



# A COMPLETE FRUIT LINE PROPOSAL



## DL FRUITLINE

### FOOD PROCESSING LABORATORY



Image for illustrative purposes only

Food technology has evolved into an interdisciplinary area based on chemical engineering and food science dealing with the production processes that make foods. Food industries are constantly seeking to improve quality and cost-effectiveness of food products, trying to carry out more sustainable and environmentally-friendly industrial activities.

In order to respond to the growing demand for skilled technicians and qualified personnel in the food technology sector, technical institutes and universities need to extend their educational offer by equipping relevant laboratories with suitable machines and equipment.

De Lorenzo has developed this fruit line laboratory with the aim of providing knowledge and expertise on food processing technology. Students will be able to observe a complete production cycle and work on a wide range of machines through hands-on practice of individual operations (washing, mixing, separating, extracting, etc.).

This laboratory is designed to allow students the possibility to handle raw materials, prepare and cook food and food products. With this laboratory, students can process up to 100 kg per hour of fresh products.

This fruit handling line is designed to process fresh fruit (raw materials) such as fresh apples, pears, peaches, apricots, tomatoes and mangoes. The finished product will be fruit cream, jam or juices. The laboratory is composed of the elements described in the following pages.



# A COMPLETE FRUIT LINE PROPOSAL

## **Batch washing machine with basket – capacity 500L.**

Function: for washing the product with blown air generated by an electric fan.

Construction features:

- Machine made entirely of AISI 304 stainless steel
- Structure made of 3mm bent sheet metal
- Perimeter reinforcements with tubular profiles
- Floor supports with tubular profiles and height-adjustable feet
- Ball valve for regulating inlet water
- Ball valve for bottom outlet
- Sheet steel solid sides
- Blower for air blowing, complete with piping
- Perforated sheet basket

Technical features:

- Tank capacity: approx. 500lt - Dimensions: 700x850x950mm
- Basket capacity: 300lt - Dimensions: 600x750x700mm
- Power used: 0.75Kw

## **Tilting Table dim. 800x1800mm**

Function: for the manual operation of selection of fruit and vegetable products

Construction features:

- Structure in AISI 316 stainless steel
- Work-top in 2mm bent sheet metal
- Floor supports with 40x40x2mm tubular profiles
- Mounted on pivoting wheels

Technical features:

- Length: 1800mm
- Width: 800mm
- Height: 900mm



## **Shredder for Fruit complete with Interchangeable Grill, Ø220x200mm**

Function: for shredding food products such as fruit and tomato. With interchangeable perforated grill for different sizes of product

- Construction features:
- Support structure in AISI 304 stainless steel
  - No. 1 loading hopper in AISI 304 stainless steel
  - No. 1 discharge hopper in AISI 304 stainless steel
  - Shredding chamber
  - Mobile shredding chamber closure system
  - Rotating beater
  - Control unit with direct drive motor via direct coupling
  - Transmission guard

Technical features:

- Length: 1000mm
- Width: 400mm
- Height: 500mm
- Installed power: 1.5kw



# A COMPLETE FRUIT LINE PROPOSAL



## **Mango Destoner, Ø420x1000mm**

Function: this machine is suitable both for pitting ripe fruit and also cleaning the stones of the fruit, such as peaches, apricots, plums and cherries. The fruit is fed through an input hopper with an auger, which ensures a smooth flow in the area where the beaters, rotating at high speed, spin the product.

The puree passes through the holes of the sieve and falls into the exit hopper, while the pits and other scraps come out from the rear of the machine.

The diameter of the sieve holes varies according to the product. In the canning industry, the product can work either alone or as a stone cleaner.

