

TONELLI

Technologies



Mixing



Thermal



Processing



Washing



Turnkey



The world of Tonelli Group



Mixing Technologies



Thermal Technologies



Washing Technologies



Processing Lines



Turnkey

100%
Made in Italy



A long Italian story to tell



Where it all started...
in a mix!



From top to bottom:
Riccardo Pennacchi, CEO. Alberto Pennacchi, Vice President. Marco Melegari, MD Engineering & Production. Annalaura Pennacchi, Manager Sales. Gerardo Villa, Senior Sales Manager.



Tonelli Group is the Italian Company which, for over 70 years, studies, designs, produces and sells complete plants for the Bakery Industry and from several years also provides product technologies connected to technical systems. Our references are among the most important Food Companies in the world.

Tonelli is considered a leader company in the mixing sector and in the food heat treatment plant. We have a technical office of over 20 professionals, who boast a great experience in the food sector, including a team of engineers.

Furthermore, our laboratory of 700 square meters, is where we develop technical and technological production solutions that are unique in the world.

In this laboratory, every day, experiments are carried out and two technologists / chemists work in collaboration with the technical office to create new production plants and to continuously optimize and improve the mixing techniques combined with heat treatments. In addition, Tonelli owns two international patents for batch and continuous cooling, while also concerning cream filling and its cooking.

Our production is independent, owning



Tonelli's first Vertical Planetary Mixer.

two metal carpentries with welders specialized in steel processing.

It would take a book of over 100 pages to explain the technical and technological differences of Tonelli compared to the competition, while explaining why it is a leader company present in all the largest companies in the food sector in the world.

The beginning

The company Tonelli, founded in Collecchio (Parma) in 1948 by the will of Emilio Tonelli, as an individual company of metal carpentry at the service of the National Electric Board. Soon after, in the mid-50s, the company starts to produce small machines (i.e., mixers, laminators, dosing and decorating machines) for small confectioners.

1950s

During the late 1950s and early '60s, Tonelli enters into the 'pasta' market

producing spreading machines as well as threaders and cutters for long pasta; this adventure lasts about 10 years, until, changes in the market, led the company to focus on the early core business, the confectionery, creating solutions destined to make history.

1970s

In the 1970s with the revolutionary Planetary Mixing System, Tonelli creates a real "Model" and leads the company to the top end of the Bakery and Confectionery machinery markets.

1980s

In the mid. 80s, Tonelli expands its range of machines and, for this purpose, initially acquires before the company Ravanetti, specialized in automatic lines for sponge cake-based products and turbo emulsifiers and, later on, the horizontal mixers' know-how by Lainox, thereby satisfying every requirement in the batter and dough productions.

1990s

In 1992 the division FPS, Food Processing Systems is founded, with the task of designing and manufacturing fully automatic sponge cake lines "tailored" to the client's needs, through laboratory tests and the support of bakery

technologists.

In 1994, the establishment of TIM, Tecnica Inox Meccanica, as a company for metallic carpentry within the group, allows to complete the production chain and strengthen the business in terms of flexibility, economies of scale and construction quality.

2000s

With the change of ownership in 2000, with the company under the leadership of Enrico Pennacchi, begins the renovation that, from the administrative, engineering and productive unification of the two divisions, Tonelli and FPS, creates Tonelli Group Ltd., which becomes a joint stock company in 2004.

The R&D side is strengthened in 2007 with the creation of a 700 sqm laboratory, available for Customers to test their usual recipes with Tonelli equipment, but also to study new ones with the support of an internal team of Food Technologists.

Today

In 2015, when Enrico passes away, the leadership goes to the heirs of the Pennacchi house, Riccardo as President / CEO and Alberto as Vice President.



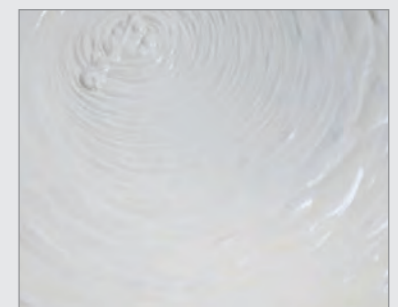
Tonelli Laboratory, recently renewed with the latest technological equipment, has become the fulcrum of all the Tonelli Universe, where passion, knowledge and technique are put at the service of the Customer.

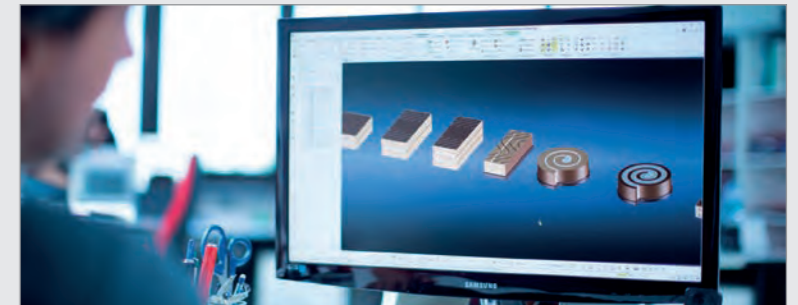
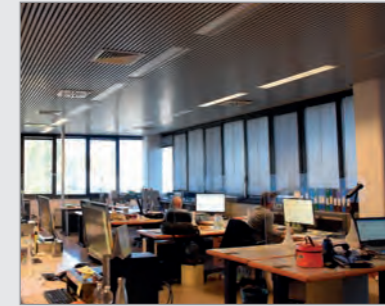
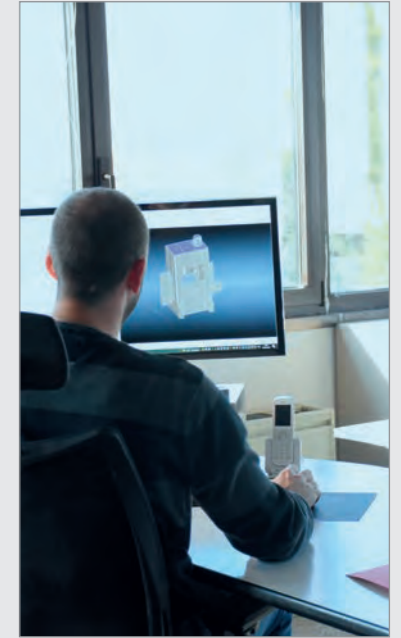
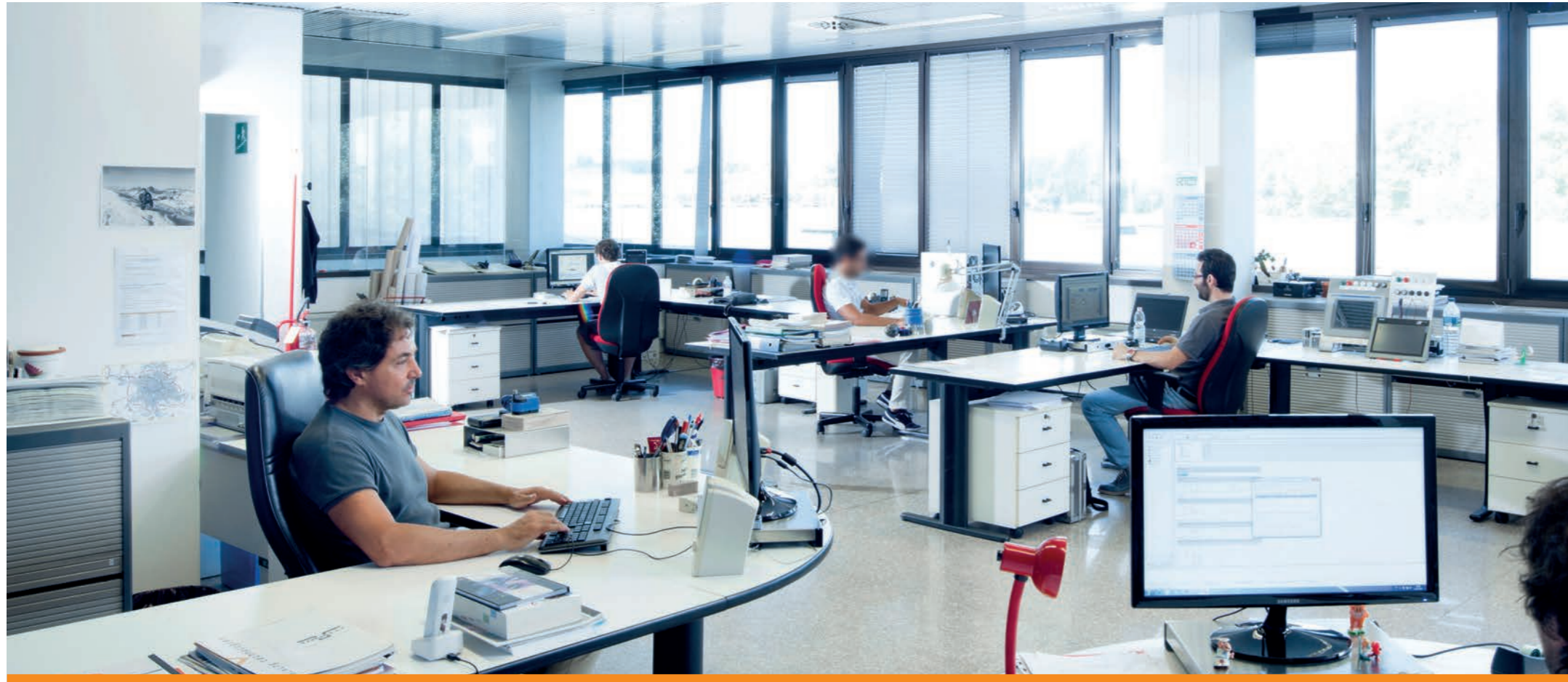
The R&D side is strengthened in 2007 with the creation of a 700 sqm laboratory, available for Customers to test their usual recipes with Tonelli equipment, but also to study new ones with the support of an internal team of Food Technologists. Thanks to this important facility, Tonelli developed new systems, entering in

the sector of thermal treatments by patenting an exclusive type of rotary scraped surface heat exchanger, plants for fats' plasticization and creams' pasteurization, as well as evolved homogenizers/cookers which have pushed the production into the catering and large retailers sector.



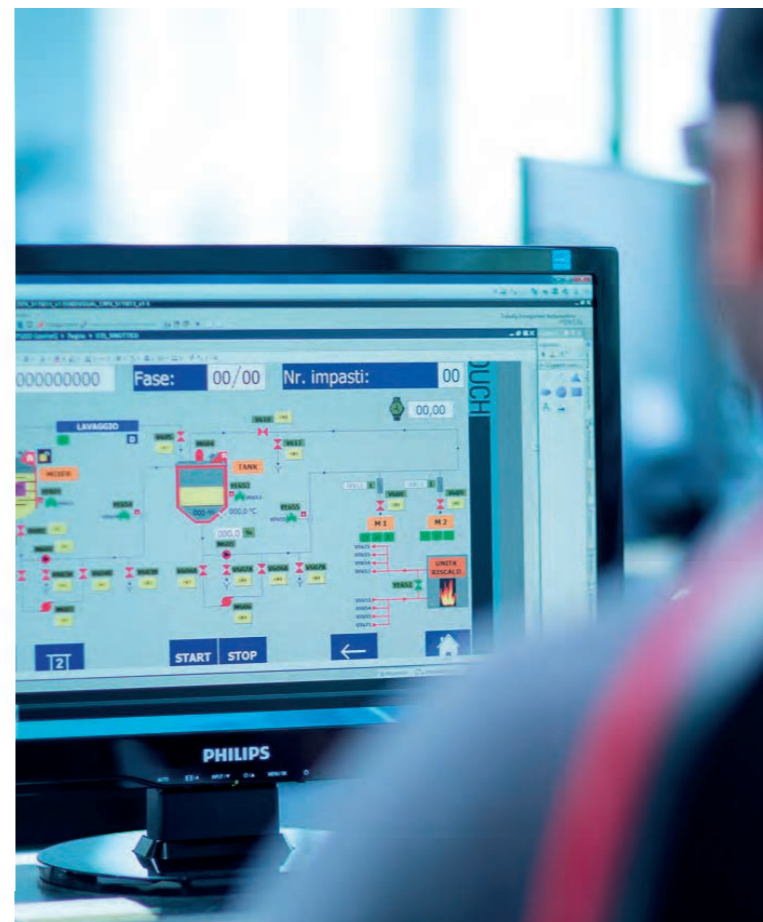
In our Laboratory where everything comes together: with Tonelli's know-how and experience combined with our customer's ideas we help to adapt our equipment to give the best recipe results.



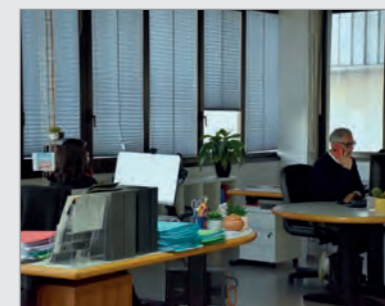
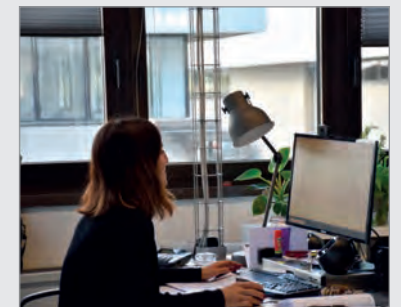


All these people have participated in making it possible to deliver over **12,000 Planetary Mixers** and **550 Sponge Cake Lines** to over **9,000 Customers** worldwide.

The points of strength of Tonelli are based on the human and professional contribution of about 300 people, between personnel, collaborators and agents: the extraordinary ingenious of a R&D department constantly aimed at the most innovative solutions; the vast mechanical and electronic know-how of an in-house production team; the sensibility of the sales team in listening to the Customer and his needs; the efficiency of the after-sales and spare parts services.



See inside our Engineering and projection department, where mechanic and electronic engineers work together to combine the perfect match.





A working day at Tonelli. Testing of a Sponge Cake line in our factory before being dismantled to be shipped for installation.

Vertical Planetary Mixers being wrapped up ready for packing and crating. Details of production in our facilities with testing and inspection.



There is no production site in other Countries, so the quality of our machinery is 100% Italian. The Tonelli's skilled workers, assemblers, welders, pipe fitters, mechanics and electricians, are among the most expert technicians and they are involved both in production and in the installation and commissioning phases at the Customer's site.

Each Tonelli machine is born here in our workshops near Parma, starting from the raw materials, the stainless steel, its structure and parts assembling, and to control and calibration, with the setting up of the software which makes it work.



Mixing Technologies



Vertical Planetary Mixer

120 L
200 L
300 L
400 L
600 L
800 L
1.300 L



Vertical Planetary Mayonnaise Mixer

120 L
200 L
300 L
400 L
600 L
800 L
1.300 L



Horizontal Mixer

TR 500
TR 1000
TR 1500



Centrifugal Mixer

MU 50
MU 100
MU 150
MU 200
MU 300
MU 400



Batter&Cream Premixer

RPX 200
RPX 400
RPX 600

CRPX 200
CRPX 300



Continuous Aerating Mixer

CAM 10
CAM 50
CAM 70
CAM 80
CAM 120

Thermal Technologies



Multifunctional Mixer

120 L
200 L
300 L
400 L
600 L
800 L
1.300 L



CombiTherMix

Made to measure



Thermal Exchangers

Made to measure

Mixing and Thermal Technologies



New Planetary Mixer XT Model



New MODULAR Compact Unit XT



Vertical Planetary Mixer

100%
Made in Italy



It is the machine by which Tonelli is known worldwide.

