

armfield

Research & Development Technology



armfield[®]
Part of Judges Scientific PLC

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
- ▶ Ingredients
- ▶ Flavours & fragrances
- ▶ Edible & essential oils
- ▶ Liquid foods
- ▶ Beverages
- ▶ Cosmetics
- ▶ Pharmaceuticals
- ▶ 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.



FT140X Mixing Vessel



FT174 Modular Miniature Scale HTST/UHT Process System



UOP10 Laboratory Steam Generator



FT85 Sterile Vessel



FT63 Laboratory Process Chiller

FT83 Sterile Filling System

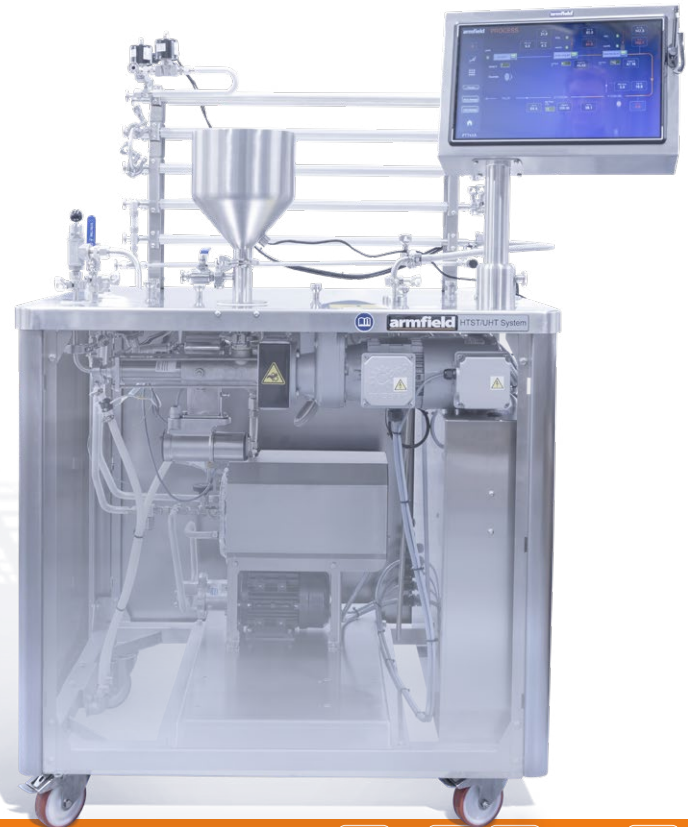


HTST/UHT System

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 Mixers 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/h
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/h (plate heat exchanger)
Interchangeable pressed chevron plate heat exchanger and tubular heat exchanger

Applications
Plant-based Beverages
Beverages
Milk
Cream
Ice cream
Yoghurts
Fruit Juices
Culture Media
Chocolate Milk

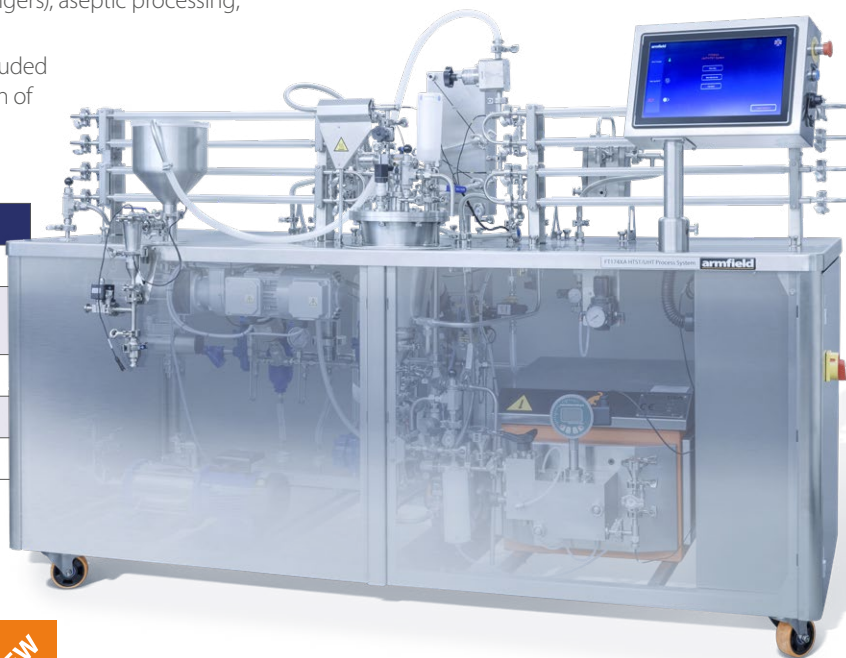
FT74XA Requirements 1Ph or 3Ph COLD Scale

