



For Engineering Industries

ماركوني للصناعات الهندسية



Experience is key to success

<https://marconymachinery.com>



With more than 25 years of experience working with major companies around the world, MARCONY machinery has strong leadership skills and the ability to build strong relationships with clients and partners. We are a premier engineering firm specializing in designing and manufacturing cutting-edge production lines and equipment for the pastry, Biscuit, Cake, and chocolate industries. Our commitment to precision engineering exceptional craftsmanship, And leveraging advanced technology allows us to deliver customized solutions that elevate production standards and exceed the specific needs of our clients .

Chocolate production lines and equipment are crucial for the efficient and high-quality manufacturing of various chocolate products such as Chocolate Refiners, Mixers, Conches, Tempering Machines, Enrobing Machines, Cooling Tunnel, Molding Machines and Cleaning and Hygiene Solutions.

Quality Control System besides Automation and Control Systems that including PLCs (programmable logic controllers) and HMI (human-machine interface) panels, Are used to monitor and control various aspects of the chocolate production process such as Temperature, Humidity, Speed, and Flow rates

These components work together to streamline the chocolate production process, From raw ingredients to packaged products ensuring consistent quality, Efficiency, and safety in chocolate manufacturing operations .



OUR EQUIPMENTS

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ENROBING

Enrober is a specialized equipment for coating products with a layer of chocolate, caramel, and cheese

Types of coating

- For real and \or compound chocolate,
- A mass flywheel feeding or a chocolate pump,
- Single or double,
- Full coating, bottom and \or top coating.

Specificaton

- Totally is made of stainless steel.
- Rang from 400mm: 2000mm width.
- Production capacity from 25kg/h to 200kg/h.
- Equipped with openable cover of the side door.
- Waterfall curtain of melted chocolate.
- Air Blower by inverter to control the air speed.
- Includes a double jacket tank with agitator.
- A conveyor belt or wire mesh tensioning device and shaker device.
- The speed of the conveyor is adjustable.
- Powered by 3 motors bottom enrobing motor, mesh belt driven motor and vibration motor.
- Scrapers at the bottom of the enrobing conveyor remove excess chocolate and prevent drips
- Recirculation system that collects excess chocolate, filters it, and returns it to the chocolate tank for reuse.
- Enrobers offer precise with PLC touch screen panel control over chocolate and water temperature, flow rate, and coating thickness.



Features and Benefits

Improving overall efficiency

Reducing manual labor, costs and production time

Easy cleaning and maintenance with removable parts



COOLING TUNNEL & SLABS

It is typically used after the tempering and enrobing processes.
Made entirely of 304 stainless steel up to 40m L and 1500mmW on request.
Standard belt speed is variable between 0.50 – 10m/min on request.

Cooling types

Cooling tunnel

A cooling tunnel machine usually consists of a long, insulated tunnel with a conveyor belt system running through it.

The tunnel is divided into different sections, each equipped with blowers.

- Radiative thermal cooling tunnel.

- The blowers circulate chilled air within the cooling tunnel ensuring even cooling of food products.

Cold air continuously is circulated from the middle of the cooling tunnel to both ends of the tunnel.

Regulate humidity levels depending on the specific requirements of the products being cooled.

Tray for collecting fallen scraps.

Powered by motor and speed inverter.

- Equipped with a control panel that allows operators to monitor and adjust parameters such as temperature, conveyor speed and airflow.

Cooling slabs

- It helps to rapidly cool and solidify the chocolate Consists of a water pipes where cool water circulates continuously.

- This water is kept at a specific temperature conducive to cooling the chocolate efficiently without causing condensation on the chocolate surface



TEMPERING MACHINE

A tempering machine is a specialized piece of equipment used in chocolate production to temper chocolate. Tempering is the controlled heating and cooling of chocolate to specific temperatures in a glossy finish.

Components of a Tempering Machine

Water double jacket pipes

An agitation mechanism

A thermometer monitors the chocolate's temperature



Tempering machines feature digital controls and displays for setting and monitoring temperature parameters, agitation speed, and tempering cycles .

