SWISS ENGINEERING & ITALIAN MANUFACTURING

Matrix is an ice cream equipment manufacturer that has engineering & trade department in Switzerland and factory in Italy. Our mission is manufacture state of the art ice cream machines and offer to the customers the best value for money.

Matrix ice cream equipment are heavy duty, easy to use, suitable for different tasks and deliver the best ice cream structure with any kind of recipe. Highly efficient refrigeration, accurate filling technology, cleaning and disinfection, have made Matrix equipment a leader between the ice cream equipment manufacturers.

Matrix helps novice entrepreneurs in ice cream business to set up new production lines: factory project, layout of equipment, technology transfer, development of custom made recipes, training to local staff.
Mix processing lines, suitable for mixing, pasteurization, homogenization and cooling of ice cream mix. Output from 150 to 1200 liters per hour.

The lines include:
- two tanks for ingredients mixing and pasteurizing up to +85°C
- centrifugal pump with cartridge filters
- high pressure homogenizer
- plates heat exchanger at 2 stages
- electronic control panel
- automatic water counter
- precision mix temperature control system
- The lines can work electric, steam or gas
- All the equipment are pre-assembled on a platform made of stainless steel
Electronic Milk counter

Plates heat exchanger at 2 stages

Optionals:
- electronic temperature data recorder for HACCP
- electronic sanitary milk doser
- second stage homogenization
- triblender

<table>
<thead>
<tr>
<th>MIXPLANT batch</th>
<th>M150</th>
<th>M300</th>
<th>M600</th>
<th>M1200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production liters per hour</td>
<td>150</td>
<td>300</td>
<td>600</td>
<td>1200</td>
</tr>
<tr>
<td>Pasteurizing system</td>
<td>Batch</td>
<td>Batch</td>
<td>Batch</td>
<td>Batch</td>
</tr>
<tr>
<td>Homegenizing pressure 1st stage</td>
<td>250 BAR</td>
<td>250 BAR</td>
<td>250 BAR</td>
<td>250 BAR</td>
</tr>
<tr>
<td>Homegenizing pressure 2nd stage (Optional)</td>
<td>50 BAR</td>
<td>50 BAR</td>
<td>50 BAR</td>
<td>50 BAR</td>
</tr>
<tr>
<td>Pasteurizing temperature</td>
<td>+85°C</td>
<td>+85°C</td>
<td>+85°C</td>
<td>+85°C</td>
</tr>
<tr>
<td>Controls</td>
<td>EMC</td>
<td>EMC</td>
<td>EMC</td>
<td>EMC</td>
</tr>
<tr>
<td>Voltage</td>
<td>V. 400/3/50</td>
<td>V. 400/3/50</td>
<td>V. 400/3/50</td>
<td>V. 400/3/50</td>
</tr>
<tr>
<td>Electric power</td>
<td>5.3 Kw</td>
<td>7.4 Kw</td>
<td>9.8 Kw</td>
<td>16.5 Kw</td>
</tr>
<tr>
<td>Heating</td>
<td>Gas or electrical</td>
<td>Gas or electrical</td>
<td>Gas or electrical</td>
<td>Gas or electrical</td>
</tr>
<tr>
<td>Final Cooling</td>
<td>Chilled water +1°C</td>
<td>Chilled water +1°C</td>
<td>Chilled water +1°C</td>
<td>Chilled water +1°C</td>
</tr>
</tbody>
</table>
Continuous mix processing lines, suitable for mixing, pasteurization, homogenization and cooling of ice cream mix. Output from 1200 to 5000 liters per hour. Pasteurization and cooling through the heat exchanger HTST.

