

armfield

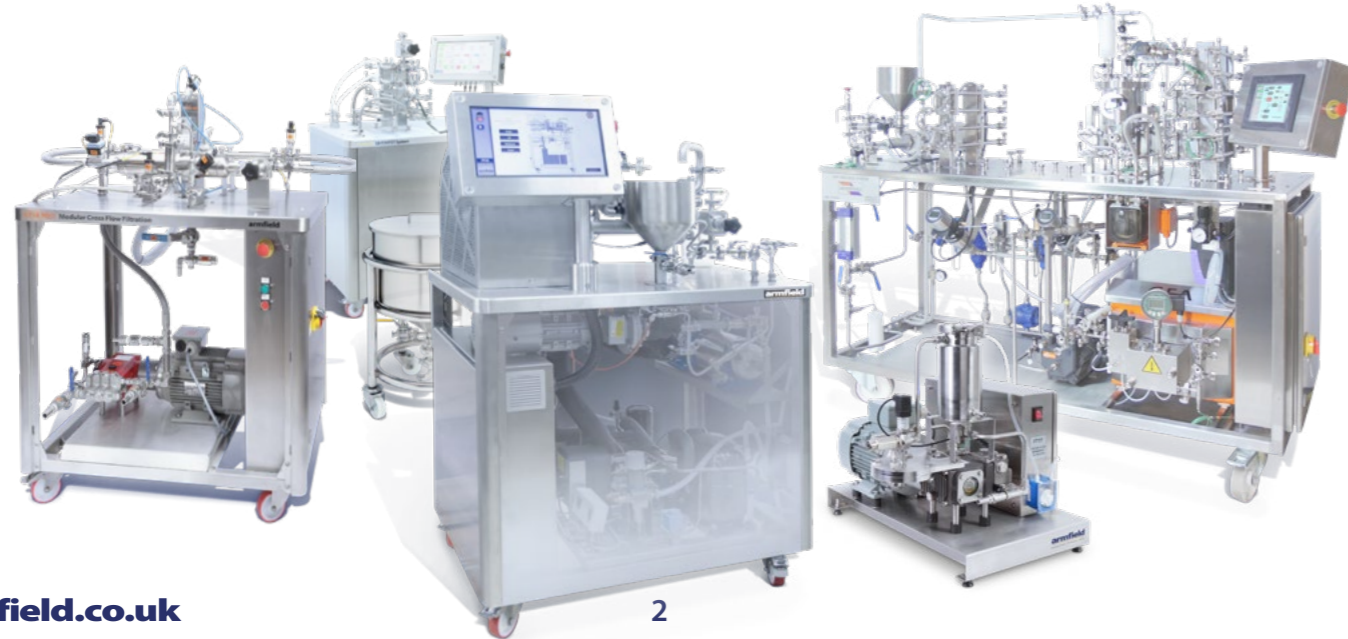
Research & Development Technology



Armfield can provide a complete solution to your requirements, offering not just the equipment but processing line advice, planning, installation, commissioning and training.

This range includes industry rated equipment for research and development, small scale pilot, batch production, educational teaching and vocational training, for applications in the following fields:

- ▶ Dairy**
- ▶ Edible & essential oils**
- ▶ Cosmetics**
- ▶ Ingredients**
- ▶ Liquid foods**
- ▶ Pharmaceuticals**
- ▶ Flavours & fragrances**
- ▶ Beverages**
- ▶ Nutraceuticals**



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Laboratory Pasteurisation

The HTST/UHT processing equipment from Armfield allows you to create a modular process line that can be reconfigured at any time.

From mixing and preparing the ingredients, through heat treating the product, storing it safely and filling it in a sterile environment, our equipment can safely simulate your processing needs.



UOP10 Laboratory Steam Generator



FT140X Mixing Vessel



FT174X Modular Miniature Scale HTST/UHT Process System



FT85 Sterile Vessel



FT83 Sterile Filling System



FT63 Laboratory Process Chiller



Cheese Vat

The Armfield FT20 Cheese Vat and its comprehensive range of optional accessories have been developed to prove the different aspects of cheese making theory.

Each accessory to the FT20 is supplied as a complete piece of equipment needing no additional service items other than the Cheese Vat.



Features / benefits

Makes all well known types of cheese	Bench mounted with small footprint
Economical with raw materials	Ease of use
1Kg batch provides adequate material for sampling	Touchscreen controls for vat temperature and paddle speed
10 or 20 litre capacity stainless steel jacketed vat available	Range of cheese making accessories
Water heater fitted in console	Simple controls
Intergrated data logging	Range of cheese making accessories



FT20 Requirements

1Ph

Scale



View data sheet: www.armfield.co.uk/ft20

Issue: 2

HTST/UHT System

The Armfield FT74XA is a miniature-scale HTST/UHT processing system optimised for rapid product development. Tubular or plate heat exchangers can be mounted and it can be used with a sterile filler (FT83). It is highly flexible with a range of options to configure to the user's specific requirements.

Options include:

Homogenisation, Variable Holding Tube, Magnetic Product Flow Meter, Suction Feed, CIP Pump, Data Logging and Static Meters which will allow you to configure the unit to suit most laboratory needs.

