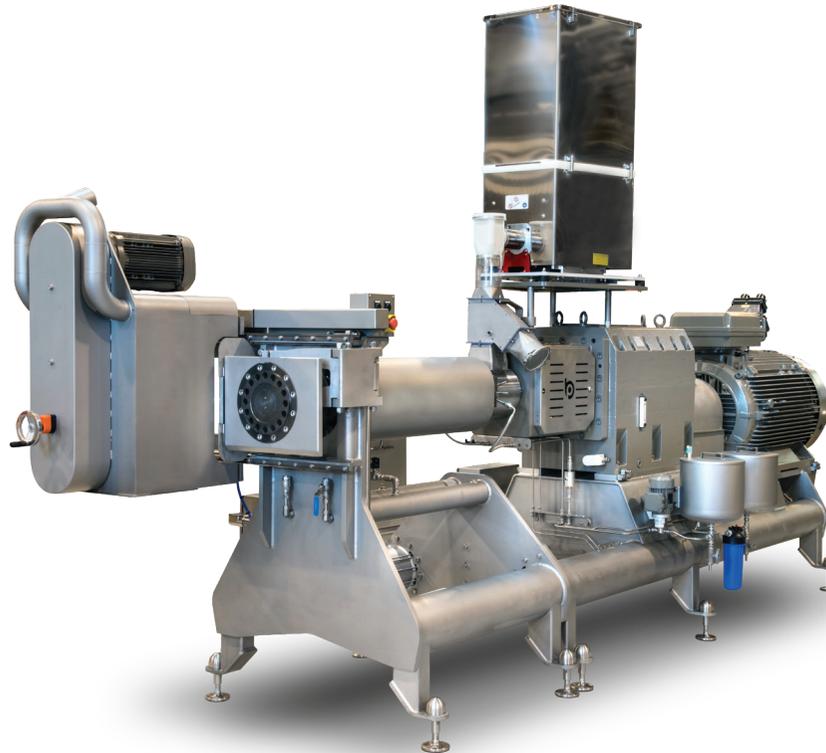


## SBX Master™ Twin-Screw Extruder

The versatile SBX Master™ Twin-Screw Extruder has been designed with the flexibility to make a wide range of starch or protein-based products at high output and high efficiency. From the preconditioner, high-torque gearbox and agitator assemblies, every aspect of the machine has been optimised to provide flexibility with consistency, high quality and low production costs.



### High outputs for extruded foods and ingredients

Segmented agitators, a heated/cooled modular barrel, a high-torque gearbox and a wide range of dies and cutting/forming options provide the capability to make any kind of extruded ingredient or food product.

### Efficient, low-cost production

High-free volume screw geometry maintains output on fine-milled materials, while programmed routines reduce waste during start and stop. There is easy access for cleaning and maintenance, and a robust drive train for long service life.

### Designed with hygiene in mind

The SBX Master™ is constructed from stainless steel with an open frame design and minimum open piping and cabling to make cleaning quick and simple, whatever the application.

### innovation centre

The development work required to launch a successful new product or improve an existing process can be carried out in the Baker Perkins Innovation Centre. With a full range of pilot-scale equipment and assistance from our expert food technologists, all the necessary tests can be conducted without using valuable plant time.



### Typical Installation Includes:



Texturised Vegetable Protein (TVP)



Ingredients



Snack Foods



Breakfast Cereal





## Texturised Vegetable Protein

The SBX Master™ can be used to process high or low moisture fibrated Texturised Vegetable Protein (TVP), commonly used for burger, ground/minced meat and chicken piece substitutes, or as filling for sausages, meat balls and chicken nuggets. The texture of extruded TVP convincingly replicates the natural structure and mouth-feel of meat.

### Recommended equipment:

Preconditioner | SBX Master™ Twin Screw Extruder with specialist TVP die | Flavouring / Seasoning



## Ingredients

Baker Perkins' twin-screw extrusion technology can create significant savings in the production of core ingredients for the food industry. Typical examples include breadcrumbs, croutons, crispy inclusions and fillings, and modified and pre-gelatinised flours used in products such as instant soups, bakery pre-mixes and infant nutrition.

### Recommended equipment:

Preconditioner | SBX Master™ Twin Screw Extruder | Cutting / Forming | Flavouring / Seasoning



## Snack Foods

Baker Perkins' extruded snacks systems combine extrusion and many different cutting and forming options into flexible and efficient production lines. Product choice ranges from standard balls, curls, rings, chipsticks or sheets, to complex, high-value extruded snacks in intriguing shapes and unusual textures. The ability to use home-grown ingredients and virtually any colour and seasoning allows every snack to be tailored to meet local tastes and changing preferences.

