

DAIRY PRODUCTS



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PERFORMANCE-DRIVEN
TECHNOLOGY



**BRAZILIAN
TECHNOLOGY**



SOLUTIONS
FOR THE

Cheese Processing Industry

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THE COMPANY

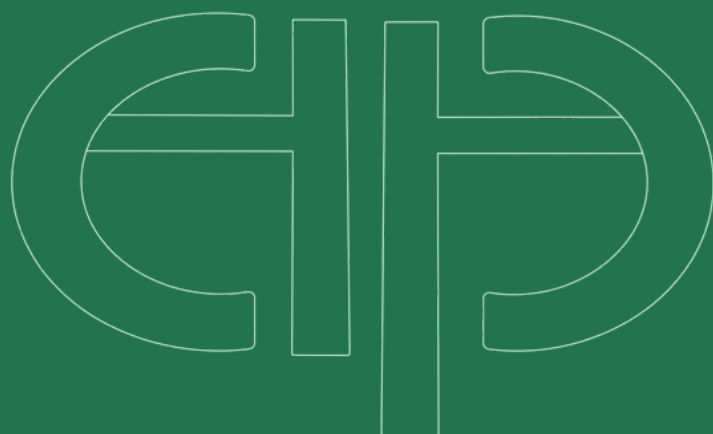


At Chapecó Soluções Industriais, we specialize in the manufacture of high-tech equipment for the dairy industry. We began operations in 2009 in the municipality of Chapecó, Santa Catarina, and since then, we have consolidated our presence in the metal-mechanical segment with a portfolio of reliable products, trusted and proven by our clients.



We manufacture high-performance equipment through a meticulous process that encompasses product engineering, selection of high-quality raw materials, precision laser cutting and welding, and a refined finish with a functional and innovative design.

With the goal of ensuring the safety of operators professionals who use our products, we produce machines and equipment that meet the requirements of the current Regulatory Standard 12 (NR12).





Projects and equipment are developed by a team of engineers and industrial designers, who provide a safety report, Technical Responsibility Annotation (ART), and a manual for each piece of equipment detailing the maintenance and operating procedures necessary to ensure optimal performance and durability.