“The Planetary mixer” through time has become a mixer that can be simple or complex, depending on the customer requirements; it is normally equipped with a pair of mixing tools and a scraper, suitable for a given application, but thanks to the interchangeability with other tools it may become a universal machine. The versatility is to allow manufacturers to achieve different operations using a single machine.

Innovative Classics

The range of equipment, designed according to tradition with robust and long-lasting qualities, also provides integrated and complex systems, offering custom-made solutions. With products ranging from large, automated and computerized systems to mixers for smaller-scale businesses with a home-made touch. Tonelli Group is the ideal partner for both large and small companies working in the confectionery and bakery industry.

Planetary Mixing System

The exclusive Tonelli Planetary Mixing System combines the use of one or two tools with the scraper, depending on a pre-set rotating ratio, to guarantee quality mixing in a class of its own. To meet different production needs related to specific product technologies, Tonelli also provides a Dual motorization option. This means the revolution of tools is independent of their rotation, so the number of parameters that can be programmed for recipes can be increased.



Drip catcher



Drip catcher detail

Cookies, Pasta bris e, Shortbread, Cake mixes, Sweet & savory leavened, Cream and mousse, Meringues, Marzipan, Ganache & chocolates, Bakery products, Mou caramel, Marshmallow, Souffle, Sauces & b echame, Dulce de leche, Jam, Jelly, aspic miroir, Molleux, Condensed milk, Toffies



1999 machine

TECHNICAL DATA

Reference	Batch Capacity (L)	Power (kW)	Dimension (mm)				Weight (kg)
			Length	Width	Height with side motorization	Total Height	
120 L	80/100	7	1481	1000	2245	2680	778
200 L	130/160	9	1700	1320	2570	3025	1262
300 L	200/250	19	1800	1530	2660	3245	2100
400 L	270/320	26	1900	1780	3280	3731	3150
600 L	450/550	41	2320	2150	3573	4125	4580
800 L	630/730	59	2320	2150	3973	4595	5515
1300 L	750/1000	83	2940	2580	4130	-	8000



Vertical Planetary Mixer

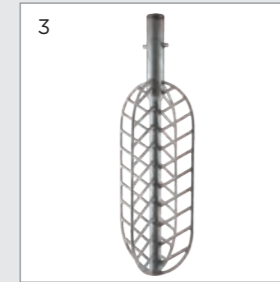
Mixing accessories

Range also for Multifunctional mixer



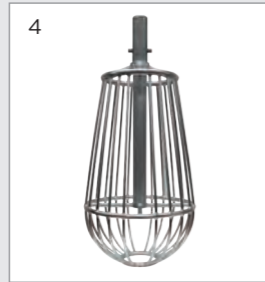
A wide range of tools that are interchangeable depending on product technologies, quick and easy to change, makes Tonelli Planetary mixers even more versatile.

Fine Wire Whisk

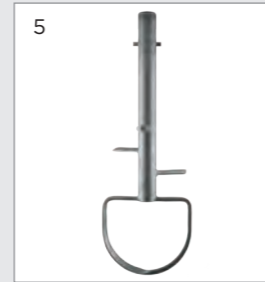


Large Basket Whisk.

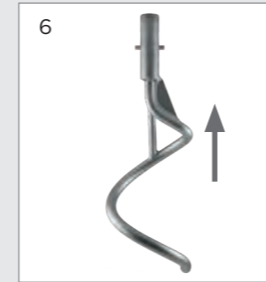
Cross Beater



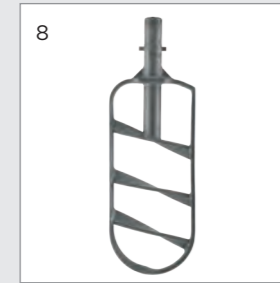
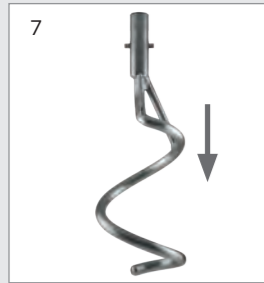
Heavy Wire Whisk.



Spade Cutting Tool



Ascending Spiral Round Bar



Descending Spiral Round Bar

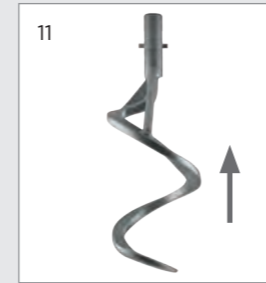
Flat Paddle



Double U Bar Paddle



Flat Ascending Spiral Wide Bars



Flat Ascending Spiral Narrow Cross Bars



Flat Paddle

Bowl Scraper



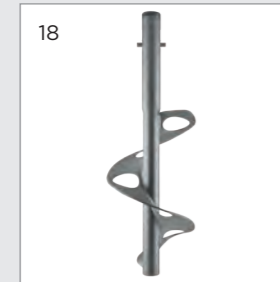
Round Bowl Scraper



Fine Wire Whisk

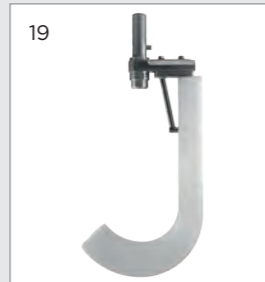


Star Beater



Cutting Tool

Extralarge Spiral with Holes



Integral Scraper



Cutters



Sigma Tool



Vertical Planetary Mixer

Bowls



The bowls are made in AISI 304 stainless steel (or in AISI 316 on request), suitable for working in pressurized or vacuumed environments. The bottom is designed using a mold of Tonelli propriety which guarantees that the inside of each bowl has exactly the same shape, reaching the same standards even for multiple use or when items are purchased at different times. This inner shape matches the scraper perfectly, making sure that the mixture is continually directed towards the tools, speeding up and optimizing the mixing of the ingredients.



Bowl scraping



Automatic discharge

Manual discharge



Double wall bowl



Detail of discharging valves for Multifunctional mixer



Single wall bowl





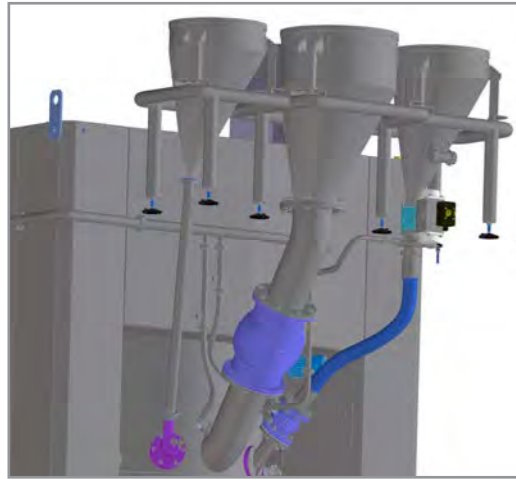
Vertical Planetary Mixer

Automatic feeding & dosing of ingredients

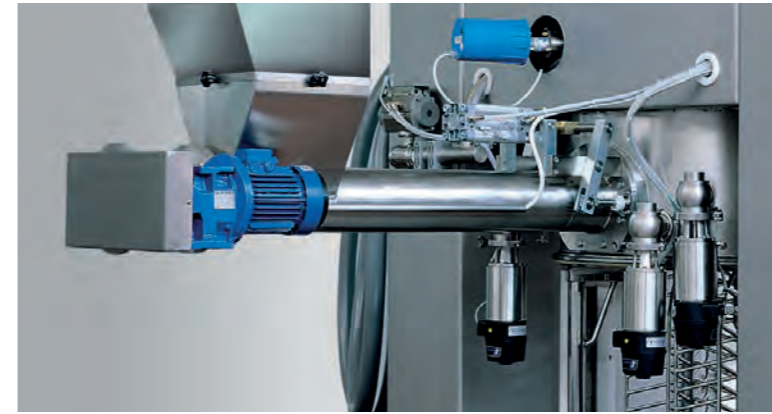
100%
Made in Italy



A wide range of ingredients, both powder and liquid, can be easily incorporated into the mixture, via manual or automatic feedings at each stage of the recipe. These inlets can be connected to a dosing system, consisting of tanks loaded with pre-weighed ingredients or filled through scales or dosing pumps.



Feeding detail



Product transfer System



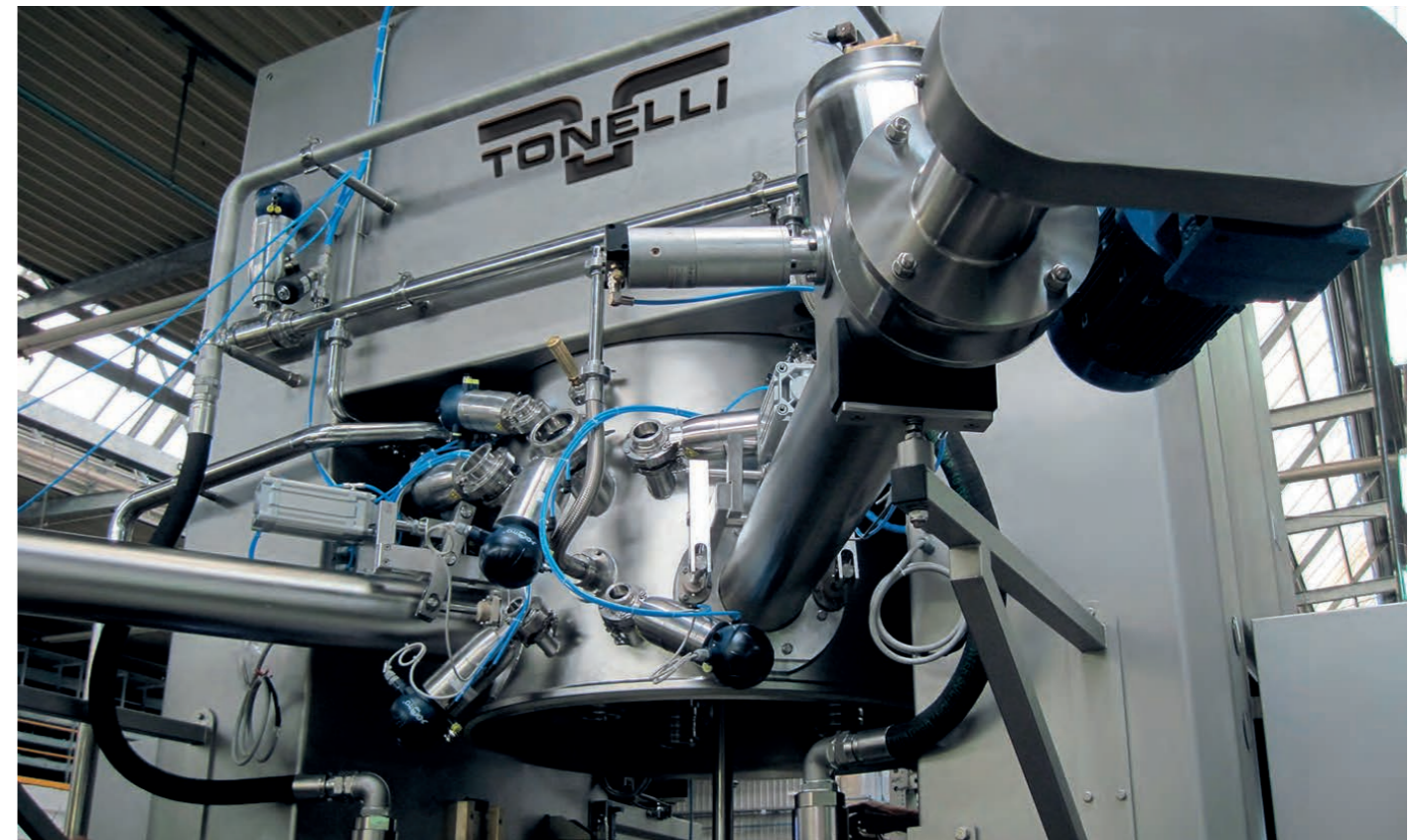
Automatic liquid feeding



Powder feeding detail



Automatic powder feeding





Vertical Planetary Mayonnaise Mixer

Special Hi-Speed Gearbox

Only one special tool. Central positioning of the tool. Flat Scraper. Special Tool with Cutters (mayo). Conical bowl with flat bottom. Dedicated Software Separate control board. Automatic Liquids feeding and dosing for high precision.



Mayonnaise, Bernese sauce, Bechamel, Cocktail Sauce, Mustard sauce, Sauces, Hollandaise sauce, Maltese Sauce,



TECHNICAL DATA

Reference	Batch Capacity (L)	Power (kW)	Dimension (mm)				Weight (kg)
			Length	Width	Height with side motorization	Total Height	
120 L	80/100	18	1481	1000	2245	2680	778
200 L	130/160	19	1700	1320	2570	3025	1262
300 L	200/250	27,5	1800	1530	2660	3245	2100
400 L	270/320	43	1900	1780	3280	3731	3150
600 L	450/550	62	2320	2150	3573	4125	4580
800 L	630/730	82	2320	2150	3973	4595	5515
1300 L	750/1000	101,5	2940	2580	4130	-	8000



Transfer systems for Vertical Planetary Mixer

100%
Made in Italy

TONELLI

Hydraulic Lifter/Tilter with single straight column, anti-torsion.

The Tonelli EIR lifter is suitable for non pumpable products i.e.: rotative dough, biscuit dough and cookie doughs. The average discharge point is 2500mm, adjustable on request. Bowl lifting device with trolley, moved by a hydraulic cylinder. Hydraulic motor for the bowl overturning, scraping arm with bowl bottom shaped blade for optimal results. Safety cage with access doors.



1. Lifters and tilters for products with high viscosity or particles.
2. Specific positive-displacement pumps to suit the particular characteristics of the product.
3. External pump transfer to the bowl.
4. Bowl tilter.



Product Positive displacement pump, placed on the floor
S/s structure to support the transfer unit. Double screw floor-mounted pump. Gear motor. Special rear protections. Flexible piping for connection to the bowl. Selector valve, pneumatically operated. Additional pressure reducer (1bar).



External pump, transfer to the bowl.
Positive displacement pump & motor. Quick connection. Locking bowl group



Hydraulically Operated Bowl Tipping Unit mod. ROV
Hydraulic power pack to drive a piston that, via special cams, actuates the bowl lifting and tipping. A chute, integral to the tipping unit, provides to convey the product into the hopper below, integral to the overturning unit. Possibility to add bowl scraping arm.