### Recommended equipment:

Preconditioner | SBX Master™ Twin Screw Extruder | Cutting / Forming | Flavouring / Seasoning

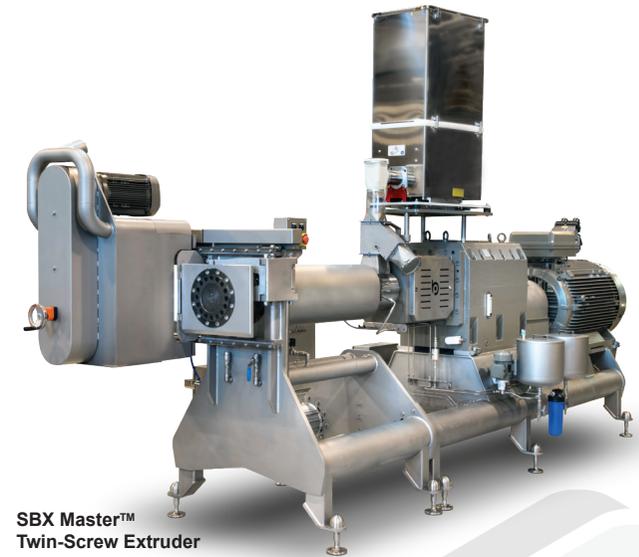


## Breakfast Cereals

A wide selection of attractive breakfast cereals can be made by the twin-screw extrusion process. Direct expansion provides simple shapes such as balls, curls or rings; the addition of a co-extrusion system produces added-value filled cereals. Extruded flakes in a variety of textures can also be processed.

### Recommended equipment:

Preconditioner | SBX Master™ Twin Screw Extruder with Co-Extrusion die | Cream Feed | Pillow Crimper | Coating / Seasoning



SBX Master™  
Twin-Screw Extruder



Co-Ex Master™  
Co-Extrusion Systems

## SBX Master™ Preconditioner



**The Preconditioner mixes, heats and hydrates ingredients for processing in a Baker Perkins SBX Master™ Extruder. This reduces cooking times and mechanical shear energy in the extruder, which widens the range of products that can be made on the extruder and maximises both output and quality.**

### Improved Product Quality

Pelletised and half-products are cooked more quickly, allowing increased cooling time and preventing unwanted expansion. The texture of protein-based products is improved by reduced mechanical shear energy.

### Increased Process Capability

High-speed mixing and hydration take place in separate chambers, enabling the time and intensity of each to be controlled independently. The high-intensity mixing aerates the product which assists rapid hydration; multiple feed ports give the flexibility to add ingredients at various points.

### Hygienic Operation

Unrestricted access to both chambers and an optional manually-installed water spray bar ensure cleaning is both quick and thorough. The vessel is fully sealed against steam and product leakage and the shafts are easily removable for additional cleaning.

## Specialist Dies for Food Extrusion



### TVP Die

Standard twin-screw extruder technology is used for the complex extrusion cooking of ingredients, with a special TVP die creating the final product.

The SBX Master™ can process a variety of different proteins including soy, pea and wheat. Beans, lentils and other pulses can also be used. Passing the product through the TVP die then creates a fibrous consistency that convincingly replicates the natural structure, texture and mouth-feel of meat.

#### Products:

Sausages | Burgers | Ground / Minced Meat | Meatballs | Chicken |



### Co-Extrusion Die

The addition of Baker Perkins' CoEx Master™ Co-Extrusion System transforms the output of the SBX Master™ extruder by enabling a sweet, savoury or fruit centre filling to be added to the extrudate before it is shaped into pillows, tubes, bars or wafers.

The CoEx Master™ System adds a co-extrusion die that combines extrudate from the extruder and filling from a feeding system into concentric streams. After extrusion, the product is then passed through forming equipment such as a pillow-crimper. The die can be added as a straightforward upgrade to an existing extrusion line, enabling the line to produce a wide variety of high-value products with minimal equipment and without extensive plant modifications.

#### Products:

Pillows | Wafers | Shapes | Bars |



### Sheeting Die

An extrusion line can be extended to create a range of innovative, high value sheeted snacks by adding a sheeting die and a Baker Perkins rotary cutter to the line. The sheeting die produces a very wide, thin sheet of dough, which is rotary cut into shapes before being fried or baked and flavoured.

This process makes exciting taste and texture combinations with high consumer appeal possible. For example, 'credit card' style snacks: novel slim, flat, rectangular co-extruded wafers that can incorporate a wide variety of savoury or sweet fillings. They may be positioned as snacks in their own right; alternatively they could be marketed as 'dipping' products for spreads and dips.

