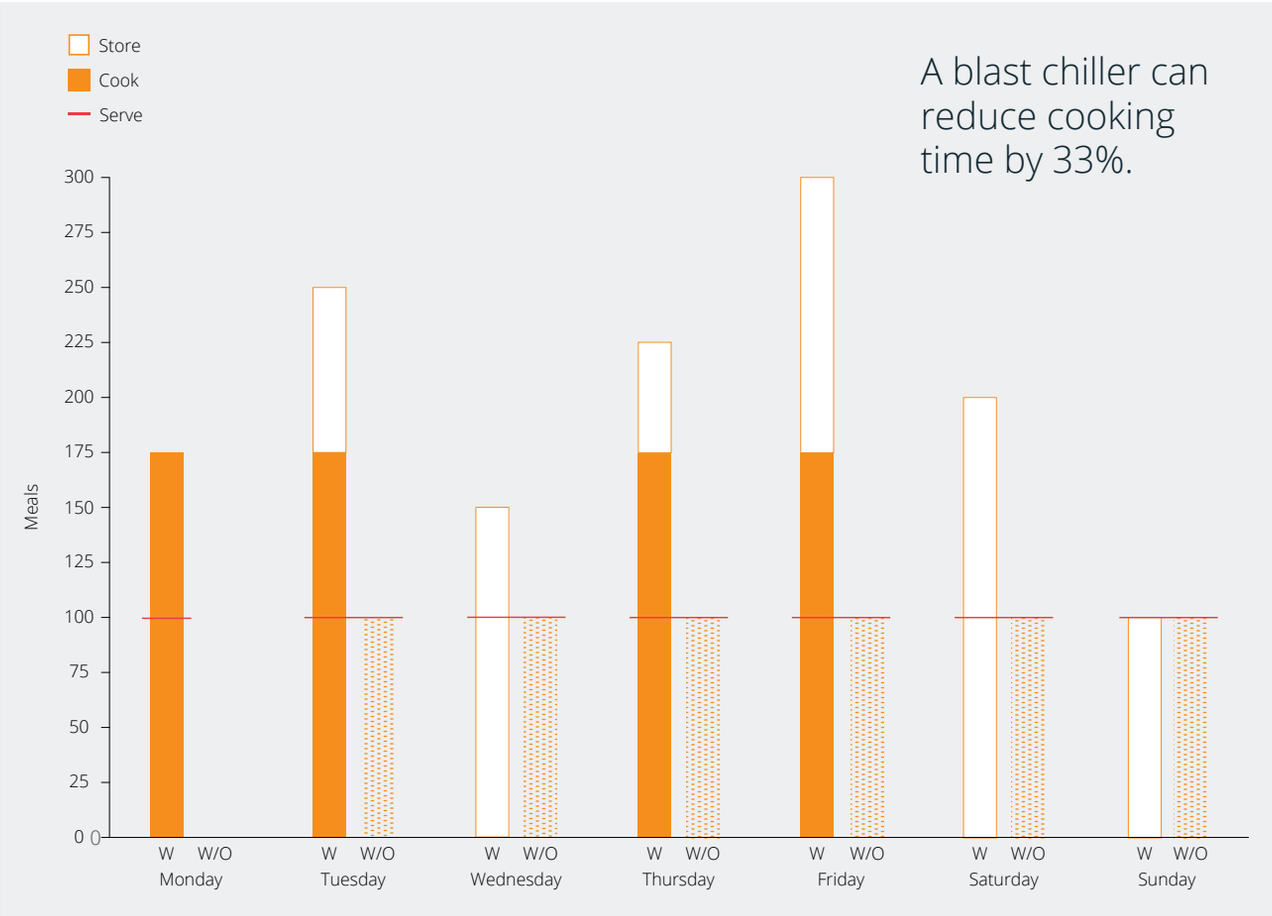
We also offer specialist models such as our WTBC70 roll-in, which, as well as accepting the Rational iCombi Pro trolley, can also accommodate Rational's previous version or the Lainox combi oven trolley.

WHAT SIZE DO I NEED?

When calculating volumes, remember you may have a production run of five days for meals that will be consumed over seven days.