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

Modular Pilot Scale HTST/UHT Process System

The Armfield FT174 offers direct heating (steam injection) and/or indirect heating/cooling (using a combination of tubular, plate or scraped surface heat exchangers), aseptic processing, upstream or downstream homogenisation and additional chilling.

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



Features / benefits

High degree of user configuration	Clean in Place (CIP) Capability
Standard throughputs from 10-60 L/h	Maximum product temperature setting of 150°C
Links directly to sterile filling bench	Direct and/or indirect heating
Rapid start-up and shut down	Hot water option available
Automatic DSI Vacuum chamber level control	

Applications

Baby foods	Yoghurts
Beverages	Desserts and puddings
Condiments	Fruit and vegetable purées
Cream	Fruit juices and cordials
Ice cream	Sauces and soups

NEW

FT174

Requirements



Scale



View data sheet: www.armfield.co.uk/ft174

Sterile Filling System

The Armfield FT83XA 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.



Applications

Extended shelf-life products achievable

Foot pedal operation - Hands free control

Large working area

Low-oxygen filling facility as standard

UVC lamp option



NEW

FT83XA Requirements

1Ph

COMP. AIR

COLD

DRAIN

N₂

Scale



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

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/h (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

FT94LT Requirements



Scale



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

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/h (30-100 l/h 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 in to 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/h (dependent on conditions)
- Units available to 200 l/h
- 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

FT94X Requirements     Scale 

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

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.



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	Touch-screen 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
Integrated data logging	Range of cheese making accessories

FT20 Requirements

1Ph

Scale



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

Microwave UHT add-on

The Armfield FT84 can be used with an Armfield FT74XA and FT174 to provide a rapid microwave final heating stage.

The non-contact heating prevents fouling, precipitation, discolouration and prevents damage 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 Requirements 3Ph COLD DRAIN Scale

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

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 FT83XA 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

FT174 – Modular Miniature-scale HTST/UHT Process System

FT94X – HTST/UHT Mini Pilot System

FT83XA – Sterile Filling System

UOP10 – Laboratory Steam Generator



FT85 Requirements

1Ph

COMP. AIR

COLD

STEAM

Scale



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

Carbonator/Filler/Capper (Counter Pressure Filling Station)

The Armfield FT102XA is a combined carbonator, filler and capper. Designed primarily to enable R&D technologists to prepare small quantities of beverages with reproducible characteristics and replicating the final product.

Now with an integrated chiller for improved efficiency and performance.

Applications
Soft drinks
Beer
Milk
Juices and cordials
Health and nutritional products

FT102XA Optional Accessories
Crown seal capper
Screw cap sealer
Filling head for cans
Automated can seaming
Vacuum system for bottles
Syrup dosing system
PET bottle neck support
Wide neck bottle filling possible

Features / benefits
Easy to use: many functions automated
Cost saving: for small test batches no production line is required
Throughputs up to 60l/h achievable (2l bottles) on FT102XA
Higher throughputs possible with twin filling head system
Wide range of cans or bottles can be used from 0.15l to in excess of 2l
CO ₂ content of 12g/l can be realised
Premix and postmix capability
Fills non-carbonated drinks
Carbonates foaming products