Features / benefits	
Compact, mobile, easy to install	
UHT throughputs up to 20 l/hr	
Can form part of a complete processing line (aseptic and non-aseptic)	
Process temperatures up to 150°C	
Built in Clean In Place (CIP) and Sterilisation In Place (SIP) facilities	
Two-stage cooling options	
Pasteurisation throughputs up to 50 l/hr (plate heat exchanger)	
Interchangeable pressed chevron plate heat exchanger and tubular heat exchanger	

Applications	
Baby foods	
Beverages	
Milk	
Cream	
Ice-cream	
Yoghurt's	
Fruit Juices	
Culture Media	



FT74XA Requirements 1Ph or 3Ph Scale

View data sheet: www.armfield.co.uk/ft74xa Issue: 2

Modular Miniature Scale HTST/UHT Process System

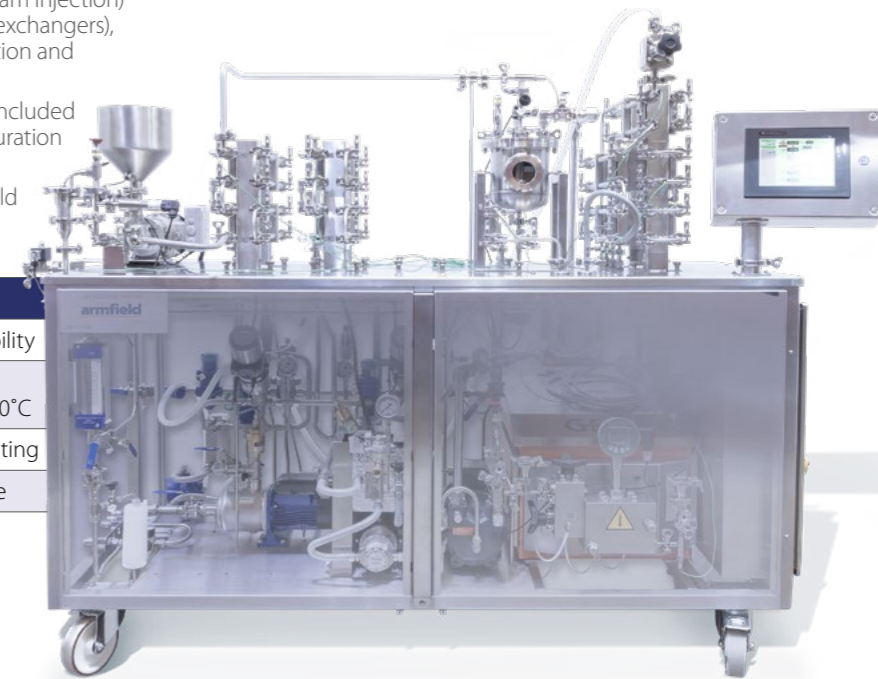
The Armfield FT174X are standard modules for direct heating (steam injection) and/or indirect heating/cooling (using tubular and/or plate heat exchangers), SSHE, aseptic processing, upstream or downstream homogenisation and additional chilling are available.

Along with many other options, enable multiple modules to be included in the same system, giving high process adaptability by reconfiguration of flexible product hoses using quick-release connections.

The sterilisation options enable the unit to be linked to an Armfield sterile filling bench to produce sterile product, even when using long holding tubes and/or downstream homogenisation.

Features / benefits	
High degree of user configuration	Clean in Place (CIP) Capability
Standard throughputs from 10-60 L/hr	Maximum product temperature setting of 160°C
Links directly to sterile filling bench	Direct and/or indirect heating
Rapid start-up and shut down	Hot water option available

Applications	
Baby foods	Yoghurt's
Beverages	Desserts and puddings
Condiments	Fruit and vegetable purées
Cream	Fruit juices and cordials
Ice-cream	Sauces and soups



FT174X Requirements 1Ph or 3Ph Scale

View data sheet: www.armfield.co.uk/ft174x Issue: 2

HTST/UHT Mini Pilot System

The Armfield FT94LT HTST/UHT Mini Pilot System is the best cost effective alternative to running product trials on full scale systems.

The flow rate and heat transfer of this unit as well as the accessory options available give the user a wide range of processing options and flexibility.



Features / benefits

Suitable for producing large batches of material for extensive product testing
Rapid start up
Throughputs from < 20 to > 100 l/hr (dependent on product)
Process temperatures up to 150°C
Touch screen control for ease of use
Continuous operation
Hygienic connections
Built in Clean In Place (CIP) and Sterilisation In Place (SIP) capabilities
USB data logging option
Suction feed with in-line level sensor



View data sheet: www.armfield.co.uk/ft94lt

Issue: 2

HTST/UHT Mini Pilot System

The Armfield FT94X HTST/UHT Mini Pilot System extends the range of continuous operation scaled-down units offered by Armfield to 200 l/hr (30-100 l/hr for the standard FT94X).

The unit combines full flexibility with comprehensive instrumentation demanded of research and development equipment.

The FT94X is designed for operation as both a stand-alone unit and also for seamless integration into a full processing system with the capability of aseptic packaging of processed product.



