

Confectionery Process Systems



Forming Cutting Syrup Multi Colour Fudge Flow Divider Guillotine
Sugar Boiling Slab Former Flavour Ropes Sanding
100% Fruit Batch Cooling Tunnel Liquorice
Jellies Continuous
Drop Roller Twin Screw Vessel Pre-Mix Vacuum
Pectin
Jams Confectionery CIP
Slurry Fondant Mixing Process Systems Cooling
Glazing MaxiVap Kitchens Sugar Paste Coating
Caramel Toffee Medicated Confectionery Z Blade Mixer
Co-Extrusion Low Mixer
Starch Gel Extruder Dip Bath FM Cooker Holding Tank Side Flow
Viscotator Dosing Process Conveyor
Compound Chocolate

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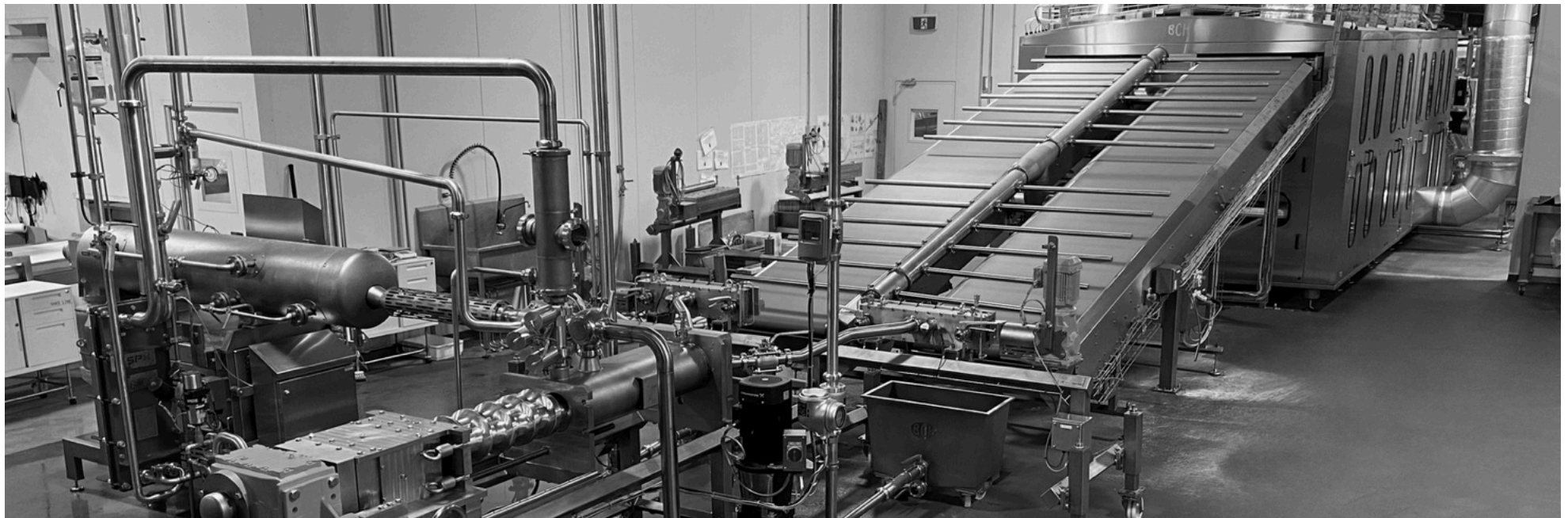
Welcome to BCH

Established in 1835, BCH are industry leaders in the supply of food and confectionery process solutions, catering to a worldwide clientele.

BCH specialises in advanced cooking, mixing and cooling technology for the production of chilled and frozen meals, soups sauces, sweet & savoury fillings, and fruit toppings.

BCH also provide single machines and turnkey systems for the manufacture of starch gel-based liquorice, 100% fruit products, caramel, syrups, jams and preserves.

An extensive range of skills, machinery and workshops, enable BCH to undertake bespoke and tailor-made equipment to be built within strict completion deadlines. Offering a total 'in-house' service for the design, manufacture, installation, and commissioning of complete process systems, incorporating the most up-to-date modern process & control technology available.