FT102XA Requirements

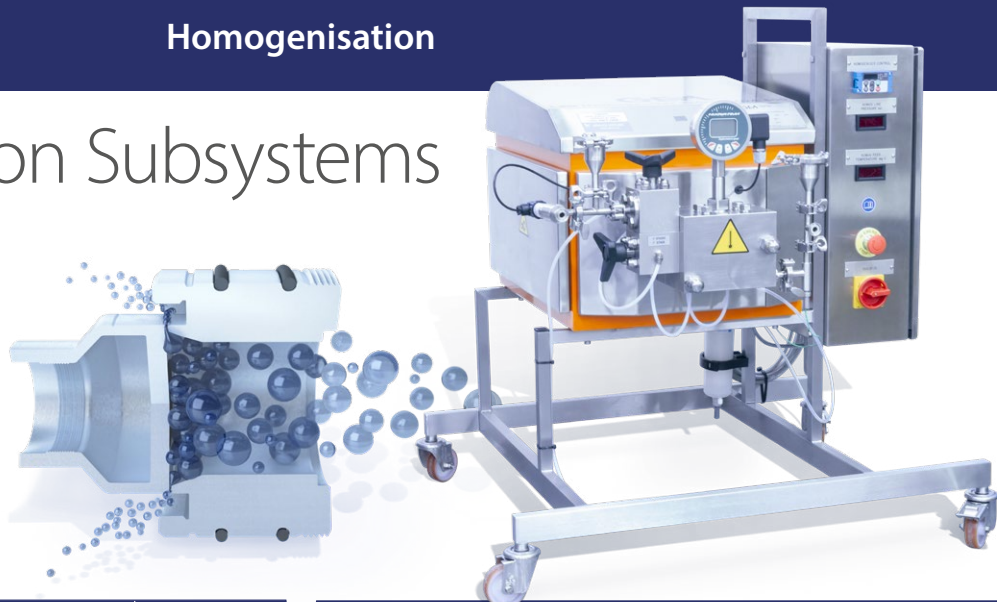


View data sheet: www.armfield.co.uk/ft102XA

Homogenisation Subsystems




The Armfield FT90 & FT91 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/h	8-22 l/h
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

FT90/FT91 Requirements   Scale 

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

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 1Ph 3Ph COLD Scale

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

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

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

Crystallisation System 20BAR

The Armfield FT25XA Scraped Surface Heat Exchanger System is utilised 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 up to 1400rpm

Temperature control system incorporated as standard

Hygienic design

Resting tube option for margarines

Standard working pressure of up to 20 bar



FT25

Requirements



Scale



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

Crystallisation System 40BAR

The Armfield FT25XA Scraped Surface Heat Exchanger System is utilised 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 up to 1400rpm

Temperature control system incorporated as standard

Hygienic design

Resting tube option for margarines

Standard working pressure of up to 40 bar



FT25 Requirements



Scale



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

Bespoke Process Lines

Armfield equipment has been designed to be modular and can be sourced as a flexible solution that can be expanded upon as your business grows.

When a specific process is required, Armfield has the expertise and capability to create bespoke designs for a wide variety of products. These are created based on Armfield's existing equipment or from first principals to give you the solution you need.



Continuous and Batch Deaeration

200l/h Homogenisation

200 l/h

Example Process Lines

Here, the customer had a very specific processing requirement that Armfield could meet and provide a complete installation and detailed training package.

This system required integration with other equipment on site with seamless communication and accuracy.

Raw pomegranate juice is fed into the process line where it is deaerated, homogenised, heat-treated, and filled in a sterile environment (or carbonated and filled).

The resulting product is a shelf stable juice processed to the detailed parameters required by the end user.