The line includes:
- The lines include:
- two tanks for ingredients mixing and heating at 55°C
- two centrifugal pumps
- two cartridge filters
- high pressure homogenizer
- plates pasteurizer and heat exchanger at 5 stages
- holding section
- electronic control panel
- electronic temperature data recorder for HACCP
- automatic water counter
- precision mix temperature control system
- The lines can work steam or gas
- All the equipment are pre-assembled on a platform made of stainless steel
- Energy saving up to 75%
Optionals:
- electronic sanitary milk doser
- second stage homogenization
- trilender turbo trilender
- mixers for fruit
- tubular heat exchanger for fruit mixes
- fats melting tank

<table>
<thead>
<tr>
<th>MIXPLANT</th>
<th>1200 HTST</th>
<th>2000 HTST</th>
<th>3000 HTST</th>
<th>5000 HTST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production liters per hour</td>
<td>1200</td>
<td>2000</td>
<td>3000</td>
<td>5000</td>
</tr>
<tr>
<td>Pasteurizing system</td>
<td>HTST Plates</td>
<td>HTST Plates</td>
<td>HTST Plates</td>
<td>HTST Plates</td>
</tr>
<tr>
<td>Homegenizing pressure 1st stage (BAR)</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Homegenizing pressure 2nd stage (optional) (BAR)</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Pasteurizing temperature (°C)</td>
<td>+85</td>
<td>+85</td>
<td>+85</td>
<td>+85</td>
</tr>
<tr>
<td>Controls</td>
<td>EMC</td>
<td>EMC</td>
<td>EMC</td>
<td>EMC</td>
</tr>
<tr>
<td>Voltage</td>
<td>V. 400/3/50</td>
<td>V. 400/3/50</td>
<td>V. 400/3/50</td>
<td>V. 400/3/50</td>
</tr>
<tr>
<td>Electric power (Kw)</td>
<td>21.5</td>
<td>32</td>
<td>42</td>
<td>58</td>
</tr>
<tr>
<td>Heating</td>
<td>Gas or Steam</td>
<td>Gas or Steam</td>
<td>Gas or Steam</td>
<td>Gas or Steam</td>
</tr>
<tr>
<td>Intermediate cooling</td>
<td>Mix recovery</td>
<td>Mix recovery</td>
<td>Mix recovery</td>
<td>Mix recovery</td>
</tr>
<tr>
<td>Final Cooling</td>
<td>Chilled water</td>
<td>Chilled water</td>
<td>Chilled water</td>
<td>Chilled water</td>
</tr>
</tbody>
</table>
AGEING TANKS

Stainless steel tanks, cooled by circulating of chilled water (compressor not included), complete with a slow stirrer and a sloping bottom.

They are studied specifically to bring to maturity a mixture of ice cream in a constant temperature of +4°C keeping homogeneous the mass, contents of the tank.

Available capacity from 300 liters to 5000 liters.

Hermetically sealed for maximum hygiene and easy cleaning of CIP.

<table>
<thead>
<tr>
<th>TWM</th>
<th>Capacity it.</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>300</td>
<td>+4°C</td>
</tr>
<tr>
<td>600</td>
<td>600</td>
<td>+4°C</td>
</tr>
<tr>
<td>1200</td>
<td>1200</td>
<td>+4°C</td>
</tr>
<tr>
<td>2400</td>
<td>2400</td>
<td>+4°C</td>
</tr>
<tr>
<td>3000</td>
<td>3000</td>
<td>+4°C</td>
</tr>
<tr>
<td>5000</td>
<td>5000</td>
<td>+4°C</td>
</tr>
</tbody>
</table>

Perfect polishing inside the tank hermetic seal cover.
High pressure homogenizers specifically designed to work with ice cream and dairy products. The range of Matrix homogenizers start from 50 up to 10000 liter per hour. All the equipments can be installed in the customer lines.

**Specifications:**

- completely manufactured in stainless steel -
- working pressures available up to 1000 BAR -
  - single or double stage available -
  - ready for CIP cleaning -
- homogenizing head made for abrasive products -
- pneumatic adjustment of pressure -
- pressure gauge in stainless steel -
- electric control panel and safety devices -
- Option aseptic model -
Chilled water tanks are refrigerating equipment that produce chilled water at +1°C. Chilled water in ice cream and milk processing lines ensure a safe work even in case of gasket leakages. Completely manufactured in stainless steel, with semi-hermetic compressor. Water is accumulated in a tank and is refrigerated by plates. Standard units are water condensed, and air condensed units are available as option.

Evaporating plates in stainless steel and water chilling tank.