Transfer systems for Vertical Planetary Mixer

100%
Made in Italy



Pneumatic Transfer Pump Mod. TSB Plunger

Suitable for *pumpable products*, transfer of products such as: Icing, Sponge, Creams, Batters. A plunger perfectly reproduces the shape of the Tonelli bowl bottoms, manually operated with an on-off valve. The new emptying plunger is equipped with a revolutionary scraper pneumatically operated, lowered into the bowl until it reaches the product, and is pneumatically inflated on lifting to increased the efficiency of the bowl cleaning with improved hygiene standard. The product is then transferred by displacement tube and piping. Pneumatic device for emptying the bowls. Pressure adjuster to optimise the discharge flow-rates.



Revolutionary scraper pneumatically operated, lowered into the bowl until it reaches the product, and is pneumatically inflated on lifting to increased the efficiency of the bowl cleaning with improved hygiene standard.



Double column lifter

Tonelli anti-torsion double column lifter/tilter created by Tonelli to transfer large quantities of products, in complete safety and with great reliability over time. Thanks to its columnar structures (in thick sheet metal, folded and closed on themselves), it has high stability during operation and possibility to support a scraping arm to clean the bowl after unloading the product.



Ejector

Ejector with a bridge-type configuration by pooling a central box body and two bearing elements. Inverter-controlled, to drive the wormscrews that action the bowl lifting. "Knock-out" unit for product extraction, jacketed for possible hot water circulation., featuring a central hole (DN 100) for product outflow. Pressure transducer for the correct management of bowl emptying.



Hydraulic Heavy Duty Double column lifter

No. 4 wheels to allow displacement according to discharge requirements. Standard discharge height: 1900 mm. above floor level. Chute integral to the bearing columns, to convey the product into the central area of the collection hopper.



Inclined single column lifter mod. EI

Tonelli anti-torsion single column lifter/tilter created by Tonelli to transfer large quantities of products, in complete safety and with great reliability over time. Thanks to its columnar structures (in thick sheet metal, folded and closed on themselves), it has high stability during operation and possibility to support a scraping arm to clean the bowl after unloading the product.



Two horizontal TR500 Mixers complete with automatic loading and weighing system. For use with gluten free or standard recipes.

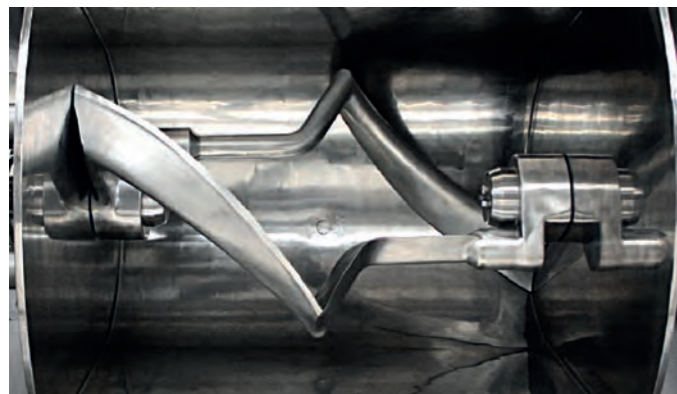
Horizontal mixing plant



Bakery products,
Chewin-gum, Cookies,
Crackers, Hard dough,
Dough pastries, Brisee
pastry, puff pastry.



“Universal” arms ideal for soft and hard products



“Triple” arms ideal for ‘laminated’ pastry dough



TECHNICAL DATA

Reference	Batch Production (kg)	Power (kW)	Dimension (mm)			Weight (kg)
			Length	Width	Total Height	
TR 500	500	39	3580	2010	3460	9000
TR 1000	1000	56	4160	2050	3860	10000
TR 1500	1500	91	4950	2050	3860	11000

Features

1. High stability bearing structure, with new Tonelli design;
2. Mixing Environment (bowl, tool, cover) in AISI 304/316 SS;
3. Hydraulically controlled bowl rotation, flexible over 140 degrees;
4. Special system for bowl locking during working phases;
5. Double cavity for forced circulation of cooling/heating fluid and for insulation;
6. High thermal exchange;
7. Heavy duty mixing arm made of cast stainless steel AISI304.
8. Motorization directly coupled to the mixing arm and variable working speed from 0 to 100%;
9. PLC and HMI control as standard;
10. Hydrodynamic washing unit; Possibility of installing retractable washing heads and relative drain valve and centrifugal pump for relaunching washing water.
11. Predisposed for ingredients' automatic loading.
12. Front and rear bowl access, for automatic front loading of the ingredients and manual loading of minor ingredients from the back of the mixer. Access from a platform by ladder to easily introduce the ingredients into the bowl.

High production efficiency mixer, suitable for fast mixing of batters for cakes and sponge cakes, meringue premix, also to homogenize and emulsify creams and whipped creams, sauces and mayonnaise, as well as fats for margarine plasticization.

Advantages

Reduced process times; Versatility of application and Cost savings thanks to its capacity to be also a scraps mixer.

The ingredients can be introduced both manually and with volumetric dosers, by using a pump, or they can be weighed with loading cell scales.



Bakery products, Sauces, Creams, Meringues, Cupcake, Sponge cakes, Character cakes, Icing preparation, Toppings.



TECHNICAL DATA

Reference	Batch Production (kg) *Referred to s.g. = 1	Power (kW)	Dimension (mm)			Weight (kg)
			Length	Width	Total Height	
MU 50	50	7	630	500	1450	350
MU 100	100	11	820	1070	2020	500
MU 150	150	11	820	1070	2020	530
MU 200	200	12	1420	1340	2120	580
MU 300	300	15	1450	920	1450	650
MU 400	400	22	1450	1322	2410	1100

**Batter skid
(tank + aeration)**



**Batter
Premixer RPX**



The Tonelli premixers for batters and creams allow to obtain a fast and simple mixing of ingredients, when the next step is a continuous process.

The mixing speed and times are completely adjustable, according to the working phases and the kind of raw materials. Thanks to this, the Tonelli premixers are extremely flexible and allow to obtain a high level of quality in the final mixed product. After mixing, the product is transferred by a mono screw pump to the buffer tank. Our premixers are all built in AISI 304 stainless steel and are fully washable, with predisposition for C.I.P. systems; the management through PLC and HMI allows the storage of recipes and a safe and easy use by the operator.



Batter Premixer RPX

This is the classic system for batter preparation, in which mixing times are extremely fast. Mixing is obtained with small and frequent batches, in order to avoid any long resting times and assure that the quality of the product is optimal.

Buffer Tank ST

The pre-mixed product is transferred to a Buffer Tank where it is kept cold, so that the following step of aeration can be performed at best. The cone shape allows the perfect draining and the inner agitation with scraping blades assures homogeneous cooling of the batter batch.

TECHNICAL DATA

Reference	Batch Production (kg) <small>*Referred to s.g. = 1</small>	Power (kW)	Dimension (mm)			Weight (kg)
			Length	Width	Total Height	
RPX 200	200	13	2170	1250	2280	930
RPX 400	400	13	2170	1250	2700	930
RPX 600	600	21	2170	1250	2700	930

Cakes, Swiss Rolls, Mini Rolls, Sponge cakes, Ladyfingers, Layer cakes biscuits.





Cream Premixer CRPX

This premixer produces cream for fillings extremely fast, thanks to its “motorized and static mixing system”.

Cream can be conditioned through the cavity wall, in which cold water keeps the temperature uniform for the following step of the aeration. Cream transfer is eased by a screw feeder for pump. Both premixer and tank are built in such a way that all the parts on contact with the product can be perfectly cleaned.



Buffer Tank ST

It is a container for cream storage and feeding, jacketed for hot water forced circulation. One arm agitates the stored cream, while dedicated scrapers prevent the cream from sticking to the internal wall.

Bakery products,
Stuffings, Creams,
Hydrated creams,
Macarons.



Cream skid (tank + premixer)



TECHNICAL DATA

Reference	Hourly Capacity Referred to s.g. = 1	Power (kW)	Dimension (mm)			Weight (kg)
			Length	Width	Total Height	
CRPX 200	200	13	1970	1250	2320	1100
CRPX 300	300	13	1970	1250	2400	1150





The CAM machine is a continuous mixer suitable to aerate and emulsify any product that requires even structure and increased volume.

This is obtained through the combined action of a stator precision coupled to a rotor, both provided with whipping teeth. The stator is jacketed to allow forced circulation of cooling water.

Aerating Mixer Unit



Bakery products, Mousse, Creams, Marshmallow, Toffee, Moon Cakes, Sufflé.



TECHNICAL DATA

Reference	Batter Hourly Capacity Kg/h Referred to s.g. = 1	Cream Hourly Capacity Kg/h Referred to s.g. = 1	Power (kW)	Dimension (mm)			Weight (kg)
				Length	Width	Total Height	
CAM 10	100/250	100/250	5,5	1000	676	1680	370
CAM 50	300/500	250/450	7,5	1300	860	2180	820
CAM 70	500/800	450/750	11	1340	860	2180	940
CAM 80	800/1200	750/1150	18,5	1380	870	2180	1220
CAM 120	1200/2000	1150/2050	30	1500	880	2330	1410

Features

- Optimal feeding of the head, thanks to its vertical structure.
- Control of the emulsified product's process and specific weight.
- Temperature control through more thick interspaces for heating/cooling.
- Maximum hygiene with its tubular frame.
- Production capacity improvement, thanks to the interchangeable heads according to the recipes.
- The available heads have different lengths, to select the best one for the product to aerate. This brings about a great technological flexibility.
- Top hygiene and easy cleaning, as rotor and stator are directly machined from a single piece, no welds or other fixing around. Even the tubular structure makes the washing phase easier.
- Liquid ingredients can be injected straight into the aerating head or liquid and solid ingredients can be added just downstream the aerating phase, with no impact on the quality of aeration while keeping the final specific gravity under strict control.
- Easy access to the electric and pneumatic parts for maintenance;
- Reduced vibrations, thanks to its low frame and improved motorization;
- The separate cabinet reduces overheating of the components.



Multifunctional Mixer

Cooking systems by: Heating Control System Through Steam, Heating Control System through Pressurized Heating system & changeover with Cooling System, Both systems combinable with Hard Vacuum

This special execution of the Vertical Planetary Mixer is a multifunctional cooking/cooling system.



It features a bowl with jacketed walls, allowing saturated steam circulation for cooking or water for cooling down the product in the same mixing chamber. Through the high vacuum it is possible to speed up the cooling phase or concentrate the blend, while mixing. This system also allows to aerate the product with purified air under pressure and to use new cooling technologies - CO₂, liquid nitrogen, glycol for the food industry. Special mixing tools and scraper are specially designed and dedicated for this extreme mixing environment. Safety is guaranteed by inox cages, protecting the operator from the whole steam circuit. With its great flexibility, the Multifunctional Mixer realizes a great variety of products, such as pâte a chou, marzipan, dulce de leche, wafer, creams, sauces, jams, etc.

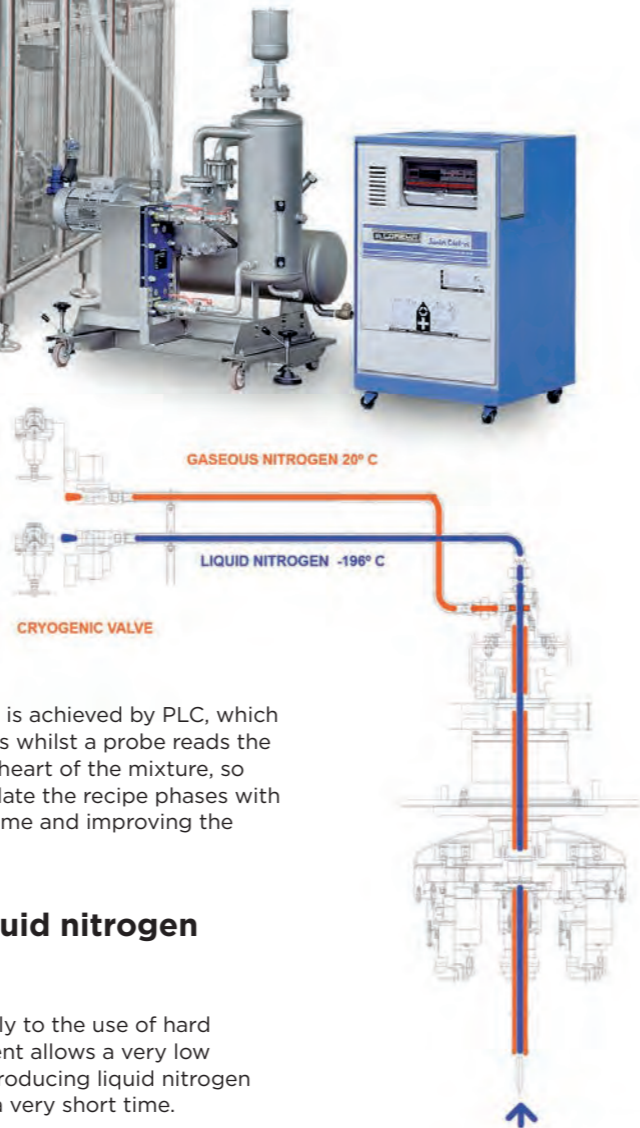


Temperature Management

The temperature control is achieved by PLC, which manage the steam valves whilst a probe reads the temperature in the very heart of the mixture, so that is possible to modulate the recipe phases with great precision, saving time and improving the product consistency.

Cooling with liquid nitrogen (Tonelli patent)

Combined or alternatively to the use of hard vacuum, this Tonelli Patent allows a very low cooling temperature, introducing liquid nitrogen directly into the mix, in a very short time.



Characteristics

The Multifunctional mixer has the following special features, compared to the Classic Planetary Mixer:

- 1 Unit for the survey and management of the product temperature, control and setting of the desired temperature;
- 2 Unit for the automatic management of the saturated steam at a maximum temperature of 4 ATM;
- 3 Unit for cooking at desired temperatures and pressures;
- 4 Automatic unit for the management of condensed water;
- 5 Safety installation on the whole steam circuit;
- 6 Tonelli's software for product cooking at different phases;;
- 7 Stainless steel safety cage to access the back side of the mixer, where the zone dedicated to the steam treatment into the mixer is settled;
- 8 Double walled bowls for saturated steam management at a high pressure - ISPEs Safety Certification with final test at 6,5-7 Bar;
- 9 Mixing tools and scraping systems specific for cooked products mixes, even at high temperatures;
- 10 Man-machine interface for production phases with steam mixer TP1200 12" color Siemens Touch Screen;
- 11 Steam preparation Unit can be provided on request.
- 12 Steam preparation Unit can be provided on request.



Hard vacuum unit

Speeds up concentration and/or cooling processes while safeguarding the organoleptic properties of the product.

100%
Made in Italy

TONELLI

Condensed milk
marshmallow, Jam, Jelly,
aspic miroir, Molleux,
Toffees, Mou caramel,
Souffle, Sauces &
béchame, Dulce de leche,
Pate a choux.