#### Products:

Fried Snacks | Baked Snacks | Profiled Snacks | Crispbread |

# SBX Master™ Twin-Screw Extruder



### Simplified die and cutter mounting

Makes changeover, cleaning and maintenance faster and safer. The die is supported on a hinged arm, while the cutter slides in and out of position on rails.



### Automated system minimises time and waste

A pneumatic, pushbutton-operated system automatically puts the cutter directly in front of the die as soon as the extruder is ready, leaving only fine adjustment to the operator.

### Improved cooling contributes to quality and consistency

Water distribution channels located closer to the internal surface of the barrel improve responsiveness and the rate of heat transfer.

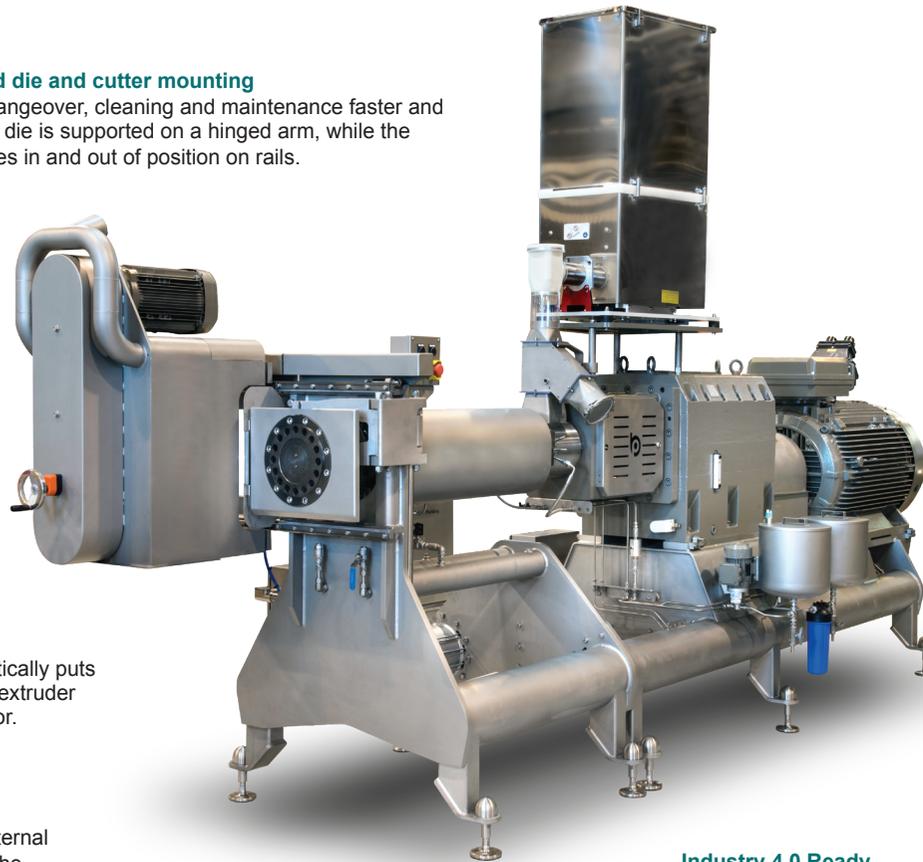
### Durable, high torque screw assemblies with splined shafts

Easily configured for different products. High free-volume geometry offers greater throughput on low-density materials.



### Modular barrel with integrated cooling

Additional 7D modules can be added on site, making future extensions of the barrel to expand a product portfolio speedy and uncomplicated.



### Industry 4.0 Ready

All Baker Perkins equipment is Industry 4.0 Ready, enabling them to communicate with each other and operators' systems for data collection and analysis, allowing users to make informed, timely decisions.

## Features

- **High-torque capacity gearbox**  
Improves reliability and increases range of products that can be made.
- **Gearbox condition monitoring system reduces unexpected downtime**  
A simple system continuously monitors the frequency and amplitude of vibrations within the gearbox, allowing the ongoing condition of vital components to be measured.
- **Powerful controls**  
PLC control with touch screen interface provides full process visualisation, recipe edits, alarm management and start-up and shutdown sequencing.
- **Low-maintenance AC motor**  
With accurate speed and torque output that increase process control.
- **Open frame**  
For hygiene and easy cleaning.

## Range & Specifications

Barrel Dia (mm)	Motor Size (kW)	Screw Speed (RPM)
SBX 50	50 - 134	600 - 1500
SBX 65	105 - 212	600 - 1180
SBX 80	200 - 322	600 - 960
SBX 100	300 - 519	500 - 750

## Options

**Barrel Lengths**  
17D, 24D, 31D, 38D

**Ingredient Feeds**  
Dry ingredients 1 feed port  
Liquid ingredients 2 liquid feed pumps  
Water feed flowmeter  
2 x 30ltr stainless steel holding tanks

**Barrel Heating**