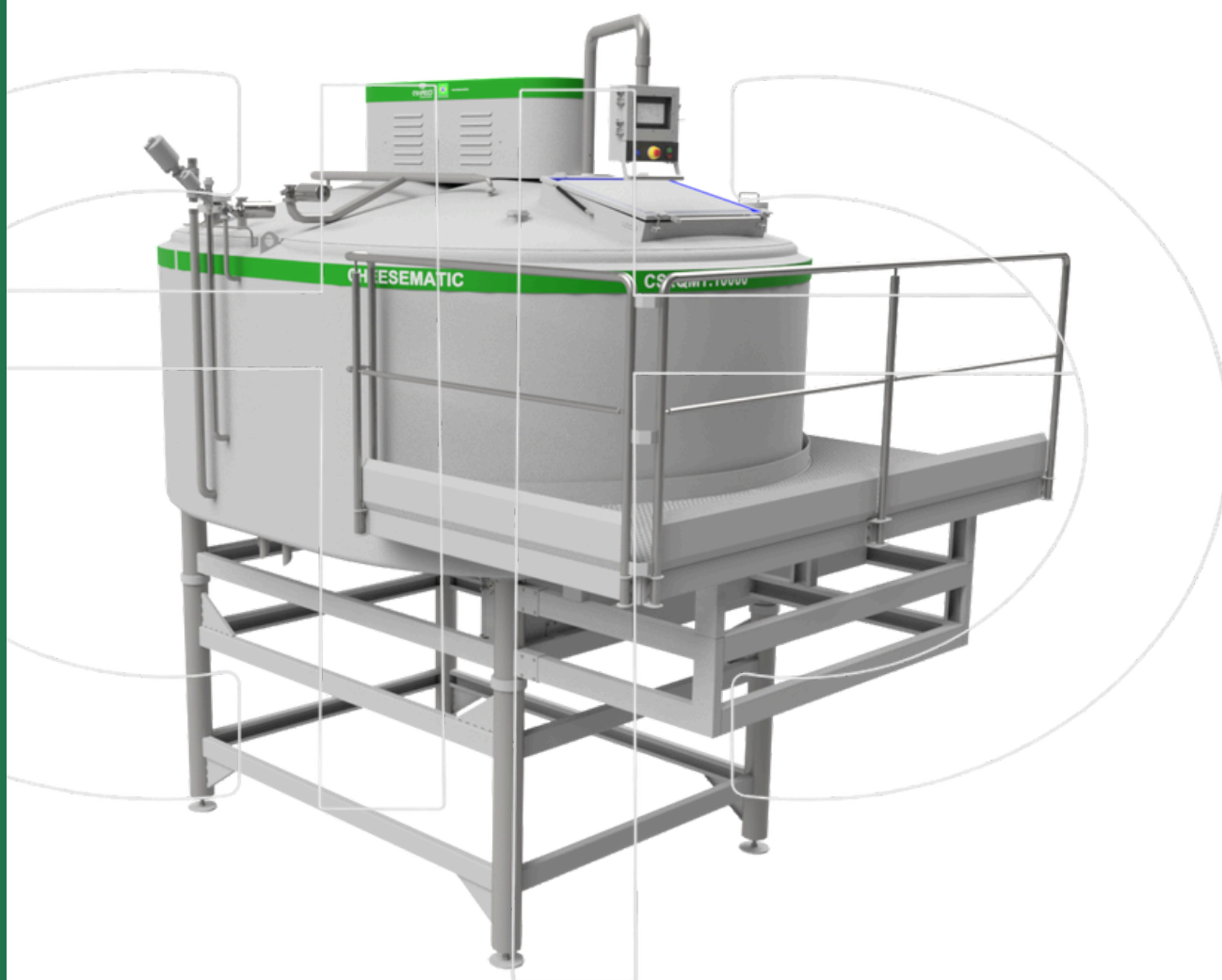




COMPLETE EQUIPMENT LINE FOR THE DAIRY INDUSTRY

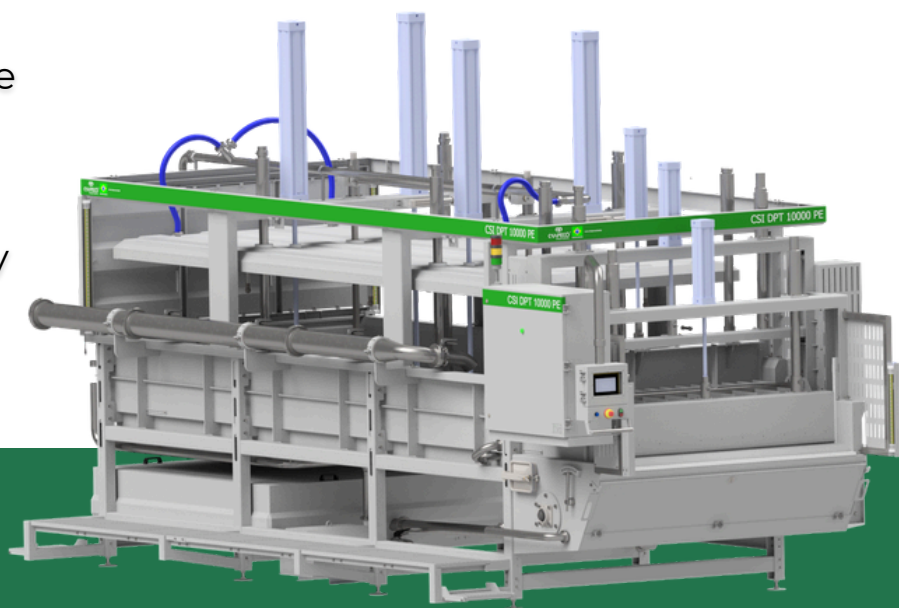
DOUBLE O CHEESE VAT

This equipment is designed for the coagulation, cutting, and cooking of the cheese curd mass. It is equipped with an HMI screen control panel, allowing the creation of process programs recipes with customizable timing and curd agitation and cutting speeds. Available in capacities from 3,000 to 15,000 liters.



The full-pressure draining press receives curd from the Cheese Vats (Queijomatics). With well-distributed piping, it creates a uniform curd bed, ensuring even and efficient whey drainage.

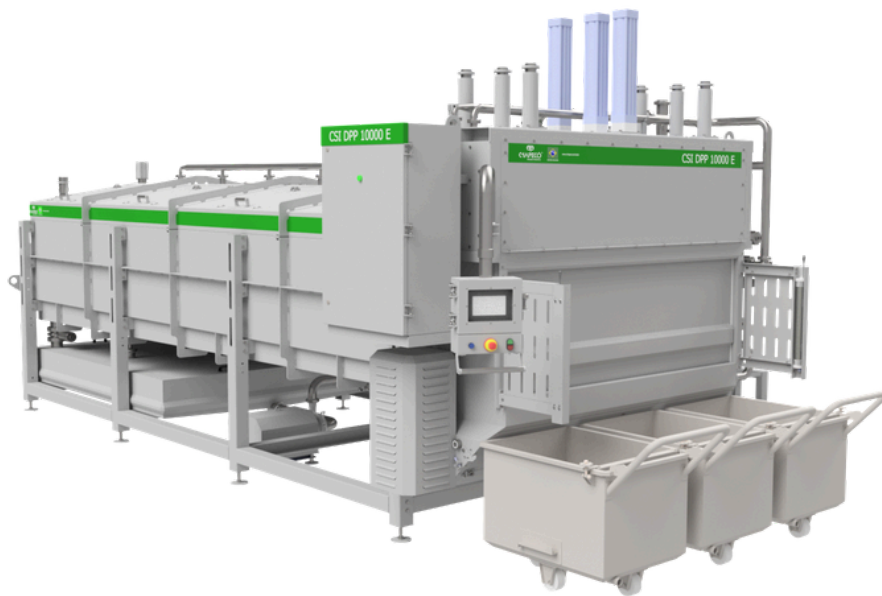
The pressing system is consistent and avoids deformation or mechanical openings in the curd block. The cutting mechanism is suitable for all cheese types. All functions are controlled via PLC, and the CIP system is fully automated.



CURD DRAINING AND PRESSING TUNNEL

Designed for use in mozzarella cheese production, this equipment separates whey from curd. Its pressing mechanism removes excess whey, and its automatic discharge system allows the production of blocks in various sizes.

The blocks are discharged into acidification carts, where they rest until reaching the ideal pH for stretching. All operations are controlled via PLC and adjustable through the HMI interface.



