



Bread Products
Mixing & Forming Systems

Integrated Mixing & Forming Systems

Baker Perkins' range of mixing and forming systems for bread offers a combination of output, efficiency and quality that bakers around the world rely on to meet increasing market demand for premium plant bakery products. Precise mixing, accurate weight control and gentle dough handling all contribute to performance that enables them to achieve consistent high quality with low production costs.

Low Production Costs

Ingredient costs are reduced as less yeast and improvers are required to achieve the same bread quality. Gentle handling preserves the cell structure developed in the mixer so the dough proves and bakes consistently, achieving the required volume, colour and softness at a lower cost.

Production costs are further reduced as gentle handling eliminates the sticking and smearing that lead to jams. It also means that a lot less cleaning and maintenance are necessary.

Hygienic Operation

All machines in the range are designed for hygienic operation and easy cleaning. This includes a wash-in-place system for the Tweedy™ mixer and full wash-down capability for the tub hoist and Accurist2.1™ divider.

While a complete, integrated system offers the ultimate in low costs, high quality and hygienic operation, every machine makes a contribution; installing individual units will result in an immediate and measurable improvement in plant performance.



High Quality
with Low
Production Costs

Versatility

The most common application for a complete Baker Perkins system is tin and toast bread in single- or four-piece formats. Systems are particularly suited to the production of bread for sandwiches where the even texture, good colour and square-sided shape provide high levels of consumer appeal.

While Baker Perkins' mixing and forming equipment is typically installed as an integrated, automated line in high-output plant bakeries, equipment capability extends beyond tin and pan bread to applications across all bakery sectors.

The Tweedy™ process can mix a full selection of doughs for artisan and open texture hearth breads. Complete mixing, dividing and moulding systems produce batons, bloomers and similarly shaped loaves: mixing and dividing also covers the full range of hearth breads.

Consistent High Quality

Optimum dough development is achieved by the integrated high speed mixing system, while gentle dough handling throughout the process preserves the dough structure created in the mixer. This helps it to prove very evenly and fill the tin well, giving an attractive appearance and a good crumb structure.

The shape, colour and resilience required for premium or sandwich bread can be achieved with a standard recipe; alternatively, standard products can be made using a lower-cost recipe.

Products



Pan/Tin Bread



Multigrain/
Wholemeal Bread



Sandwich Bread



Hearth Bread



Buns & Rolls



Brioche



Rye Bread



Pizza Dough



Toast Bread

Process

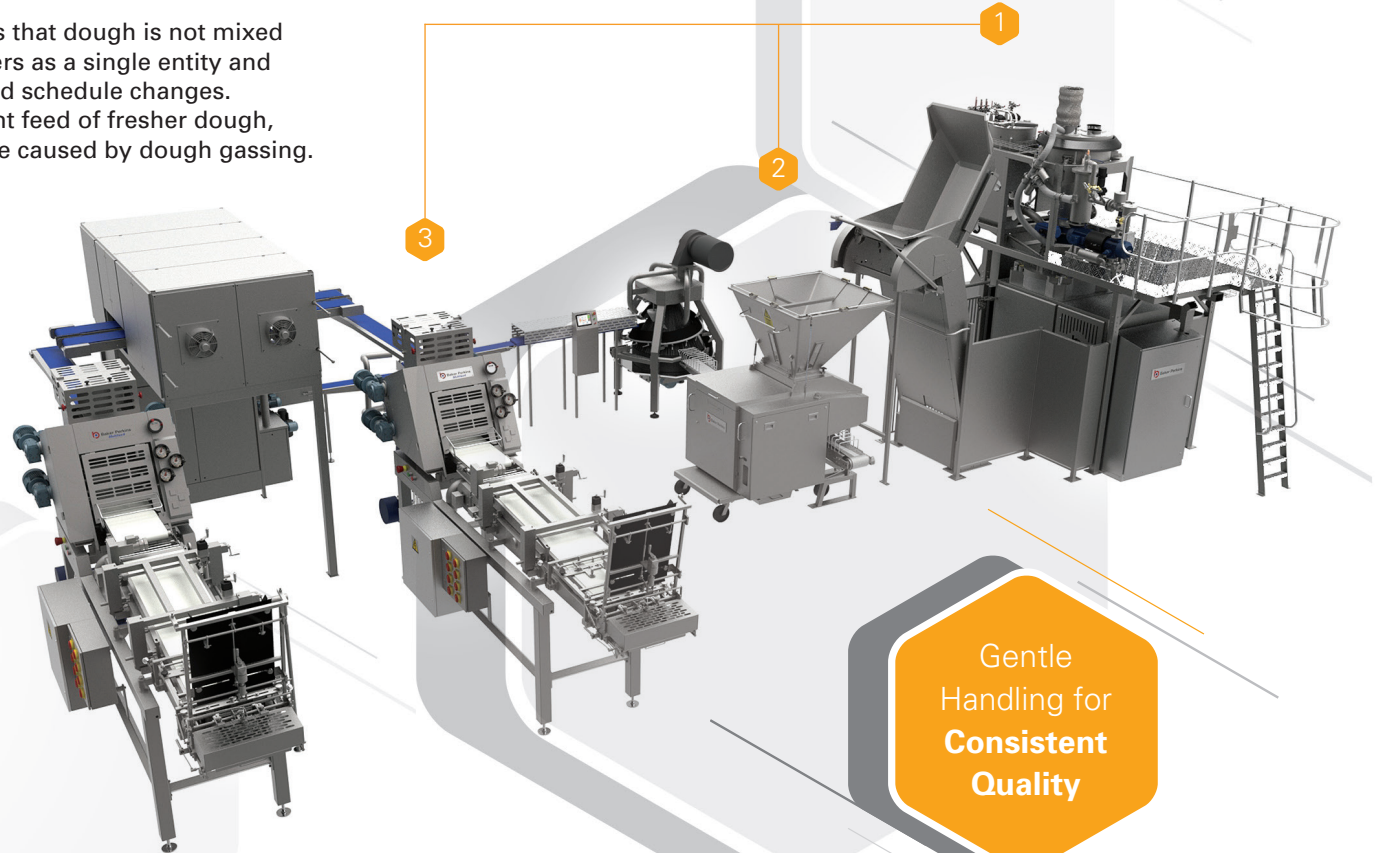
A typical Baker Perkins mixing and forming system comprises Tweedy™ mixers, Accurist2.1™ divider, Conical Rounder, First Prover and Multitex4™ moulders. For an 800g loaf this plant would be rated from 4,000 loaves per hour. Plants rated at 9,200 per hour can be configured with an additional mixer and moulder.