Available in different sizes and capacities and types as following

Manual tempering machines require operators to control temperature adjustments and agitation manually, suitable for smaller operations

Batch Tempering Machines: These machines temper chocolate in batches, suitable for smaller-scale production

Continuous Tempering Machines: operate continuously, allowing for a continuous flow of tempered chocolate, suitable for large-scale production lines .



More than 25 years
of experience means
a wide range of
situations and
challenges, and they
have had ample
opportunities to hone
their expertise
over a long period.



FAT MELTING TANK

A fat melting tank is a specialized equipment used to melt and liquefy fats and oils in the chocolate and confectionery industry .

Specification

Typically constructed stainless steel 304 or 316 resistance to corrosion

Available in various sizes and capacities .

Tanks have insulation layers to maintain consistent temperature control and reduce heat loss during the melting process .

Agitation is crucial to move fats and oils from downward to upward for even heating and melting .

Adjustable speed controls with inverter allow operators to customize the agitation intensity based on the specific fat or oil being melted .

Equipped with thermostatic PT100 controls to monitor and regulate the melting temperature accurately .

Digital temperature displays provide real-time temperature readings

To prevent overpressure, fat melting tanks include pressure relief valves that release excess steam .

An emergency stop button is installed for immediate halting of operations in case of emergencies or malfunctions.

Heating by oil circuit at 90 degree and water circuit .

Features

Designed for easy access and cleaning with removable lids, drain gate, covers, and internal components .



Storage tanks

storage tanks are used in chocolate manufacturing facilities, confectioneries, bakeries, and food processing plants where chocolate is a primary

ingredient and for storing pharmaceutical ingredients, formulations, and sterile liquids in pharmaceutical manufacturing facilities

They maintain the temperature, viscosity, and quality of the chocolate, ensuring it remains in optimal condition for further processing or production

Tanks come in various capacities ranging from small and large-scale tanks for artisan chocolatiers.

Material: Chocolate storage tanks are typically made of food-grade stainless steel 304 or 316 to prevent contamination.

Insulation: Tanks may be insulated to maintain a consistent temperature and prevent heat loss

Agitation System: Some tanks feature an agitation system, such as a stirrer or mixer, to prevent chocolate from settling and ensure uniform consistency
Temperature Control.

Chocolate storage tanks are equipped with temperature control systems, such as heating elements or cooling jackets, to maintain the chocolate at the desired temperature range

The design of the tank may include feature like a sloped bottom for easy draining.

A hinged lid or cover for access, and level indicators to monitor chocolate level.

Chocolate storage tanks are designed with hygiene in mind, featuring smooth surfaces, rounded corners, and sanitary fittings to facilitate cleaning and prevent bacterial growth.

They may also have CIP (clean-in-place) systems or removable parts for thorough cleaning and sanitation.

Safety features such as pressure relief valves, temperature alarms, and emergency shut-off systems to ensure safe operation and prevent accidents.



Chocolate conche

A chocolate ball mill is a critical piece of equipment used in the chocolate manufacturing process to refine and improve the texture, flavor, smoothness and overall quality of chocolate.

They are essential for producing a wide range of chocolate products, including couverture chocolate, chocolate bars and chocolate coatings.

Ball mill helps develop desirable chocolate characteristics such as smoothness, glossiness, mouthfeel, flavor balance, and aroma by reducing particle size, homogenizing ingredients, which includes cocoa solids, cocoa butter, sugar, and other ingredients and enhancing cocoa butter crystallization

They consist of a rotating shaft with agitator ensuring uniform distribution of ingredients and flavors.

The conche may have a jacketed design for heating or cooling the chocolate mass as needed during processing.

Temperature Control: Some conches have heating and cooling.

The conching process can vary in duration, ranging from 5kg/h to 1000 kg/h.

During conching, the chocolate mass undergoes stages of moisture reduction, fat crystallization, flavor development, and viscosity optimization.