Features / benefits

From cold start to steady state operation in seconds
Links directly to sterile filling bench or sealed bag filling systems
Continuous and batch operation
Standard throughputs from 30 to >100 l/hr (dependent on conditions)
Units available to 200 l/hr
Preheating by hot water (indirect)
Heating by steam (indirect)
Plate and tubular heat exchanger options
Built in Clean In Place (CIP) and Sterilisation In Place (SIP) facilities
Two-stage cooling option



View data sheet: www.armfield.co.uk/ft94x

Issue: 2

Microwave UHT add-on

The Armfield FT84-12 can be used with an Armfield FT74XA and FT174X to provide a rapid microwave final heating stage.

The non-contact heating prevents fouling, extends the life of the unit and prevents spoiling of delicate products; particularly useful for high protein products.

Applications

Baby foods	Gelatine products
Beer	Health products
Condiments	Milk
Cream	Nutritional products
Culture media	Pharmaceuticals
Custards	Puddings
Desserts	Sauces and soups
Fruit purées	Yoghurts



FT84-12 Requirements    Scale 

View data sheet: www.armfield.co.uk/ft84

Issue: 2

Sterile Vessel

The Armfield FT85 Sterile Vessel can store UHT processed product for sterile filling at a later point. It eliminates product wastage associated with pilot-scale continuous-operation filling systems that lack buffering capacity.

The vessel is sited between Armfield's UHT processing units and the FT83 Sterile Filling System and is available with vessel sizes from 30 litres as standard (other sizes on request). It is designed for operation with Armfield systems, but can be operated with other equipment.

Sterile product can be stored until required.

Features / benefits

- Self sterilising
- Compact and mobile
- Full colour touch screen
- Removable side panels for easy washing

Associated equipment

- FT174X – Modular Miniature-scale HTST/UHT Process System
- FT94X – HTST/UHT Mini Pilot System
- FT83 – Sterile Filling System
- UOP10 – Laboratory Steam Generator



FT85 Requirements     Scale 

View data sheet: www.armfield.co.uk/ft85

Issue: 2

Sterile Filling System

The Armfield FT83 is the most cost-effective solution for R&D departments to produce sterile packaged samples requiring an excellent shelf life.

As well as a working chamber with a controlled, clean environment, the unit includes the facilities to enable all the product paths to be sterilised and for the filling to be controlled in a simple manner.



FT83-UV Ultraviolet option

Applications

- Extended shelf-life products achievable
- Foot pedal operation - Hands free control
- Large working area
- Low-oxygen filling facility as standard
- UVC lamp option



FT83 Requirements 1Ph COMP. AIR COLD DRAIN N₂ Scale

View data sheet: www.armfield.co.uk/ft83

Issue: 2

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Continuous In-line Deaerator

The Armfield FT51 deaerator unit has been designed to enable small quantities of food and other liquid products to be processed conveniently in the laboratory. It can be used as a standalone batch deaerator or in-line with one of the Armfield continuous processing systems, such as the FT74XA or the FT174X. The unit is designed to mirror the industrial processes of vacuum deaeration.

Applications

- Baby foods
- Beverages
- Cream
- Desserts and puddings
- Fruit and vegetable purees
- Fruit juices and cordials
- Gelatine products
- Gravies
- Health and nutritional products
- Milk
- Pharmaceuticals
- Sauces and soups
- Yoghurts

Performance

- Continuous throughput typically up to 20 l/hr
- Batch volume 2-10l
- Vacuum level to - 950 mbar (product dependent)

Features / benefits

- Deaeration capabilities of down to 0.5ppm dissolved O₂ (batch mode with N₂ degassing)
- Nitrogen degassing facility
- Clean In Place (CIP)
- Touchscreen control
- Full compatibility with existing Armfield UHT systems



FT51 Requirements 1Ph Scale

View data sheet: www.armfield.co.uk/ft51

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Homogenisation SubSystems

The Armfield FT91 & FT90 are complete in-line homogenisation subsystems for use with Armfield miniature-scale food processing equipment.

They have been specifically optimised for this application in the dairy, liquid foods and condiments industries.



Technical specifications	FT91	FT90
Homogeniser	Niro Twin Panda 600	APV 1000
Throughput: Adjustable	10-30 l/hr	8-22 l/hr
Max 1st stage homogenisation pressures	600 Bar	1000 bar
Homogenisation temperature	90°C max	105°C max
Max sterilisation temperature (30 mins)	140°C	130°C
Pump power	1.5 kW	3 kW
No of pistons	2 off	1 off

Features / benefits
In-line homogenisation for trial quantities and miniature-scale processing
Uses scale-down valve technology which ensures the results are representative of production-scale processing
Two stage homogenisation with adjustable pressure (600bar)
Can be used as stand alone
Pulsation dampers included
Can be sterilised and used in an Aseptic system

FT91/FT90 Requirements    Scale 

View data sheet: www.armfield.co.uk/ft91

Issue: 2

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Mixing Vessels

The Armfield FT140X range comes in three models (see table), each configuration is available in 50l and 100l volumes.