CURD DRAINING AND PRE-PRESSING TUNNEL

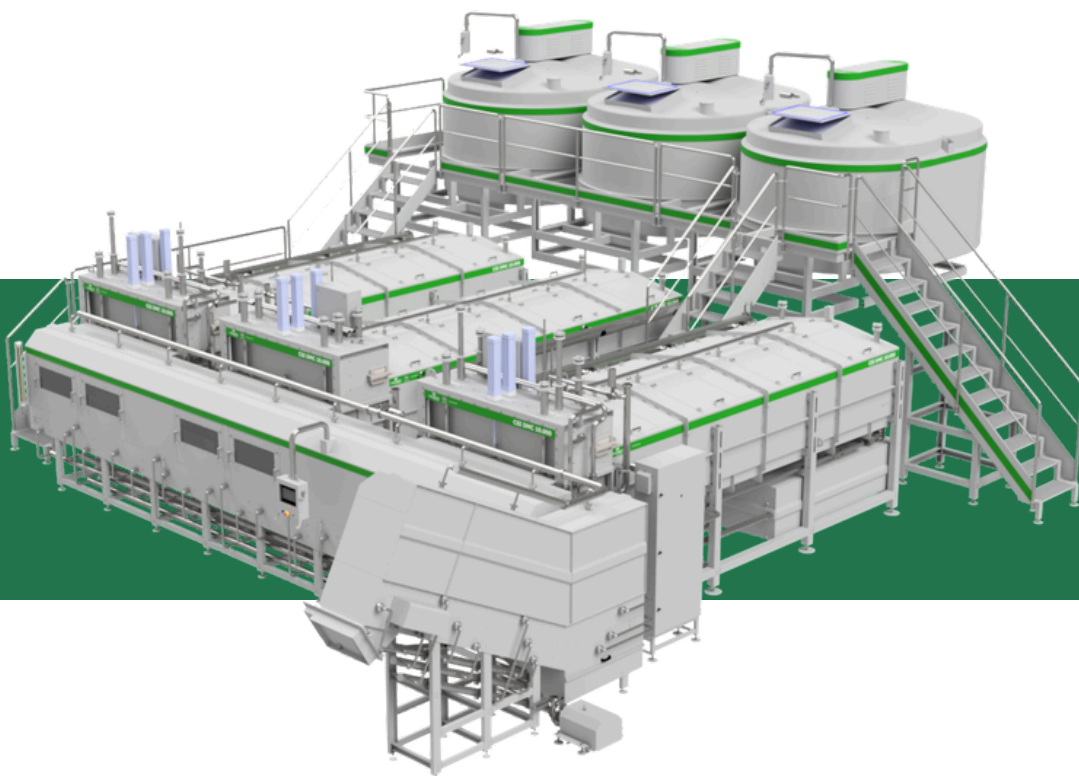
CONTINUOUS DRAINING AND FERMENTATION TANK FOR MOZZARELLA CURD

The continuous draining and fermentation system for mozzarella consists of three main stages: draining and fermentation tanks, the discharge conveyor and the feeding conveyor. Curd prepared and stored in the cheese vats (Queijomatics) is directed via piping to the fermentation tank, which evenly distributes the curd across all draining zones.

After whey drainage, the curd rests for fermentation, with resting time depending on the acidity required. Direct steam injection can be used to speed up fermentation. Once the curd reaches the target pH, it is fractioned and discharged.

The discharge conveyor sends the blocks to the feeding conveyor, which delivers them to the cheese stretcher.

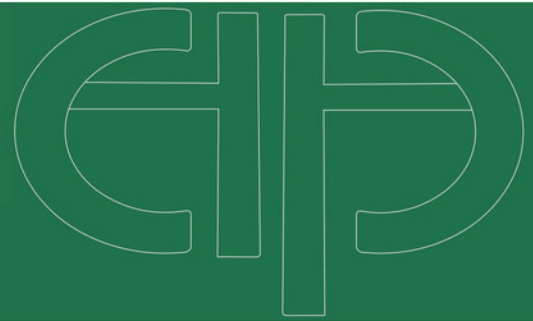
A key feature is its fully enclosed, contamination-free cycle—there is no operator handling. Both the tanks and conveyors are sealed with inspection-only access. Each tank can process a full cheese vat batch, draining all whey without interruption and achieving uniform grain texture. The CIP cleaning system is automated.





STATIC FINES FILTER

This equipment is primarily designed for the recovery of fine solids from whey. It is also suitable for filtering butter whey and cleaning solutions. Flow rates are sized according to specific applications. The system includes a fully integrated automatic CIP (Clean-in-Place) system.



MOZZARELLA CURD FEEDING SYSTEM FOR CONTINUOUS STRETCHING



This equipment was developed to reduce manual labor and eliminate curd waste during the feeding process of the mozzarella stretcher. By automating this step, human contact with the curd is eliminated, thereby minimizing the risk of cross-contamination. The unit features a level sensor that triggers both an alert on the HMI (Human-Machine Interface) and a warning light when low curd levels are detected.

It is also equipped with a buffer tank to collect acid whey drained from curd transport trolleys. The tank includes a level sensor that activates a motorized pump to transfer the whey. Its internal surface is coated with Teflon, and the entire system includes an automatic CIP cleaning cycle.

A young boy with dark hair is smiling and looking down at a bowl of food he is holding. The image is overlaid with a semi-transparent green filter. The text 'Behind this' is in a light teal sans-serif font, and 'smile' is in a yellow cursive script. Below this, 'is a product you can trust.' is in the same light teal sans-serif font.

Behind
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smile

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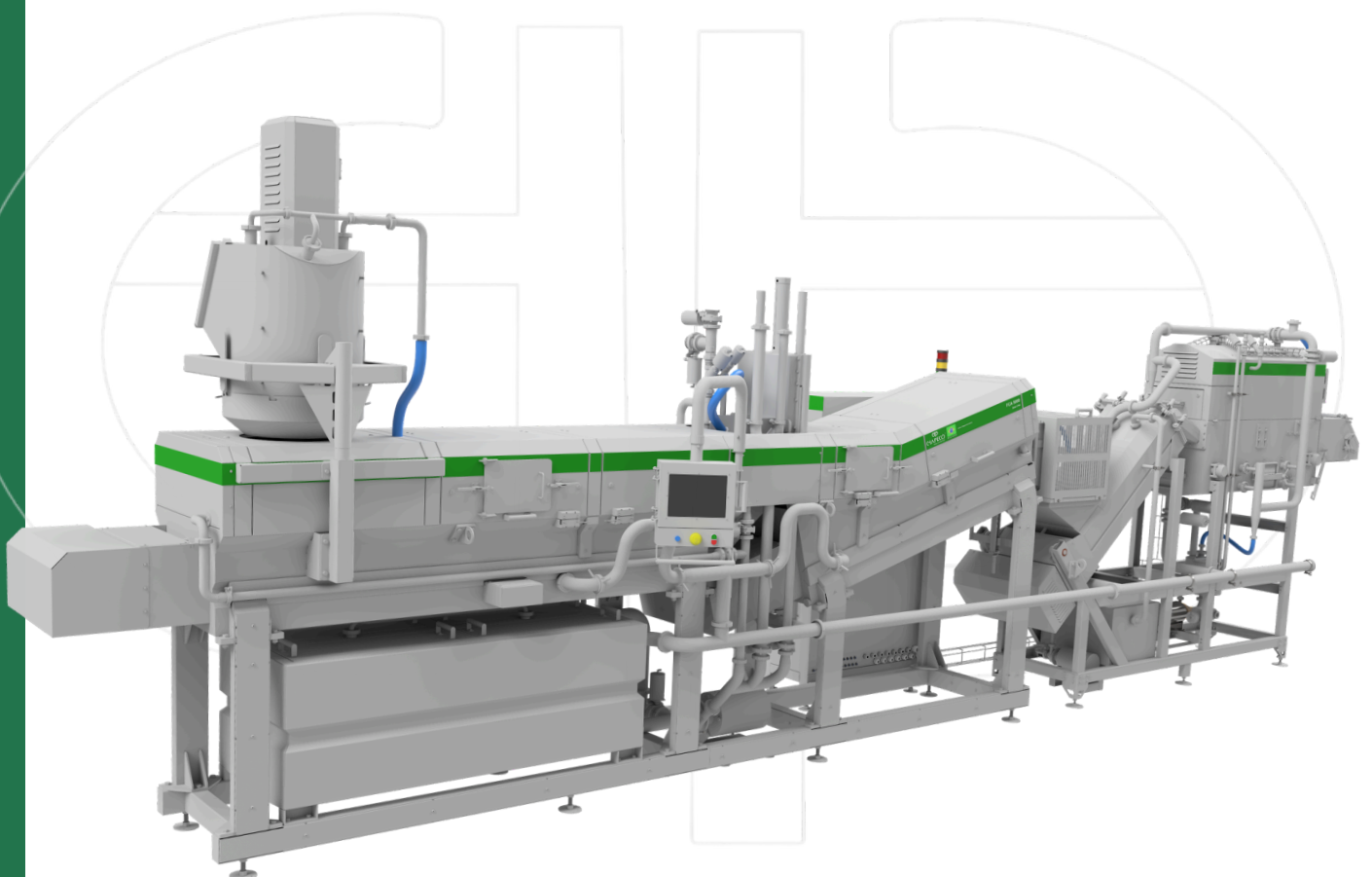
CONTINUOUS HOT WATER CHEESE STRETCHER — 4,000 KG/H