If possible, when specifying the blast chiller, blast freezer or blast chiller freezer, add in a little extra capacity to allow for the expansion of your business and for changing menus.

When it comes to specifying storage equipment, a minimum capacity of two days' worth of meals is typical for cook-chill systems.



A SCENARIO FOR GROWTH

Imagine a busy foodservice business that serves 600 meals a week over six days. The owner might want to start operating over seven days, but extra staffing costs make it uneconomical.

Introducing a cook chill system could easily allow it to open the extra day without incurring additional costs.

Installing a blast chiller capable of chilling 175 meals every day would allow the business to undertake prime cooking on just four days a week, while increasing the meal turnover by 100 every week. All without requiring additional staff or energy costs.

A Williams WBCF30 blast chiller can blast chill 30kg of product in a cycle, which is equivalent to 335 x 340g portions. Each cycle takes 90 minutes, so this blast chiller can easily cover the maximum weekly requirement.

There is even spare capacity to allow for further expansion of the business, for example by adding extra tables in the restaurant or adding a banqueting service to supply local hotels and wedding venues.

BLAST CHILLER FREEZER TIMES

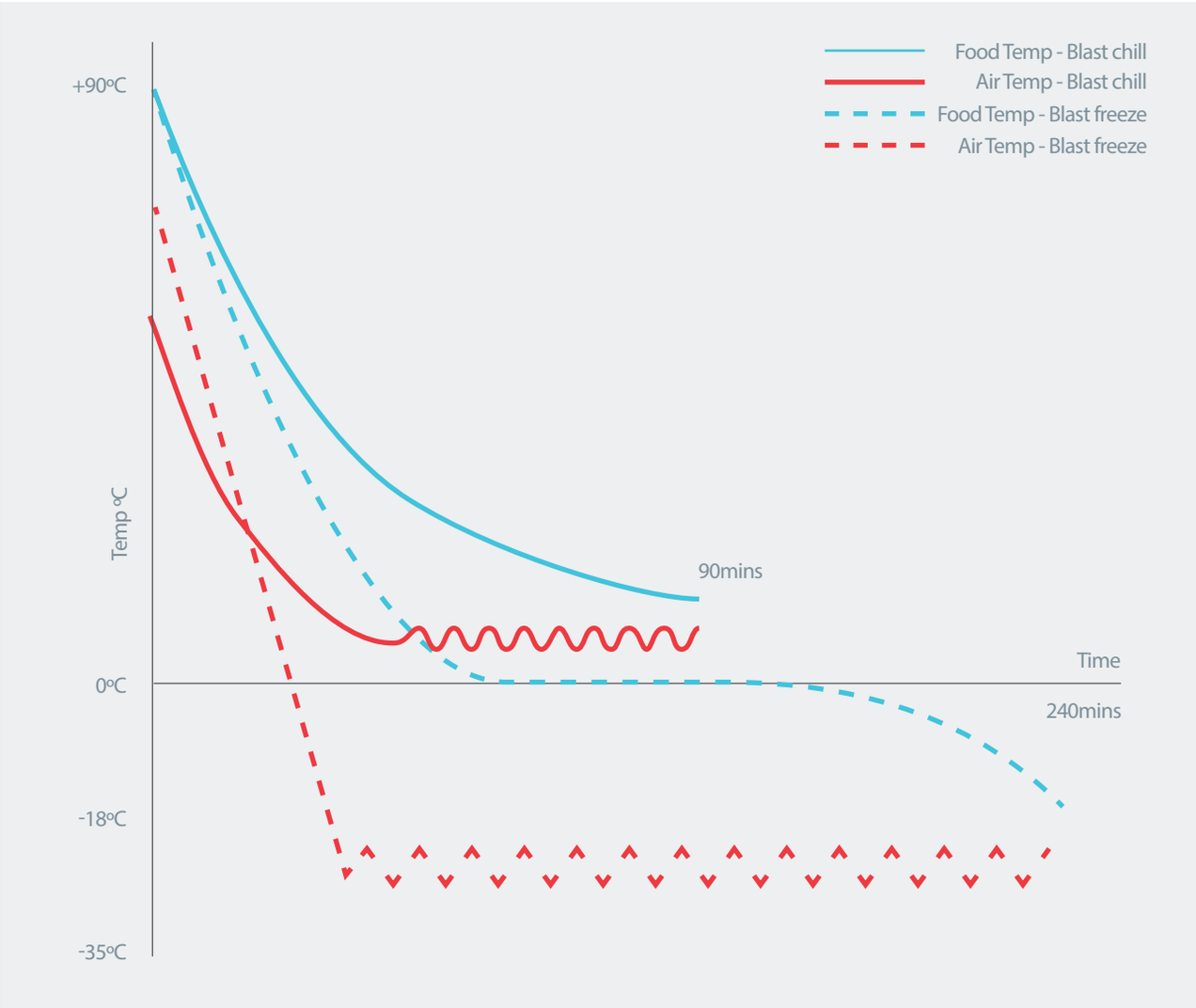
The table shows the approximate times taken to chill or freeze foods using Williams Blast Chillers and Blast Freezers. If operators use the food probe, the cycle will stop automatically once the ideal temperature is reached.

