



## MARGARINE PASTEURISATION UNIT

The FH SCANDINOX margarine pasteurisation unit is a compact skid mounted-unit, of sanitary design which is easy to integrate in the overall process plant, but which is also engineered to be easy to service and to keep a good maintenance practice.

### DESCRIPTION

The pasteurisation process has great process advantages in the margarine industry. It ensures that bacteria and other micro-organisms are removed from the final end product. FH SCANDINOX recommends to pasteurise the whole margarine emulsion as the water phase will also be a part of this pasteurisation sequence as well.

Another benefit when including a pasteurising system in the whole production line is to ensure that the emulsion is fed to the crystallisation line at a constant temperature achieving constant processing parameters, product temperatures and product texture. Furthermore, occurrence of pre-crystallised emulsion fed to the crystallisation equipment is prevented when the emulsion is properly pasteurised and fed to the high-pressure pump at a temperature of approximately 5°C higher than the melting point of the fat phase. All pasteurisation parameters can be controlled and recorded from the FH SCANDINOX automation system.

A typical pasteurisation process will after preparation of the emulsion in the mixing tanks at 45-55°C include a heating and holding sequence of the emulsion in a stainless steel holding tube at 75-85°C for 16 seconds, and subsequently a cooling process to a temperature of 45-55°C. The outlet temperature depends on the melting point of the fat phase. The higher the melting point, the higher the temperature.

### PRODUCT APPLICATIONS

- Table margarine
- Puff Pastry margarine
- Industrial margarine
- Cake margarine
- Low fat margarine
- Shortening
- Ghee
- Spreads

## DESIGN

The FH SCANDINOX pasteurising unit consists of a plate heat exchanger (PHE) with three sections for heating, cooling and heat recovery (up to 70%). It also includes two brazed PHE to provide the unit with hot water by condensing saturated steam and to provide cold water as well. Also pumps, process valves, flow diversion valve, temperature regulation valves, pipes, fittings and a holding tube designed for a holding time of 16 seconds, are included.

The FH SCANDINOX pasteurising unit is equipped with double jacketed product pipes. The hot water will be supplied from the internal hot water loop (the FH SCANDINOX hot water unit).

The margarine emulsion system can be delivered completely pre-manufactured with pipes and fittings, and electrically prewired to a local junction box as well. Ready to install at the factory site. The pasteurising system is prepared for CIP cleaning.

## MATERIALS

The stainless steel plates in the PHE are made of Titanium. The stainless steel holding tube is made of SAF904. Other product contacting parts are made of stainless steel AISI 316L.

## NOMINAL CAPACITY

The nominal capacity is depending on product application and product and temperature profile. The nominal capacities listed in the table on the reverse side are based on emulsions with a fat content of 80% and a typical emulsion temperature profile of +40°C > +85°C > +40°C.

## CERTIFICATION

The construction is in accordance with the European Pressure Equipment Directive (PED) 97/23/EC. Other certifications can be delivered on request.

FHS Emulsion Pasteurising Model	1200	1500	3000	5000	7000	10000
Capacity margarine emulsion. 80% fat. (Kg/h)	1200	1500	3000	5000	7000	10000
Max working low pressure (Bar)	10	10	10	10	10	10
Heat recovery (%)	70	70	70	70	70	70
Steam flow at 3,5 bar * (kg/h) *	20	25	50	80	115	165
Cold water requirement, max water temperature (C°)	30	30	30	30	30	30
Product pipe in-/outlet	1½"	1½"	1½"	1½"	2"	2"
Dimension LxWxH (CM)*	170x160x190	175x165x200	180x170x210	190x180x210	200x190x210	240x220x240
Weight (KGS)* *Approximately	600	700	900	1100	1400	1800