All models have an internal surface made of AISI 316 stainless steel. These tanks have been designed for industrial applications and are ideal for product storage and formulation in factory and pilot plant environments.

The agitators are manufactured with alternately rotating racks, making these vessels ideal for preparing and mixing dense products like creams, soups and broths.

Features / benefits	
Electronic control speed for mixing motor (20-60 rpm)	
Rotor with two direction paddle	
Turbo emulsifier with electronic control speed (200-900 rpm) in CCT option	
Interchangeable Teflon scrapers	
Datalogging to record process data	
CIP spray ball	
VPN connection	
Vessel Type	Description
CFC	Non-jacketed vessel with variable speed agitator
CFCR	Jacketed vessel with variable speed agitator, heaters and temperature controller
CCT	Jacketed vessel with variable speed agitator, high shear emulsifier, heaters and temperature controller



FT140X Requirements    Scale 

View data sheet: www.armfield.co.uk/ft140x

Issue: 2

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Multifunction Laboratory Mixer

The Armfield FT141 is a multifunction batch process system designed for the hygienic processing either 10 litres or 20 litres depending on the unit and option selected. Emulsification, through mixing and temperature control can be used to prepare many variations of recipes.

Many available options to augment your system:

- Double knife (high viscosity products)
- Extra funnel for dosing liquids or powders
- PLC and touch screen with over 100 recipes

Features / benefits

10 or 20-litre product capacity

Simultaneous high shear mixing and sidewall agitation

Fast emulsifying for improved dissolving of powders

Full compatibility with existing Armfield UHT systems

Technical Specifications

Maximum Temperature: FT141 - 100°C
Service Side


FT141

Requirements



Scale



View data sheet: www.armfield.co.uk/ft141

Issue: 2

Multifunction Laboratory Mixer

The Armfield FT142 is a multifunction batch process system designed for the hygienic processing either 10 litres or 20 litres of high viscosity or combination products. Emulsification, through mixing and temperature control can be used to prepare many variations of recipes.

Many available options to augment your system:

- Automatic vacuum control (sub 100°C evaporation)
- pH titration equipment
- Direct steam injection

Features / benefits

10 or 20-litre product capacity

Simultaneous high shear mixing and sidewall agitation

FT142 has UHT capability: 140°C, 3 bar

Fast emulsifying for improved dissolving of powders

Full compatibility with existing Armfield UHT systems

Technical Specifications

Maximum Temperature: FT142 - 140°C


FT142

Requirements



Scale



View data sheet: www.armfield.co.uk/ft142

Issue: 2

Oil Preparation & Processing

Armfield is proud of its unique oils preparation and refining line of processing equipment. Using this equipment, you can take a raw seed from the plant, extract the oil and refine it to the purity you desire.

These units can create oils that are ready for sale or further downstream processing in various forms depending on your requirement.

FT29 Batch Solvent Extraction & Desolventising Unit



FT66 Neutraliser/Washer/ Bleacher



FT68 Deodorising Unit



FT67 Hydrogenation Unit



FT25 Margarine Crystalliser



Edible oils have such a wide variety of forms and functions and are used in such a range of consumer products that constant redeveloping of new products and refining of the manufacturing process is becoming more of a necessity in modern manufacturing environment.



UOP10 Laboratory Steam Generator



Batch Solvent Extraction and Desolventising Unit

The Armfield FT29 is a floor standing, self contained 25 litre batch process unit demonstrating a variety of solid/liquid extractions.

The unit is particularly suitable for 'leaching' edible oils from oil-bearing seeds and desolventising both the extracted solids and the miscella.



Features / benefits

- Improved extraction efficiency
- Wide variety of oils from nuts, seeds and vegetables
- ATEX Rated
- High temperatures possible
- Pulsation dampers included
- Controlled & monitored parameters ensure easy scale up



FT29 Requirements    Scale 

View data sheet: www.armfield.co.uk/ft29

Issue: 2

Neutraliser/Washer/Bleacher

The Armfield FT66 Neutraliser/Washer/Bleacher is a floor-standing batch processing vessel capable of performing these stages on small quantities of crude edible oils and facilitates practical research and development.

Features / benefits

Small quantities of oil can be processed

25 litre vessel compliant with PED

Capabilities

Effect of variation of operating parameters such as temperature, vacuum and degree of agitation

Selection of the correct amount and strength of caustic solution for the particular oil

Selection of the type and quantity of adsorbent for the bleaching operation

Optimization of operation of a pressure leaf filters

Description

The main reactor vessel, reagent vessels, filter pump and filter are constructed from stainless steel and are mounted within a floor-standing, stainless steel framework. A variable speed agitator, electrical heating element, cooling coil and observation port are incorporated in the reactor, which is a vertical cylindrical vessel designed to process a 25 litre batch of oil.



View data sheet: www.armfield.co.uk/ft66

Issue: 2

Hydrogenation Unit

The Armfield FT67 Hydrogenation unit is a floor-standing batch processing vessel, which is used to adjust the degree of saturation of 25 litre batches of edible oils. Increasing the saturation improves the stability and lengthens the shelf-life of the product.