JHT/HTST and Sterilisation

Sterile Filling and Integrated Capping

Controlled Carbonation and Filling



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



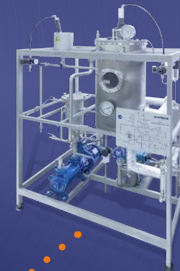
FT66 Neutraliser/Washer/ Bleacher



FT68 Deodorising Unit



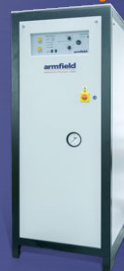
FT67 Hydrogenation Unit



FT25 Margarine Crystalliser



Edible oils have such a wide variety of forms and functions, they 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

Steam heated

Controlled & monitored parameters ensure easy scale up



FT29 Requirements



Scale



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

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

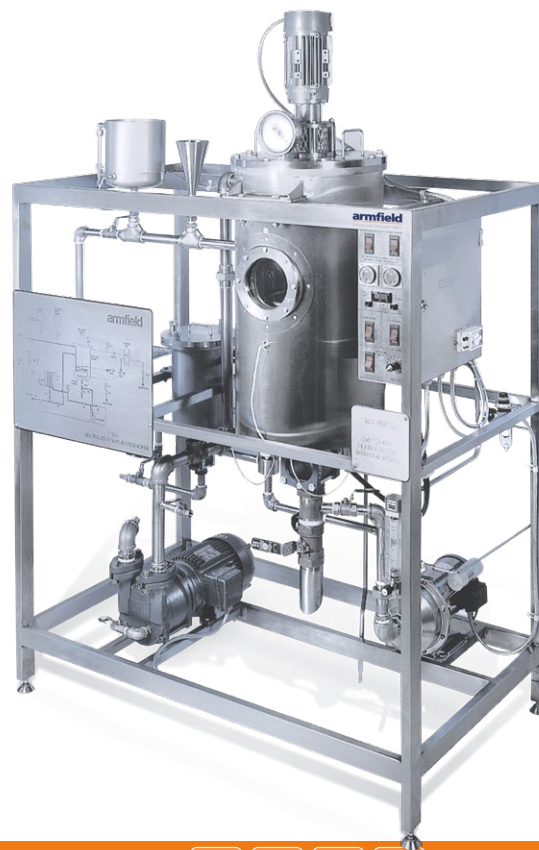
Selection of the type and quantity of adsorbent for the bleaching operation

Optimisation 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.



FT66 Requirements



Scale



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

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	Reusable filter mesh
Temperatures up to 180°C	Air driven agitators
Pressure leaf filters	Windows for safe viewing
Accurate control of hydrogen addition	Integral steam heating coil and cooling coil
Line sampling capabilities	Easy to install and maintain



FT67 Requirements      **Scale** 

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

Deodorising Unit

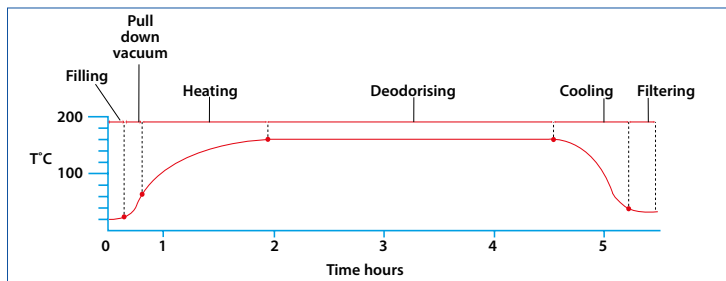
The Armfield FT68 Deodorising Unit is a safe and easy to use floor-standing batch processing vessel suitable for steam stripping of volatile aromatic compounds from edible oils.

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, 7mBorA)

Easy to install and operate with meaningful and repeatable results



Typical printout of process temperature recorder



FT68 Requirements

3Ph

COLD

STEAM GENERATOR

DRAIN

Scale



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

Armfield's Trial Laboratory

Armfield's trial laboratory is fully flexible and available for your next trial!

We have a broad range of equipment available for testing your products on many different scales including a mini pilot line for sterile UHT and HTST processing.