### Construction features:

- Entirely built in stainless steel
- Robust and structure with 2 head and 2 side panels connected to the structure
- Structure with tubular 3mm support and floor connection
- 3mm side panels for the punctured housing and beaters
- Cream collecting tank from processing
- Rotor consists of a central shaft mounted on roller bearings and bearing supports at the ends
- 2 four-tooth stars with bushes for fixing beaters
- 4x shaped beaters complete with food rubber quickly adjustable and replaceable
- Perforated sieve, easily and quickly replaceable, constructed from stainless steel (perforated with 8mm hole)
- Product feeding hopper with product flow auger
- Pipe with ball valve and sprayers for washing the perforated and the collection tank
- Easy to open inspection covers fitted with safety micro switches.
- Waste discharge with shaped mouth and safety micro on the removable part
- Control unit with motor coupled with pulleys with conical bushes

### Technical features:

- Length: 1700mm
- Width: 1200mm
- Loading Height: 1500mm
- Sieve: Ø420x1000mm, 8mm hole
- Passing power: 11kw

Important note: it is possible to remove this unit (mango destoner) from the list of lab equipment in case you do not need to process fruit like mango.

## **Refiner, 220x= 800 complete with 50L Tank and Extraction Pump**

Function: this machine is suitable both for passing and refining ripe or cooked fruit. The fruit is fed through an input hopper with an auger, which ensures a smooth flow in the area where the beaters, rotating at high speed, spin the product.

The puree passes through the holes of the sieve and falls into the exit hopper, while the other scraps come out from the rear of the machine. The diameter of the sieve holes varies according to the product





# A COMPLETE FRUIT LINE PROPOSAL



## Construction features:

- Entirely built in stainless steel
- Robust with 2 headboards and 2 thick side panels connected to the structure
- Structure with tubular 3mm support and floor connection
- 3mm side panels for the punctured housing and beaters
- Cream collecting tank from processing
- Rotor consisting of a central shaft mounted on roller bearings and bearing supports at the ends
- 2 three-tooth stars with bushes for fixing beaters
- 3x shaped beaters complete with food-grade rubber that can be quickly adjusted and replaced
- Perforated sieve, easily and quickly replaceable, constructed from stainless steel (perforated with 8mm hole)
- Product feeding hopper with product flow auger
- Pipe with ball valve and sprayers for washing the perforated and the collection tank
- Easy to open inspection covers fitted with safety microswitches.
- Waste discharge with shaped mouth and safety micro on the removable part
- Control unit with motor coupled with pulleys with conical bushes
- Belt transmission with protection papers
- 50lt juice collecting tank with level regulator for running and stopping the pump
- AISI 316 mono pump for pressure up to 4.5 bar complete with speed control
- Pump coupling with speed control by linear coupling
- Support base in stainless steel 304 stainless steel

## Technical features:

- Length: 1500mm
- Width: 900mm
- Loading height: 1200mm
- Sieve: Ø220x800mm
- Passing power: 3kw
- Pump power: 1.1Kw

## Mixing Tank with slow stirring agitator - capacity 300lt

Functional Cycle: conical bottom tank with slow paddle stirrer for mixing products with different features.

## Construction features:

- Made entirely of AISI 304 stainless steel
- Satin and pickled internal and external surface with food grade finish
- Conical bottom with total discharge and stainless steel butterfly valve
- CIP Washing with divosphere and attack DN 32
- Slow agitator with still driven by gear motor
- Cavity placed on the planking and on the bottom of the tank
- Insulation of the entire tank with rock wool covered with stainless steel sheet
- Temperature regulation system with PT100 probe and pneumatic valve for thermal flow regulation
- 3x support legs





# A COMPLETE FRUIT LINE PROPOSAL



Technical features:

- Plating diameter: 650mm
- Total height: 1450mm
- Power used: 0.5kw
- Capacity: 300lt

## **Mono Extraction Pump for Puree of Fruit**

Function: mono pump for transferring the treated product to subsequent users.

Construction features:

- Single stage pump with graphite mechanical seals
- Inlet and outlet DN 65
- Operating pressure up to 4.5 bar
- Control unit with coaxial motor variator
- Rubber stator with parts in contact with the product in 316 stainless steel

Technical Features:

- Electrical protection: IP 55
- Installed power: 1.1 kw

## **Accessories**

Function: provide connections between the machines allowing easy, safe and hygienic transfer of food

Construction features:

- Stainless steel working platform between the pitting and chopping unit and the mixing tank and extraction pump.
- Taps, manual control valves, piping, fittings, joints etc in stainless steel. Pre-assembled and tested in factory

## **Electrical Cabinet**

Function: for the electrical management of utilities.