Investing In The Future

BCH have over 190 years of experience in food and confectionery processing systems.

In 2000 we opened our Innovation Centre to assist our worldwide customers with meeting the many challenges faced in today's fast changing food industry. Our unique Innovation Centre is available for assistance with new product and process development, as well as equipment evaluation before initial investment.

The Centre houses a wide range of equipment, services and facilities, all of which are supported by in-house personnel with a wealth of knowledge to provide support in process design, food science, engineering and software.

BCH know-how enables all of our clients to develop new and exciting products, to test feasibility, then up-scale production – ultimately enabling the end product to reach the wider marketplace at a much faster pace.



Liquorice Production

BCH produced their first liquorice press in 1835 and have been manufacturing equipment for liquorice and starch gel applications ever since. Today's production lines incorporate the latest developments in efficiency, hygiene, electronics control and modern design.

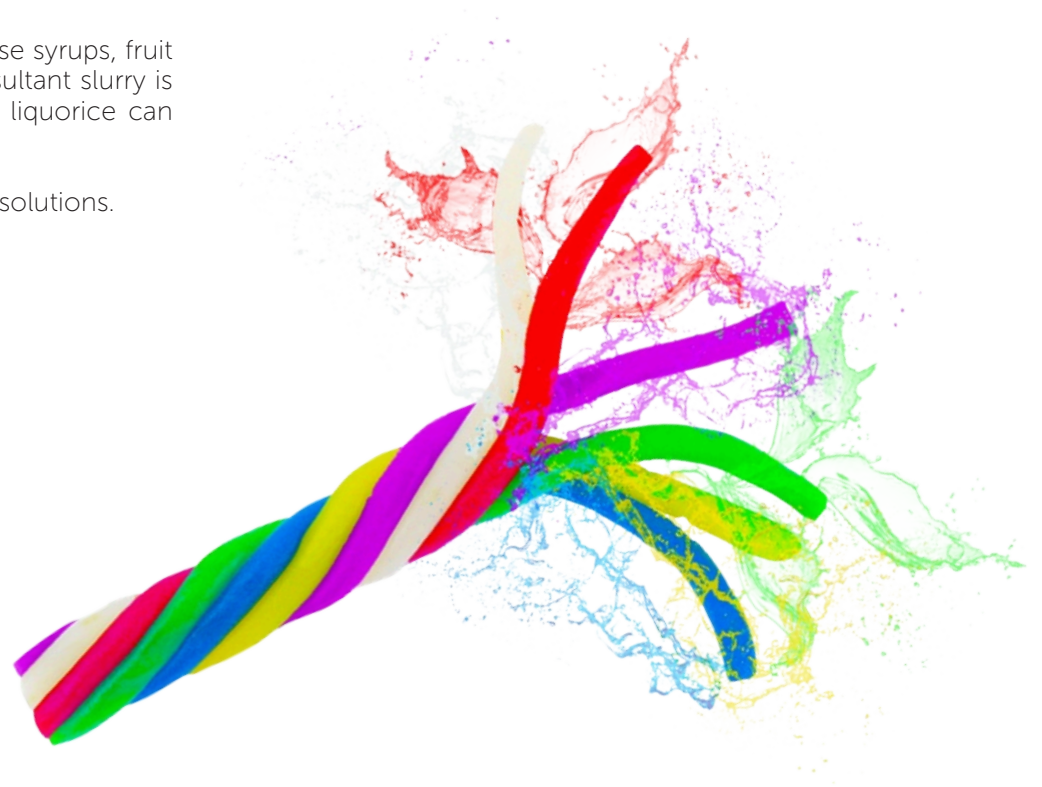
Liquorice is manufactured from wheat flour, starch, sugar, molasses, glucose syrups, fruit purées and flavourings that are blended together to make a slurry. The resultant slurry is cooked, thus allowing the starch particles to expand and gelatinise. The liquorice can then be extruded into various shapes through a wide range of die profiles.

BCH offers both a continuous and batch / final moisture liquorice cooking solutions.