Contact us to find out more about developing your future successes:

ift@armfield.co.uk

- Trial:**
- ▶ **Mixing and Emulsification**
 - ▶ **Homogenisation**
 - ▶ **UHT and HTST Processing**
 - ▶ **Sterile Filling**
 - ▶ **Filtration**

- ▶ **Carbonation, Filling & Capping**
- ▶ **Spray Drying**
- ▶ **Solvent Extraction**
- ▶ **Crystallisation**
- ▶ **Ice Cream Freezing**

Trials in the USA

Our subsidiary Armfield Inc in New Jersey, USA, also has a trials facility for UHT/HTST processing and carbonation, filling and capping.



Cross Flow Membrane Filtration

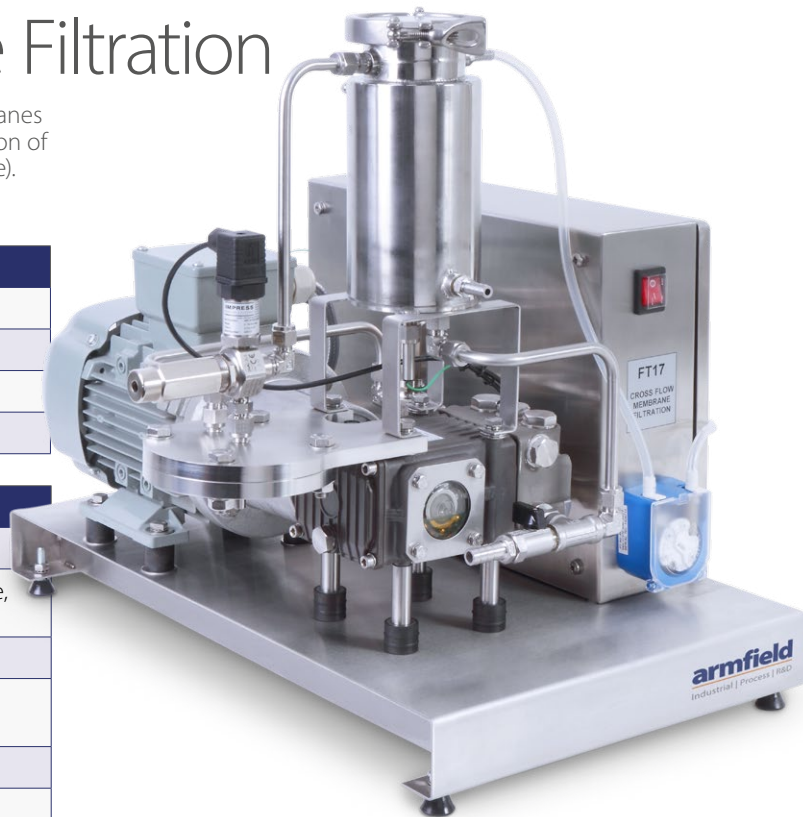
The Armfield FT17 is a lab-scale system for both evaluating membranes in a cross flow filtration application and enabling rapid determination of cross flow filtration performance with small product volumes (1 litre).

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

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

PC

COMP. AIR

COLD

3Ph

DRAIN

Scale

Icon of a person

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

Benchtop Rapid Extractor

The Armfield FT110DP Benchtop Rapid Extractor is used to extract the active constituents from small (<1 litre) samples of materials.

This new Dual-Piston (DP) system has an increased efficiency of solvent extraction, reducing the time of each cycle and increasing the active ingredient extraction in each cycle.