Actual times will depend on a variety of factors, including the type, size, thickness and quantity of the product, as well as the type of container, actual entry temperature and the ambient temperature.

Please note, different food types don't chill at the same rate. This means that if trays or trolleys are loaded with different types of product and placed in the blast chiller or blast freezer, the various foods will not all chill at the same time or rate.

Timings

	Blast Chill	Blast Freeze
Meat	**Hard blast chill 40 - 90 mins** (includes beef, pork, lamb, poultry pieces, stock and mince)	**60 mins up to 240mins** (all types of meat product)
Fish	**Soft blast chill 30 - 90 mins** (includes fish such as haddock, plaice, cod fillets, salmon and shellfish, which may be fried, poached or baked)	**60 mins up to 240mins** (raw fish/cooked shellfish)
Prepared Dishes	**Hard blast chill 50 - 90 mins** (includes dishes such as meat based stews, casseroles, lasagne, moussaka, shepherd's pie, mashed potato and risotto)	**90 mins up to 240 mins** (meat based dishes, mashed potato)
Vegetables/Pulses	**Soft blast chill 30 - 90 mins** (includes carrots, all green vegetables, cauliflower, rice and sliced potatoes, steamed or roasted)	**60 mins up to 240 mins** (fried potatoes, blanched vegetables)
Fruit	**Soft blast chill 60 - 90 mins** (includes stewed apple, peaches, cherries, rhubarb and other cooked fruits)	**60 mins up to 240 mins** (berries, rhubarb, apples, cooked or raw fruit)
Desserts	**Soft blast chill 30 - 90 mins** (includes fruit based desserts, cream based desserts, egg custards, and panna cotta) **Hard blast chill 30 - 90 mins** (includes steam puddings, sponge cakes and dense desserts such as tiramisu and cheesecake)	**70 mins up to 240 mins** (raw pastry, mousses, cooked cream desserts, cooked pastry desserts, gateaux)
Vacuum Packed Soups/ Sauces (Max 4kg)	**Hard blast chill 75+ mins** (includes all types of soup, custard and sweet and savoury sauces)	**90 mins up to 240 mins** (all types of sauces)
Dough/Bread		**Blast freeze 70 mins up to 240mins**
Cakes	**Soft blast chill 50 - 90 mins**	**Blast freeze 70 mins up to 240mins**
Cream Cakes/Gateaux	The selection of hard or soft chill will depend on product consistency	**Blast freeze 50 mins up to 240mins**
Pastry	The selection of hard or soft chill will depend on product consistency	**Blast freeze 50 mins up to 240mins**



COOK-FREEZE

A cook-freeze system involves the full cooking of food, followed by rapid freezing and storage at -18°/-22°C, before controlled and thorough thawing and regeneration prior to service.

Blast freezing can also be used for raw materials and part-cooked products. The food's core temperature should be reduced from +90°C to -18°C within 240 minutes.

The Williams range of reach-in models offers the dual function of blast chilling and blast freezing, giving operators the best option in terms of flexibility. Williams also offers a range of dedicated modular roll-in blast freezers for larger volumes.