The liquorice cooking range includes;

- Pre-Mix System (kitchens)
- Viscotator
- Extruder
- Co-Extrusion
- Colour & Flavour Addition
- Flow Divider
- Cooling Tunnel
- Glazing / Sanding Unit
- Guillotine

An option for a small scale / pilot sized extrusion line is also available.



Continuous Fruit Cooking

BCH has developed a 100% fruit cooking and extrusion system for the manufacture of healthy snack products. This is in response to the latest customer trends for natural, organic and clean ingredient labels.

The system is a combination of BCH's MaxiVap Evaporator technology (also used for continuous running caramel plants) and our extrusion technology.

The fruit cooling and extrusion system enables the evaporation of high moisture fruit mixes to typically 85% solids, at which point they have the consistency of soft dough which can then be extruded. This then enables the production of a healthy snack bar using 100% fruit ingredients which can be co-extruded in a variety of different colours, shapes and flavours.



Caramel

BCH is at the forefront of caramel production technology and is a specialist provider of both batch and continuous production methods which minimise 'burn on.'

Our continuous production plant has the flexibility to produce caramel at variable rates, aligning with the specific process type and speed requirements. Capable of running non-stop for extended periods before necessitating cleaning, an increased product output with reduced disruptions can be achieved.

Our famous "Low Type" cookers have long been regarded as the industry standard for batch production, many of our customers citing that truly high-quality products can only be made on this machine. The Low Mixer has a capacity of up to 500 Litres, ideal for producing large batches of caramel.

Another exciting BCH development is the extrusion of caramel for continuous biscuit lines; this highly accurate depositing method can be linked to our continuous caramel production system for a complete process solution.

BCH also offer a caramel Enrober, Cooling Tunnels and Guillotines as part of our complete caramel portfolio.



Confectionery Kitchens

BCH provide a wide range of confectionery kitchens capable of producing various products including liquorice, starch gels, jam, candies, jellies, extruded fruit, fondants and caramels.

A typical confectionery kitchen can contain the following equipment;

Pre-Mix Vessel

This stainless steel mixing vessel is mounted on load cells for automatic weight control of ingredients and allows both automatic and manual loading of dry and liquid ingredients.

The vessel is steam jacketed for automatic temperature control and is designed for precise, homogeneous mixing. Delivery to the next process can be achieved via pumping, gravity, or vacuum matched to the process, and it can be fitted with a product screening facility.

Batch Cooking

Made from stainless steel, this machine is typically steam jacketed and can cook under atmospheric, pressure or vacuum conditions as required. Cooking operations can be to a weight, time, temperature or total sugar solids (Brix). An agitator provides continuous mixing of the product.



Continuous Cooking

Our technical team will design a process matched continuous cooking system suitable for cooking the product to the highest quality and efficiency.

BCH manufactures scraped surface cookers (Viscotator) for low, medium, and high-temperature cooking, as well as under pressure conditions.

Our Maxivap cookers operate under vacuum conditions where moisture is removed from the mass to achieve required conditions. A high-speed agitator ensures continuous product movement.

Holding Vessel

This stainless steel machine can be jacketed with steam or hot water, as required and provides a buffer prior to transfer to the next process on demand for efficient, continuous operation. An agitator mixes the product, and automatic discharge valves are fitted with a product screening facility, if required.

Rework Processing System

The optional Rework Processing system, made from stainless steel, is designed for the processing of start-up / shut-down waste.

Mounted on load cells for automatic weight control, the option of steam or hot water jacket for precise temperature is also included. An automatic discharge valve facilitates easy disposal / emptying.

Viscotator

The Viscotator is designed to continuously cook or cool a wide range of products using a scraped surface heat exchanger design.

It offers maximum process versatility with the ability to continuously cook or cool both viscous and particulate food products.

Due to its superior heat transfer performance, the Viscotator can be employed in the continuous processing of many pumpable fluids or slurries.