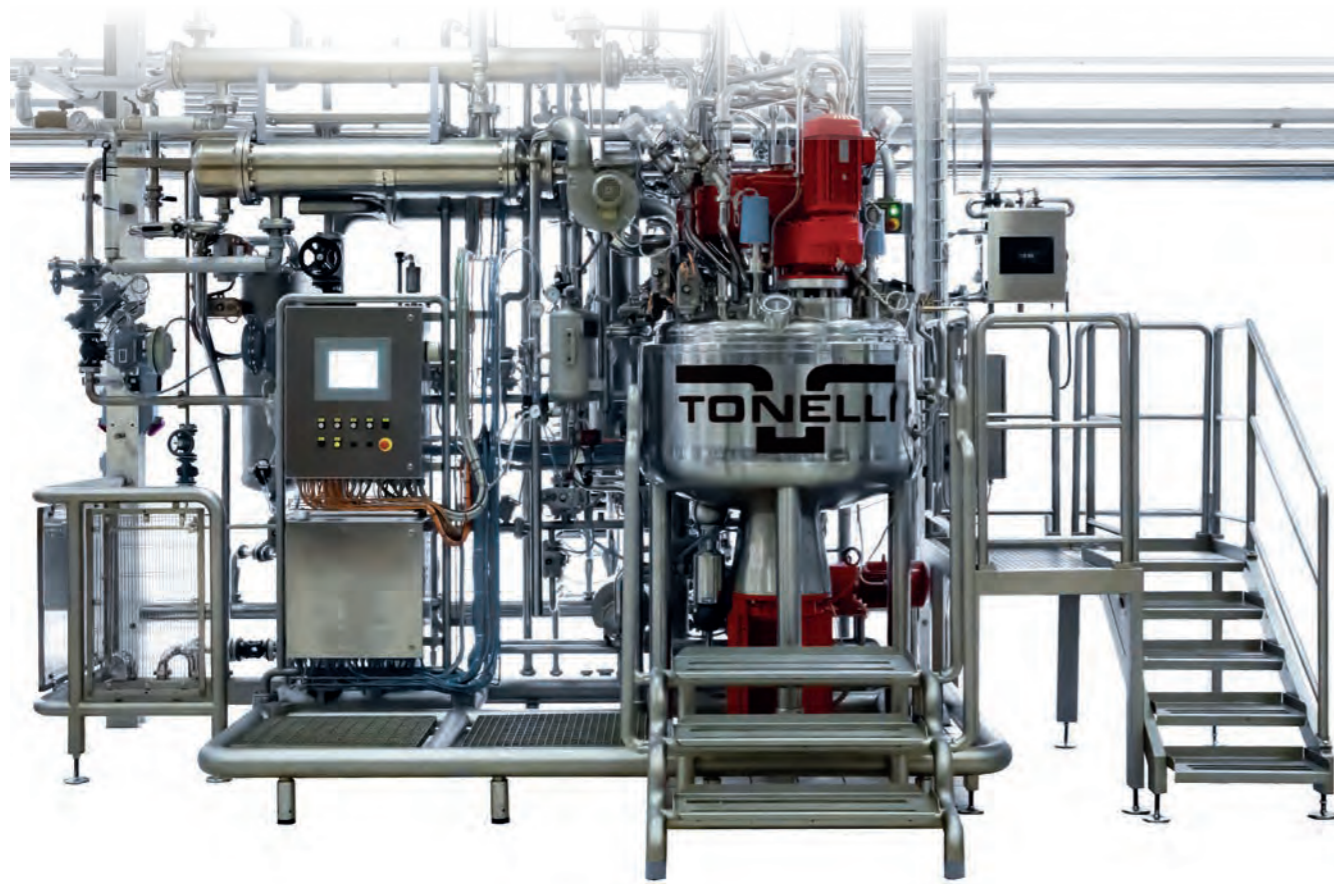


CombiTherMix

100%
Made in Italy



It is the new evolution of Tonelli's engineering for aseptic production technologies, for both Bakery and Gastronomy.



This machine combines several mixing systems and thermal treatments, so that it is extremely versatile for a wide range of applications (creams, sauces, bechamel, mayonnaise, pate', ketchup, ragout, ready to bake and many more...)



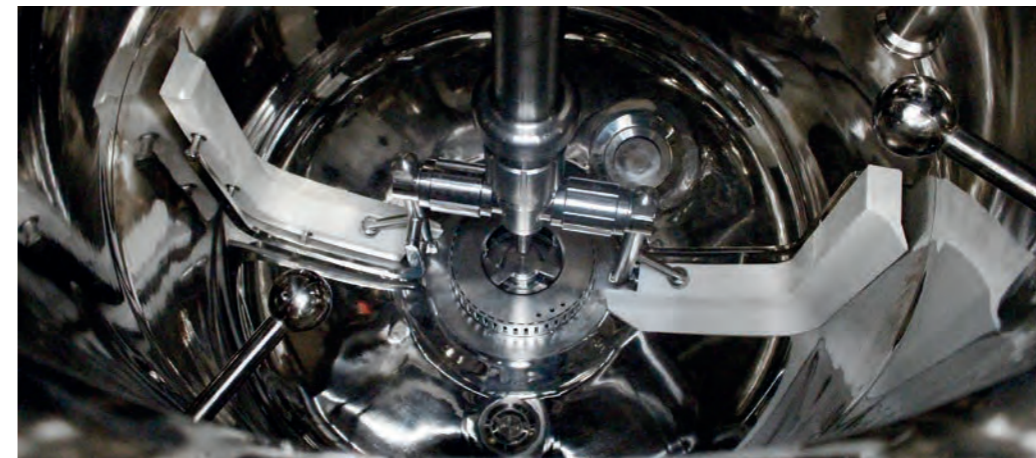
Centrifugal Homogenizer

3 different types of rotating impeller are available, different combinations of tools according to the product to be obtained, giving high versatility. Different tools for different products, this is Tonelli versatility.



FEATURES

- Cooking via saturated steam;
- Cooling by iced water;
- Hard vacuum treatment;
- Cooling by liquid nitrogen;
- Interchangeable mixing tools;
- Integral scrapers;
- Homogenizing head;
- Aseptic product discharge valve.
- Cooking with injection of food-grade steam.



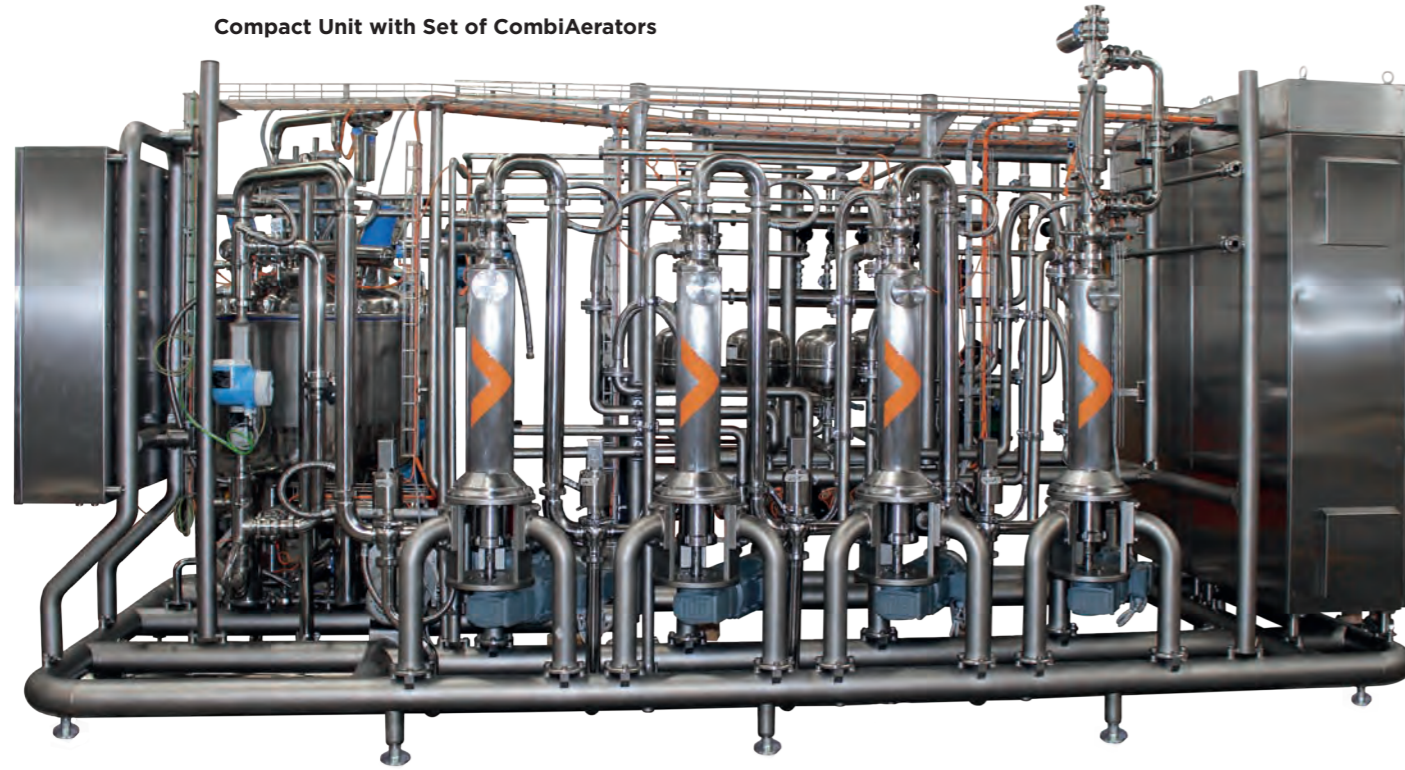
Sauces, Creams, Ragout, Ketchup, Ready to bake, Bechamel, Mayonnaise, Paté.





Driven by the constant research for new technical solutions for the most special needs, TONELLI has created a series of heat exchangers for various production requirements: from the production of soft dough to pasteurized creams, and for any products that require a targeted heat treatment.

Compact Unit with Set of CombiAerators



CombiAerator®

CombiAerator® is one of the latest Tonelli developments. It's a Scraped Surface Rotary Heat Exchanger featuring a very quick crystallization, joint to a high-grade homogenization, that refines the plasticization crystals while chilling. The core patent is in the peculiar geometry of the unit, where teeth take turns with knives: the thermal exchange is highly increased, as well as homogenization and nitrogen incorporation (if present). The exchange chamber is narrow, but the exchange effectiveness is very high. This solution is extremely versatile, so that it fits variable technologies. All the versions are projected and built with "sanitary design" regulations: the scraping knives are in high-grade synthetic resin, odorless, non-toxic, and bacteriologically inert. This heat exchanger presents completely new technical solutions and thus was patented by Tonelli. The particular conformation of the rotor, which alternates scrapers and teeth, not only allows a thermal control of the batter, but also produces a marked effect of homogenization of the fat and gaseous phase. For this reason, with this system it is possible to produce and whip a very wide range of products, but mostly those products whose technology is not achievable with a classic aerator.



Scraped surface rotary heat exchanger

"SANITARY DESIGN" heat exchanger for aeration and slow crystallization of products at medium/high viscosity and with high fat.

- ▶ Cooling section in a high thickness gear included between two stators in which runs icy/glycolated water.
- ▶ Aerating section via toothed head with independent movimentation.
- ▶ Synthetic resin scrapers, high quality, inodorous, non-toxic, bacteriologically inert.

Wide scraped surface horizontal heat exchanger

- ▶ FOR HARD PRODUCTS
- ▶ Maximum operating pressure 21 bars.
- ▶ Rotor AISI 316 with synthetic resin scrapers bacteriologically inert.
- ▶ Stator AISI 316 with high section jacket for saturated steam injection.
- ▶ Hygienic design.
- ▶ Integrated system for rapid rotor assembly and disassembly by means of rotating bearings.



Double scraped surface heat exchanger



- ▶ "SANITARY DESIGN" heat exchanger for continuous cooling of every kind of food products.
- ▶ Beater teeth in stainless steel AISI 316 to optimize the air incorporation.
- ▶ Double stator (inner-outer) with spiral for refrigerating or heating fluid circulation.
- ▶ Synthetic resin scrapers, high quality, inodorous, non-toxic, bacteriologically inert.
- ▶ Product aeration via air/gaseous nitrogen injection through automatic flowmeter.



A NEW ERA OF BAKERY EXCELLENCE



Unique
Adjustable
Innovative
Interactive
Energy Saving

New concept
Modular
Safer
Easier
Versatile

More...
Functional
Hygienic
Universal
Adaptable

New Planetary Mixer XT



New MODULAR Compact Unit XT





New Planetary Mixer XT

100%
Made in Italy

Multi-functional Power Mixer. Mixing capacity from 100 to 500 l in one mixer.
Laser Safety Barriers. Smart interactive software, colour touch screen.
High precision bowls. Hygiene design valves signal for: open/closed, alarm.



HEATING BY:

- Steam
- Pressurized water
- Induction
- Hot water recirculation
- Bain marie process
- Diathermic oil

COOLING BY:

- Cold water recirculation ($\pm 4^{\circ}\text{C}$)
- Liquid Nitrogen
- Carbon dioxide

BOTH HEATING & COOLING:

- Supported by the help of Vacuum or pressure



TONELLI

XT

Cookies, Pasta brisè,
Shortbread, Cake mixes,
Sweet & savory leavened,
Cream and mousse,
Meringues, Marzipan,
Ganache & chocolates,
Bakery products, Mou
caramel, Marshmallow,
Souffle, Sauces &
béchame, Dulce de leche,
Jam, Jelly, aspic miroir,
Molleux, Condensed milk,
Toffies





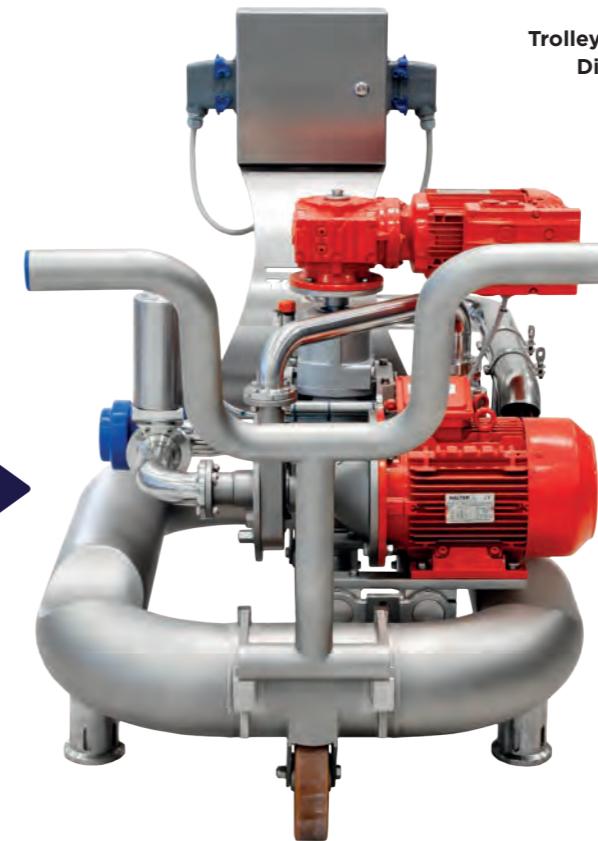
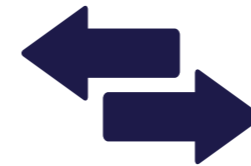
New MODULAR Compact Unit XT

for Batter and Cream Preparation

100%
Made in Italy

TONELLI

XT



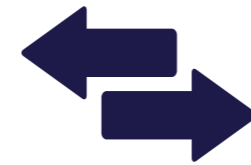
Trolley with: Product Discharge Pump

NEW CONCEPT MODULAR COMPACT UNIT composed of interchangeable trolley units with:

- ▶ Buffer Tank
- ▶ Product discharge pump
- ▶ Continuous Arating Cam with New Conical head *
- ▶ Combiaerator, scraped surface heat exchanger

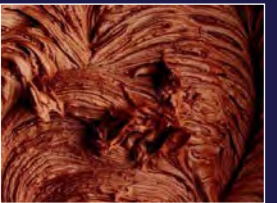
Each unit is equipped with its own trolley on wheels to be quickly and easily replaced through its electrical, pneumatical and mechanical quick connections. The new system facilitates maintenance and easily change the trolley on the compact unit.