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity watt</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 20</td>
<td>20000</td>
</tr>
<tr>
<td>R 32</td>
<td>32000</td>
</tr>
<tr>
<td>R 40</td>
<td>40000</td>
</tr>
<tr>
<td>R 57</td>
<td>57000</td>
</tr>
</tbody>
</table>
COOLING TOWER
A cooling tower is a gas-liquid heat exchanger inside which the liquid phase transfers thermal energy to the gas phase, thus reducing its temperature. In most cases the gas phase is constituted by air or water vapor and the liquid phase from water of various types.

A cooling tower allows to cool and recycle the water of a whole ice cream line, with economy up to the 95% of the total water required by the plant.

Special model available
- super silent
- for installation in Hot climates
- for installation in cold climates
CIP UNITS

MANUAL CLEANING IN PLACE
The CIP SYSTEM 1200/3TANKS is a small integrated system suitable for washing and sanitizing small and medium-sized ice cream production plants.

The system consists of three tanks, electrically heated with adjustable temperature for washing, sanitizing and rinsing solutions. A pump is connected to the three outputs to circulate the selected solution in the production circuit and in the plant equipment.

The tanks are equipped with a tap to be able to select which of the three tanks is to be used, according to the washing plan.

A return pump is connected to the utilities to return to CIP the washing solution. By circulating alternatively the solutions, washing and sanitizing of pipes, taps, valves, tanks that make up the system itself is carried out.

---

<table>
<thead>
<tr>
<th>Type</th>
<th>Ice cream capacity</th>
<th>Time of complete Cycle</th>
<th>Capacity</th>
<th>Dimensions</th>
<th>Voltage</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIP 1200/3T</td>
<td>2000</td>
<td>60 min.</td>
<td>3 x 150 lt.</td>
<td>130/96/128</td>
<td>400/3/50</td>
<td>19.5</td>
</tr>
</tbody>
</table>
CFI FREEZERS

SEMI AUTOMATIC CONTINUOUS FREEZERS
Main Features:
- Materials and components of the highest quality, designed to grant reliable and long lasting operations
- Easy access to components for maintenance
- Bitzer semi hermetic refrigeration compressor
- Pneumatic adjustment of freezing cylinder pressure
- Accurate viscosity control by hot gas smart management system
- Hybrid rotor-volumetric 2 stages piston pump, ensure
  - high operation pressure of the cylinder
  - no need to use extraction pump for models 400 and 700
  - flexible to work with high or low overrun
  - fully suitable to handle mixes with seeds, pulp and high fats contents
  - low cost of maintenance
  - quick service time
- Dasher in stainless steel with eccentric stirrer and single piece scraping blades
- Ultra-high efficiency cylinders with new evaporation cyrcuit designed to reduce power and water consumption and deliver high quality ice cream
- Air sterilization set of filters allows use of factory compressed air
- Certified according CE standards
- Ready for production with connection of electricity, water and compressed air.

<table>
<thead>
<tr>
<th>Type</th>
<th>Ice cream output liters per hour</th>
<th>Overrun</th>
<th>Overrun adjustment</th>
<th>Ice cream outlet temperature</th>
<th>Dimensions</th>
<th>Voltage</th>
<th>Power</th>
<th>Cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFI 300</td>
<td>300</td>
<td>10%-130%</td>
<td>air injection</td>
<td>-2 / -9°C</td>
<td>72/150/155</td>
<td>400/3/50</td>
<td>7.8</td>
<td>Water</td>
</tr>
<tr>
<td>CFI 400</td>
<td>400</td>
<td>10%-130%</td>
<td>air injection</td>
<td>-2 / -9°C</td>
<td>72/160/165</td>
<td>400/3/50</td>
<td>10.5</td>
<td>Water</td>
</tr>
<tr>
<td>CFI 600</td>
<td>600</td>
<td>10%-130%</td>
<td>air injection</td>
<td>-2 / -9°C</td>
<td>72/160/165</td>
<td>400/3/50</td>
<td>16.8</td>
<td>Water</td>
</tr>
<tr>
<td>CFI 800/E</td>
<td>800</td>
<td>10%-130%</td>
<td>air injection</td>
<td>-2 / -9°C</td>
<td>85/175/172</td>
<td>400/3/50</td>
<td>26</td>
<td>Water</td>
</tr>
<tr>
<td>CFI 1200/E</td>
<td>1200</td>
<td>10%-130%</td>
<td>air injection</td>
<td>-2 / -9°C</td>
<td>85/195/172</td>
<td>400/3/50</td>
<td>33</td>
<td>Water</td>
</tr>
<tr>
<td>CFI 1500/E</td>
<td>1500</td>
<td>10%-130%</td>
<td>air injection</td>
<td>-2 / -9°C</td>
<td>85/215/172</td>
<td>400/3/50</td>
<td>36</td>
<td>Water</td>
</tr>
</tbody>
</table>
Matrix is proud to introduce the new CFX range of continuous ice cream freezers, which is the result of over 40 years experience in ice cream equipment manufacturing. The result is a range of fully automatic, operator-friendly, heavy duty and flexible ice cream freezers, that grants high performance and accurate controls, with capacity from 400 to 1600 liters per hour.