BELT CONVEYORS

A conveying system is a mechanical handling equipment used to transport materials from one location to another within a facility or between different stages of a production process.

Belt conveyors use to transport products horizontally, inclined, or vertically.

Types of conveyors:

- Roller Conveyors
- Screw Conveyors
- Curved conveyors
- Straight conveyors
- Chain Conveyors
- Bucket Elevators
- Pneumatic or rejection Conveyors



Specification

Drive Mechanism: The drive mechanism powers the conveyor system, typically using electric motors, gearboxes, and pulleys.

Rollers or Idlers: Rollers or idlers support the conveyor belt and provide smooth movement along the conveyor. Controls and automation systems manage conveyor speed, direction, start/stop functions.

Accessories such as chutes, diverters, sensors, and guides.

Conveying systems operate by moving materials or products along a predefined path using mechanical, gravity, or pneumatic forces.

Designed for continuous or intermittent operation, with adjustable speed and capacity to accommodate varying loads.

Food Processing: They are used in food processing facilities for conveying ingredients, finished products, distribution, and packaging materials.

Advantages

- reduce manual labor
- labor costs
- repetitive tasks for workers
- improve workflow efficiency



Nut sprinklers

Nut sprinkles used as toppings for various desserts, and baked goods such as ice cream, sundaes, cakes, cupcakes, pies, and pudding, cookies, brownies, muffins, scones, bread, and pastries.

Nuts like almonds, walnut, pistachios, coconuts to create nut sprinkles.

Types of Nut Sprinkles

Chopped Nuts

Toasted Nuts

Candied Nuts



The machine has a hopper partially transparent for easy monitoring of nut levels.

A dispensing mechanism is used to release nut sprinkles onto the desired food product.

Can be manual or automatic machines.

The machine typically has adjustable settings to control the quantity of nut sprinkles dispensed per unit of time or per portion of the food product.

Some nut sprinkles machines are integrated into conveyor systems or have a designated dispensing area where the food product passes under the sprinkler to receive the nuts.

Safety features such as emergency stop buttons, safety guards, and overload protection may be incorporated to ensure operator safety.

Powered by control panel with digital displays, buttons, and settings to adjust parameters such as dispensing speed, quantity, and timing.

Easy Cleaning and Maintenance.



Chocolate decoration

A chocolate decoration machine is an equipment to create decorative designs from chocolate.

Various decorating tools are integrated into the machine, such as decorating pens, nozzles and spray guns.

Stainless steel design driven by a motor and a gearbox.

Production Capacity depending on the model and size.

Machines feature is a control panel with digital displays and user-friendly

interfaces to adjust settings such as temperature, flow rate, nozzle types, and decorating modes.

Safety features such as emergency stop buttons, overload protection, and safety interlocks are incorporated to ensure operator safety during machine operation.

Separate zones for decorating to ensure precise temperature management.



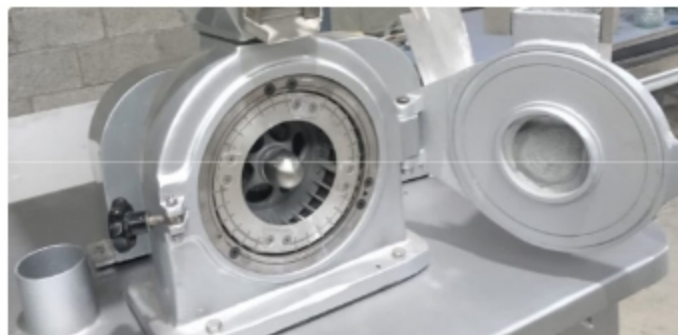
TURBO MILL

A turbo grinding mill is a high-speed impact mill used for fine and ultra-fine grinding of materials

It operates on the principle of centrifugal force, where materials are fed into the grinding chamber at high speed and subjected to intense impact forces generated by rotating impeller blades or pins.