As well as a blast freezer, a cook-freeze system requires suitable storage cabinets for frozen food and, preferably, a rapid thawing cabinet.

Following cooking, the product should be portioned for blast freezing, ready for storage in a frozen food cabinet at below -18°C. Food can be stored for several weeks or months.

The blast freeze cycle transforms the liquid present in the food into microcrystals, which do not damage the tissue structure of the product. This process ensures the quality of the food is maintained.

WHY BUY WILLIAMS

Williams Refrigeration has over 40 years experience in designing and manufacturing blast chillers. We have built a worldwide reputation for the outstanding quality and performance of our models.

Simple to operate, accurate to control: Effortless control with Williams' WEB 1-2-3 controller. Clear, digital interface for staff to easily manage blast chill and freeze cycles

Total food safety: Audible alarms signal cycle completion and temperature issues, guaranteeing product integrity and cabinet functionality

Total hygiene: All models feature stainless steel exterior and interior with easy to clean, hygienic interiors including removable racking/shelving on reach-in cabinets

Coated evaporator and coils: Ensure longer service life and hygiene compliance

Flexible operation: Choose either the simple 1-2-3 controller or use the food probe to automatically monitor and run the cycle

Superior aesthetics: Sleek looks and elegant lines make the units suitable for front of house as well as back

Easy to work with: All models automatically shift into storage mode, holding product at the right temperature until its ready to be moved to the correct storage cabinet or coldroom

Accurate temperature control: All models are fitted with a high quality core food temperature probe that removes uncertainty and ensures perfect temperature control every time

Total food quality: Williams' advanced air flow design ensures uniformity throughout the unit eliminating the risk of dehydration or damage caused by large ice crystals.

Auto defrost: Functions on the completion of every cycle and every six hours, to ensure continued operational efficiency

Easy monitoring: All models are compatible with temperature monitoring and control systems available from Williams

Environment-friendly: Natural, energy efficient green refrigerants, that are 100% CFC free. Designed and manufactured to meet or exceed international build quality and health and safety standards

Options include:

- UV lighting on roll-in models for additional hygiene safety
- Historical hard data printer option available for blast chill/freeze cycle recording. Graphical print out at the end of each blast chill cycle shows the time of cycle and temperature fall
- Various voltages available, to suit international requirements
- Roll-in models have the option of Williams' unique storage "pod" refrigeration system which offers increased efficiencies and storage area

A model for every application: From compact undercounters to high-volume systems, our versatile range is tailored for 43°C ambient, catering to diverse environments and requirements

Marine versions: Reach-in models can also be configured to meet marine specifications including positive latch handles, marine voltages, flanged legs for deck fixing, and bulkhead fixings

AS EASY AS ONE-TWO-THREE

Operating Williams blast chillers and blast freezers really is as easy as 1-2-3 – and you have the choice of running the cycle using the 1-2-3 buttons or, for blast chilling, with the food core temperature probe.

1. Press button '1' once to select blast chill or blast freeze (on blast chillers the only option is chilling). Press button '1' a second time to select hard chill or soft chill, or blast freeze (on blast freezers the only option is blast freeze).

2. Pressing button '2' gives you the time options (90 or 240 minutes, depending on the size of load and type of product). Or you can select the food probe option.

3. Press button '3' to start the blast chill or blast freeze cycle.

X. Press X is you have made a mistake and it will cancel your instructions so you can start again.

While the unit is running the blast chill or blast freeze cycle the cabinet temperature will be shown throughout the process.

Food Probe Control*

1. Press button '1' as above, to select blast chill, then press it again to select hard chill or soft chill.

2. Press button '2' and select food probe. Make sure the probe is placed in the centre of the product to be chilled.

3. Press button '3' to start the cycle.

When using the food probe to blast chill, the LED display shows the time elapsed and the product's core temperature.

* Food probe control is NOT recommended for blast freezing

The time elapsed feature is unique to the Williams range of blast chillers, blast chiller/freezers and blast freezers. The first window shows the time elapsed and the second window shows the food's core temperature (when using food probe control).