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



Applications	
Natural food flavours	Tinctures and infusions
Fruit flavours	Herbal extracts and homoeopathy
Herbs and plant extracts	Cosmetics
Spirit liquors	Pharmaceuticals

Features / benefits
Two 5-litre vessels for solvent recirculation and recovery
Touchscreen for total process control

FT110DP Requirements 1Ph COMP. AIR or N₂ Scale

View data sheet: www.armfield.co.uk/ft110DP

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 homoeopathy
Herbs and plant extracts	Cosmetics
Spirit liquors	Pharmaceuticals



FT111X Requirements



COMP. AIR

or

N₂

Scale

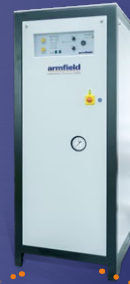


View data sheet: www.armfield.co.uk/ft111x

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

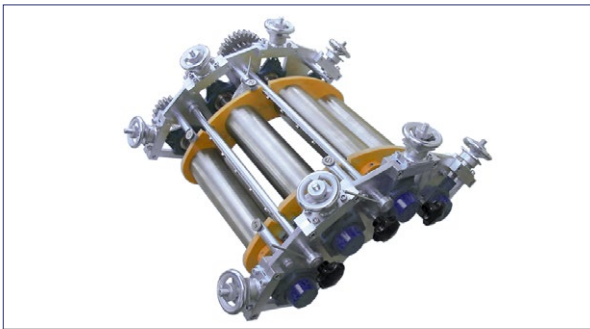
COMP. AIR

Scale


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

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.



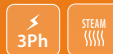
Feed roll assembly

Technical specifications

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



FT32 Requirements



Scale



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

Rising Film Evaporator

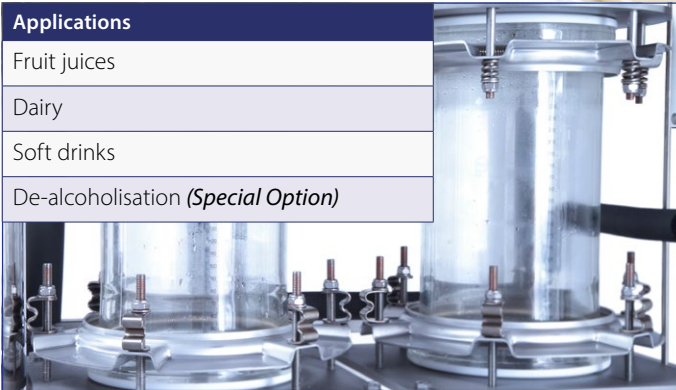
The Armfield FT22 Rising Film Evaporator condenses aqueous solutions by removing water and forming a concentrate. This is performed under gentle heating and controlled vacuum conditions.

The two streams of products are separately collected for recycling, further processing or packaging.

To reduce the footprint, a single, wider column is fitted and consecutive process runs allow for multistage process simulation.

2-10 litre batches can be processed in a single run, and short turn-around times mean many batches can be processed each day.

The **FT22** is perfect for making products like evaporated milk



FT22

Requirements

3Ph

COLD

DRAIN

STEAM

PC

Scale

View data sheet: www.armfield.co.uk/ft22

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.

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

Compatible equipment:

- ▶ FT74XA
- ▶ FT81
- ▶ FT94LT
- ▶ FT18-MKII
- ▶ FT174



Coolant recirculation and pressure gauge



Washable digital control panel



FT63 Requirements



Scale



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

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:

- ▶ FT174
- ▶ FT94LT
- ▶ FT94X

Often used to reduce outlet temperatures to below ambient, for cold storage preparation.



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



FT64 Requirements  Scale 

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

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 FT174.

The unit is designed to mirror the industrial processes of vacuum deaeration.

Applications	Performance
Baby foods	Continuous throughput typically up to 20 l/h
Beverages	
Cream	Batch volume 2-10l
Desserts and puddings	Vacuum level to – 950 mbar (product dependent)
Fruit and vegetable purees	
Fruit juices and cordials	Features / benefits
Gelatine products	
Gravies	Deaeration capabilities of down to 0.5ppm dissolved O ₂ (batch mode with N ₂ degassing)
Health and nutritional products	Nitrogen degassing facility
Milk	Clean In Place (CIP)
Pharmaceuticals	Touchscreen control
Sauces and soups	Full compatibility with existing Armfield UHT systems
Yoghurts	



FT51 Requirements



Scale



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

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

To locate a contact in your area visit:

www.armfield.com/contact

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Pilot scale research & development technology

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