

**FT
SERIES**

Scraped Surface Heat Exchanger Series – FT25

Issue: 1

Armfield miniature-scale technology is well established at offering developers the opportunity to run small trials, which provide enough information to enable scale-up to larger plant with confidence.

The formulations go through similar physico-chemical changes as they would in production plant and real time data logging permits results to be recorded and repeated.

The FT25 range of miniature-scale scraped surface heat exchangers has built-in control and flexibility with a graphic representation of the process on the touch screen control panel.

The operator can choose the parameters wanted for any particular formulation.

The FT25 has a number of configurations according to the required use.



Example product, palm oil, ice cream, margarine

Features / benefits

- ▶ Duplicates full-scale process
- ▶ Fast, accurate new product development
- ▶ All process parameters under operator control for maximum flexibility
- ▶ Rugged and reliable units
- ▶ Only requires electricity and water to function.
- ▶ Full control of barrel speeds to over 1000rpm
- ▶ Temperature control system incorporated
- ▶ Integral control panel enabling simple control and monitoring of all major variables
- ▶ Enclosed self-contained, mobile, stainless steel service cabinet for easy cleaning and wash down with removable panels
- ▶ Hard chromed barrels
- ▶ Hygienic design
- ▶ Made from 316 stainless steel
- ▶ In cabinet refrigeration

Available:

- ▶ Variable speed pinworker for margarine and soft spreads
- ▶ Air incorporation system
- ▶ Computer data logging facility
- ▶ Pinworker

Description

The FT25 Scraped Surface Heat Exchanger Series utilises the Armfield monocoque stainless steel cabinet with membrane technology control panel. The working platform can accommodate one or two barrels (B) and a variable speed pinworker (P) alongside a progressive cavity feed pump.

The unit uses a refrigeration system supplied within the cabinet and utilises a chilled, food grade refrigerant, which is pumped through the barrel jackets.

An air incorporation system can also be added if required.

Small batch sizes enable rapid product testing.

All services required are housed inside the wash-down cabinet, which also contains a drawer mounted with the electrical chassis.

Enhanced CIP facility available (FT52).

Requirements

Scale



- ▶ Electricity supply: (see ordering codes)
- ▶ Water supply: For refrigeration cooling
Cooling water supply with flow rate of 3l/min @ 3bar and $\leq 20^{\circ}\text{C}$

Control Panel

The splashproof, full colour touch sensitive screen with diagrammatic representation of the process. It shows variables such as product feed pump rate, barrel and pinworker speed, temperature and pressure, which are all under operator control. Process data is displayed in real time and can be logged to a PC running the Windows™ operating system.

Note:

For Scraped surface heat exchanger applications involving product heating, UHT, or combined heating and cooling, please enquire about our FT174X - Modular Miniature HTST/UHT Process System.

Windows™ Data Capture Software

A unique benefit of the Armfield miniature-scale food processing range is that the measured data may be captured and stored to disk.

An Armfield FT25-DTA-ALITE Data Logging Accessory transfers results to a computer.

Feed pump flow rate, barrel/pinworker speeds, temperatures and pressures can be monitored in realtime. The data can be displayed in graphical and tabular forms and printed.

A computer with a USB port, and running Windows XP or later is required.

Overall dimensions

Height: 2.6m
Width: 0.78m
Depth: 0.65m

Packed and crated shipping specifications

Volume: 2.1m³
Gross weight: 380kg

Technical specifications

Heat Exchanger Barrel:

Heat transfer area: 0.045m²
Shaft/barrel volume ratio: 1 : 3.5
Scraper blades: 4 along shaft stainless steel, 180° separation

Barrel length: 0.35m

Barrel working pressure: 8.0 bar

Pinworker:

No of pins on shaft: 20

No of pins on barrel: 42

Barrel/pinworker drives:

Variable speed ac motors, inverter controlled:
speed range 0-1400rpm

Refrigeration system:

Food grade refrigerant: -25°C capability

Feed pumps:

Progressive cavity pump:

Process throughput: 0-20l/h, independent of back pressure

Particulate capability: up to 0.6mm

Fibre handling capability: up to 25mm

Air incorporation system: Air pump with multiple turn control valve and dial to vary overrun

NOTE: Air incorporation systems use a suction inlet and are not fitted with an inlet tank.

Typical Configurations

Continuous Margarine Crystalliser

FT25BP-IF-C: One barrel and one pinworker

FT25BBP-IF-C: Two barrels and one pinworker
A resting tube for product settling and food grade refrigeration unit for process cooling are supplied.
A range of oil emulsions can be processed.

Continuous Ice Cream Freezer

FT25BA-IF-C: One barrel
Air incorporation via a small air compressor and refrigeration.
Overrun can be achieved up to 300% (dependant on product).

Combined Ice Cream and Margarine System

FT25BBPA-IF-C: Two barrels, one pinworker plus air incorporation.

Optional Accessories

Data Logging Accessory: FT25-DTA-ALITE

Ordering codes

▶ FT25BA/BP/BBP/BBPA-A 220-240v 1ph 50Hz

▶ FT25BA/BP/BBP/BBPA-G 220-240v 1ph 60Hz

Armfield standard warranty applies with this product

Knowledge base

- > 28 years' expertise in research & development technology
- > 50 years' providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



Products CE certified

armfield.co.uk

Aftercare

Installation
Commissioning
Training
Service and maintenance
Support: armfieldassist.com