

MPF24 Small Batch Twin-Screw Extruder

Baker Perkins' MPF24 Twin-Screw Extruder is a small batch extruder for development work and low output production runs. Ideal for experimental and laboratory use, it is used to try out new ideas, assess ingredients, provide test marketing samples, and even make small production batches of product with high-value ingredients.



Versatile process for end-product development

A variety of foods and ingredients ranging from standard direct expanded to more complex, multi-component premium and filled products can all be produced on the MPF24. Ingredients are texturised and cooked through a combination of heat, mechanical shear and moisture addition. Flavours and colours can be added easily to make any kind of extruded food product.

Easy scale-up to production outputs

Full, reliable scale-up to Baker Perkins' range of production-rate food extruders is possible with comparable screw geometry, temperature profiles and screw speeds.

Compact and portable design

The MPF24 can be used either in a laboratory for new product development or within a production environment for tasks such as small batch production using high-value or limited amounts of ingredients. Its castor-mounted base and conveniently located plug and socket utility connections aid portability to easily move the unit from one production area to another.

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 Cereals



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Feed options

Dry Powder Feed System: A gravimetric dry powder feeder system is used to accurately meter the dry powder pre-mix into the infeed port of the extruder.

The feeder comprises a feed hopper to store ingredients prior to feeder itself, and a loss-in-weight screw feeder, with continuous speed adjustment.

All contact parts are in stainless steel.

Liquid Feed System: A liquid feed system is used to pump process liquid from holding tanks into the extruder barrel. The system comprises of two reservoir tanks for the storage of process liquids (water, oil), and two peristaltic pumps.



Horizontally split clamshell barrel

The clam shell barrel can be opened at any time to assess the state of processing, aiding development work and allowing screw section profiles to be optimised. The top-opening barrel also provides easy access for cleaning and the design means that a thorough clean can be achieved very quickly.



Product cutter with inverter driven rigid blade

A machine-mounted product cutter complete with cutter cage, variable speed drive motor and rigid blade.



Advanced barrel heating and cooling

The barrel is water-cooled via a cored one-piece barrel liner backing block manufactured from through-hardened steel, and is electrically heated via cartridge heaters. The barrel also incorporates integrated mountings for an optional barrel cooling unit.

Control system with simple touchscreen interface

Sophisticated controls - identical to production machines - include a full recipe management system, historical trending of data, and connectivity to a PC to capture that data.

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.

Range & Specifications

- 9.2kW @ 1,000rpm variable speed drive
- Extruder barrel is electroless nickel plated for corrosion resistance
- Co-rotating, self wiping fully segmented agitator assemblies
- Die assembly with single hole insert die
- Two-tank liquid feed system with inverter-driven peristaltic pumps (Free-standing)
- Free-standing barrel cooling unit
- Available with a full selection of cutters and dies

Specifications

- Nominal barrel length 25:1 L/D
- Barrel lengths up to 40L/D available (in 5 L/D increments)
- 24mm liner bore diameter
- Maximum operating temperature: 200°C
- Maximum operating pressure: 1,250 psi
- Liner Material: Through-hardened steel (Nitrided D2)
- Barrel opening method: Manual
- Barrel cooling: Cored barrel backing block
- Discharge arrangement: Single hole insert die
- Agitator speed range: 0 - 1,000 rpm