Specification

- Rotor speed: 7500 rpm.
- Grinding chamber: 220mm diameter.
- Fineness: 40mesh to 100mesh.
- Capacity: 20kg to 2000kg/h.
- Has hopper, fixed on a table with 4 leg.
- Classification System to ensure precise grinding performance.
- Powered by drive motor, gearbox, and coupling arrangement to drive the rotor at high speeds.
- turbo mills may include a control panel with variable speed drives and process monitoring sensor.
- Has cooling air system to maintain the temperature of the grinding chamber.
- Has a cloth bag to collect the very fine volatile sugar.
- Adding Level control to control the amount of product.



Advantages

High Grinding Efficiency
Versatility for different application
Low Heat Generation during grinding
Compact Design making them suitable
for installations with limited space.



POWDER MIXER

A powder mixer is a type of industrial equipment used for blending dry powders or granules to achieve a uniform mixture

Types of Powder Mixers

Vertical Mixer
Horizontal Mixer
Rotary Drum Mixer
V-Shape Mixer

Features of Powder Mixers

Material Construction: stainless steel 304 Or 316.
Bowl capacity: 5 L to 2000 liters.
Powered by drive motor, gearbox, and coupling arrangement to drive the rotor at high speeds.
Agitators inside the mixer move powders.
Mixers have variable speed motor controls to adjust mixing intensity and optimize blending efficiency.
Powerful spiral with two levels spirals, one internal anticlockwise spiral and one external clockwise spiral.
Safety features may include interlocks, emergency stop buttons and microswitch to ensure operator safety during mixing operations.

USAGES

Food and Powder Beverage: Powder mixers are used in the food industry for blending ingredients such as spices, seasonings, flour mixes, and nutritional supplements.
Pharmaceuticals: They are employed in pharmaceutical manufacturing for mixing powders used in drug formulations and tablet production.
Cosmetics: They are used in cosmetics and personal care product manufacturing for blending powders used in makeup, skincare, and haircare formulations.

Advantages

sanitary features for easy cleaning
comply with safety



SIFTER

Food sifter, is used in Sieving flour, Grading and Sorting, Screening powdered ingredients and Food Ingredient Handling.

The sifter is typically constructed of stainless steel 304 to ensure hygiene, durability, and ease of cleaning.



- Rang from 200 to 1000 mm diameter, fixed on 4 legs.
- Powered by vibrating mechanism motor with contactor for motor protection.
- Equipped with 2 exits, one for the product for delivery to hopper and the other for disposal of foreign materials.
- Electricity connection: 380 V 50 HZ 3 Ph.

Food sifters often feature adjustable settings for deck inclination, vibration intensity, and screen mesh size.

Screw Spiral Elevator

A screw feeder is a mechanical device used to transport bulk materials in a controlled manner by rotating a helical screw blade within a cylindrical casing.

Spiral feeders can be horizontal, vertical and inclined.



Specification

Stainless steel elevated with different size and capacities .
 Powered by a drive motor with contactor for motor protection .
 Equipped with a hopper fixed on chassis .
 The door can be opened to clean the Screw feeder .

- **Mesh** in front of the gate to protect workers.
- **Microswitch** during the maintenance process to stop the machine completely.
- Freedom to direct product receipt.
- Control the speed of motor by **inverter** through a digital screen.
- **A magnetic filter** used to remove ferrous and weakly magnetic particles.
- Control panel

Easy to remove and install for cleaning and sterilization



PUMPS & Three valves double jacket

pump specifically designed for chocolate to transfer liquid chocolate from a storage tank to a tempering machine, enrobing machine, molding machine, or packaging equipment. Gear or Van pump made of stainless steel (304) to ensure hygiene and prevent contamination.