Samples taken from line test



Features / benefits

Safe and easy to use

Temperatures up to 180°C

Pressure leaf filters

Accurate control of hydrogen addition

Line sampling capabilities

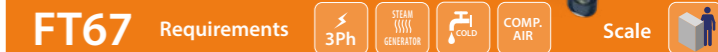
Reusable filter mesh

Air driven agitators

Windows for safe viewing

Integral steam heating coil and cooling coil

Easy to install and maintain



View data sheet: www.armfield.co.uk/ft67

Issue: 2

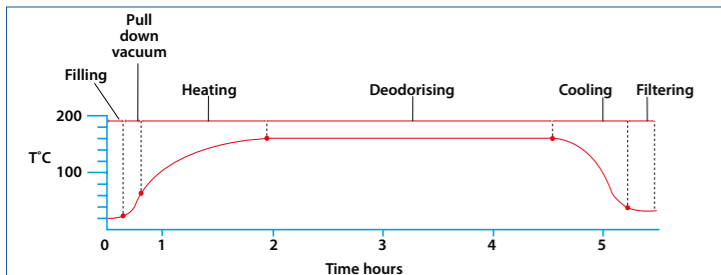
Deodorising Unit

The Armfield FT68 Deodorising Unit is a safe and easy to use floor-standing batch processing vessel suitable for steam stripping of fatty acids from edible oils. Applying steam to agitate and heat the oil while under very near vacuum reduces aromatic compounds contained in the product.

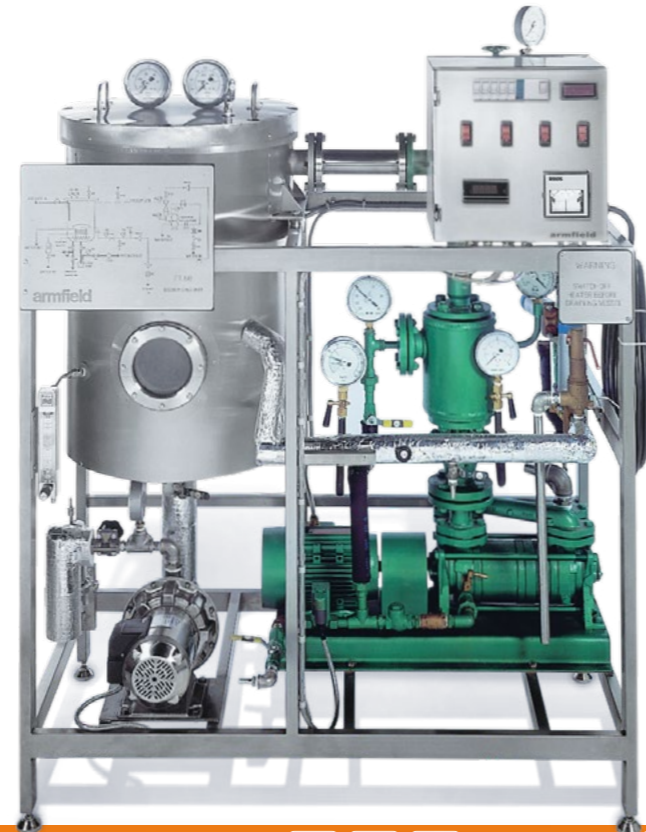
Features / benefits

Very low vacuum levels possible (<5mm Hg, 7mBarA)

Easy to install and operate with meaningful and repeatable results



Typical printout of process temperature recorder



FT68 Requirements    Scale 

View data sheet: www.armfield.co.uk/ft68

Issue: 2

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Scraped Surface Heat Exchanger

The Armfield FT25 Scraped Surface Heat Exchanger System is utilized for the development of fat crystallisation and ice cream freezing. The unit can be run as a continuous process or a batch system, if required, and has been tested with success on many fats and emulsions.

Batches as small as a few litres up to hundreds of litres can be run on this unit, all under the continuous conditions that are representative of a production plant.

Options available allow for a combination of 1 or 2 SSHE barrels and the addition of a pinworker and/or air incorporation if required.

The refrigerant circuit allows the operator to have precise control over the temperature change of the product, vital in the control of the crystal formation.

Other parameters such as the flow rate, system pressure, pinworker, scraper speed can be controlled to vary the nature of your product.

Features / benefits

Datalogging to record process data

Duplicates full-scale process

Fast, accurate new product development

All process parameters under operator control for maximum flexibility.

Full control of barrel speeds upto 1400rpm

Temperature control system incorporated as standard

Hygienic design

Resting tube option for margarines

Standard working pressure of upto 20 bar



FT25 Requirements    Scale 

View data sheet: www.armfield.co.uk/ft25

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Cross Flow Membrane Filtration

