TOMATO PASTE SACHET LINE MACHINERIES & EQUIPMENT

1.11. Tomato pasteurizer 1 (600 – 1.200l/h)

1.11.1. Pasteurizer plant type 6700/011

As product treatment plant with indirect heating system

Capacity:	600l/h – 1.200 l/h 3500l/h CIP
Product:	Tomato Paste max. viscosity 100 cp/10°C max. 38 Brix°

The heating and the cooling of the product is managed indirectly by the heat exchange with water in counterflow in the supplier's tubular heat exchanger. The economic relativity of the heat exchange area and product volume guarantees an optimal product quality with high efficiency concerning the energy units.

The pressure and temperature stability of the tubular heat exchanger have simple and safe seals. Straight and smooth product-flow is assuring a safe CIP and inspection.

Specification:

1.11.2. 1 Tubular heat exchanger system

Subdivided as follows:

1 High heating system from approx. 45°C to 92°C by heat exchange with hot water in counter flow.
1 Cooling system from 92°C to approx. 45°C by heat exchange with water in counter flow
1 Heating system for the hot water circuit
The water is heated to the required temperature by heat exchange with steam before it enters the high heating system.
1 Cooling system for the product
The product is cooled, if necessary, by heat exchange with cooling water before it enters the return.
The cooling water is fed by a regulating valve.
The cooling system is heated by steam during the sterilisation of the system in order to shorten the sterilisation time.
1 Heat holder of tube DIN 11850, with following heat holding time:
Approx. 30 seconds flow time at nominal capacity

Operating platform

1 Balance tank

- Standing, round, closed execution, with man hole (200 mm)
- Material no. 1.4301 / AISI 304
- Spray ball for CIP
- Level control by magnetic switches and floater
- Agitator

A special valve combination avoids the mixing of product and water in the balance tank during start, interruption and stop.

1 Expansion receptacle for closed circulation (regenerative circuit)
2 Screw pump as product feed pump (frequency controlled) Type Bornemann
1 Centrifugal pump as feed pump for the hot water circuit (high heating system, frequency controlled)
1 Complete set of valves, ball valves, fittings and accessories

1.11.3. Measuring and control devices

1 Temperature control for the outlet temperature
1 Temperature control for the high heating temperature
1 Flowmeter for the regenerative circuit
1 Inductive flowmeter for the product way
1 Flowmeter for the high heating circuit

1. PACKAGING SPECIFICATIONS

MODEL	ML-1000 6
MAX FORMAT ACHIEVABLE	150x200 mm
MIN FORMAT ACHIEVABLE	40x50 mm
NUMBER OF TRACKS	6
NUMBER OF CYCLES*	50 c/min
MAXIMUM REEL WIDTH	1000 mm
REEL DIAMETER	Ø 500 mm
REEL CONE DIAMETER	Ø 3" -76,2 mm
MACHINE SIZE	See Layout
POWER CONSUMPTION	29 Kw
PNEUMATIC CONSUMPTION	580 Nl/min
INERT GAS CONSUMPTION	-
WEIGHT**	3400 Kg
FEET NUMBER	8
SOUND LEVEL	78 dB
COLOUR	RAL 9007
SAFETY	EC REGULATIONS ***

FORMAT:	**83 x 140 mm (TBC) – 4 sides sealed**
FILM MATERIAL:	TO BE DETERMINED BUT HEATSEALABLE
PRODUCTION SPEED:	Between 270 - 300 Sachets / minute [1]

2. EQUIPMENT DESCRIPTION

The ML-1000 has been designed to satisfy customer needs and also to adapt to the latest market trends. It is a machine that can fill powder, liquids, granules, etc. These machines incorporate all the technology and know-how from the horizontal machines.

Depending on the pouch format, a different amount of lanes can be fit in the ML-1000, thus allowing producing simultaneously.

3. EQUIPMENT ELEMENTS

FRAME

- The frame of the machine has been designed in a unique module. It incorporates **fixed and mobile polycarbonate protections** in order to allow the vision of the working parts as well as the access for maintenance and cleaning tasks.
- The module has been manufactured in **reinforced carbon steel sheet (F-111)** and complemented with the following painting processes:
    - **Surface cleaning** by means of erosion, using solid granulate material impulsion.
    - **Primer** layer, 30 µ.
    - Polyester putty **filling**, 120µ.
    - HEMPADUR **intermediate layer**, 120µ.
    - Ral 9007 **stainless paint** finishing, acrylic, 40µ.
- This process guarantees larger paint durability, protecting steel from external aggressions.

- High stability and rigidity from the reinforcements, avoiding vibrations while the machine works.
- A **stainless steel (AISI-304) cladding** is placed at the top part of the module which protects the top part of the frame.
- Base plate **protected** by a **stainless steel cladding (AISI-304)**, thus increasing protection, cleaning easiness and hygiene.
- **Four stainless steel (AISI-304)** and height adjustable **feet** contribute to high frame stability.
- Framed protections with **safety locks and machine stop**.
- Incorporates a **10" color touch screen** for controlling and adjusting the adjustable devices.

REEL UNWINDER

This group is responsible for unwinding the film reel and feed the machine's film pull unit.

- **Direct motorized** film unwinding.
- Capacity for **one reel** with a maximum diameter of 500 mm and a maximum width of 1000 mm.
- The reel shaft **expands pneumatically** using a compressed air pneumatic gun, thus facilitating reel replacement.
- **Film buffer** by means of a pneumatical system. It keeps the film tension constant while unwinding.
- **Splicing table** at 1 meter height, hence facilitating reel splicing and replacement. Pneumatic brake and press.
- A **reel edge aligner** corrects the film position using a linear motor driven by two electrical cells. This allows using 100% of the reel width, no film waste is generated.
- End of reel **warning sensors**.

FILM PULL DRIVE

Higher production speeds achieved with an innovative film pulling system, only existing in the Mespack machines.

- High performance gear box
- 9,2 Nm servo motor gear box (Allen Bradley)
- **Additional servo motor** gear box placed at the unwinder unit.
- **Adjustable speeds** in order to adapt to both product and film.
- **Adjustable pouch length** through the HMI.
- **Pneumatic** compensator cylinders adjusted through **safety valves**.

CIRCULAR LANE KNIVES

This group is responsible for longitudinally cutting the film in a determined amount of lanes, depending on the machine.

- **Servo Motor driven** knives and counter knives.
- Knives made of **special steel, tempered** until ensuring 60 HRC hardness. High **wear resistance**.
- Circular knives with an **independent pressure system** for the cutting.

VERTICAL AND BOTTOM JAW

This electro-pneumatic group is in charge of the stick's vertical sealing.

- A **servo driven** motor actuates on each machine **cycle**.
- A **servo driven** motor actuates **when machine stops**, opening the vertical sealers from the film and thus avoiding them to burn the film.
- **Easy opening system** for cleaning and maintenance tasks.
- The amount of sealers depends on the machine model. Each one contains a **250 W resistance**.
- **Independent PT-100 temperature** probes for each sealing bar.
- **Independent control** through the HMI for each sealing bar.

ROTARY INDEPENDENT SERVO DRIVEN KNIVES

This electro-pneumatic group is responsible for cutting and hence separating the sticks.

- **Servo driven**.
- Rotary knife made of **special tempered steel** (60 HRC), ensuring a **high wear resistance**.

EXIT RAMP AND REJECT

- Exit ramp for the finished sachets. It can be customized according to customer requirements.
- Individual sachet rejection or cycle rejection.

SACHET EXIT CONVEYOR