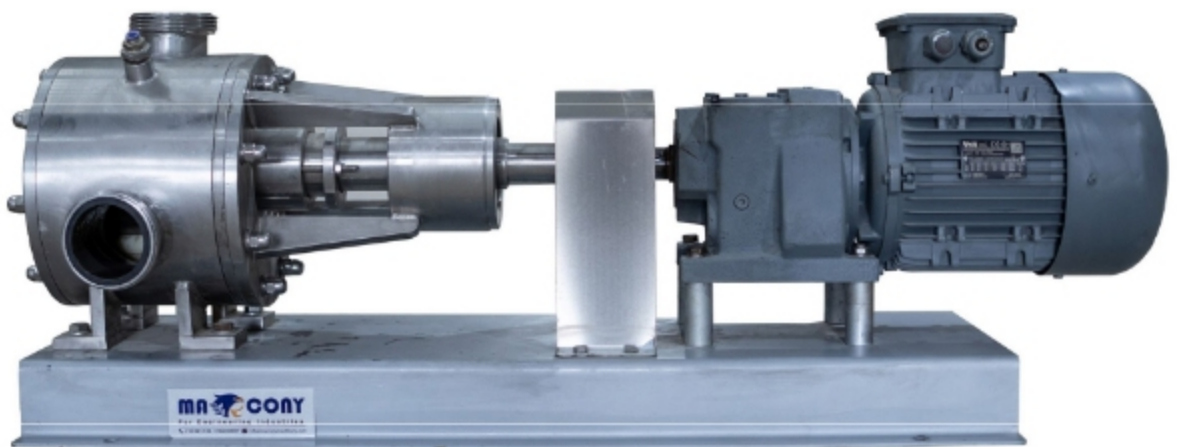
They may include safety features like pressure relief valves, temperature sensors, and overload protection mechanisms to ensure safe and reliable operation.

Capacity is from 500 kg to 8 tons /hr.

Heated by a water double jacketed system.

Installed on a stainless steel base with adjustable legs.

Equipped with motor.



FOOD SAFETY REQUIREMENTS

HYGIENE STATION

SINKS

MAGNETIC MESH FILTER

Made of stainless steel 304 or 316 and can be double jacketed.

A magnetic filter for food production is a type of equipment used to remove ferrous and weakly magnetic particles from food products during the production process . The primary purpose of a magnetic filter in food production is to eliminate metal contaminants that may be present in raw materials, ingredients, or finished food products.

Metal contaminants can pose serious health and safety risks , leading to product recalls, customer complaints, and damage to brand reputation

The magnetic rods or cartridges are designed to attract and capture ferrous and weakly magnetic particles as the food product flows through the filter

Add a customized Mesh filter.

They are used to remove metal contaminants from raw materials such as grains, spices, powders, and liquids before processing.

Protects processing equipment from damage caused by metal particles, reducing maintenance costs and downtime.

Easy Cleaning and sanitizing the filter components according to food safety guidelines.



HYGENIE STATION

Hygiene station designed to promote cleanliness and hygiene practices in various places such as factories, hospitals, cafés, offices, schools, etc

Specification

Made of stainless steel 304 or 316.

Level control to level soap, water and sanitizer.

Equipped with two small tanks, one soap and one sanitizer.

Equipped with Glove Dispensers and Face mask Dispensers.

Operated automatically when a person places their hands under the sensor.

Handwashing Timers by the recommended duration (e.g., 12seconds).

Stations for brushing powered by motor.

Equipped with separate electrical control panel.

Hygiene has more than one step to reduce the spread of germs as following:

soap dispensers.

Touchless Handwashing Stations.

