Baker Perkins

Systems for breakfast cereal production

process knowledge and engineering expertise
A comprehensive capability in breakfast cereal production

Baker Perkins combines a portfolio of best-in-class unit machines with the process knowledge and engineering expertise to create solutions for virtually every kind of RTE (Ready To Eat) cereal product.

This is why multinational and regional producers in Europe, North America, South America, Asia and Australia chose to invest in Baker Perkins technology.

Our modular approach to process design means that our cereal lines can be adapted or extended with additional units to make the new products required by this established, yet still developing market. The greater flexibility that this brings to cereal production enables maximum return on equipment investment.

Baker Perkins is able to fully support newcomers to the market, enabling them to create a full range of high quality products with extruders or steam cookers. They can then expand their product range or increase output by incorporating additional units into the line.

Established businesses work with Baker Perkins to add interest and variety to product ranges and install additional capacity.

We offer steam-cooking, extrusion, flaking, shredding, toasting and coating processes for flaked, shredded and expanded breakfast cereals.
Leaders in innovation

Baker Perkins’ development programme for the breakfast cereal industry is wholly customer focused, both in terms of end-product need and production requirements. The result is a series of best-in-class unit machines that allow cereal makers to respond to consumer demand rapidly and effectively.

We ensure customers are able to take advantage of the latest developments in technology. In our Innovation Centre at Peterborough, UK, an extensive research programme continually develops innovative equipment and processes.

We recognise that our customers’ success is driven by a flow of new and stimulating end products. The Innovation Centre contains a full range of development and test facilities, backed by expert food technologists, to help turn concepts into reality.

Services include creating complete product portfolios, optimising process conditions and developing innovative new product lines.

In the Innovation Centre, customers can conduct equipment trials, develop products, and produce samples for test marketing with the assurance of complete confidentiality.
Equipment Overview

**SB cooker-extruder**
This range of multi-purpose extruders handles a wide variety of cereal products; it is a versatile production tool with an attractive cost of ownership. As well as flexibility, it combines easy maintenance with enhanced process control. Ingredients are texturised and cooked through a combination of heat, mechanical shear and moisture addition; flavours and colours can be added easily. Clamshell barrel extruders are also available.

**Rotation cereal cooker**
Baker Perkins’ range of cookers is used by leading manufacturers worldwide to meet the market for high-quality, healthy cereals with high consumer appeal. With fully automatic batch operation and a

**Thermoglide2 toaster**
Baker Perkins process knowledge has led to the design of a new generation of toaster specifically created for consistent, even processing of cereals. As well as a gentle airflow ensuring even toasting with minimal damage, benefits include small machine footprint and a low maintenance requirement.
highly effective mixing action, this rotating live steam pressure unit handles milled or whole grain cereal products including wheat, corn and bran.

**Flaking rolls**
State-of-the-art control technology enhances the performance of the latest generation of flaking rolls for high-output, high-quality cereal production. These units provide consistent processing of a wide range of corn and multigrain flakes, from both traditional rotary cookers and cooker-extruders.

**Syrup coating systems**
Fully automated systems apply frosting and glazing to enhance product flavour and appearance, efficiently and cost-effectively; they enable a product range to be expanded for little additional cost. Emphasis on the health aspect of cereals is achieved via the ability to engineer syrup skids, coating drums and driers to operate in both sugar and sugar free modes, with simple interchange between the two.
Cereal Master TX – a flexible technology

The Baker Perkins Cereal Master TX line is the choice of manufacturers needing the assurance of a consistent high-quality end product. The well proven cereal cooking technology is at the core of complete lines producing many of the world’s leading brands.

Cereal Master TX is an expandable process. A basic line making traditional wheat and bran flakes can be progressively extended by incorporating additional units into the line. Multigrain products, cornflakes, and a range of shredded products are all achievable. A modular approach to process design allows the Cereal Master TX system to grow as the customers business expands.

The key features of Cereal Master TX are:

- Gentle steam cooking of cereal grains in the Baker Perkins Rotary Cereal Cooker ensures that the texture, flavour and nutritional benefits of wholegrain ingredients are retained in the final product
- Pellet forming is used to achieve the correct size of flake when producing bran flakes, wheat flakes or multigrain flakes
- Consistent flake quality is achieved using the Baker Perkins Flaking Rolls
- Controlled toasting and drying of the flakes takes place in the Baker Perkins Thermoglide2 toaster where the fluidised bed process minimises product damage
- Drying and tempering equipment can be added to the line to enable the manufacture of high quality multigrain flakes and cornflakes
- Bran sticks and other shredded products can be produced with the addition of Baker Perkins shredding rolls
- The product range can be further extended by adding a Baker Perkins Coating System consisting of Autofeed, Syrup Skid and Coating Drums
Breakfast cereals – the healthy option

In a market in which a focus on health and well-being has assumed major significance, breakfast cereals of every kind meet modern consumer expectations - a nutritious product that also offers taste, convenience, value and variety.

Breakfast cereals are the perfect vehicle for the wholesome multigrain and wholegrain servings recommended as part of a healthy lifestyle. Wholegrain products retain, after processing, all three parts of the original grain - the germ, the bran and the endosperm - in their original proportions. Multigrain products feature a combination of grains such as wheat, rye, corn, barley or rice.