As part of our commitment to delivering advanced and innovative solutions to the dairy industry, we are proud to launch our high-capacity continuous hot water cheese stretcher. Until now, our models have handled up to 2 tons per hour, but we are now offering machines with an effective capacity of up to 4 tons per hour — that's right, your facility can process up to 40,000 liters per hour with just one unit.

Complementing the process, the system features a third stretching stage, where the stretched curd receives its final finishing. At this stage, a liquid brine dosing system is integrated into the process.

The brine application rate is controlled by a PLC and sensors that measure, in real time, the flow rate of stretched curd passing through the system, automatically adjusting the brine release.

After application, the salted stretched curd passes through the extruder, which helps incorporate the salt before the product proceeds to molding and cooling of the cheese pieces.



BATCH STEAM CHEESE STRETCHER

The batch steam stretcher is specifically designed to cook, knead, melt, and stretch dairy-based products such as shredded mozzarella, processed cheese blends, and large-scale food preparations. With a rugged and heavy-duty design, it is ideally suited for cheese plants and industrial production environments.

Equipped with two independent, counter-rotating augers, the unit can process a wide range of curds, including fresh curd, frozen industrial curd, and plant-based alternatives. The combination of mechanical kneading and direct steam injection heating offers significant advantages in the cheese production process, enhancing both product quality and yield.

In addition, the steam stretcher is paired with a molding buffer hopper that matches the machine's capacity. This system features thermal insulation, hot water-jacketed, and helical screws to guide the processed product directly into a molding unit. This equipment combination provides a complete solution for the production of cheese and other food products at industrial scale.



AUTOMATIC MONOBLOCK STRETCHING MACHINE

This equipment is designed for processing pasta filata cheese curd that has reached the optimal pH for stretching — the point at which the curd is ready to enter the next stage of cheese production. With a production capacity of up to 3,000 kg/h, it is suitable for high-throughput operations and large-scale cheese manufacturing.

The unit features a fully integrated automatic CIP (Clean-in-Place) system, simplifying sanitation procedures and ensuring proper cleaning between production cycles. It is also equipped with an in-line curd cutter, allowing for efficient and continuous integration of curd cutting prior to stretching.

All production parameters — including speed, temperature, and other process variables — are fully adjustable through the machine's HMI (Human-Machine Interface). This allows operators to fine-tune settings according to specific production needs, ensuring a consistent and controlled manufacturing process.



LIQUID BRINING SYSTEM – PATENT NO. BR 102024017556-5

The liquid brining system doses brine solution directly onto the stretched curd (pasta filata) immediately after the stretching process. The goal is to mold the cheese with salt already incorporated into the curd, reducing subsequent brining time. The solution is prepared, homogenized, and stored in dedicated holding tanks, where it is maintained at a controlled temperature until it is sprayed onto the curd.

Salt addition occurs before molding, preventing yield loss. After application, the salted curd passes through the extruder, which aids in salt incorporation before the product proceeds to molding and cooling. The amount of brine solution sprayed is controlled by a PLC and sensors that measure the curd flow rate in real time, automatically adjusting the solution flow.

With this system, it is possible to incorporate up to 1.2% salt into the curd, reducing residence time in static brining tanks or brine flumes by up to 50%. The entire system is fully integrated with upstream and downstream processes and features an automatic CIP (Clean-In-Place) sanitation system.



CHEESE BLOCK FORMER WITH COOLING UNIT

The CSI Molder Cheese automatic block-forming and cooling machine can be used for all types of stretched-curd cheeses ("pasta filata"), and is especially designed for the production of Mozzarella and Provolone cheeses. Its technology automatically portions stretched-curd cheese into cylindrical, square, or rectangular blocks without the need for external molds or manual handling by operators.

As a result, it enables a fully automated molding process, eliminating operator intervention during the shaping stage and consequently preventing any potential product contamination that could arise from manual handling.

Production capacity is customized according to the requirements of each plant and can reach up to 3,500 kg/h. One of the machine's main advantages is that molding and block discharge take place outside the chilled water tank, allowing for more uniform cheese blocks and improved cooling temperatures. This also enables the cheese blocks to be sent directly to the salting flume without the need for an additional cooling tank.



TWO-STAGE CHEESE BLOCK FORMING AND COOLING SYSTEM

This equipment was developed to introduce innovation in the molding and cooling process of pasta filata cheese blocks. Its function within a cheese plant is to form square, rectangular, or round cheese blocks, ensuring well-defined edges and achieving internal temperatures below 35°C (95°F) at the center of the block and 18°C (64°F) at the surface.