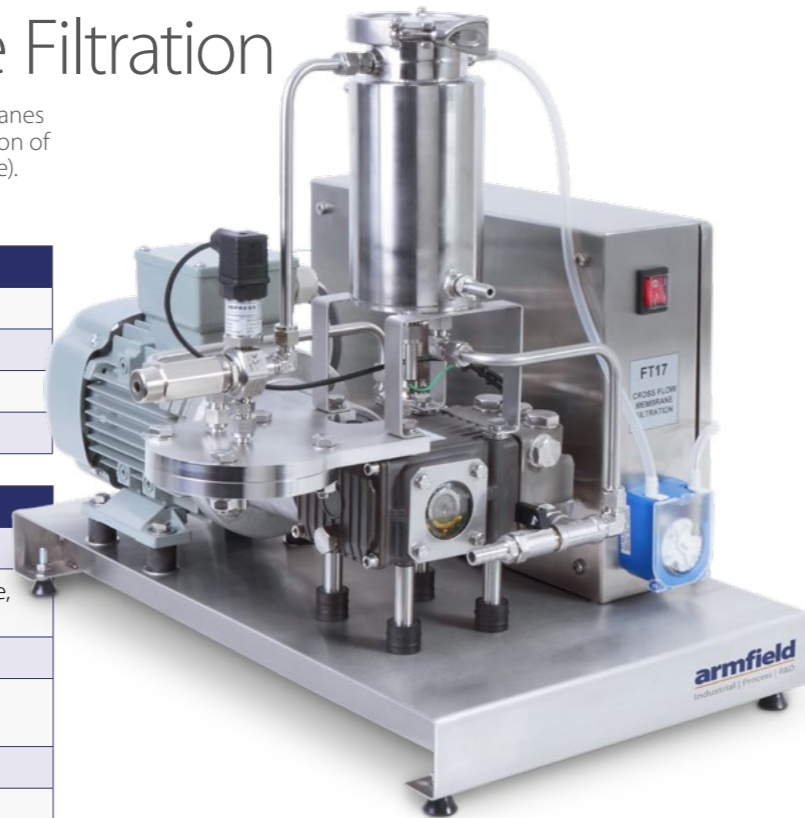
The Armfield FT17 is a lab-scale system for both evaluating membranes in a cross flow filtration application and enabling rapid determination of cross flow filtration performance with small product volumes (1 litre).

Applications

Fruit juices	Water treatment
Dairy	Medical applications
Fermented foods	Biofuels
Pharmaceutical/biopharmaceutical	Soft and alcoholic beverages

Features / benefits

Variable retentate cross flow velocity over the filtration membrane
Data logging of filtration pressure, permeate mass, retentate flow rate, retentate temperature
Buffer addition / Diafiltration capabilities
Optional retentate temperature control (FT17-15) with operating temperature range of 5-60 °C
Small-scale, only one litre of material is required
Simple cleaning and maintenance protocols
Suitable for microfiltration, ultrafiltration, nanofiltration and reverse osmosis membranes and pressures. Pressure operating range 0-40 bar



FT17 Requirements



Scale

View data sheet: www.armfield.co.uk/ft17

Issue: 2

Modular Cross Flow Filtration

The Armfield FT18-MkII is a pilot-scale cross-flow filtration system designed to operate with a range of membrane module configurations. It is the perfect tool to use, following on from flat sheet membrane trials with the FT17, for further process development and scale-up.

Features / benefits

► Four membrane module options:

- Ceramic
- Spiral wound
- Hollow fibre
- Tubular

► Capable of:

- Microfiltration
- Ultrafiltration
- Nanofiltration
- Reverse Osmosis

Maximum filtration pressure of 50 bar

Clean-in-place capability

Backpulsing option (suitable for certain modules)



FT18 Requirements



Scale

View data sheet: www.armfield.co.uk/ft18

Issue: 2

Carbonation & Filling

FT140X Mixing Vessel



FT102X Carbonator/Filler



FT104X Filler/Capper



FT63 Laboratory Process Chiller



Precise calculation of carbonation and consistently accurate filling are the core principles around which the FT102 Carbonator Filler was designed.

These characteristics allow you to assess the precise filling parameters your beverage will behave best under. This in turn allows you to perfect your recipe for boosting the desirable traits, and the filling process for maximising the filling efficiency.

Carbonator/Filler/Capper (Counter Pressure Filling Station)

The Armfield FT102X is a combined carbonator and filler, designed primarily to enable R&D technologists to prepare small quantities of beverages with reproducible characteristics and replicating the final product.

Features / benefits	Applications
Easy to use: many functions automated	Soft drinks
Cost saving: for small test batches no production line is required	Beer
Throughputs up to 60l/h achievable (2l bottles) on FT102X	Milk
Higher throughputs possible with add-on filling/capping system (FT104X)	Juices and cordials
Wide range of cans or bottles can be used from 0.15l to in excess of 2l	Health and nutritional products
CO ₂ content of 12g/l can be realised	FT102X Optional Accessories
Premix and postmix capability	Crown Seal Capper
Fills non-carbonated drinks	Screw Cap Sealer
Carbonates foaming products	Filling Head for Cans
	Vacuum System for Bottles
	Syrup Dosing System
	PET bottle neck Support
	Wide neck bottle filling possible



FT102X Requirements       

View data sheet: www.armfield.co.uk/ft102X

Issue: 2

Carbonator/Filler

The Armfield FT102LT has a well deserved reputation for being simply the best laboratory Carbonator-Filler on the market. Utilising the same technology and most of the features and benefits, the FT102LT is a light weight, more cost effective package.