Whole- and multigrain cereals can be produced on both rotary cooker and cooker-extruder lines. Baker Perkins has developed products with beneficial nutritional profiles based on both platforms.

With 48 grams of wholegrain recommended daily,* and 32 grams in a typical serving, breakfast cereals are a key part of a healthy lifestyle.

* The Whole Grain Council
Cereal Master EX – a base to build on

The Cereal Master EX twin-screw cooker-extruder process is a proven, versatile and expandable solution for producing a wide variety of breakfast cereals. It is welcomed by a wide range of producers as a simple, cost-effective way to serve new and emerging markets; it is equally at home in sophisticated production environments where its inherent adaptability adds to the capability of established producers.

A range of popular breakfast cereals are made on Baker Perkins extruders - corn balls, multigrain rings, alphabet shapes, cocoa curls, and cocoa balls are typical.

The Cereal Master EX line is a cost effective point of entry to the breakfast cereals market. Using Baker Perkins’ process and product expertise, additional units can then be incorporated to build capability.

Co-extrusion equipment, flaking rolls, cereal cookers and dryers can be added to form versatile plants suitable for a wide range of high-specification cereals produced in volume.

The key features of the Cereal Master EX process are:

- The Baker Perkins SB Range of twin-screw cooker extruders. With Baker Perkins’ process support, used by customers worldwide to make high quality coated direct expanded breakfast cereals, at outputs between 300 and 1800 kg/hr
- Thermoglide2 toaster used to dry the extruded products. This versatile unit is also capable of toasting flakes
- Baker Perkins Syrup Coating System provides a consistent glaze, or frosting to give a high quality finished product
- The final dryer is specified to dry the coated direct expanded products and is also capable of handling coated flakes
- Cereal squares can be made with the addition of a free standing cutter, located after the extruder
- The plant capability can be extended to include extruded flakes by the addition of a single screw forming extruder and a pair of Flaking Rolls
- Cereal cooking and drying equipment can be added to the line to enable the manufacture of high quality multigrain flakes
**Co-extrusion adds value**

This Baker Perkins innovation extends the capability of the extrusion process to make added-value products with out of the ordinary shapes that catch the eye, complemented by innovative flavours and fillings.

A co-extrusion system incorporates fillings with contrasting textures or colours into a cereal outer shell. The essential elements of the system are a die, pillow crimper and cream feed system.

The fillings can be of virtually any colour or flavour - creams, fruit pastes or chocolate pralines are typical. The product range is limited only by the imagination.

The Baker Perkins pillow crimper expands the product range beyond conventional squares and rectangles. It provides the opportunity to form a number of attractive and distinctive patterns such as hexagons, 'cats face', chevrons and waves. Other options include surface textures such as grooves and highlights.
Adding value with a coating system

Coating creates the opportunity to develop new cereal products with added value and additional consumer appeal through enhanced flavour and appearance. Baker Perkins has extended its range of modular syrup preparation and coating solutions to match individual requirements, by developing process technology for low sugar/sugar-free glazings and frostings.

This new capability builds on Baker Perkins’ proven track record in providing know-how and equipment for sugar-free production of a wide range of products.

Low sugar/sugar-free coated products enable manufacturers to highlight the beneficial role of cereals as key sources of minerals, vitamins and carbohydrates – without the empty calories of sugar.

Baked granola bars and clusters

Baker Perkins offers a range of equipment for the production of cereal clusters and baked granola bars.

Mixing, sheeting and baking technologies are available from Baker Perkins for both products. For cluster production the baked product passes through a pre-breaking and kibbling system where it is broken into pieces of the required size.

Bars are baked as a sheet, a slitter cuts the product into single rows and a guillotine then cuts the bars to the required piece size.

A range of process solutions are available from Baker Perkins for this fast developing product sector.

Shredded cereals

Baker Perkins can supply the equipment and process knowledge for the manufacture of a range of shredded cereals, including multi-layer shredded wheat, 2, 3, or 4 layer corn, rice or wheat squares and bran sticks.

Shredding is an excellent alternative to flaking and is designed to form cooked cereal into layered shredded or stranded products.

The equipment can be added to an existing line and brings added interest and variety to a cereal product range, as well as enhancing quality.
Aftermarket – lifetime service

Baker Perkins supports installed equipment throughout its lifetime. In addition to a full replacement parts service that ensures rapid delivery throughout the world, support includes on-going confidential development of new products in the Innovation Centre to meet customers’ plans for business expansion.

Baker Perkins makes new developments available as retrofit options for existing plant to ensure customers are updated with the latest technology. A recent development is a package producing significant savings for owners of clam-shell extruders.

An existing one-piece or segmented clam-shell barrel is replaced with a pair of backing blocks fitted with liner inserts. Further replacement is limited to worn inserts rather than complete liners.

An on-line enquiry system covering screw parts for cooker-extruders has also been introduced. Customers can browse a catalogue of parts, compile a basket of the ones in which they are interested, and receive a quotation on the next working day.

Other important developments are available for flaking mills. Existing flaking units can be upgraded to the latest gap control system. In addition Baker Perkins offers a full service for maintaining the rolls themselves, including prolonging the life of rolls on MkI and II mills by applying a tool steel surface layer.