To achieve these targets, the equipment is designed to perform block molding and discharge within a heated upper chamber. When steam is injected, it facilitates the shaping of the pasta filata cheese within the mold, preventing the mass from sticking to the mold walls. As a result, the cheese obtains smooth, uniform surfaces and well-formed upper, lower, and side faces. Furthermore, when the block is discharged after cooling, the residual heat helps release it from the mold effortlessly, without compromising its final shape.

Unlike other equipment that struggles to achieve the desired temperature distribution, extensive R&D led to the development of a two-stage cooling process. In the first stage, the blocks are submerged in water at a higher temperature, followed by a second stage with cooler water. This method significantly improves cooling efficiency. Studies have shown that when cheese blocks are immediately submerged in very cold water, the outer layer cools rapidly and forms a thermal barrier that prevents heat from dissipating efficiently from the core. However, by first submerging the block in warmer water and subsequently transferring it to colder water, the cheese reaches the target internal temperature more quickly and uniformly.



PRE-BRINING FLUME SYSTEM

The pre-brining flume system is directly connected to the cheese block forming and cooling unit, enabling the seamless discharge of molded cheese blocks. It is custom-sized according to each client's production requirements.

Constructed entirely from 316-grade stainless steel, the system features controlled flow channels that guide the cheese pieces toward the transfer conveyor, which in turn transports them to the main brining flume.



ENCLOSED BRINING FLUME SYSTEM

In this system, cheese blocks are placed into an enclosed brine tank filled with chilled salt solution. The blocks are conveyed through the full length of the tank by high-pressure water jets, driven by dedicated pump motors that ensure consistent movement along the entire pathway. An automatic CIP (Clean-in-Place) system is fully integrated into the unit.



OPEN BRINING FLUME SYSTEM

In this configuration, cheese blocks are placed into an open brine tank filled with chilled salt solution. The blocks are conveyed through the full length of the tank by high-pressure water jets, driven by dedicated pump motors that ensure consistent movement along the entire pathway. An automatic CIP (Clean-in-Place) system is fully integrated into the unit.



STACKED BRINING FLUME SYSTEM

In this system, the product is placed inside a stacked brine tank filled with chilled water and salt solution. The cheese blocks are transported throughout the tank by means of high-pressure water jets, powered by specialized pump motors that maintain a continuous flow along the brining path. CIP (Clean-in-Place) system integrated into the equipment.

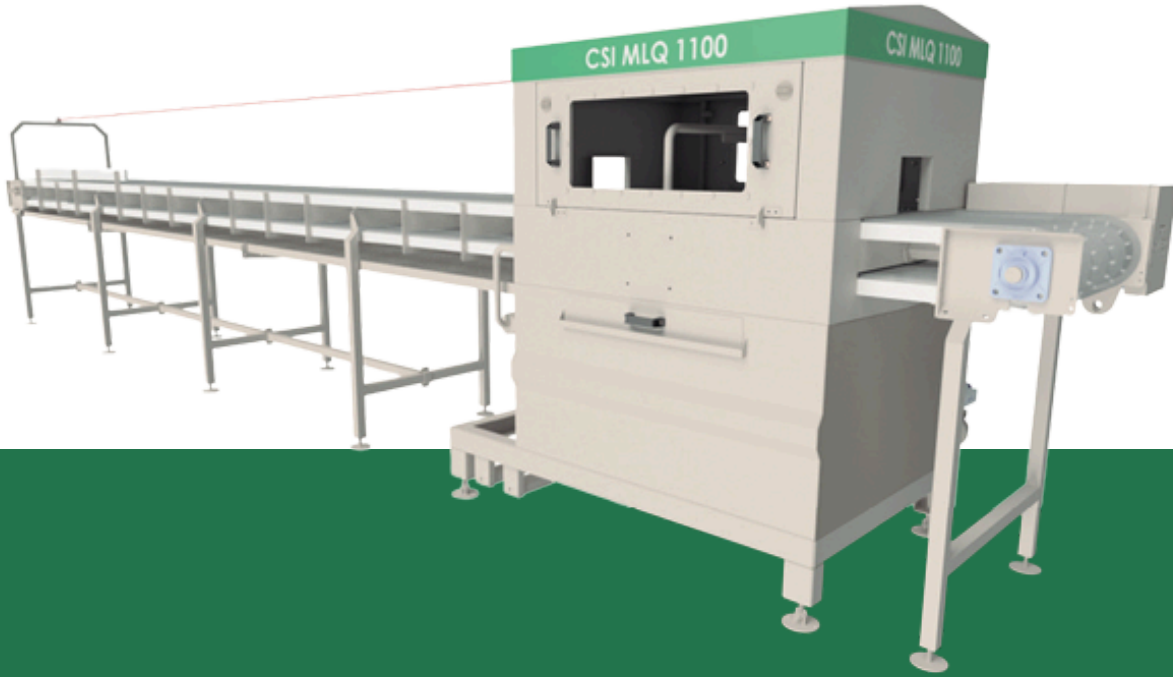




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ALIGNING CONVEYOR BELT

The aligning conveyor belt is designed to connect the brining flume system to the cheese bar cutter. Its function is to align and orient the cheese blocks properly for accurate entry into the cutting unit. As an optional feature, the conveyor can be equipped with an integrated washing module, which removes excess salt and surface residues from the cheese blocks as they exit the brining system.



AUTOMATIC CHEESE BAR CUTTER

This equipment is specifically designed for cutting chilled cheese bars. With adjustable cutting settings, it can divide cheese pieces of up to 850 mm (33.5 inches) in length into two or three equal sections.

Its production capacity can reach up to 8,000 kg/h (17,600 lbs/h).



AUTOMATIC BELT VACUUM CHAMBER MACHINE

Developed for the packaging process of large production batches. Production capacity of up to 3 cycles per minute. The machine is equipped with a vacuum pump and a vacuum booster (Roots type), featuring sealing bars on both sides.