Once the cycle is complete the blast chiller, blast chiller/freezer or blast freezer will auto defrost and then automatically switch to storage mode, to ensure the food is kept at a safe temperature of +3°C (blast chill) or -18°C (blast freeze) until you are ready to transfer it to a storage cabinet or coldroom/freezer room.

THE PERFECT CHOICE

Williams Blast Chillers and Blast Freezers are the perfect choice for caterers in every sector who cook and then chill food.

The 'Reach In' cabinet range includes both blast chillers and blast chiller freezers, with capacities ranging from 10kg to 50kg.

The 'Roll-In' range meanwhile includes blast chillers, blast freezers as well as blast chiller freezers. They are available in different formats, including wide entry models. Capacities range from 70kg up to 320kg.

KEY FEATURES

- Chill food safely from +90°C to +3°C in 90 minutes or less; Freeze from +90°C to -18°C in 240 minutes or less*
- Reach-In models accommodate GN 1/1 pans or shelves. Roll-In models accommodate GN 2/1 trolleys
- Natural hydrocarbon refrigerant. Charge is < 150g which falls below the threshold for hydrocarbon equipment, therefore no costly insurance or zone control necessary. Can be placed on the cookline. (Available on reach-in models only)
- Choice of hard, soft, store and core food temperature probe-controlled cycles with audible alarm indicating end of cycle
- Automatically switches to storage mode at 3°C or -18°C at the end of each cycle
- Williams Easy Blast (WEB), simple to operate, 1-2-3 controller
- Unique advanced airflow design
- All models will accept the maximum product weight in both chill and blast freeze mode of operation. (No reduction in product weight between the two cycles)

The 'Reach In' cabinet range includes both Blast Chillers and Blast Chiller Freezers, with capacities ranging from 10kg to 50kg

- Foodsafe stainless steel exterior and interior
- Easy to clean dished base with radiused corners
- Full length integral door handle for non-slip, easy grab on the door. Easy to clean, no potential dirt traps
- Self-closing doors improves energy efficiency
- Precision injected, high density 75mm polyurethane insulation
- Heavy-duty non-marking, swivel castors with brakes
- Anti-tilt trayslides
- Food probe safe storage feature
- Automatic defrost at the end of every blast cycle or every 6 hours in store mode
- Connection to third party supervisory communication systems such as BMS is possible using proprietary equipment. Contact Williams for more information

*Maximum product entry temperature depends on ambient conditions. Product entry of 90°C is acceptable for ambient of 35°C or less. For ambient temperatures between 35°C and 43°C, product entry temperature must be 70°C or less

SUMMARY

RAW MATERIALS

- Buy from reputable suppliers.
- Choose good quality products.

STORAGE

- Raw materials should be stored at recommended temperature and humidity levels, in accordance with the Food Safety (Temperature Control) Regulations 1996.

PREPARATION

- Raw materials should be prepared in areas separated from cooking and post cooking areas.
- Products should be held at temperatures below +10°C until cooking commences.
- Frozen products should be control thawed before use.

COOKING

- The core temperature of food must reach at least +70°C and should be held at this temperature for at least two minutes.
- Check the core temperature using a probe thermometer inserted into the slowest heating point, normally the centre.

BLAST CHILL

- The rapid chilling process must begin within 30 minutes of cooking being completed.
- Once in the chiller, the food must be chilled to a temperature between 0°C and +3°C within 90 minutes.
- Foods such as joints of meat can be chilled to below +10°C within 150 minutes before portioning and final chilling.

CHILLED STORAGE

- Cook/Chill foods should be stored in a cabinet designed for the purpose.
- Pre-cooked chilled food should be stored at between 0°C and +3°C for a maximum period of 5 days.
- If the storage temperature rises to over +5°C, but no more than +10°C, the food should be consumed within 12 hours.
- Food should be clearly labelled with a description, production date and expiry date.
- A stock rotation system should be operated.

BLAST FREEZE

- The rapid freezing process must begin within 30 minutes of cooking being completed.
- Once in the freezer, the food must reach a core temperature of at least -5°C within 90 minutes, and a subsequent temperature of at least -18°C.