*The new conical head of the CAM unit is designed to eliminate the air pockets during the aeration phase so that all the injected air is incorporated into the product.



Trolley with: Combiaerator, scraped surface heat exchanger

Creams, marshmallow, sauces, bechamel, dulce de leche, pate a choux, jelly, jams, soufflé, aerated creams, bakery products, mousses, moon cakes, macarons, caramel, mascarpone, cream fillings





Processing Technologies



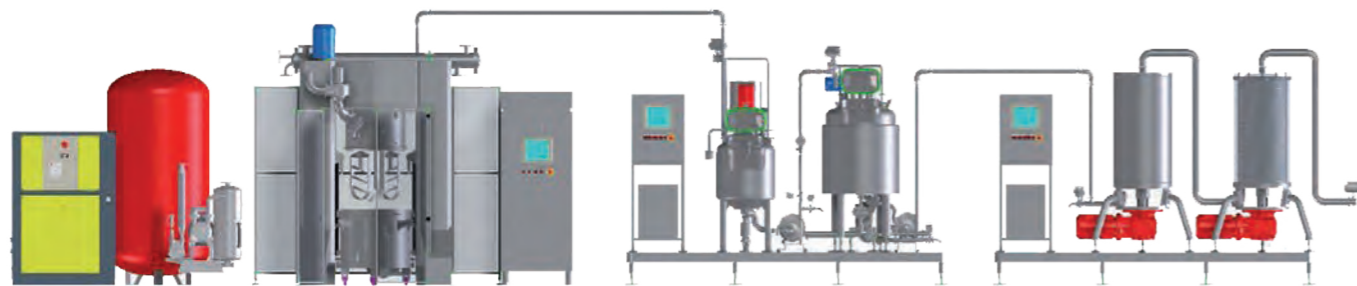
Sponge Cake Lines



Multi-filling



Fat plasticization systems



Pasteurization systems



Washing Technologies



C.I.P. Washing systems



Sponge cake line

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Bar cakes, Mini roll,
Swiss roll, Mini bites,
2 layer cakes,
2 layer cakes, Family layer
cakes, Folded swiss roll,
Sliced swiss roll,
Vertical layer cake,
Special occasion cakes,
Rusk biscuits, Biscuits.

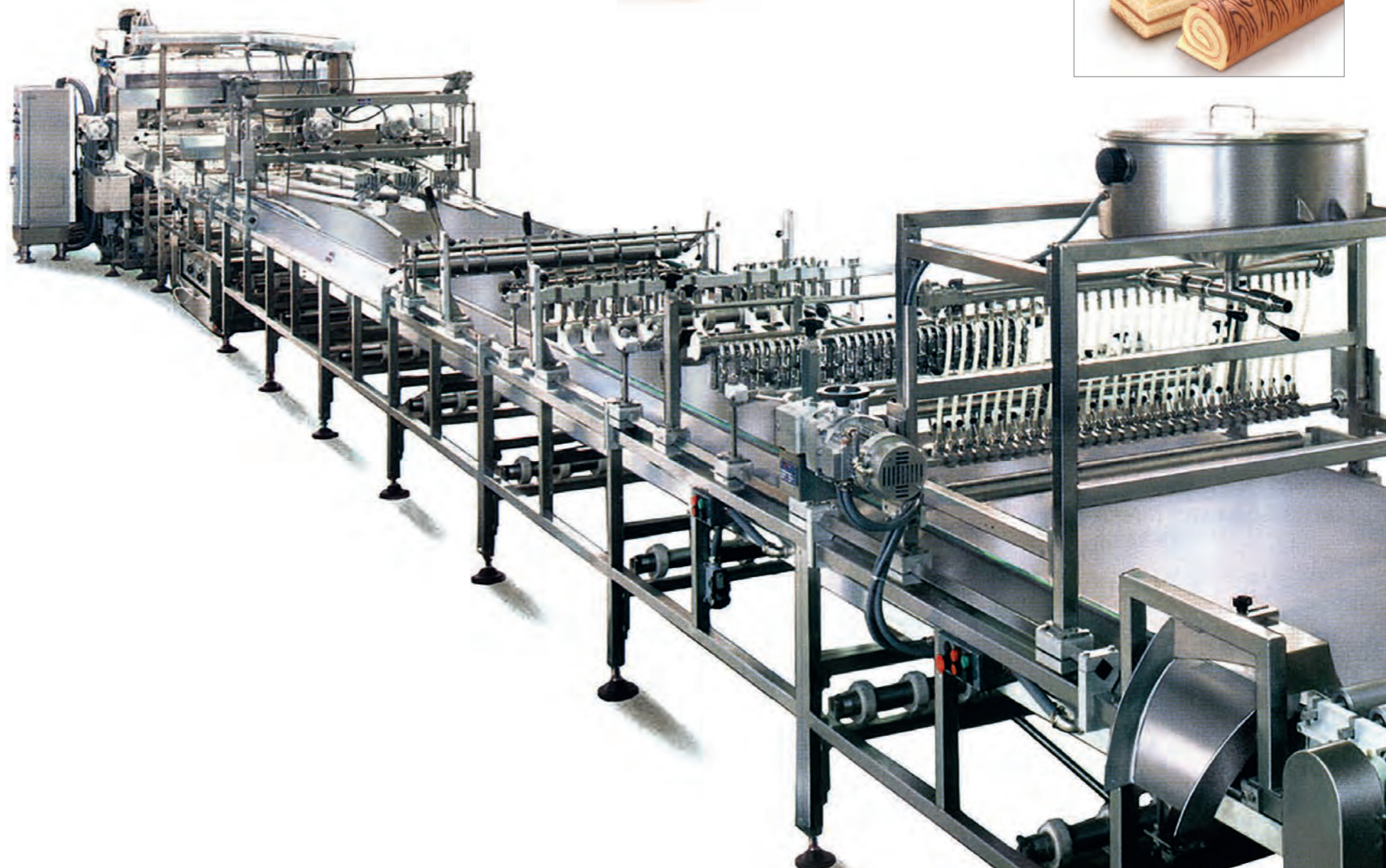


START



The Tonelli Multiproduct Spongecake Lines are totally automatized, from the mixing up of the ingredients to packaging. They are designed and made to ensure very high outputs and an excellent standardization and quality of the finished product. Each line is able to produce several kinds of products, simply changing settings.

- ▶ Dosing
- ▶ Decoration
- ▶ Baking Oven
- ▶ Overhead Cooling Conveyor
- ▶ Longitudinal Cutting
- ▶ Syrup Distribution
- ▶ Cream Distribution
- ▶ Overlapping
- ▶ Rolling
- ▶ Transversal Cutting
- ▶ Chocolate Enrobing Tunnel
- ▶ Packaging



END





Batter Preparation



To start producing on an automatic cake line, first of all raw ingredients have to be incorporated into a batter, then mixed and portioned properly. Batter can be achieved through a variety of equipment and Tonelli provides all the right solutions to obtain the desired product.

PER BATCH



CONTINUOUS



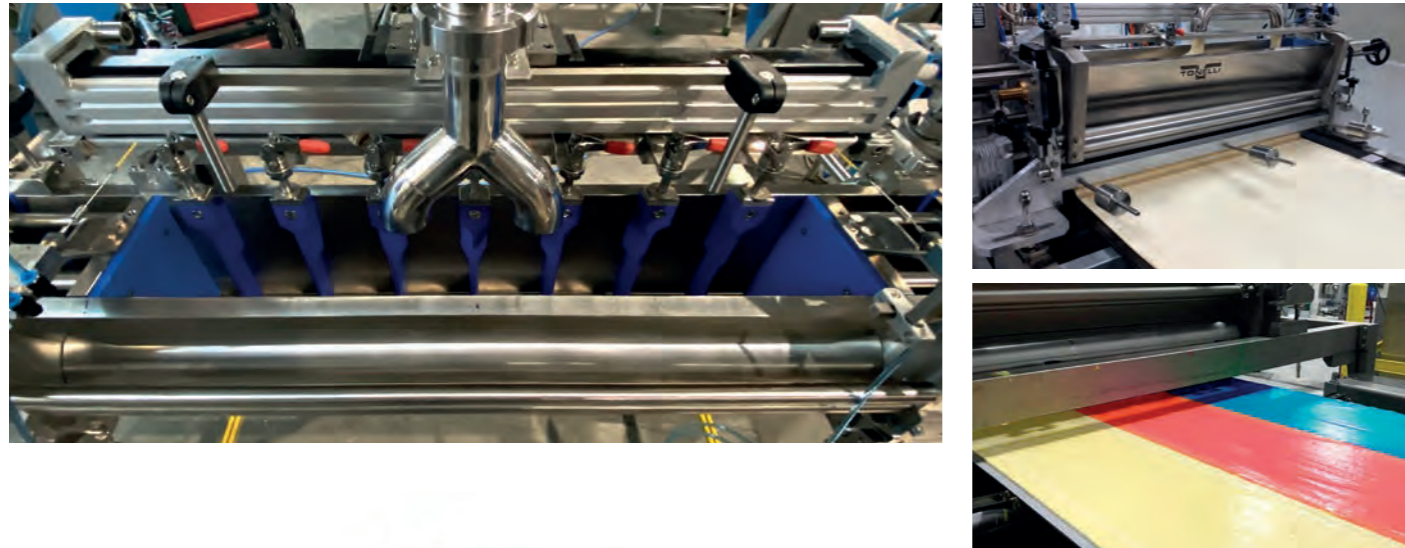
CONTINUOUS SPECIAL





Dosing

The batter is dosed through a Sponge Roller Depositor installed across the in-feed band of the baking oven for continuous depositing of a strip of batter whose thickness is adjustable, depending on the cake. Depositor for one, two or three colours.



Dynamic Colour Mixer

Is it possible to dose liquid flavouring and colouring matters into pumpable products, either whipped or not, through a Dynamic Colour Mixer.

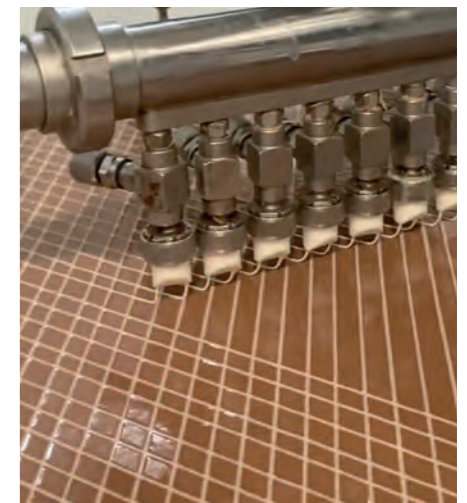
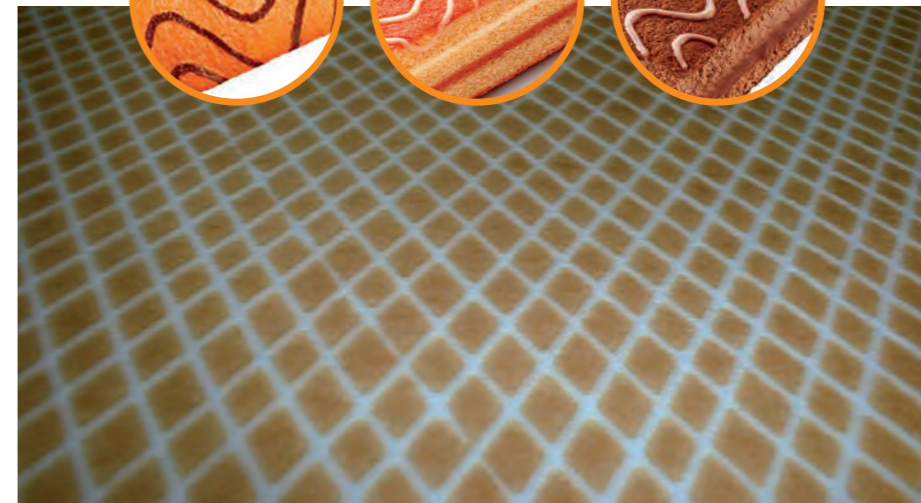
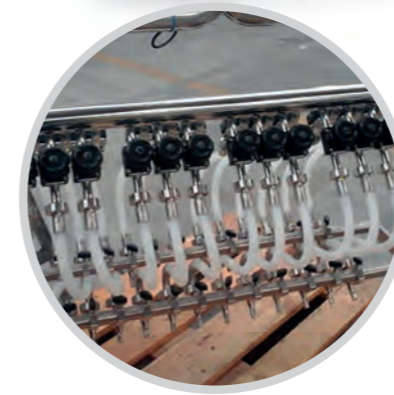
The colour injection system is located at the head's inlet in order to mix it with the sponge coming from the emulsifier.

This machine brings about the presence of a second roller depositor.



Decoration

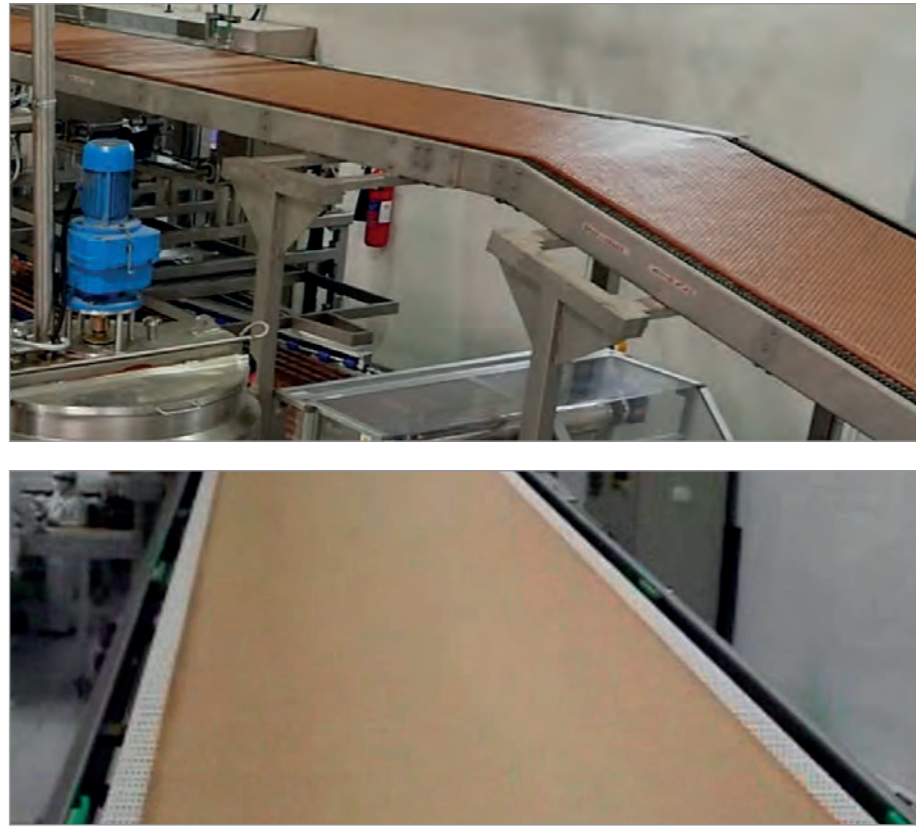
The sponge cake can be decorated with icing before the baking oven in different designs and colours, depending on the final effect required: Rhomb, Sinusoidal or Combined.