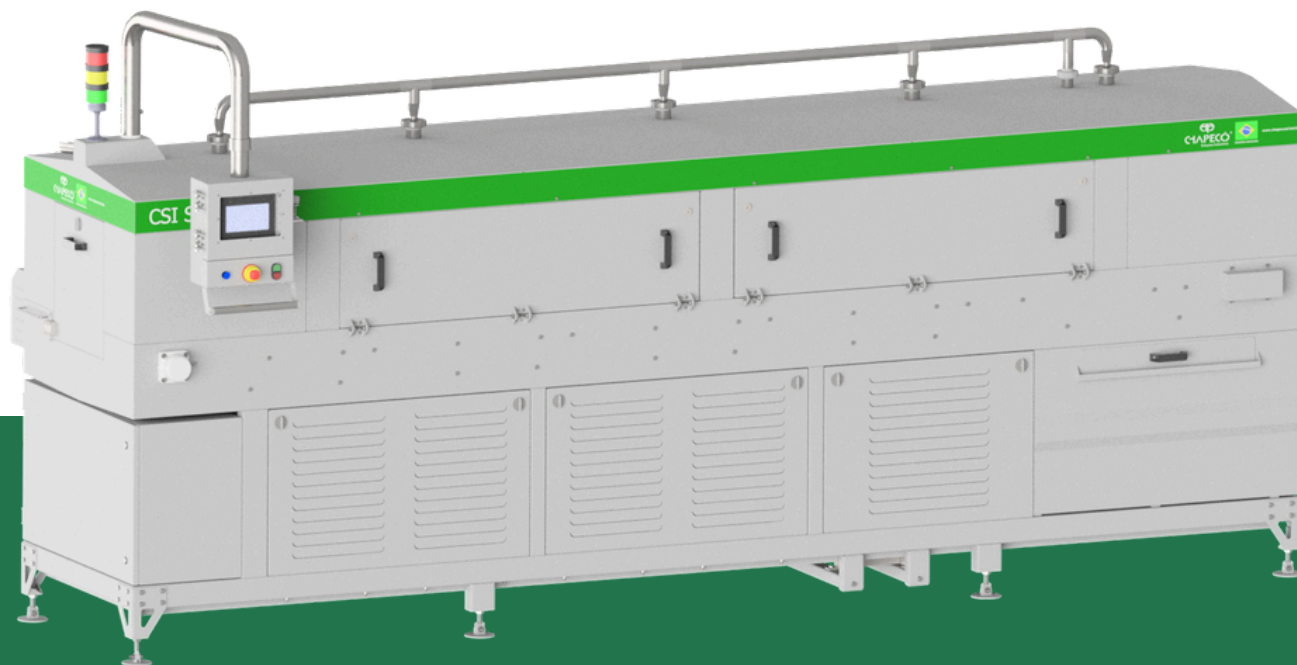
Its construction material eliminates the need for cooling on the sealing bars. The vacuum chamber height can be adjusted through the operating control system. A robust piece of equipment with extremely low maintenance costs, fully compliant with NR12 safety standards.



Machine equipped with an HMI: In addition to operational controls, the interface allows the generation of performance reports and preventive maintenance notifications related to the equipment.

CHEESE DRYING TUNNEL

This machine is designed to reduce surface moisture on cheese blocks immediately before entering the packaging area. Equipped with air compressors and directional nozzles, it generates forced air jets that target all surfaces of the cheese for effective drying. The system also includes a tank for storing and dispensing anti-mold agents (natamycin). Automatic CIP (Clean-in-Place) system integrated into the equipment.



HOT WATER SHRINK TANK

This equipment is designed for immersing vacuum-packed products in heat-shrink bags, enabling precise shrinking through controlled thermal immersion. It features an HMI panel for process control and parameter adjustments, providing real-time visualization of production data and performance graphs.

The system includes automatic temperature and water level control, supporting a production rate of up to 4 cycles per minute. An automatic CIP (Clean-in-Place) system is fully integrated into the unit.



CUTTER MIXER FOR SPREADABLE AND PROCESSED CHEESES



Equipped with a direct heating system, this machine is ideal for the production of cream cheese spreads, processed cheeses, ricotta cream, Minas Frescal, traditional cream cheese, and related dairy products. It performs multiple operations in a single unit, including: grinding, mixing, blending, thermalization, melting, pasteurization, sterilization and emulsification.

PROVOLONE SMOKING SYSTEM



This smoking system is designed specifically for Provolone cheese pieces ranging from 400 g to 4 kg (0.88 to 8.8 lbs). It features an integrated smoke generator and includes trolleys for transporting cheese blocks throughout the smoking chamber. The operation is PLC-controlled, with all settings managed through HMI, allowing operators to perform tasks with greater efficiency and speed. Equipped with a built-in exhaust system, the smoke is effectively extracted and vented outside the processing area, ensuring that the operating environment remains safe.

CIP SYSTEM

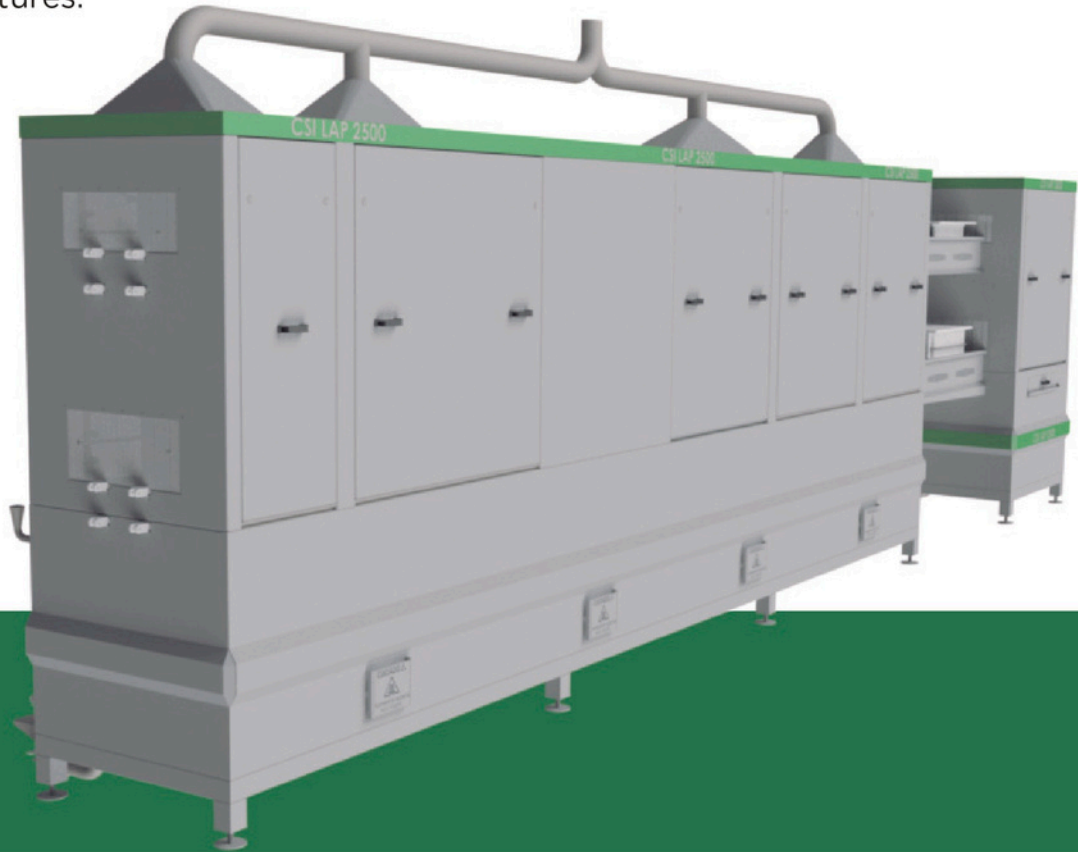
The Smart Cleaning-in-Place (CIP) system is a hygienic cleaning solution that saves time, reduces environmental impact, and lowers operating costs—without compromising food safety or product quality. The smart CIP system performs continuous operational adjustments, utilizing optimized volumes of water and detergent, precisely calibrated to meet the cleaning requirements of each cycle.