For such a high output the amount of equipment required is particularly small; this not only keeps capital costs and footprint down but also reduces labour and maintenance costs.

1 The Tweedy™ mixer's integrated control system ensures that dough is not mixed until it is required by the plant. It manages pairs of mixers as a single entity and can dynamically adjust to compensate for stoppages and schedule changes. Dough is mixed in small batches resulting in a consistent feed of fresher dough, minimising downstream waste, giveaway and downtime caused by dough gassing.

2 The Accurist2.1™ divider keeps production costs low with sustained high accuracy, full wash-down capability and five-year major service intervals. The pressure-controlled servo ram reduces dough damage to maintain consistency of weight control and quality.

3 The Multitex4™ Moulder combines gentle dough handling with high efficiency panning for consistent quality. Accurate, repeatable settings make running adjustments unnecessary, even at the start of a run, meaning that 100% efficiency is achieved from the very first dough piece. Pieces are then discharged via panning bends, or direct to tin.



Gentle
Handling for
**Consistent
Quality**

Equipment

Tweedy™ Mixer

High-speed and consistent pressure/vacuum mixing of mechanically developed dough.

- Suitable for most types of tin and artisanal bread, rolls and pizza
- Accurate integrated weighing system for precise recipe control
- Highly efficient mixing tool design for rapid energy input
- Hygienic ingredient platform with wash-down area
- Wash-in-place system for mixing bowl and lid
- Acoustically sealed to reduce noise
- Tweedy™ SuperCool mixer reduces dough temperatures for warmer climates
- ATEX certified



Accurist™ Divider Range

High-output servo-controlled and mechanical dividers delivering sustained high accuracy while preserving dough structure.

- 2.5g to 3.5g SD on 900g pieces
- Five-year major service intervals
- Adjustable ram pressure minimises dough damage
- 15 minute clean down with full foam clean-and-rinse capability
- Low-usage oiling system improves hygiene and reduces costs
- 3,000, 5,000 and 9,000 per hour mechanical dividers available



Conical Rounder

Precision-engineered for low-stress shaping and surface conditioning of dough pieces.

- Integrated air blowers for hygienic, dust-free operation
- Long-lasting non-stick surface coating minimises cleaning
- Adjustable troughs allow precise set up for consistency
- Tight tolerances minimise chipping
- Soft start/stop protects machine and avoids power spikes



Proving Options

Reliable and hygienic resting of the dough pieces using intermediate provers or conveyor systems prior to final moulding.

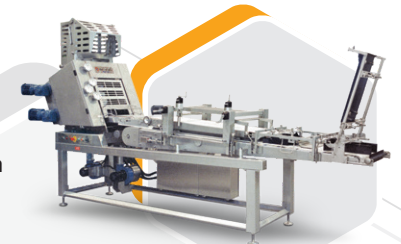
- Dedicated provers rest the dough before moulding
- Individual pockets are air dried for reliable discharge
- Synchronised bucket feed for accurate pocket fill at high rate
- Air circulation system prevents build up of moisture on dough surface
- Quick-change pockets made from hygienic metal-detectable plastic mesh
- Special purpose, flour-free resting systems can transport the dough piece while allowing the dough pieces to rest



Multitex4™ Moulder

The ultimate bread moulder, the Multitex4™ uses a uniquely gentle process to obtain maximum quality from the available ingredients.