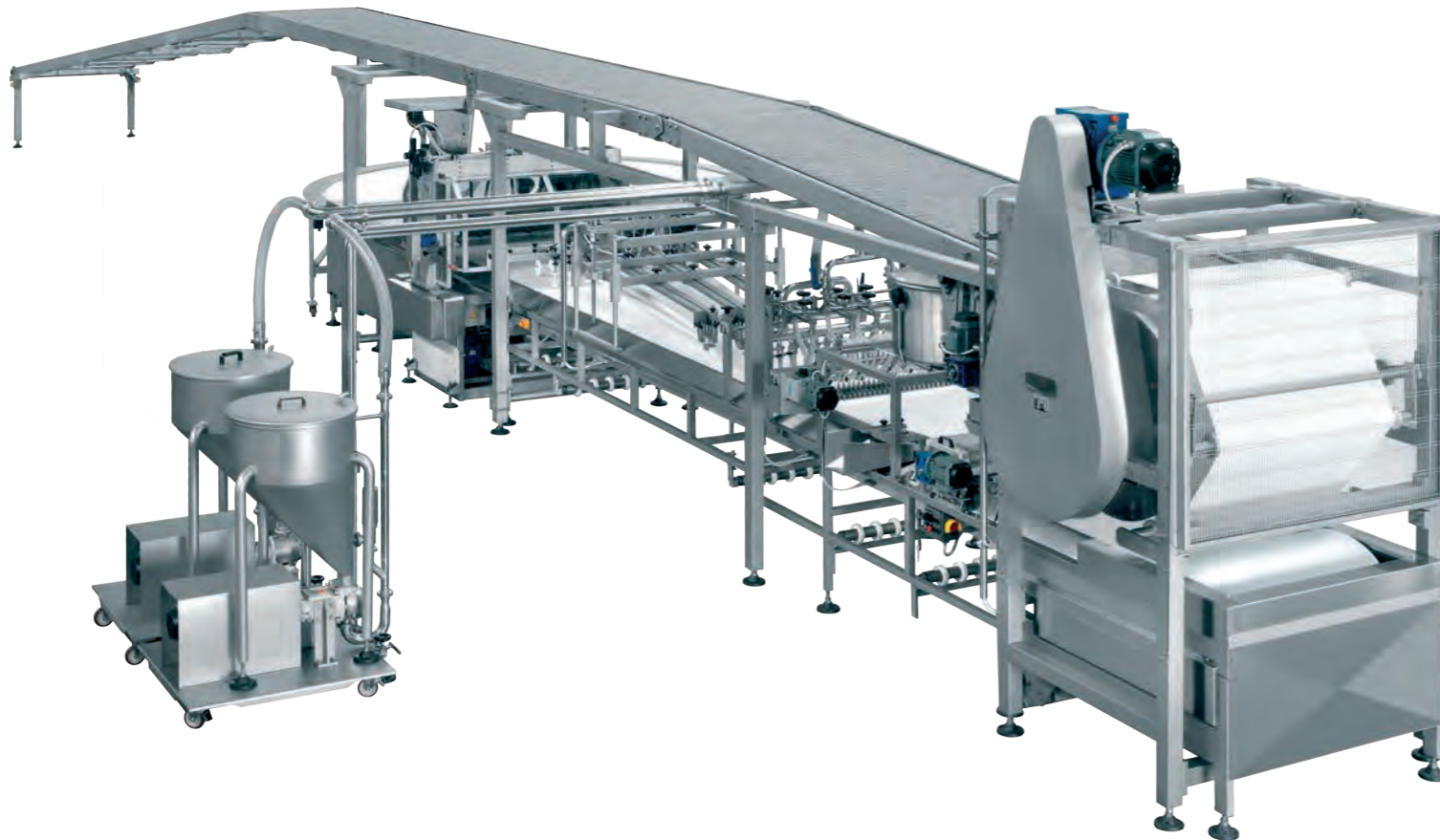


Overhead cooling

The cooling of the baked sponge cake can be achieved by an Overhead or InLine Cooling Conveyor, depending on the space available: the first allows to reduce space thanks to a first section, 8° sloped, carrying a roller to collect the sponge at the oven exit. Second one straight, ending with an overturning head which feeds the cooled sponge to the working table, that runs under it.



Two types of conveyor are provided: a stainless steel wiremesh or a plastic grid.



Longitudinal Cutter



The cut is obtained by means of circular blades, smooth or toothed, fitted on a suitable rotary shaft, each with a precise pitch between the disks, according to the strip size. When a different size of cake is required, the blade holding shaft can be easily replaced.





Filling Preparation



The preparation of the cream or filling can be realized through a variety of solutions, each studied for particular applications and final results. Traditional and compact units are suitable for any type of fillings, but it is possible to reach top quality for creams by using pasteurization systems, both in continuous and per batch.

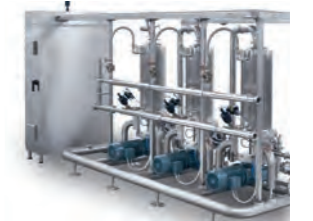
PER BATCH



CONTINUOUS



CONTINUOUS SPECIAL (Cooked / Pastoured filling)





Wetting

Syrup Distribution

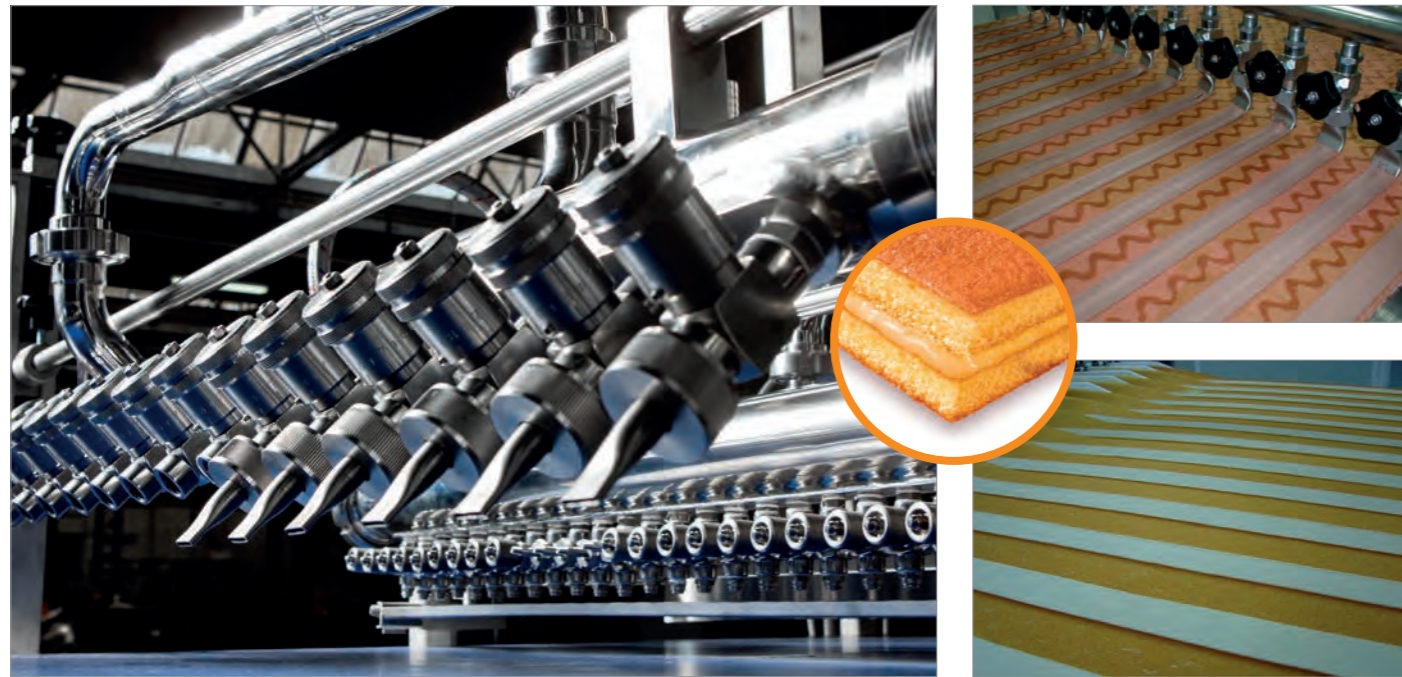


Sponge cakes' wetting consists of an alcoholic or a sugar based solution, that gives the right humidity and even particular flavours to the product. If the customer chooses to produce the syrup by himself, Tonelli provides a complete unit which feeds the distributors directly on the band.



Cream and/or Jam Spreading

Cream Distribution



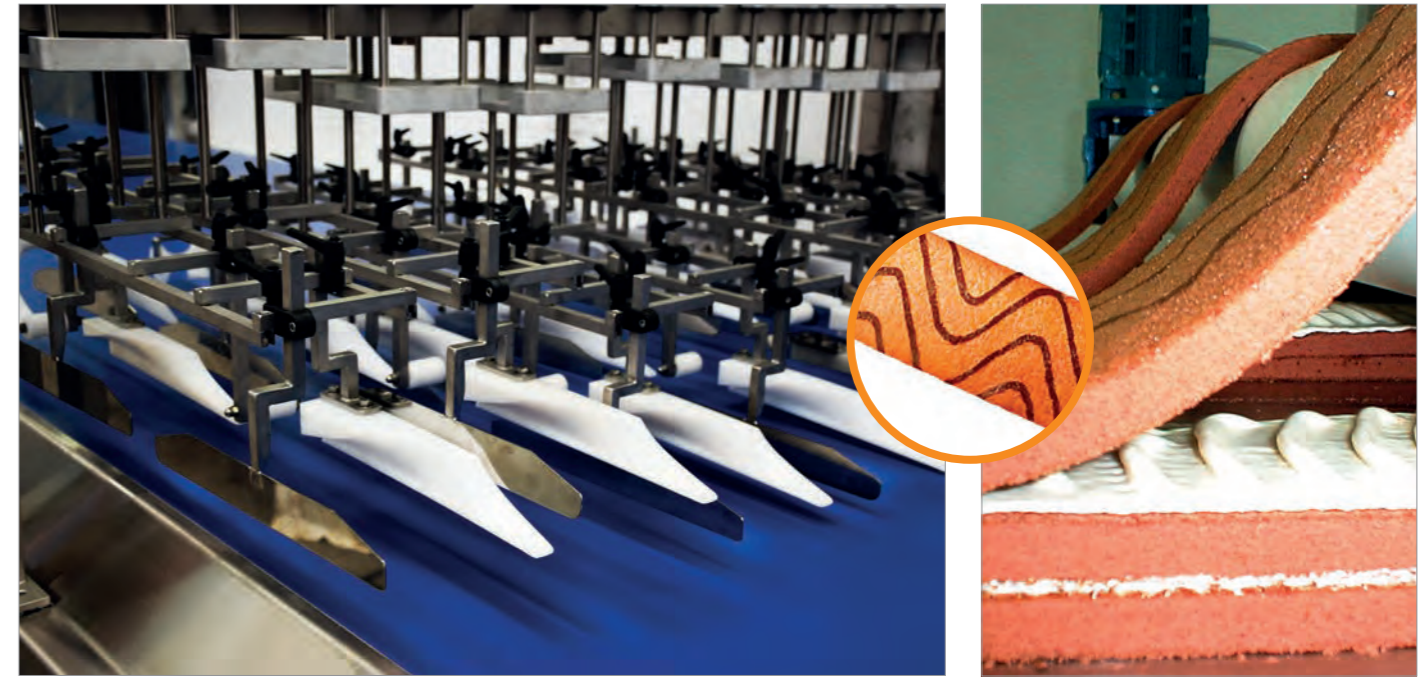
The filling (cream and/or jam) is spread on the spongecake sheet through a collector which assures a balanced feeding to the set of spreaders beneath. The flow thickness of such spreaders is adjustable by suitable taps.



Overlapping

100%
Made in Italy

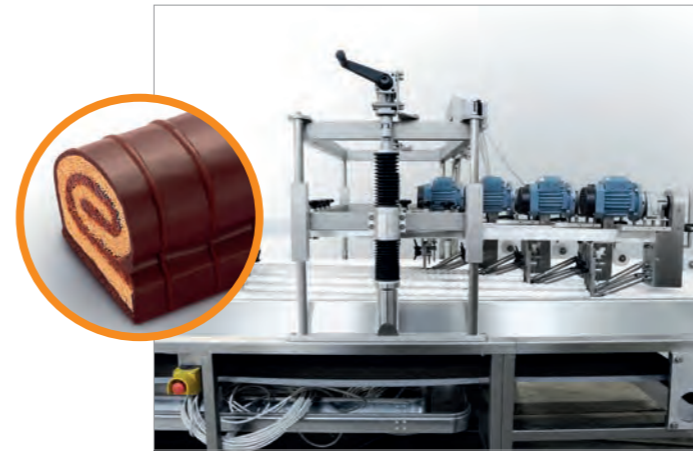
TONELLI



The Layer Cake processing station is composed by an overlapping device with adjustable food-grade polyurethane spades suitably shaped. Their size depends on the product, while the number changes according to the desired number of rows. When the station is not in use, the guide holding bar can be lifted and locked in position. The station is completed by guides and rollers for forming optimization. Different settings for cakes with two, three or more layers, even with family size.



Rolling



The automatic rolling up device for Swiss Rolls and Minirolls is designed to roll-up the strips of sponge cake previously cut and filled. The rolling units consist in three knurled plastic screws, shaped for easier picking of the sponge strips. Spades at the infeed of the rolling station lift the sponge strips to facilitate its rolling, while a series of guides at the outlet straightens the rolled product to the band. After which, sizing adjustable rollers optimize and uniform the roll size.