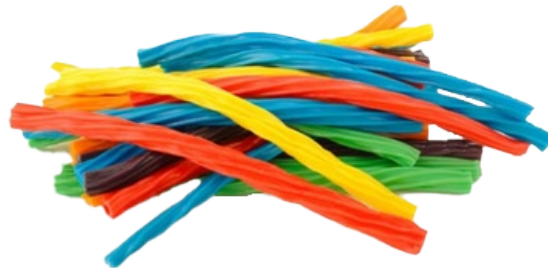
With a spiral flow water jacket, the Viscotator is also suited to the cooling of a range of food and confectionery products.

Features

- All stainless steel construction
- High thermal efficiency
- The design ensures good product movement in the heat exchange area and minimise build up on the scraper blades
- Jacket options designed to maximise cooling/heating medium flow efficiency
- Rotor options to allow minimum shear for foods containing particulates
- Fully CIP-able

Products

- Sauces
- Custard
- Pet Food
- Caramel
- Spreads
- Liquorice



Extrusion

BCH'S extruders are manufactured in stainless steel to a hygienic and robust design.

Primarily designed to handle liquorice, starch gels, fruit twists and sugar pastes, these extruders can also handle viscous food pastes and gels:

- Caramels
- Fudges
- Nougat / Praline Gels
- Fat-based products



Side Flow Extruders

Typically used for centre fillings / co extrusion applications or for the extrusion of batch cooked liquorice.

- Cost effective
- High output
- Good uniformity of product weight
- Minimal start up times (water jacketed main barrel)

Micro Extrusion Lines

The Micro Extrusion Line has been designed to accommodate the continued move towards more responsible healthy eating attitudes.

It offers output capacities of up to 150 kg/hr for liquorice and 300 kg/hr for liquorice and sugar paste co-extrusion.

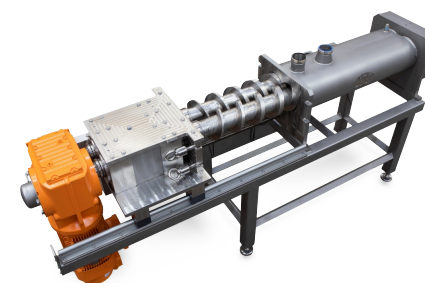
- User friendly
- Cost Effective
- Suitable for recipe development and marketing samples



Twin Screw Extruder

The BCH Twin Screw Extruder is designed to receive continuously cooked liquorice for extrusion at higher pressures.

- Gentle product handling and low shear pressure development.
- Screw extraction system for rapid and easy inspection.
- Extended running time & low maintenance
- Hygienic design
- CIP option available
- Low energy consumption



Multi-Colour Multi-Flavour

Primarily used in liquorice production, the multi colour multi flavour system is capable of providing up to 6 individual colours and flavours. Utilising the BCH Twin Screw Extruder a neutral cooked product is fed into the extruder before being split into individual channels with colour / flavours precisely metered into each individual channel and mixed in-line.

- Labour saving with quick start-up
- Unique CIP System reducing energy costs
- Flexible and fast colour changes
- Eliminates colour & flavour contamination of the premix
- Equal and uniform colour and flavour streams.

Cooling Tunnels & Process Conveyors

BCH has launched a modular range of conveyors and tunnels for the efficient transport, cooling and conditioning of confectionery products.

A BCH cooling tunnel or process conveyor can be incorporated into a full process line using a fast and simple installation.

The conveyor widths are available from 400 - 1600mm in modular stainless steel sections and apply a hygienic design for easy access and cleaning.

The cooling tunnels use high velocity air cooling with water cooled tables or parallel air flow cooling above and below the belt.

Features

- Modular construction
- Hygienic design
- Ease of installation
- High performance cooling

Multi-Tier Cooling and/or Drying Tunnel

Designed for efficiency and hygiene, the stainless steel construction features an open grid plastic modular belt.

The 3 or 5 tier structure, made of stainless steel pipework, serves as the frame and the process air delivery system. Tiers have an open plastic modular belt on plastic chevron strips, each with individual speed settings for optimal process control. Product dust and debris fall through the open structure to the stainless steel floor for easy cleaning.

Using natural convection, hot and moist air rises, maximising cooling and drying efficiency. Cooled and dried air enters at the tunnel base, blows through the product, and is removed for reconditioning at the top.