- Gentle sheeting and tight coiling optimise volume and texture
- Ingredient costs may be reduced without affecting quality
- Runs continuously without jamming
- Repeatable settings allow fast and efficient changeovers
- Controlled panning enhances shape and consistency
- Optional attachment for seeded loaves

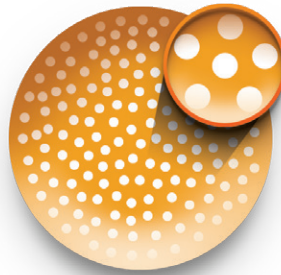


Gas Cell Retention for Quality and Consistency

There is more to making high-quality bread at high output than simply mixing, dividing and shaping the dough pieces. High-speed processing requires absolute precision at every step, while quality can be achieved only by handling the dough very gently. It starts with mixing a dough that has a good cell structure, then retaining this through the subsequent operations, each of which plays a vital part in creating the perfect loaf.

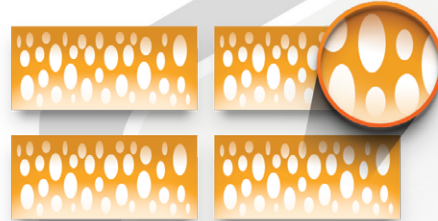
1 Mixing

While the dough is developed by high shear and controlled energy input, gas cell structure is created by applying pressure and vacuum in the mixing chamber. Pressure applied near the start of mixing assists with dough development and mixes more air into the dough. Applying partial vacuum towards the end of mixing causes the cells in the dough to expand to form bubbles which are then sub-divided by the action of the mixer into small cells. When the vacuum is released these cells are compressed, resulting in a large number of fine, evenly distributed cells in the dough.



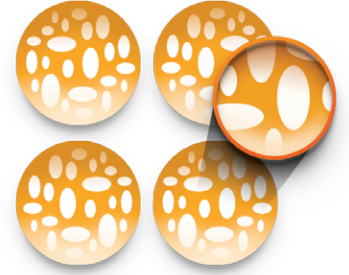
2 Dividing

Dough is divided by drawing it from a hopper and pushing it into pockets of known volume. The movement of the ram is stopped at a pre-determined pressure, which is enough to fill the pockets but not damage the dough. This achieves the optimum balance of accurate weight control and retention of cell structure.



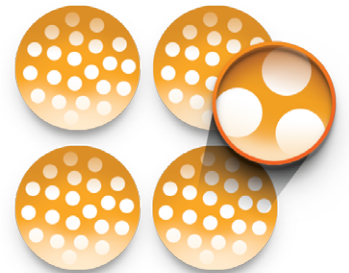
3 Rounding

The rounder shapes the divided dough pieces into balls and conditions the surface for easier handling downstream. The open profile, shallow angles and 3-dimensional path of the troughs provide a very gentle rolling action that rounds and conditions the pieces while maintaining the dough structure.



4 Proving

Although minimal, the dough pieces will have picked up internal stresses during dividing and rounding. This stress is randomly distributed and, if uncorrected, would lead to tearing of the dough surface during moulding and an uneven rise during proving and baking. Relaxing the dough makes it behave more predictably and enhances the quality and consistency of the end product.



5 Moulding

The main job of the moulder is to put as much tension into the dough piece as possible while preserving the cell structure. This is achieved by a multi-roller sheeting head that gently reduces the dough sheet thickness in a series of small steps. The dough is kept under tension as it is coiled and then moulded into its final shape.



Innovation Centre

The Bakery Innovation Centre enables industrial bakers interested in improving plant performance to evaluate the different ways of achieving this.

The Innovation Centre at Peterborough in the UK contains a wide range of production and laboratory scale equipment dedicated to the bakery industry:

Mixing

Pressure-vacuum mixing, low stress dividing and gentle moulding can all be tested as either individual units or a complete process upgrade.

Proving and Baking

Proving and baking facilities are also on hand so that improvements in texture, colour and softness can be seen in the final product.

Analysis

A C-Cell analyser is available for anyone wanting an objective measure of the difference in bread quality.



Lifetime Support

For as long as a machine is in production we will continue to offer parts, service, upgrades, rebuilds and training that increase performance and service life while reducing running costs.

Service Contracts

A service contract is the most cost-effective way of ensuring that your plant performs reliably and efficiently throughout its life. Contracts are tailored to suit individual sites but generally include regular inspection and maintenance visits with guaranteed plant performance and comprehensive reporting.

Process Support and Training

Full process support is available at the evaluation stage of a project and throughout the life of the plant. From on-site tests and consultations through to development trials in our Innovation Centre, we work with you at every stage to get the process and equipment specifications exactly right. Custom training packages can be included with commissioning or service contracts.

Replacement Parts

Fitting genuine Baker Perkins parts guarantees equipment performance and extends service life. Our parts service is comprehensive and includes 24/7 emergency breakdown cover. Service contracts can be extended to include bonded stock at our factory or consignment stock on your sites. All parts are made to the original drawings using the correct materials so they fit first time.

Rebuilds and Upgrades

Our rebuild and refurbishment services keep your machines running as reliably and efficiently as when they were new, while old machines can be given a new lease of life by a range of upgrades drawn from the latest versions of our current machines.





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