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Miniature-scale research & development technology

MULTIFUNCTION LABORATORY MIXER
MULTIFUNCTION LABORATORY MIXER - UHT

FT141
FT142



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ISO 9001:2008
2YR EXTENDED WARRANTY

AL
ASEPTIC LINE
COMPONENT

The new Armfield FT141 and FT142 are versatile batch processing vessels, the FT142 having UHT capability. They are suitable for high shear mixing, dispersing, homogenising, emulsifying, evaporation and vacuum deaerating.

FEATURES

- 10 or 20 litre product capacity
- High speed bottom mounted emulsifying mixer
- Top mounted gentle agitator with flexible scraper
- Simultaneous high shear mixing and sidewall agitation
- Vacuum capability
- Powered lift for tank lid
- Inlet funnel and valve
- FT142 has UHT Capability: 140°C, 3 bar
- Large diameter hygienic outlet valve
- Full instrumentation
- Jacketed vessel for indirect heating and cooling
- Optional direct heating using steam
- Viewing window with light and wiper
- Range of process options

BENEFITS

- Representative results from small quantities of product
- Maximum flexibility enables development of a wide range of products
- Fast emulsifying for improved dissolving of powders
- Deaeration with vacuum
- Straightforward scale up
- Simple to use

ISSUE - 3



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Armfield R&D products include:

Hygienic connections as standard ✓

316 Stainless steel ✓

CE certification ✓

Extended warranty as standard ✓



An ISO 9001 Company

Head Office:

Armfield Limited
Bridge House, West Street,
Ringwood, Hampshire.
BH24 1DY England

Tel: +44 1425 478781
Fax: +44 1425 470916
E-mail: sales@armfield.co.uk

U.S. Office:

Armfield Inc.
9 Trenton - Lakewood Road
Clarksburg NJ 08510
Tel/Fax: (609) 208-2800
E-mail: info@armfieldinc.com

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Description

The FT141 and FT142 are multifunction batch process systems designed for the hygienic processing of up to either 10 or 20 litres of product, depending on the option selected. Each system comprises of the jacketed mixing tank, a high speed mixer, a gentle agitator, a vacuum system, steam heating and water cooling of the jacket, water flush for the shaft seals and an electronic control panel. Direct steam heating of the vessel can be provided as an option.

The FT141 is capable of processing at 95% vacuum and up to 100°C temperature. The FT142 extends the performance into UHT processing at up to 140°C and 3 bar pressure.

Each tank is fitted with a large diameter (51mm) manual outlet valve and a 25mm manual inlet valve complete with inlet funnel. All contact surfaces are 316 Stainless Steel. The vessels are equipped with a temperature sensor, a safety cut-out switch and a sight glass with a light and wiper. The clamped lid has a powered lift mechanism for easy raising. The heating/cooling jacket can be pressurised and is fitted with a safety valve.

A high speed mixing head with variable speed control is provided in the bottom of the vessel, carefully positioned in relation to the outlet valve to enable easy drainage. The standard mixing head is a double bladed knife. Other heads can be provided on special request, such as single knife or a mixer with a stator ring. Stator rings are available with different hole sizes from 1mm up.

A slow speed gentle agitator is fitted on the vessel lid. This is a double arm agitator with a flexible scraper on one arm to prevent burn-on of the product to the side of the vessel.

A liquid ring vacuum pump is used when required to process below atmospheric pressure. A combined pressure and vacuum gauge is used to display the tank pressure. The FT142 includes a cooler on the connecting pipe to the vacuum pump. Options are available for automatic vacuum control and for a condensation collector with a sight glass in the vacuum line.

The mechanical seals on the rotating shafts are automatically flushed with water via a solenoid valve, activated together with the motors.

The electronic control panel is enclosed to IP54 standard and made of 304 grade stainless steel. It includes start/stop controls and speed controls for the motors, temperature display, heating and cooling set points, plus emergency stop. Once the heating set point has been reached the temperature is maintained using on/off control.

The Armfield range includes HTST/UHT/aseptic systems, carbonator/filler/cappers, spray dryers/chillers, multifunction batch processors, ice cream freezers, margarine crystallisers, extractors, edible oils processors and more. For further information about our products and services, or to book a trial at one of our trials facilities, please contact us.

Specification

Mixer speed:	Variable to 3,000 rpm
Agitator speed:	Variable to 36 rpm
Maximum vacuum:	-950 mbar Gauge
Jacket pressure:	4 bar max
Maximum temperature:	100°C FT141 140°C FT142
Tank insulation	30mm

Ordering codes

FT141-10:	Ten Litre Multifunction Laboratory Mixer
FT141-20:	Twenty Litre Multifunction Laboratory Mixer
FT142-10:	Ten Litre UHT Multifunction Laboratory Mixer
FT142-20:	Twenty Litre UHT Multifunction Laboratory Mixer
FT141-10-E/FT141-20-E }	380-415V/3ph/50Hz
FT142-10-E/FT142-20-E }	
FT141-10-D/FT141-20-D }	208-220V/3ph/60Hz
FT142-10-D/FT142-20-D }	

Options

FT141-11/FT142-11	PLC control system with 6" (153mm) colour touch screen
FT141-12/FT142/12	Automatic vacuum control valve
FT141-13/FT142-13	Direct Steam Injection connection with valve
FT141-14/FT142-14	Water inlet to prove a measured quantity of water into the vessel, selectable in increments of 0.25l
FT141-15/FT142-15	Condenser and sight glass on vacuum pipe
FT141-10-16/FT142-10-16	Safety shield for 10l tank lid
FT141-20-16/FT142-20-16	Safety shield for 20l tank lid

Additionally extra sockets can be provided for additional instrumentation. All options must be specified at time of order.

Requirements

Electrical supply:	3 phase (see Ordering codes)
Steam (indirect heating):	13kg/hr max at 4 bar
Steam (direct heating):	75kg/hr max at 4 bar
Water:	8.5l/m at 4 bar constant pressure
Compressed air:	100L/min max at 6 bar
Electricity three phase:	6kW max (400V version runs off a standard 16A supply)

Overall dimensions

Height:	Lid closed	Lid open
Width:	1.75 m	2.15 m
Depth:	1.7 m	
	1.3 m	

Shipping specification

Volume:	5.7m ³
Gross weight:	910kg