Benefits

- Reduces floor space
- Easy access to product and to clean
- Achieves maximum cooling and drying efficiency

Guillotines

The BCH guillotine range is specially designed to cut both soft and sticky products without adhering to the blade and with minimal crumbling of the product.

BCH offer automatic, high speed and ultrasonic cut Guillotines to maximise the flexibility of any production line. Manufactured with the latest stainless steel hygienic design, they are user-friendly, easy to clean and maintain.

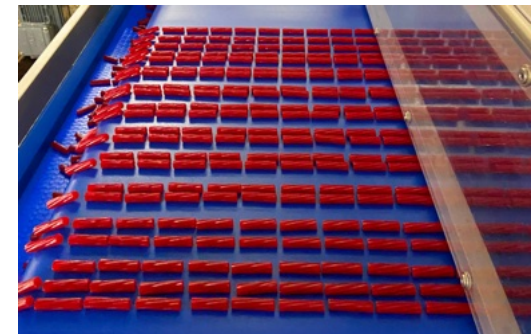
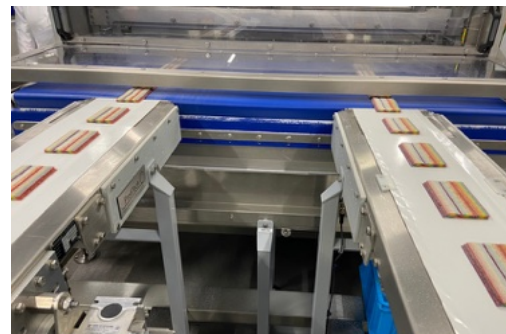
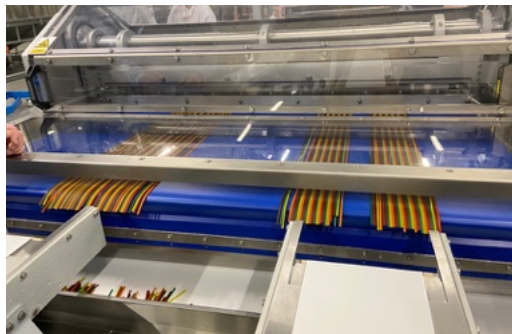
Guillotines can be modified to suit specific customer requirements.

Features

- Cuts speed of 0-500 cuts/min
- Automatic cut length control from 5mm to 10m via HMI on control panel
- Automatic belt tracking
- Belt speed and cut length adjustable directly from HMI while guillotine is in production
- All stainless steel and aluminium construction
- Guillotine blade made of hard, mirror polished stainless steel running between spring steel scrapers or PTFE coated with Nylon scrapers
- Adjustable height product hold down bars for product up to 25mm high

Products

- Chocolate
- Caramel
- Sponge
- Straps
- Liquorice



Drop Rollers

BCH produces a comprehensive range of drop rolling machines for hard candy, toffee and gum manufacturers. They have been sold around the world since they were first manufactured in 1835.

There are a large variety of sizes available from a 1kg sample product machine to a 600kg/hr machine.

Rollers are manufactured from phosphor bronze or stainless steel as standard. Additional rollers can be purchased with any pattern and are interchangeable.

Benefits

- Hand operated or motor driven
- Hygienic design for easy access and cleaning
- Versatile – rollers are easy to replace
- Custom built rollers to your specification
- Water cooled rolls when motor driven