Features of CFX freezers:

- SIEMENS S7 PLC with 9-HMI grants fast response and reliable work
- Automatic start up procedure
- Hold on production allows interventions on the filling machine avoiding wastes
- Quick resume production automatic procedure
- Automatic stop procedure
- Adjustable parameters:
  - ice cream mix inlet flow
  - ice cream viscosity (hardness)
  - overrun
  - cylinder pressure
- All parameters are saved under recipes
- Smart operator warnings designed to prevent malfunctions
- Alarms record of anomalies and malfunctions
- Data production record and statistic
- Guide to maintenance operations
- Built-in drive of filling valve, adjustable from program
- Three CIP cycles designed, for manual, semi-automatic and automatic washing
**IF 100 Ingredients feeder** - It is an equipment suitable to mix dry ingredients, such as nuts, fruits, biscuits, chocolate pieces with ice cream outlet from continuous freezer. Such components can not be processed by freezer pump, and should be mixed with ice cream. IF 100 has a capacity up to 2000 liters per hour of ice cream, and can incorporate from minimum 5% of dry particles up to the 20% (variable according the product). The adjustment is easy thanks to 3 separate mixers for pump, hopper and final mixer. The ice cream pump keep high pressures due to its stron lamella structure.

<table>
<thead>
<tr>
<th>Type</th>
<th>Ice cream capacity Lt/h</th>
<th>Feeding ingredients</th>
<th>Capacity hopper Lt.</th>
<th>Dimensions cm.</th>
<th>Voltage V.</th>
<th>Power KW</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF 100</td>
<td>300-2000</td>
<td>5%-20%</td>
<td>40</td>
<td>75/102/141</td>
<td>380/3/50</td>
<td>2.4</td>
</tr>
</tbody>
</table>
DOSAPACK SEMI AUTOMATIC FILLING MACHINE

DOSAPACK DU-1R

DOSAPACK DU-BR-3
DOSAPACK - a semi automatic filler for ice cream containers of various dimensions and capacity. The standard machine can fill ice cream up to 3 colours. Special version are available for 4 colours filling. Spyral fillers can be fitted as option for "Manhattan effect" filling. The fillers are suitable to process ice cream with dry particulates such as nuts, raisins. A special ripple mixing head is available to get star filling effect. The machine should be connected to an air compressor.