FROZEN STORAGE

- Pre-cooked frozen food should be stored at -18°C or below.
- Foods should be clearly marked with a description, production date and expiry date.
- A stock rotation system should be operated.
- Generally, frozen foods may be stored for up to eight weeks, although certain foods can be stored for longer.

DISTRIBUTION

- Pre-cooked chilled foods must remain in their chilled state (0°C to +3°C), until they reach the regeneration site.
- If the core temperature rises to over +5°C, but no more than +10°C, the food must be consumed within 12 hours.
- If the core temperature rises above +10°C the food must be discarded.

REGENERATION

- Cooked and chilled foods that are to be eaten cold should be consumed within 30 minutes after removal from storage.
- Regeneration must take place close to the point of consumption.
- The core temperature of the food must reach at least +70°C and be held at this temperature for at least two minutes.

SERVICE

- Once food has been regenerated to the required temperature, it should be consumed as soon as possible.
- The temperature of the reheated food should not be allowed to drop below +65°C.
- Any food left after service which has been regenerated must be destroyed.

DISTRIBUTION

- Frozen foods must be transported to the regeneration site under controlled conditions.
- If a product starts to thaw, it must not be refrozen.

THAW

- Pre-cooked frozen foods must be fully thawed before regeneration.
- Thawing must be controlled, preferably with the use of a controlled thawing cabinet.
- Food thawed rapidly in fast thaw cabinets should be consumed within 24 hours.
- Thawed foods must not be re-frozen.

REGENERATION

- Regeneration must take place close to the point of consumption.
- The core temperature of the food must reach at least +70°C and be held at this temperature for at least two minutes.
- Reheated food should not be re-frozen.
- Regenerated food not sold must be destroyed.

GLOSSARY

Williams Blast Chillers and Blast Freezers are the perfect choice for caterers in every sector who cook and then chill food.

Blast Chiller
A mechanical unit designed to chill hot food rapidly - from +70°C to +3°C within 90 mins. It works by recirculating low temperature air at high velocity.

Hard Blast Chill
+70°C to +3°C in 90 mins
Blast chill cycle suitable for denser items with a higher fat content such as meat joints, meat based sauces, soups, mashed potato and vacuum packed products. The air temperature of the cabinet drops below freezing point during the 90 minute cycle.

Soft Blast Chill
+70°C to +3°C in 90 mins
Blast chill cycle suitable for delicate and light products such as fish, rice, vegetables, cream, desserts and fried foods. During the 90 minute cycle the air temperature of the cabinet remains above 0°C.

Blast Chiller Freezer
A mechanical dual function unit designed to chill or freeze hot food rapidly.

Blast Freezer
A mechanical unit designed to freeze hot food rapidly - from +70°C to -18°C within 240 mins (4 hours).

Blast Freeze
+70°C to -18°C in 240 mins
Fast freezing of cooked foods to -18°C which transforms the liquid present in the food into microcrystals – preventing damage to tissue structure of the product and ensures food quality after defrosting. During the cycle the air temperature of the cabinet reaches -25°C or -35°C dependent on the model used.

Chill Chain
The whole process of maintaining strict temperature control throughout receipt, storage, preparation, processing, storage and distribution of food to control the growth of micro-organisms.

Food Core
The temperature within an item of food or dish. Temperature taken at the slowest cooling point - normally the centre.

Pathogenic Micro-Organisms
All foods contain a certain level of organisms or bacteria which can carry disease if allowed to multiply to large numbers. Cooking food kills them, while keeping food below certain temperatures limits their growth. Consequently, a cook-chill system is a good way of maintaining food safety as it controls bacteria growth.

Probe
A thermometer that is inserted into a food product to record the inner temperature. The needle probe should be disinfected each time using a special impregnated tissue or cloth.

Regeneration
The technical term for returning the pre-cooked chilled food back to the safe temperature of +90°C ready for immediate serving.

williams

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Installation of all Williams products requires adequate ventilation.

Williams has recently upgraded its products. As such the 'on location' images used here, differ slightly to the new range. For true new model representation please refer to the individual product images.

Williams reserves the right to modify the design, materials and finish in accordance with its progressive development policy.

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