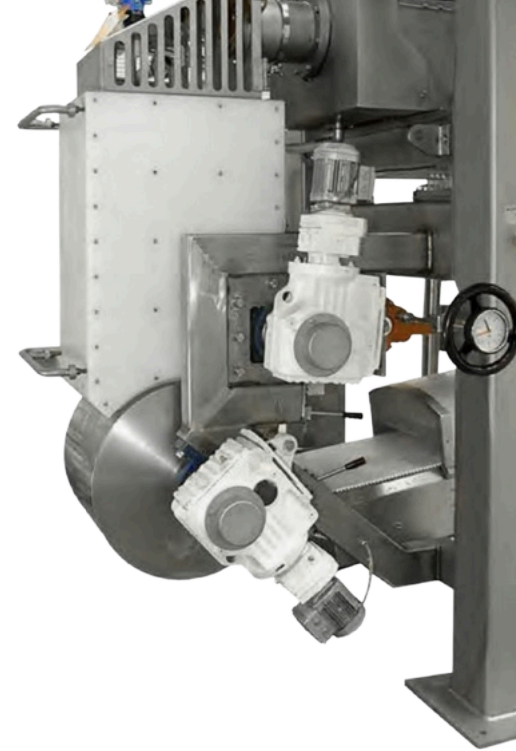
Slab Formers

BCH slab formers are manufactured using stainless steel and are ideal for products such as caramel, fudge, nougat and pastes.

They can be created with different widths and thicknesses to suit the customers needs, depending on the desired outcome.

Features

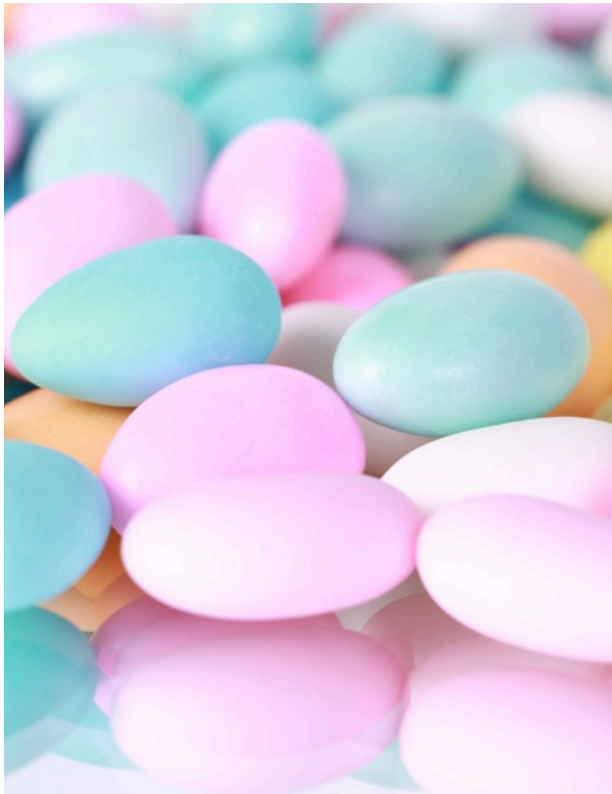
- High efficiency water cooling channels
- Jacketed feed hopper
- Variable roller gap adjustment for precise slab thickness control
- Easily adjustable/removable scraper blades
- Suitable for a wide range of confectionery products - toffees, fudges
- Hygienic stainless-steel construction
- Available in a range of widths/capacities
- Individual roller temperature control
- Roller internal channelling designed to provide uniform surface temperatures across the width
- Temperature controlled product inlet hopper
- Suitable for feeding via batch or continuous processes
- Option for product roller lubrication



Coating Pans

BCH manufacture traditional style pans for the coating of hard candy with either chocolate or sugar or for candies requiring a high acidity coating. They are a tilting design with a motorised rotating mechanism.

The pans can be manufactured in capacities up to 500kg, and come in either a standard or tulip shape. BCH has seen many improvements to the design of this type of pan over the years making it more adaptable, efficient and easier to use than ever.



CIP (Clean In Place) System

As our customers are driven to improve their hygiene protocols to satisfy their requirements, BCH have worked very closely to develop a clean in place system that allow the feed line from the liquorice line to be cleaned in place.

Our liquorice line is provided with a high-pressure, high-volume CIP recirculation & scavenge pump complete with interconnecting hygienic pipework. The system will re-circulate hot wash water through the cooker, extruder and flow divider/die assembly.

The waste water is collected in a mobile return water tank which is fitted with a removable screen filter so solids can be separated from the water, and the water passed back through the tank into the CIP pump for continuous recirculation.

Our sugar paste equipment has been designed for simple disassembly to allow cleaning to take place off line.

The liquorice dies are also cleaned as part of the process, the dies are simply removed after cleaning and are ready for the next time they are needed – this saves a significant amount of labour costs when considering total cost of ownership.