This Miniature-scale Carbonator-Filler provides the ability to establish precise and repeatable parameters when carbonating in the laboratory. This can dramatically improve the speed with which new products are developed.

Both premix and postmix operations are available from the standard machine. Options allow for deaeration of the product and evacuation of the bottles, filling and capping (screw and/or crown) at a single station without removing the bottle.

Features / benefits

32 preset programs

Option of filling and crown seal capping and/or screw top capping at a single station

Throughputs up to 60l/h achievable (2l bottles)

Wide range of cans or bottles can be used from 0.15l to in excess of 2l

Carbonates foaming products

Features / benefits

Soft drinks

Beer

Milk

Juices and cordials

Water

Health and nutritional products



FT102LT Requirements     

View data sheet: www.armfield.co.uk/ft102LT

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Filler/Capper (Counter Pressure Filling Station)

The Armfield FT104X is an additional Filling and Capping station to supplement the FT102X. Much higher flow rates can be realised when connected in series as they can be subsequently added to.

Simultaneous filling into various types and sizes of containers such as cans and screw-topped PET bottles make comparisons between these simple and rapid.

Features / benefits

Can stack multiple units

CIP built in

Shares connection to chiller with FT102X

Full colour touch screen control

Independent filling parameters

Applications

Soft drinks

Beer

Milk

Juices and cordials

Health and nutritional products

FT104X Optional Accessories

Capper Enabling System

Crown Seal Capper

Screw Cap Sealer

Filling Head for Cans

Vacuum System for Bottles (requires FT102X-10)

Syrup Dosing System

PET bottle neck Support

Filling Head for Bottles, 25mm to 43mm

Filling Tube for different head space

Note, these items are identical and interchangeable with the FT102X equivalents.



FT104X Requirements       

View data sheet: www.armfield.co.uk/ft104x

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Benchtop Rapid Extractor

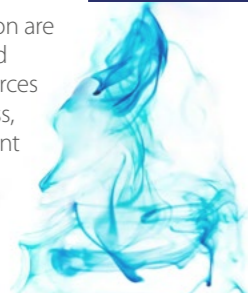
The Armfield FT110X Benchtop Rapid Extractor is used to extract the active constituents from small (<1 litre) samples of materials.

This single piston pressure system gives rapid results from small volumes while giving flexibility to the operator with the processing parameters.

The three phases of operation are pressurisation, relaxation and dynamic percolation. This forces the solution into the biomass, dissolves the active ingredient and recovers the solution into a separate vessel.



Example of operation, tea extraction



FT110X Requirements   or  Scale 

View data sheet: www.armfield.co.uk/ft110X

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Laboratory-Scale Rapid Extractor

The Armfield FT111X Laboratory-Scale Rapid Extractor is ideally suited to product development purposes, used to extract the active constituents from materials in pilot-scale batch sizes.

The Armfield FT111X uses high pressure and a combination of both static and dynamic extraction phases to achieve a rapid extraction of the active materials with minimum degradation to the product. In the dynamic phases, the solvent is passed through the material providing a forced percolation and agitation.

Features / benefits

Small-scale, 5, 10 and 20 litre options

Simple cleaning and maintenance procedures

Uses ethanol, glycerol, water or similar safe (polar) solvents

High pressure, room temperature extraction, excellent for sensitive materials

Highly flexible extraction parameters

Heated tank option

Applications

Natural Food Flavours

Tinctures and infusions

Fruit Flavours

Herbal extracts and homeopathy

Herbs and Plant extracts

Cosmetics

Spirit liquors

Pharmaceuticals



FT111X Requirements   or  Scale 

View data sheet: www.armfield.co.uk/ft111X

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Ingredient Preparation

Ingredients and constituents of the final products must sometimes travel large distances to where they are fully assembled. To reduce the cost of this transportation some ingredients can be dehydrated at the source and rehydrated upon arrival at the final assembly site.

Products with a base of a common oil can be filtered to increase the concentration of the required ingredient, then diluted at the destination to the appropriate concentration.



UOP10 Laboratory Steam Generator



FT32 Laboratory Drum Dryer



FT142 Multifunction Laboratory Mixer UHT



FT80 Tall Form Spray Dryer

Spray drying water-based ingredients and spray chilling oil-based ingredients can transform your ingredient into one much more easily handled, stored and transported.

Tall Form Spray Dryer Tall Form Spray Chiller

The Armfield FT80 Tall Form Spray Dryer and FT81 Tall Form Spray Chiller have been purpose-designed to enable laboratory quantities of products to be processed.

With drying temperatures upto 250°C, and by controlling and monitoring various parameters, including RH, you can produce powder comparable to large-scale production dryer capability.

Both systems offer unparalleled flexibility with separate, individually controlled inlet and outlet fans, together with variable nozzle positions and selection of co- or counter-current flow configurations. This flexibility is enhanced by an unsurpassed range of options, purpose-designed for laboratory and research use.

With the appropriate accessories it is possible to change from spray-drying to spray-chilling configurations in a matter of minutes, thus adding further unique experimental capability.