It enables water consumption reductions of up to 21% and detergent savings of up to 7%, contributing to both sustainability efforts and cost-efficiency across the cleaning process.



MICRO-PERFORATED CHEESE MOLD WASHER

This equipment is designed specifically for the cleaning of micro-perforated molds and lids. The system operates in three stages, consisting of a pre-wash zone, a main wash zone with either alkaline or neutral chemical detergent, and a final rinse. It is suitable for both individual and perforated molds, and features an extensive water distribution network with removable sprinkler nozzles to ensure thorough and uniform cleaning across all surfaces. The machine is equipped with a PLC-controlled system and HMI, allowing full adjustment of wash times and temperatures.



PLASTIC CRATE WASHER

This equipment is designed for the cleaning of plastic crates. The system operates in three stages: a pre-wash zone, a main wash zone using alkaline or neutral detergent, and a final rinse. It features an extensive water distribution network with removable spray nozzles, ensuring thorough and uniform cleaning across all surfaces. The machine is equipped with a PLC-controlled system and HMI panel, enabling full adjustment of wash cycle times and temperatures.



FERMENTATION RACK WASHER

This automated cleaning system for fermentation racks streamlines industrial operations, enabling safe, efficient cleaning while eliminating manual handling and reducing water and detergent usage and labor costs.



CONVEYOR SYSTEMS

Equipment developed for the transport of various products, manufactured according to the specific needs of each application.



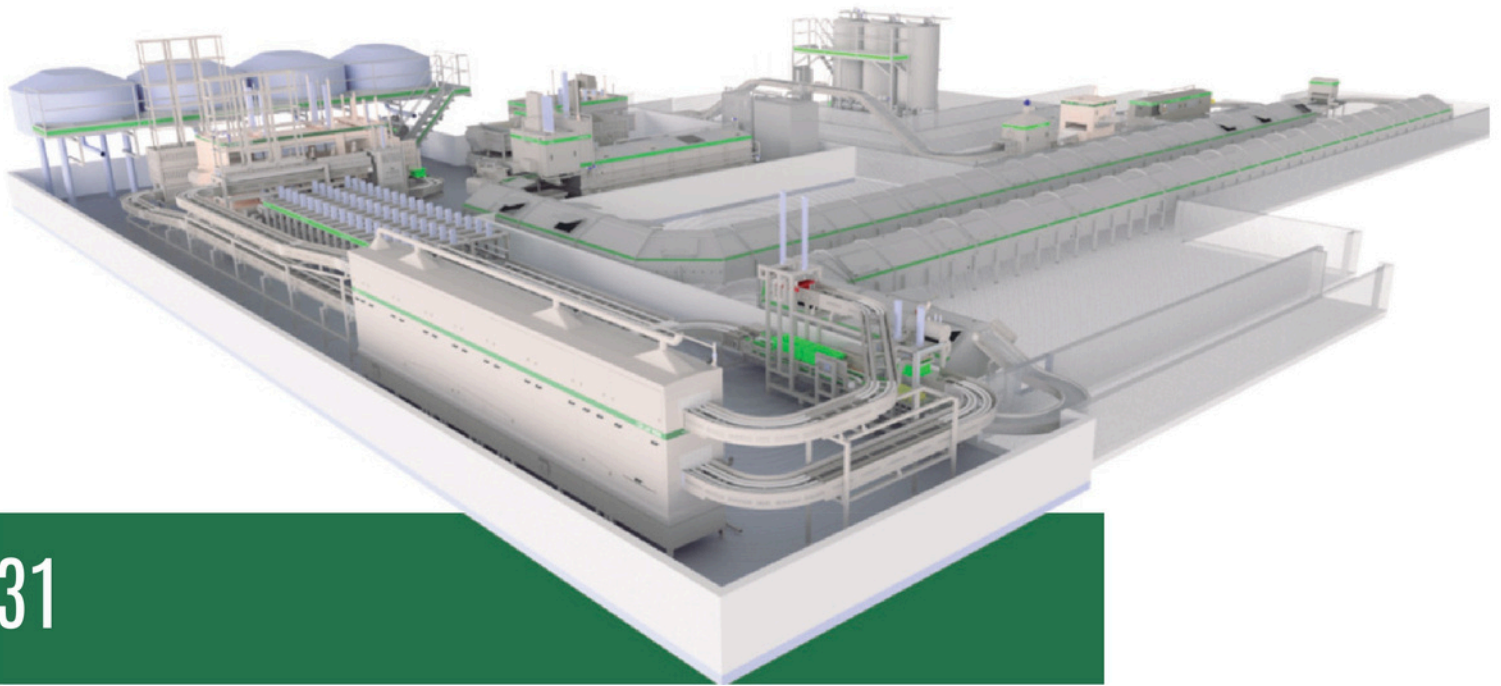
AUTOMATED PROCESSING LINE FOR HARD AND SEMI-HARD CHEESES

Once the curd is filled into the forming molds, the system automatically manages the entire process: the lid is automatically positioned onto the mold, and the mold proceeds to the pressing system.