Product's Make-up Unit

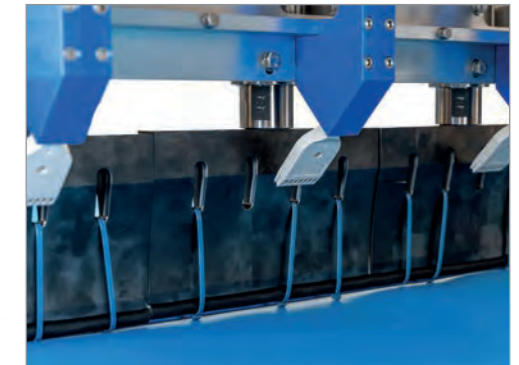
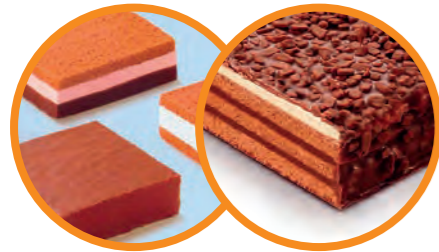
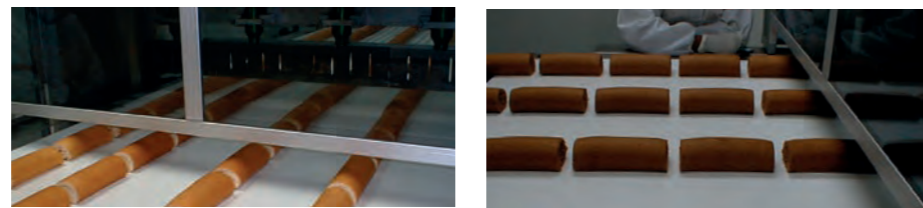


Processing station to produce Sliced Swiss Rolls, with a longitudinal cutting unit to cut the strips; a filling unit with: manifold, extruder and spreaders to distribute the cream/jam onto the sponge. An independent working bench, with special transversal cutter and motorized rolling assembly device and AISI 304 net band. A divider set on its own table with a PVC conveyor band to distribute the product, and another table at the exit holding pressure rollers to ensure the cakes regular shape.



Transversal Cutter

The formed product has to be finally cut in the definitive length and Tonelli provides several kinds of transversal cutters, according to the specific product's characteristics and production requirements.



Ultrasonic Cutters for individual family size products (layer cakes, family cake, minirolls, swiss rolls) when a perfect cut, without squashing, is required due to the very soft sponge and high percentage of cream.



Pneumatic Cutters for individual products (layer cakes, minirolls) till 50 strokes/min.

Mechanic Cutters for individual products (layer cakes, minirolls) from 50 to 120 strokes/min.

Pneumatic and Mechanic with trolley for individual and family size products (layer cakes, family cake, minirolls, swiss rolls).

Punch Cutting

The Automatic Punch Cutter is a special transversal cutter consisting in several blades mounted to obtain particular geometrical shapes into the sponge cake sheet, both with or without filling: round or rectangular sponge bases for cakes, seasonal individual cakes of different shapes. The blades' disposition is studied to minimize scraps.



This technological solution developed and tested by Tonelli for creams pasteurization is a batch Aseptic Cooking and Cooling

The advantages of such a system are:

- ▶ Possibility of easily vary the process parameters.
- ▶ More creamy, smooth and homogeneous texture, due to lower mechanical stress when mixing.
- ▶ Reduced loss of product on production's start and stop.
- ▶ Reduced washing and sanitizing times.
- ▶ The whole cooking/pasteurizing cycle is performed entirely in the batch and it is very rapid.
- ▶ Reduced cooling times, thanks to work under vacuum.
- ▶ The final cooling takes place in a double scraped surface heat exchanger.



Pasteurising creams highly helps improve their hygienical quality, while extending the cake's shelf-life.

Multifunctional mixer

This special execution of the Vertical Planetary Mixer is a multifunctional cooking/cooling system which, combined with specific tanks and thermal exchangers, becomes the first step of the pasteurization's process.

The ingredients are pre-mixed in a first phase, then pasteurized at a high temperature with a possible rest of some minutes.

Finally the cream is vacuum-chilled down to medium temperature before being quite quickly pumped to the MU homogenizer.



Aseptic homogenizer & aseptic buffer tank

In a second phase, the cream is batch-homogenized by means of an immersion homogenizer for some minutes. Then it is pumped to the aseptic buffer tank, in a controlled environment.



Scraped Surface Cooling Exchangers

From here onwards the process becomes continuous, allowing the cream to be chilled down to the desired value, according to the final product requirements. Moreover it can be further refined through an expressly shaped rotor.





Fat plasticization

Tonelli Group has been urged by its major customers to study and develop systems capable to plasticize fats, while making the mixing of fat matters easier, quicker and more effective.

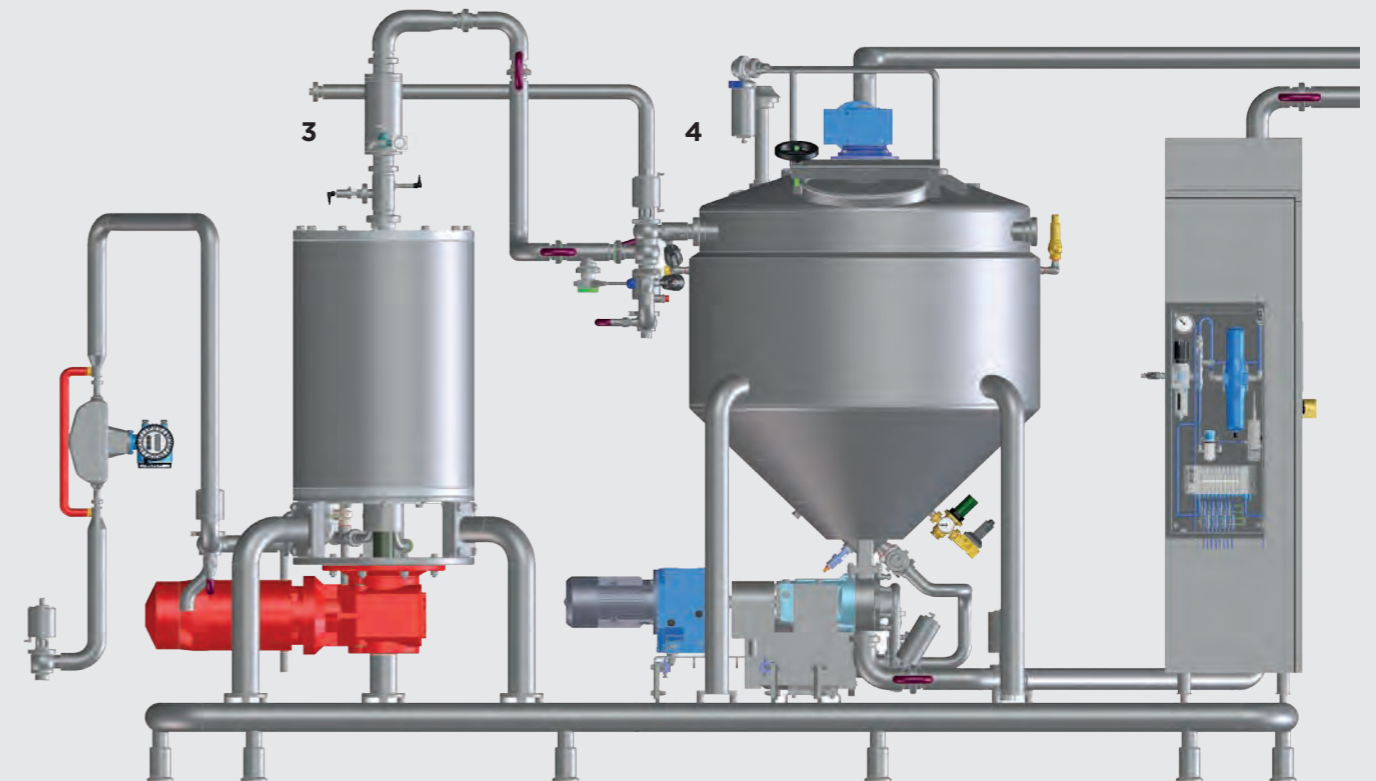
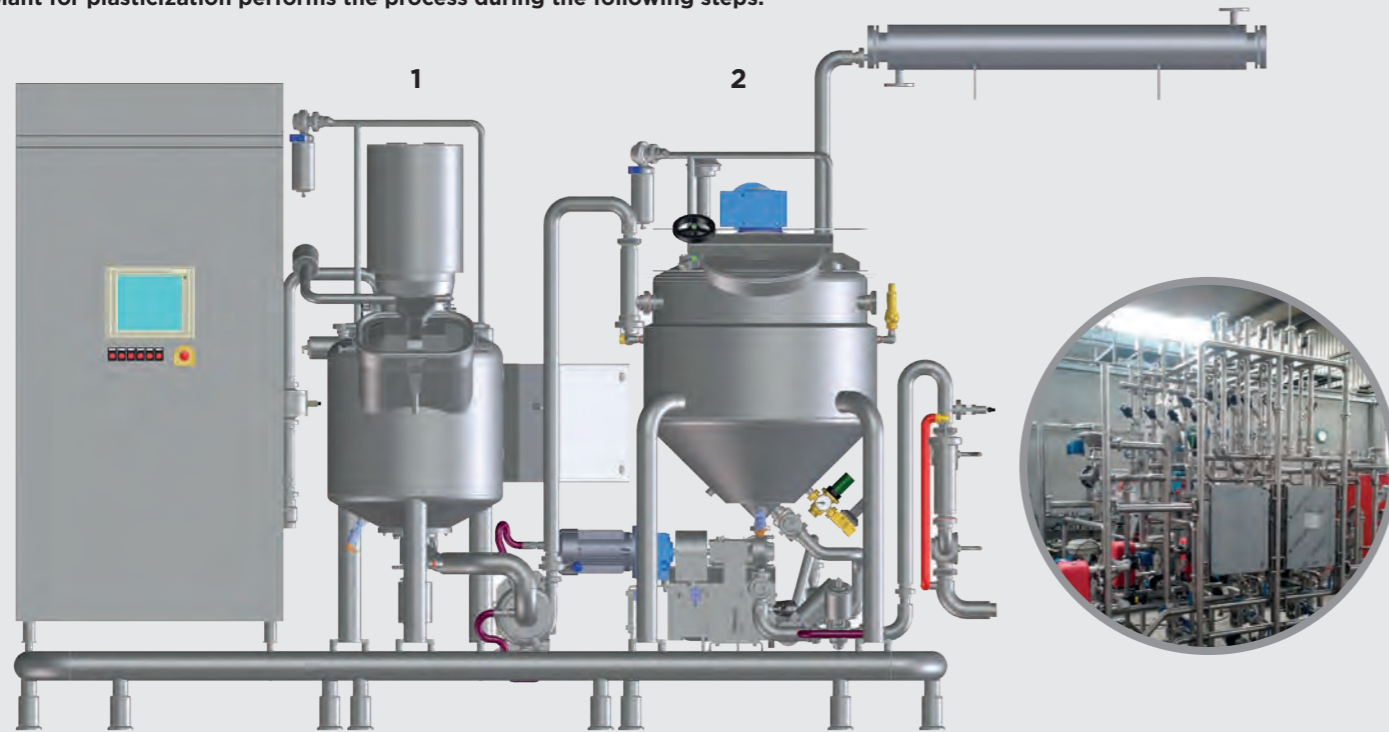
With this in-bakery process, the plasticization can be made straight in the production site and the plasticized quantities can be adapted to the specific needs of each production line.

The Tonelli's high skill in fat plasticization comes from countless tests performed in its own cutting-edge Laboratory, using the most diversified types of fat matters.



The fat, after this process, is easy to transfer because of its fluidity and it is also easier to process with remarkable advantages for users.

The plant for plasticization performs the process during the following steps:



1) Emulsion

The Centrifugal Mixer creates a stable emulsion oil/water very quickly.

2) First buffering

The Buffer Tank keeps the oil/water emulsion at the right conditions of temperature and homogeneity for the plasticization phase.

3) Plasticization

The emulsion's plasticization is performed by the Heat Exchanger, which achieves a fine crystallization, a low viscosity and a high stability.

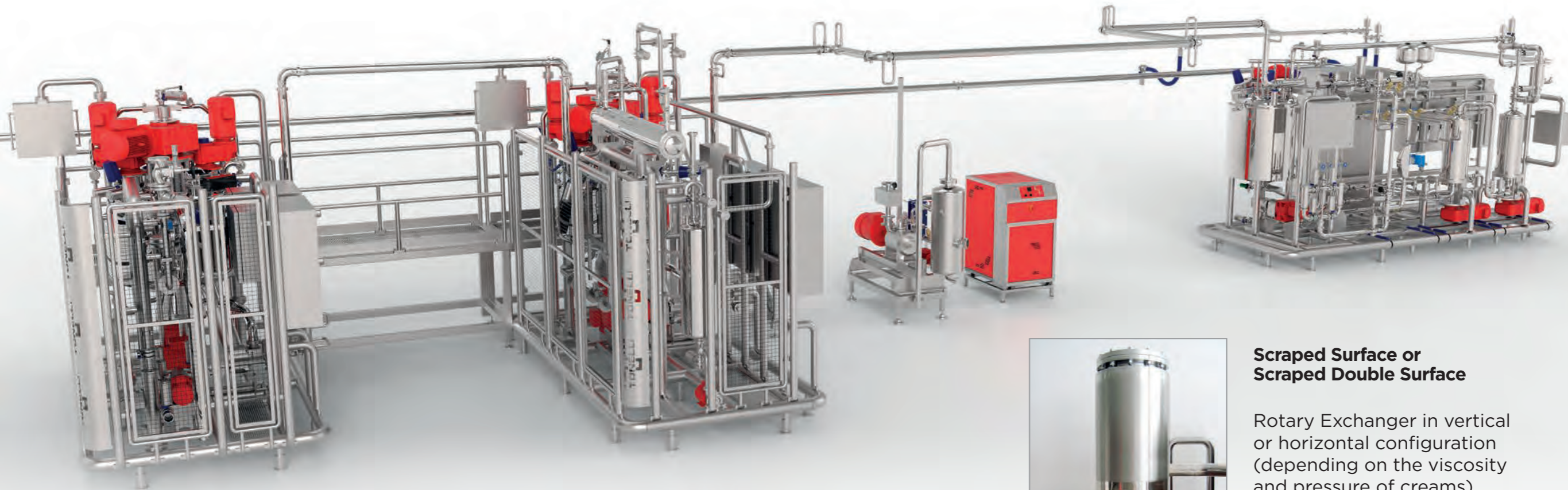
4) Final buffering

The plasticized fat is kept fluid and homogeneous into the maturing tank, until the next use.



Custard Cream, Churro, Mascarpone, Special Batters, Pre-cooked doughs, Sauces, Jams, Jelly, Creams, Mallow Sauce, Panna cotta, Béchamel.

Various fillings for: Wafers, Sandwich Biscuits, Chocolate Pralines, Cup-cakes, Pound cakes, Muffins, Chiffon cakes, Layer cakes, Patisserie cakes; Pies, Savoury cakes.