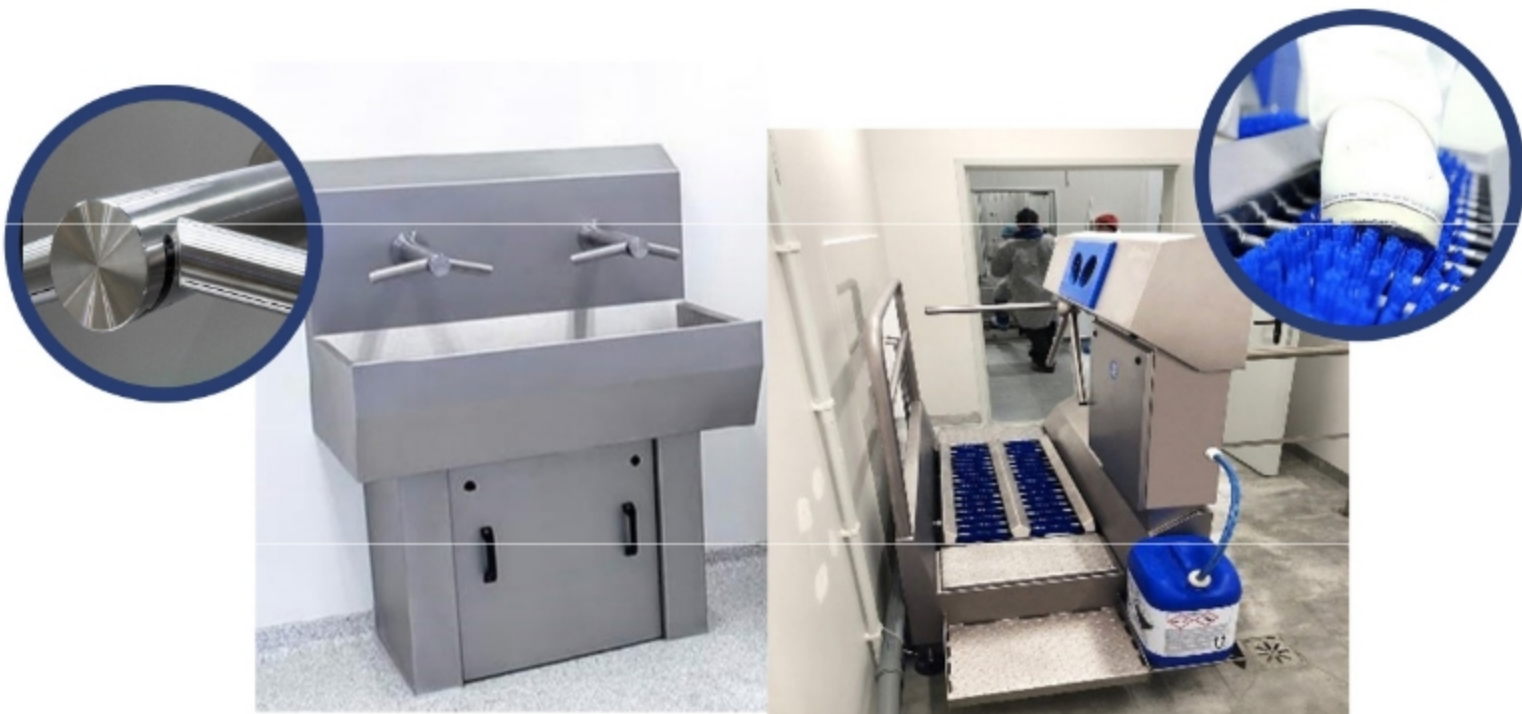
hand dryers.

Hand Sanitizer Dispensers.

Stations for brushing the soles of shoes or boots before entering clean areas.

Turnstiles to ensure organization and encourage users to sanitize before entering.

Infrared sensors to measure body temperature and screen individuals for fever, a common symptom of infectious diseases.



MARCONY After-Sales Services:

Installation, Setup and Training for the customer on how to use the equipment. **MARCONY** is providing a dedicated **Technological and Technical** support team to handle any operational issues or questions that customers may have to encourage repeat business by building trust and reliability.

Offering software and hardware upgrades to enhance the efficiency and capability of existing production lines and keep the equipment up-to-date with the latest technology.

Providing technical support via phone, email, or on-site visits to troubleshoot and resolve issues.

Handling warranty claims and ensuring quick resolution of any issues.

Ensuring availability of critical spare parts to minimize downtime.

By offering comprehensive after-sales services, MARCONY can ensure that customers are satisfied, productive, and loyal, ultimately contributing to long-term success and growth.



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