The pressing equipment operates continuously, without requiring a full machine load before starting. After pressing, the molds are sent to the Cheese Demolding and Cutting System, which removes the lid and extracts the cheese.

Once extracted, the cheese is transferred to the cutting system and portioned according to the specified mold dimensions, then transferred to the salting section.

The molds and lids are simultaneously sent to the washer, where they undergo the cleaning cycle.



BUTTER CHURNER

Equipment developed for the production of butter through an efficient and dynamic process. The fat globules are combined to form butter grains, facilitating the separation of fat from buttermilk by a mechanical process operating in both directions. At the end of the cycle, the butter appears in granular form, and the buttermilk is removed through a draining process.

Butter washing can be performed in the same machine.

Fully built in 304 stainless steel, it features adjustable speed through a frequency inverter, with a capacity of 500 to 2000 liters. Fully compliant with safety regulations.



LINEAR CUP AND JAR FILLING MACHINE

This automatic filling machine is designed for filling creamy and semi-solid products (cream cheese, dairy cream, butter, and similar), including automated sealing and capping of jars and cups. With linear operation, it features simultaneous filling of 5 units, achieving a throughput of up to 100 units/min.

Fill volume and container format are adjustable to accommodate each customer's packaging requirements. Combining innovative design, advanced technology, and robust construction, it delivers high throughput with consistent product quality.



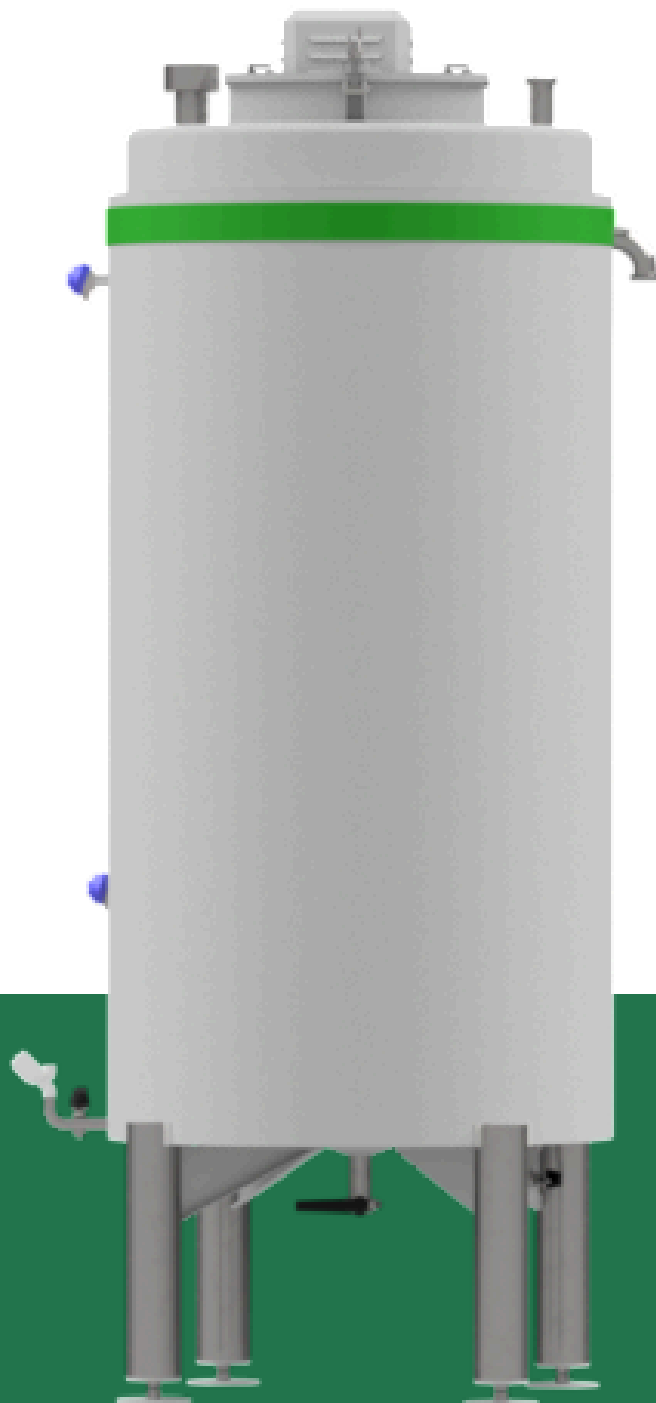
CREAM CHEESE COOLING TANK

This cooling tank for cream cheese pouches is designed to handle production capacities from 1,000 to 3,000 kg/h (2,200 to 6,600 lbs/h) and accommodates various pouch sizes. Its multi-tier design optimizes floor space utilization. Product infeed is handled via an inlet conveyor belt integrated with the filling machine. The system features a chilled water immersion cooling system, as well as overhead spray nozzles to accelerate heat transfer.



CREAM AGING TANK

Aging tanks are manufactured by CSI according to the customer's needs. Entirely made of 304 stainless steel, they feature agitation and heating systems, as well as a CIP (Clean-In-Place) system interconnected to the equipment.



FAT CONTROL PLUS

Developed by CSI to optimize milk standardization, this equipment performs precise, automated control of predefined parameters. It features an inline measuring device that automatically collects samples every 10 seconds, providing real-time data on fat, protein, total solids, and lactose content. All data is collected immediately after the mixing of skim milk with cream, and the cream addition rate is adjusted instantaneously after each measurement. In other words, every 10 seconds, the system self-adjusts to maintain milk composition within the defined parameters.

System control is managed through an HMI (Human-Machine Interface), where parameters can be adjusted, process data monitored in real time, and alarms and operation logs reviewed. The system also enables remote monitoring, adjustment, and data processing via online connectivity. All data is stored in the cloud and available for evaluation and report generation through integrated digital services.



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