Construction features:

- Framework of the cabinet in stainless steel.

The following equipment are installed inside the panel:

- Main switch with handle, door lock and release bobbin
- Key selector for the exclusion of door safety devices
- Transformer for auxiliary circuits complete with fuses
- Motor starter groups consisting of contactor with magneto thermal switch
- Wiring accessories
- Wiring diagram
- Connection of utilities in the workshop will be made on site by a series electrical circuits
- All accessories included

## **Steam Bowl 100L**

Function: steaming food products at atmospheric pressure.

Construction features:

- Mixing and cooking bowl Ø 600 mm, fixed type with support foot, total capacity approx. 150L,
- Steam-operated at a maximum pressure of 3 bar
- Hemispherical external bottom in AISI 304 stainless steel with glass wool insulation and stainless steel jacket
- Internal hemispherical bottom and conical trimming strip in AISI 304 stainless steel





# A COMPLETE FRUIT LINE PROPOSAL

- The two bottoms are joined by a ring and electrically welded

The basin is complete with the following accessories:

- Manual product ball discharge valve
- Safety valve
- Pressure gauge and pressure gauge
- Condensate drain
- Stirrer with pin and stainless steel bars and teflon scrapers, driven by a 0.37 Kw gear motor, 14 rounds per minute
- Lid in three sections, one of which is fixed, to support the agitator and two that can be opened
- Support feet in stainless steel
- Machine complete with pneumatic pump to transfer the product to the dosing machine

Technical features:

- Steam consumption approx. 50 Kg / h
- Installed power: 0.75 Kw

## Volumetric Pump for Jam

Function: to transfer the product to the dosing machine.

Construction features:

- Manufactured in AISI 316 stainless steel suitable for food products
- Control unit with variator
- Support base in stainless steel AISI 304
- Committed power. 1.1kW

## Accessories

Function: to connect utilities to provide a working production line.

Construction features:

- Connections, Taps, Valves, Pipes, Fittings, Joints
- All in Stainless Steel
- Pre-assembled and tested in factory



## Electrical Cabinet

Function: for the electrical management of utilities.

Construction features:

- Framework of the cabinet in stainless steel.

The following equipment are installed inside the panel:

- Main switch complete with handle with door lock and release bobbin
- Key selector for the exclusion of door safety devices
- Transformer for auxiliary circuits complete with fuses
- Motor starter groups consisting of contactor with magneto thermal switch
- Wiring accessories
- Electrical diagram
- Connection of utilities in the workshop will be made on site by a series electrical circuits
- All accessories included



# A COMPLETE FRUIT LINE PROPOSAL



## **Semi-Automatic Bench Filler, 1000cc**

Function: bench-top volumetric pneumatic dispenser with adjustable stroke dosage for thick products such as jam or puree

Construction features:

- Structure made entirely of AISI 304 stainless steel

The dosing unit consists of:

- Suction syringe with stroke up to 1000 cc
- Teflon gaskets
- Filling nozzle
- Product volume adjustment system to be dosed with hand wheel
- Indicator on the graduated reading scale of the desired volume
- Height adjustment of the vessel support plate to be filled
- 30L stainless steel hopper with stirrer and level
- Dosing operation with button or pedal.

Technical features:

- Production: 300 / 400pz / h depending on the product and format

## **Work Table with Shelf, dim. 800x1800mm**

Function: for the manual selection of fruit and vegetables

Construction features:

- AISI 304 stainless steel structure
- Work-top in 2mm bent sheet metal
- Support shelf below in 2mm sheet metal
- Floor supports with 40x40x2 tubular profiles
- Mounted on pivot wheels

Technical features:

- Length: 1800mm
- Width: 800mm
- Height: 900mm

## **Pasteurization Tank with Steam, complete with Basket, Capacity 300L**

Function: tub for heat treatment of glass jars.