<table>
<thead>
<tr>
<th>Type</th>
<th>Hourly capacity pcs/hr</th>
<th>Numbers of filling heads</th>
<th>Min/Max filling volume cc.</th>
<th>Production</th>
<th>Dimensions cm.</th>
<th>Voltage V.</th>
<th>Control</th>
<th>Compressed air required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOSAPACK DU</td>
<td>600-800</td>
<td>1,2 or 3</td>
<td>100-10000</td>
<td>containers,vats,cups</td>
<td>850/95/178</td>
<td>220/1/50</td>
<td>Semi automatic</td>
<td>6 BAR-200 nl min</td>
</tr>
<tr>
<td>DOSAPACK DU-BR</td>
<td>600-1000</td>
<td>2,3 or 4</td>
<td>100-10000</td>
<td>containers,vats,cups</td>
<td>850/95/178</td>
<td>220/1/50</td>
<td>Semi automatic</td>
<td>6 BAR-200 nl min</td>
</tr>
</tbody>
</table>
TP 4000
AUTOMATIC FILLING MACHINES
TP 4000 - A filling machine designed specifically for ice cream. Available 1 lane, hourly output capacity 3600 pieces per hour. Standard configuration provides for automatic positioning of the package with the filling of 1 or 2-colors ice cream, placement and pressing of lids, release of the finished product. As an option available a wide range of dispensers for syrup, chocolate, chips, cookies and other products. All the main movements are mechanicals. PLC controls the filling time and pneumatic controls.

<table>
<thead>
<tr>
<th>Type</th>
<th>Ice cream output</th>
<th>Production</th>
<th>Control</th>
<th>Dimensions</th>
<th>Voltage</th>
<th>Power</th>
<th>Compressed air required</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP4000</td>
<td>3600</td>
<td>cones and cups</td>
<td>Automatic with PLC</td>
<td>108/115/196</td>
<td>400/3/50</td>
<td>2,4</td>
<td>6BAR</td>
</tr>
</tbody>
</table>
TP 2000
AUTOMATIC FILLING MACHINES
T-LINE Main features:
- heavy duty machines, designed to work on 3 shifts
- hygienic design, easy to clean and disinfect
- available in 2, 3 and 4 lanes
- completely made in stainless steel
- easy product mould changeover
- PLC SIEMENS S7 with 9" colour touch screen
- remote assistance for software update
- optional available servo driven filler
- optional available 3d-filler

<table>
<thead>
<tr>
<th>Type</th>
<th>Hourly capacity</th>
<th>Numbers of lanes</th>
<th>Maximum filling volume</th>
<th>Production</th>
<th>Dimensions (cm)</th>
<th>Voltage (V)</th>
<th>Compressed air required</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-LINE/2</td>
<td>7200 pcs/hr</td>
<td>2 lanes</td>
<td>500</td>
<td>cones, cups</td>
<td>305/95/190</td>
<td>400/3/50</td>
<td>6BAR-1100 nl min</td>
<td>Automatic with PLC</td>
</tr>
<tr>
<td>T-LINE/3</td>
<td>10800 pcs/hr</td>
<td>3 lanes</td>
<td>500</td>
<td>cones, cups</td>
<td>440/120/190</td>
<td>400/3/50</td>
<td>6BAR-1100 nl min</td>
<td>Automatic with PLC</td>
</tr>
<tr>
<td>T-LINE/4</td>
<td>14400 pcs/hr</td>
<td>4 lanes</td>
<td>500</td>
<td>cones, cups</td>
<td>440/120/190</td>
<td>400/3/50</td>
<td>6BAR-1100 nl min</td>
<td>Automatic with PLC</td>
</tr>
</tbody>
</table>
AUTOMATIC ICE CREAM EXTRUSION, HARDENING AND PACKAGING LINE

A compact line composed of a fully stainless steel insulated box with double evaporator and mechanical trays conveyor unit, working table with extrusion and time elapsed dosing stations, cut and positioning of the stick, pincers pick-up system, flow-pack wrapper unit and Freon or ammonia cooling unit.

The modular system of accessories to add and/or update the type of product makes the line especially versatile and suitable for all production requirements and market trends:

- mini magnum
- magnum
- funny face
- ball cone
- wave
- twister
- sandwich
- half-sandwich
- bars
- bon bons

Diagram:
- Cabin in stainless steel
- Evaporator
- PLC controls
- Ice cream extrusion and stick inserter
- chain driven conveyor trays
- connection to wrapping machine
- chocolate dipping system
TECNOTUNNEL
ICE CREAM EXTRUSION TUNNELS

T 6000 LAYOUT

MAGNUM - MINI MAGNUM

Ice cream cutting and stick inserter

Product pick up and chocolate dipping system
Gelato and Ice Cream Machines
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