Advantages

- Fast product and dye change overs
- No need to strip equipment down for cleaning
- Fully sealed CIP and collection tank
- Caustic can be used and disposed of in a safe manor



CIP recirculation process

Process Automation

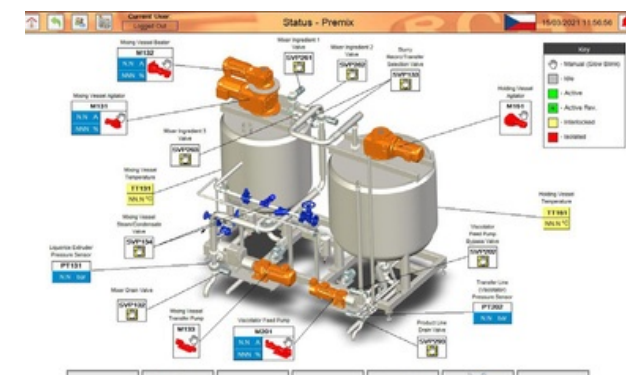
Calling on our vast experience in the industry, our electrical and software engineers develop control systems using the most up-to-date technology available.

The system will specifically match the process requirements of any individual plant, whether it is a standalone basic relay control panel or an intelligent networked plant requiring a turnkey solution.

The software can be developed for use on any of the leading PLC manufacturers' equipment. A full package can be added to include recipe management, real time and historical trending, batch and CIP reports, and cloud based monitoring/data storage if required.

Benefits

- System design from basic concept
- Control panel design and building
- Software design and development
- In-house testing and pre-commissioning
- On-site installation
- On-site commissioning
- Technical support and training (local or remote)



Spares & Service

BCH is fully committed to providing all of its customers with a world class after-sales service. As part of this service, we offer a full range of replacement parts for both new and existing plant and equipment, as well as service packages.

Spares Department

The BCH spares department is available for replacement parts on BCH equipment.

All new equipment is supplied with a detailed spare parts list, with all critical items clearly identifiable, as well as delivery timescales. The spare parts supplied are of guaranteed quality to ensure our equipment remains achieving optimum performance.

An extensive range of stock of frequently used parts are held at our manufacturing facility for quick delivery and to ensure equipment can be back up and running as fast as possible. Fast-track, in house manufacture of critical components allows us to ensure we always hit our delivery commitments. For other parts, a world wide shipment is offered using the most efficient transportation methods.



Service, Commissioning & Installation

Our service department is on hand to offer assistance with the installation of spare parts on site, which can dramatically cut down time. For urgent issues, our calibration engineers are available as a priority.

The service department can also provide health checks on equipment to assess plant efficiency and identify and solve any issues before they affect production.

BCH also offer installation and commissioning packages on equipment to ensure machinery is fitted correctly and to a high standard, so production can begin quickly. On-site training can also be included to make sure staff are confident in using BCH equipment.



Find Out More...

BCH also offer additional equipment for the Food and Confectionery process industries. This includes equipment for the production of soups, sauces, ready meals, sweet and savoury fillings, condiments, rice, vegetables, jam & preserves, pet food, desserts and cake toppings.

Discover some of our popular food lines below:



Cook / Cool

BCH's Cook / Cool system combines our Cooking Kettle with a Vacuum Cooling Vessel to create a high performance system. Products can be cooked and cooled rapidly with repeatability.

A smaller footprint with reduced labour and energy costs are just a few benefits of this system.



Jam Equipment

The BCH jam equipment line provides a full production process, from premixing and heating of ingredients to the final manufacture of jams prior to filling. An automated cleaning in place system ensures the full cleaning of vessels.

This method retains more of the natural flavour, colour and whole fruit content to guarantee a high quality product.



Optima Processing System

The BCH Optima is a batch process machine which can be relied upon to perform an extensive range of steps - in a single machine. Greatly enhancing production; preserving the colour and flavour of the original ingredients.

Ideal for the manufacture of a countless variety of food products, the machine can also handle confectionery such as fruit based products.



For more information on BCH's food production equipment please contact us today.



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