Construction features:

- Pasteurization tank made of AISI304 stainless steel with 3mm sheet steel
- Perforated stainless steel AISI 304 basket with perimeter reinforcements
- Upper cover can be opened pneumatically
- Water heating system by indirect water / steam exchange via coil
- The introduction of steam is controlled by a pneumatic on/off valve
- The temperature is controlled automatically by a PT100 probe
- The steam unit includes a started flow valve, a filter, a pressure gauge and a condensate discharge unit
- The cooling of the vessel after the pasteurization cycle is carried out through cold water inlet also controlled by a pneumatic on / off valve
- Overflow pipe which drains excess water
- Water inlet hose with ball valve
- Bottom outlet complete with pipe, fittings and ball valve
- Electric control panel which allows the setting of pasteurization time and temperature, cooling time and temperature depending on the product to be processed



# A COMPLETE FRUIT LINE PROPOSAL



Optional:

- Temperature control probe inside the product with the possibility of downloading the cycle data using a key

Technical features:

- Capacity of the tank: 300lt
- Steam consumption at 3 bar 80kg / h

Accessories:

- 1x Perforated stainless steel basket

## Manual Loading Crane

Function: for manually controlled lifting of products to be processed and to tilt the basket into the pasteurization unit

Construction features:

- Lifting unit for baskets in perforated sheet
- Realization in painted carbon steel
- Lifting piston with manual control
- Assembly of the structure on pivoting wheels
- Lifting arm adjustable according to the weight to be lifted



## Static Dryer

Function: for drying all fruit and vegetable products, excluding cereals.

Construction features:

- Each external panel is equipped with double-hook fasteners
- Assembly takes place from the inside
- All the panels, whose total thickness is 60mm, are insulated in polyurethane directly injected between the two faces
- Made of galvanized sheet 6/10 + non-toxic scratch-resistant PVC 1.5 / 10
- Each module includes 1 trolley with 20 frames 1200x600mm
- Steam heating
- The structure is complete with U-shaped profiles for fixing
- Automatic control panel complete with all automaticity, protection and programming accessories including digital read-out electronic thermostat for automatic temperature regulation

Technical features:

- Indicative external dimensions: 2250x750x2150mm
- Steam consumption: 40Kg / h

## Rapid Steam Generator, Capacity 200kg/H

Function: for the production of steam necessary for machine operation. Construction features:

- Horizontal water tube steam generator MOD. A / 200, CE approved
- Exempt from the obligation of the licensed stoker
- Complete with accessories
- Generator equipped with food tank and recovery of condensate in stainless steel mounted on a steel plate platform, stainless steel, with all internal electrical and hydraulic connections already made.
- Two-stage methane gas burner
- Automatic water softener, ion exchange, with container in polyester resin reinforced with fiberglass

Technical features:

- Steam production: 200Kg / h
- Steam pressure: 5bar
- Operating temperature: 158 ° C





# A COMPLETE FRUIT LINE PROPOSAL

## Accessories

Function: to connect utilities to provide a working production line.

Construction features:

- Steam connection pipe between the various utilities
- Complete with manual cast iron support, brackets and valves
- Pipes and fittings

## Air Generator with 500L Tank and Dryer

Function: for the production of air necessary for all industrial applications where, by law, the noise level of the working environment must not exceed a certain number of decibels.

Construction features:

- Electro-piston compressor inserted in a soundproof cabinet with material
- Fireproof soundproofing
- Vacuum solenoid valve to facilitate compressor start-up

Technical features:

- Tank capacity: 500lt / min

## Accessories

Function: to connect utilities to provide a working production line.

Construction features:

- Compressed air connection pipe from the compressor at the various utilities
- Pipes and fittings



## Bowl

Suitable for transporting food

AISI 304 stainless steel structure

1" discharge valve on the bottom

4 swivel castors with brake

Handle for easy displacement

## Cooker Hood

Suitable to extract vapours in the cooking area

AISI 304 stainless steel structure

Electric forced aspirator

## Semi-automatic bench top twist off caps machine

Construction features:

- AISI 304 stainless steel structure
- Closing head for twist off caps
- Powered by pneumatic motor
- Pneumatically adjustable clutch
- Crossbar with sliding supports
- Hand wheel for cap head adjustment
- Cantering device for jars in stainless steel
- Machine control through pneumatic foot control
- Electro-pneumatic on-board control unit



# A COMPLETE FRUIT LINE PROPOSAL