A general classification of the different types of creams can depend on the water content and on the a_w value:

Anhydrous Creams

Creams for Sandwich Biscuits, Creams for Wafers, for Filled Biscuits and Chocolate Praline fillings.

Intermediate Humidity Creams

Intermediate Humidity Creams (10 - 30%) room T° or refrigerated: creams for croissant (after baking or bake stable) - creams for cup cakes, pound cake and muffins - (pasteurized or unpasteurized), creams for layer cakes, fresh or refrigerated.

High Humidity Creams

High Humidity Creams (30 - 70%) : creams for fresh and frozen Patisserie products.

This 'Multi-filling' technological solution compared to the "completely continuous technology" has the following advantages:

- ▶ Less sophisticated equipment and easier to manage: in the discontinuous phase the equipment can cook/pasteurize and pre-cool the cream in the same cycle.
- ▶ Flexibility: recipe, cooking or pasteurizing T°, stasis length and sequence of ingredients introduction can be easily modified without modification of the equipment.
- ▶ Quality: the cream is continuously mixed and scraped, consequently the cream remains homogeneous as well in the stasis phase.
- ▶ Waste: considerable reduction of waste whether changing recipe or washing at the end of production.
- ▶ Time: the chilling phase, while scraping the exchanger surface, is performed under vacuum, therefore is quite quick.

The cream is cooled at the final T° by a continuous scraper exchanger but, because the cream is pre-chilled under vacuum a strong cooling is not necessary. Very cold water is used instead of freon, therefore:

- ▶ Quality: the filling texture does not change because the mechanical stress is decidedly lower, due to the T° of the cooling water. For the same reason, also the fat crystallizes slowly and the cream viscosity result is lower.
- ▶ Density: when the cream must be aerated or when the cream has a high fat content the density reached is very low, especially with the scraper exchanger Combiaerator®
- ▶ Time: reduced washing and sanitizing times, due to less complex equipment and reduced timing.



Scraped Surface or Scraped Double Surface

Rotary Exchanger in vertical or horizontal configuration (depending on the viscosity and pressure of creams).

- ▶ Cooked non Aerated Creams.
- ▶ Anhydrous Creams Plasticization.
- ▶ Fat plasticization.

Combiaerator®

Patented equipment, in the same time scraper exchanger, homogenizer and aerator.

- ▶ Cooked, not aerated Creams with high fat content.
- ▶ Pasteurized and Aerated Creams.
- ▶ Pasteurized and Aerated Dairy and Vegetable Creams and Mousses.



Rotary Scraper Exchanger

Scraper exchanger equipped with an aerating section (independently driven by toothed rotor).

- ▶ Non-pasteurized Aerated Creams (Layer Cake with high thickness cream and low T°)



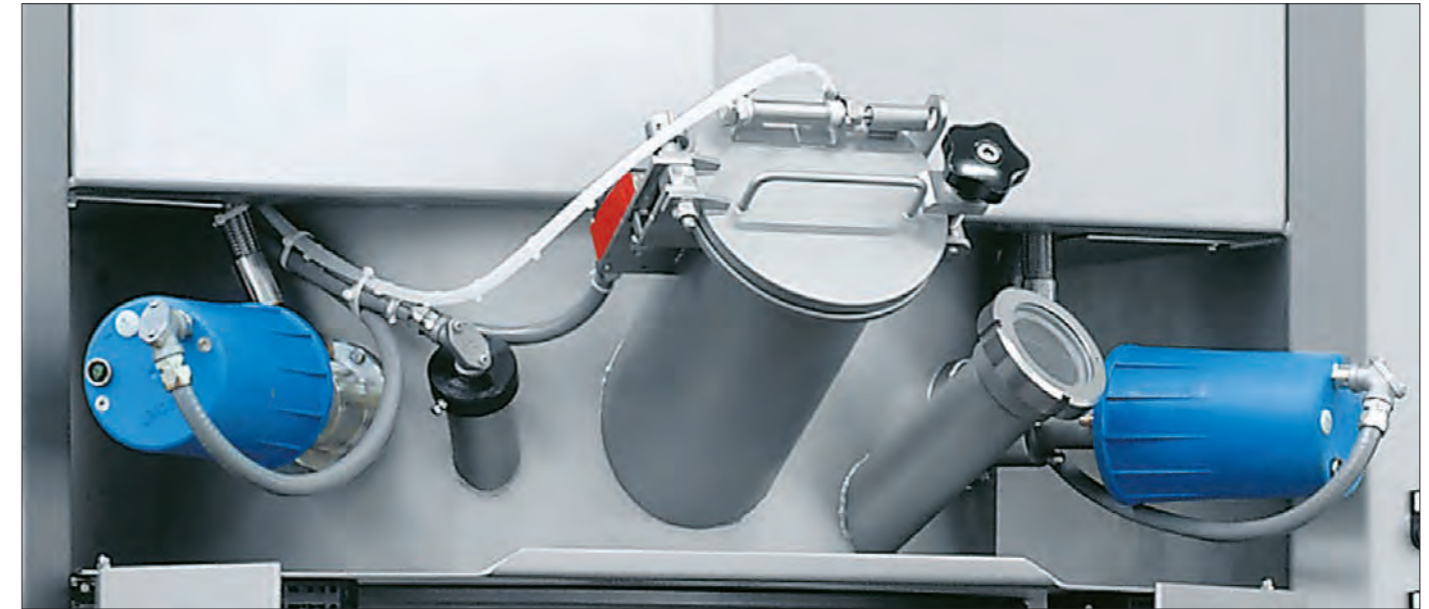


Cleaning in place



Complete Turn-key washing systems C.I.P.

- ▶ 1-2-3-4 stainless steel AISI 316 tanks: soda - acid - water - (sterilizer).
- ▶ Automatic units for reset of detergents through dosing of concentrated agents.
- ▶ Automatic temperature control of the washing solutions.
- ▶ Automatic control of solutions' conductivity.
- ▶ Heat exchanger for solutions' heating through steam. Centrifugal pump 25.000L/h; head 7 bar. Automatic manifolds, stainless steel AISI 316, for delivery/recovery of the solutions towards the machines to be washed.



Hygiene

All parts in contact with the product have been designed and developed to prevent the formation of bacteria. The mixing environment is fully washable, even at high pressures and can be integrated with C.I.P. washing circuits. The AISI 304 stainless steel execution, makes easy the overall cleaning.

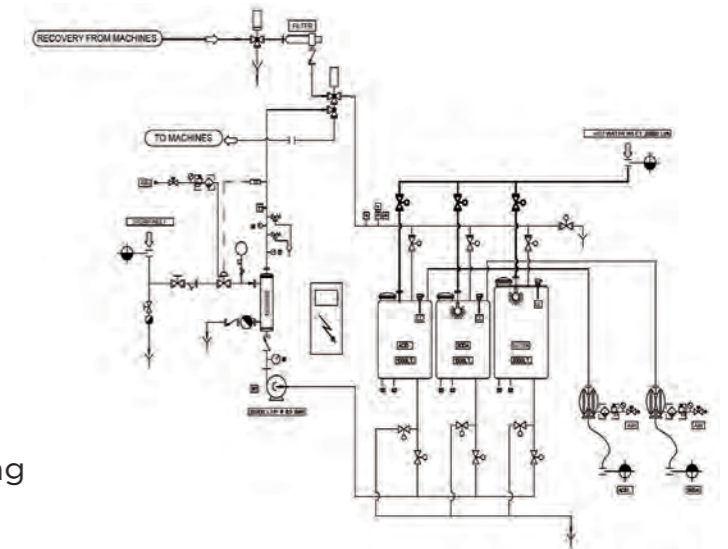
Washing & Sanitization

Washing system with hydrodynamic (max pressure 30 bar) or motorized (max pressure 110 bar) heads, connectable to C.I.P. system.

Washing system with hydrodynamic (max pressure 30 bar) or motorized (max pressure 110 bar) heads, connectable to C.I.P. system.



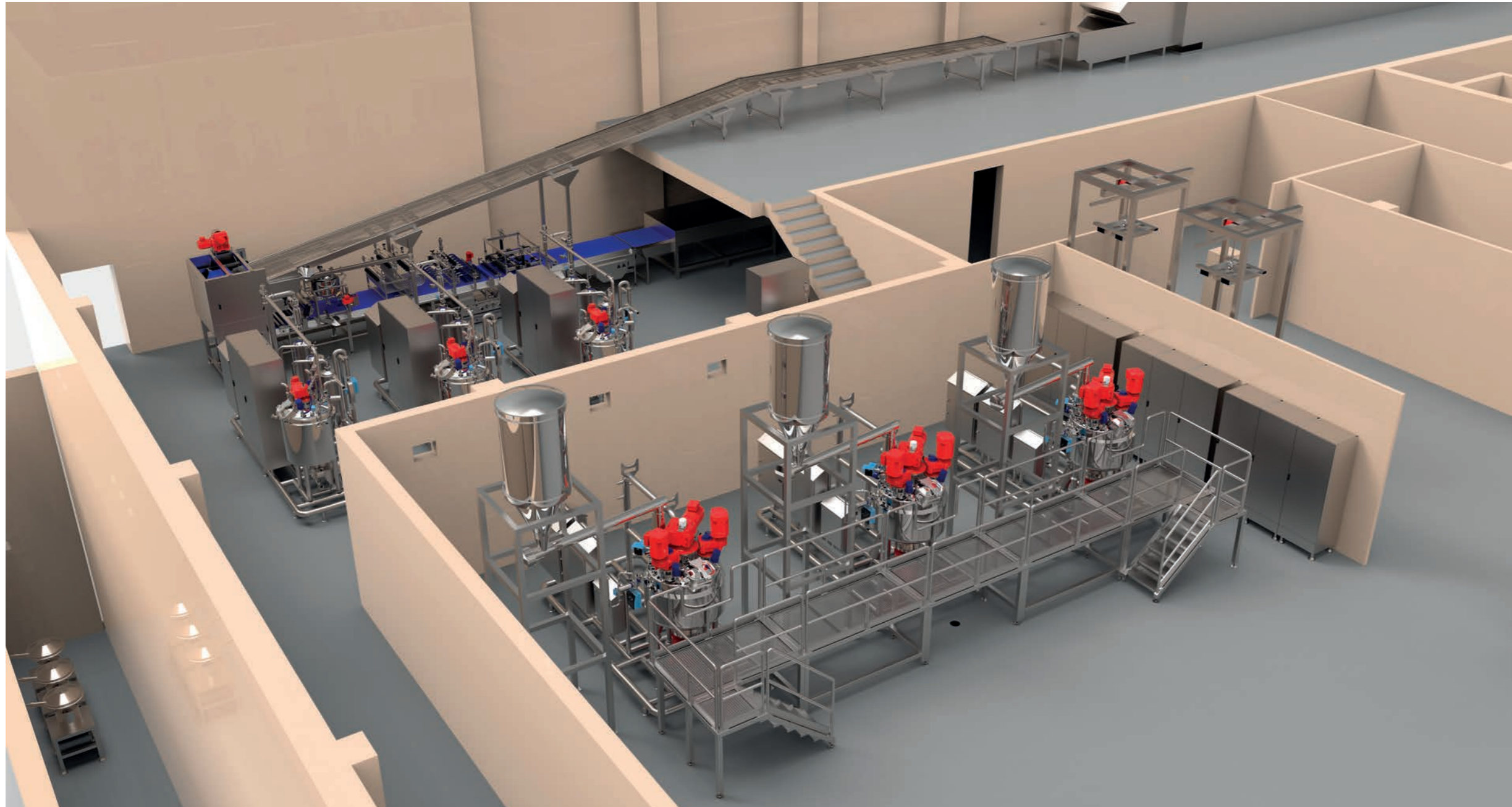
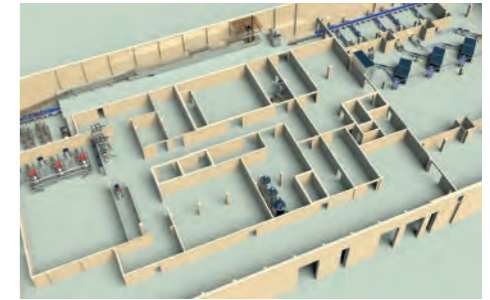
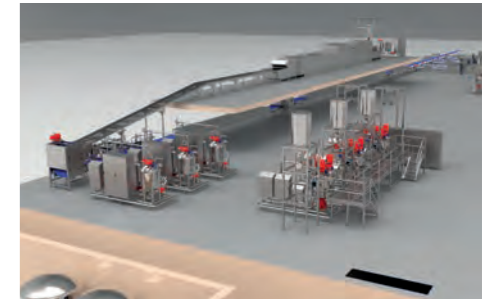
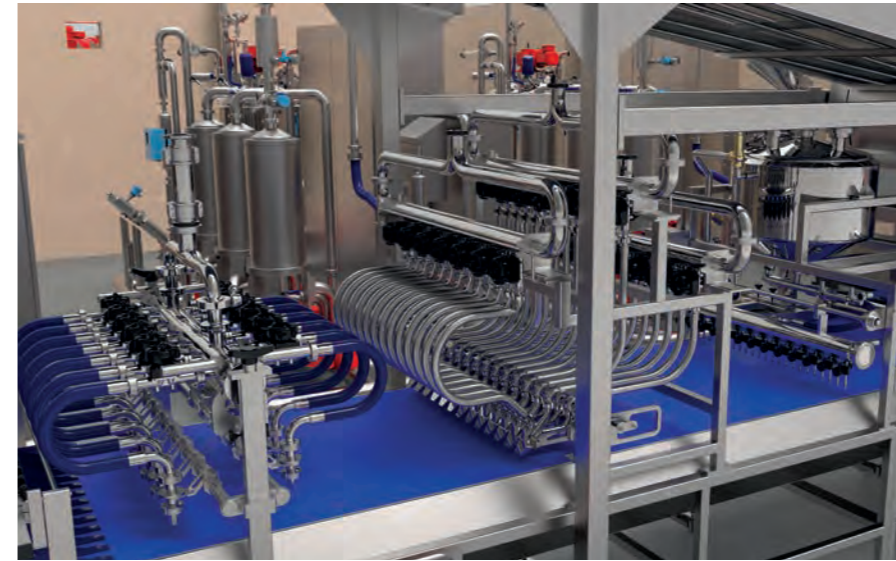
Automatic weighing system through loading cells, for the optimum concentration of the disinfectant solution.





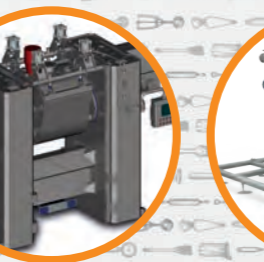
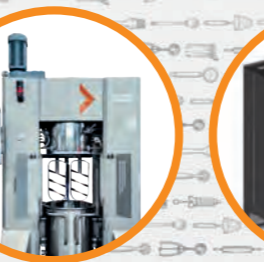
Turnkey Solutions

Tonelli Group wants to be a “preference partner”, not simply a supplier. Our idea is to develop projects starting from the Customer’s idea with his active collaboration. We offer an end-to-end solution; you just turn the key when the project is ready.





Future is now





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