Applications

- Dairy
- Liquid Foods
- Pharmaceuticals
- Nutraceuticals
- Flavours and Fragrances



FT80/FT81 Requirements 3Ph PC COMP. AIR Scale

View data sheet: www.armfield.co.uk/ft80

Issue: 2

Laboratory Drum Dryer

The Armfield FT32 is a laboratory-scale drum dryer, designed for food, chemical and pharmaceutical research. It can be used for both process development and new product research demonstrating the many drum drying applications.



Feed roll assembly

Technical specifications

Drum size:	300mm diameter x 300mm long
Drying duty:	Max material feed rate 45 kg/hr Max water evaporated 30 kg/hr Steam consumption 40 kg/hr @ 6 bar
Max Operating temperature:	162°C
Single or Double drum options	



FT32

Requirements



3Ph



STEAM

Scale



View data sheet: www.armfield.co.uk/ft32

Issue: 2

Blast and Fluid Bed Freezer

The Armfield FT36 Blast and Fluid Bed Freezer combines these two important industrial processes into one scaled-down freezer cabinet.

Description

Inside the cabinet, a fan with adjustable impeller transports air from the interior of the cabinet into the freezer ducting and through the evaporator tube bank where it transfers heat to the refrigerant.

The air, now reduced in temperature, passes through the tray section, which can be observed through a removable Perspex panel. It then changes direction and passes vertically up through the fluid bed section, the cabinet space where it is again circulated by the fan.

The blast freezer section contains five trays on to which the food samples to be frozen are placed.

Applications

- Detailed study of batch blast freezing process
- Study of fluid bed freezing
- Effect of air velocity
- Effect of air temperature
- Simulation of the production scale process



FT36

Requirements



3Ph



COLD

Scale



View data sheet: www.armfield.co.uk/ft36

Issue: 2

Laboratory Process Chiller

The Armfield FT63 is a recirculating process chiller, providing a continuous supply of refrigerated liquid to serve as the chilling media when used with an Armfield miniature-scale processing unit.

Compatible equipment:

- FT74XA
- FT81
- FT94LT
- FT102X
- FT102LT
- FT174X

Features / benefits
Low refrigerant charge
Low running costs
Easily cleaned and maintained
Temperature controller on chilled liquid outlet enables stable processing
Mobile unit
Simple ON/OFF control



FT63 Requirements 1Ph Scale

View data sheet: www.armfield.co.uk/ft63 Issue: 2

Large Laboratory Process Chiller

The Armfield FT64 is a recirculating process chiller, providing a continuous supply of refrigerated liquid to serve as the chilling media when used with an Armfield miniature-scale processing unit.

The FT64 is particularly suitable for larger cooling duties and for use with:

- FT174X
- FT94LT
- FT94X

Often used to reduce outlet temperatures to below ambient to prepare for cooled storage.

Features / benefits
Low refrigerant charge
Low running costs
Easily cleaned and maintained
Below sound safety thresholds
Simple ON/OFF control



FT64 Requirements 1Ph Scale

View data sheet: www.armfield.co.uk/ft64 Issue: 2

Clean In Place Unit

The Armfield FT52 has been designed to provide additional cleaning performance for Armfield Food Technology (FT) units and other equipment. It consists of a high flow rate stainless steel centrifugal pump mounted on a mobile frame.

Features / benefits

Mobile unit with small footprint providing local CIP capability for pilot scale equipment

Produces cleaning velocities in excess of the industry standard 1.5 m/s in Armfield systems

Capable of flow rates up to 4.0 m³/h

Simple on/off pump control

Stainless steel pump motor splash cover

High pressure hygienic flexible hoses and fittings for quick connection to Armfield equipment

5L stainless steel hopper for cleaning solutions

Overall dimensions

Height: 1.10m

Length: 0.90m

Depth: 0.45m

Packed and crated shipping specifications

Volume: 0.45m³

Gross weight: 30kg



FT52 Requirements 1Ph Scale

View data sheet: www.armfield.co.uk/ft52

Issue: 2

Mixing	FT140X FT141 FT142 (UHT capability)
HTST / Pasteurisation / UHT	FT174X FT74XA FT84-12 FT94X FT94LT FT142
Homogenisation	FT90/91
Filling + storage	FT83 FT85 Aseptic Bag-in-box Filler
Drying - (Dehydration)	FT30-MkIII FT32 FT80
Evaporation	FT22

Pressure extraction	FT2 FT28 FT14 FT110X FT111X
High Temperature Solvent extraction	FT29 + UOP10
Separation	FT27
Refining	FT27 FT66 FT68
Hydrogenation	FT67
Margarine Crystallisation	FT25 BP/BBP/FT25 BBPA FT140
Ice cream processing	FT25 BA FT25 BBPA FT40 FT140X
Spray chilling	FT81

Freezing	FT34-MkII FT36
Filtration - MF / UF / NF & RO	FT18-MKII FT17
Carbonation / Filling / Capping	FT102X FT102LT FT104X
Deaeration	FT51
Blending	FT5
Cheese making	FT20/20A FT21/21A
Butter making	FT21/21A
CIP (clean in place)	FT52
Service Units	FT63 FT64 UOP10

To locate a contact in your area visit:

www.exploreamfield.com/contact

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Miniature-scale research & development technology

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