



# Production Automation Catalogue











Depending on the model, outdoor or indoor silos suitable for: Baby and functional food, Bakery and biscuits, Beverages, Cacao, Cereals, Chemical, Chocolate, Confectionery, Confectionery Eggs, Dairy, Eggs, Flour, Glucose and syrup, Oil & fats, Pasta, Pet Food, Premix, Salt & Additives, Sugar, Yeast & sourdough.

#### **GLOBOSILO**



Outdoor silos in stainless steel for powders and granular products. Globosilos are designed and built internally in dedicated tower. Our exclusive welding technique leaves no seams between the cylinders, reducing the risk of contamination to zero. The inner surface is entirely smooth inside to prevent the persistence of leftovers. Globosilo is hygienic and safe and comes with powder recovery filters and air exhaust system. ATEX conform and suitable for all food ingredients including abrasive ingredients. Extraction can be single or multiple with fluidized bed for flour oxygenation, accurate FIFO management and waste efficiency, or with vibrating cone for all products including abrasive and hygroscopic products like sugar and salt. Includes: access door to the skirt with lock, manhole in stainless steel for control of the cleaning, and advanced safety technologies such as safety group for overpressure and depression, anti-explosion hatch and slide valve. Globosilos can be can be fitted with anti-condensation system for the control and regulation of internal temperature, and insulation or drying systems according to the stored product or in case of specific weather conditions. Integrated automation and full traceability.









#### SILBOX



Modular and extendable indoor silos made of panels in stainless or aluminum steel. Indoor silos made of panels, in stainless or aluminum steel. Modular and extendable, they offers the highest flexibility in the storing of all flours and powdered ingredients. Silbox can be equipped with fluidized bed for a complete emptying of product by the first in first out principal (FIFO), full traceability and top waste efficiency. Extraction with vibrating cone for abrasive products such as sugar and salt. Special solutions are available for cous-cous and short pasta. Hygienic design and ATEX conform, Silbox can be assembled locally during installation.

#### SILSYSTEM



Modular indoor silos in anti-static patented HT fabric. Extraction with fluidized bed or vibrating cone, and distributor available for multiple lines. They are perfect for flour, sugar and all main raw materials involved in any food process and frequently paired with sugar milling systems in confectionary production lines. Earthed thanks to our patented equipotentiality technology and ATEX conform. Silsystem silos include advanced safety systems to guard against overpressure and underpressure. The anti-static fabric they are made of (Trevira) is also patented. Weight control in real time, integrated automation and full traceability.

#### DISCHARGER BAG



Bag dumping stations of variable capacity, suitable both to load silos and to feed the lines directly. Bag dumping stations of variable capacity, suitable both to load silos and to feed the lines directly. Ergonomic and suitable for any bag size, can be used in a battery for big production volumes. Extraction with vibrating cone and and metering with rotary valve or feed screw. A model with integrated conveyor belt for the direct loading of silos is available. It's lower, easier, faster and includes integrated filter and feed screw. No bridge and can be used by pressure.











#### **TREVIBOX**



Trevibox is an indoor silo in antistatic Trevira fabric silo equipped with a fluidized bed. The Trevibox model includes all these features and adds the advantages of Silbox. The addition of a fluidized bed allows for chronological extraction with FIFO logic, which greatly enhances the traceability process. Trevibox has higher metering capacity in all processes including metering by pressure, and provides multiple extraction without bridges. The flour oxygenation operated by the fluidized bed leads to a crucial improvement in the quality of the flour, with a faster but natural maturation that improves the flour's rheological properties without using additives. Fluidized flour is much better for breadmaking, with better responses to all treatments from dough preparation to fermentation. The dough is more elastic and easier to work. It absorbs water more easily and keeps gas in more easily during leavening. Bread made from well oxygenated flour is softer thanks to a more alveolar product, and more digestible as oxygenation allows for longer leavening. ATEX conform and earthed thanks to our patented equipotentiality technology, Trevibox comes with advanced safety systems to guard against overpressure and underpressure. Weight control in real time, integrated automation and full traceability.

#### DISCHARGER BIG BAG



Big Bag dumping stations of variable capacity, suitable both to load silos and feed the lines directly. Big Bag dumping stations of variable capacity, suitable both to load silos and feed the lines directly. Ergonomic systems which allows for the bags to be recycled. They are equipped with chain host to lift the bags, easy discharge and change over devices, and easy lock. Multiline feeding and available in combo version with dump station.









#### **TRIMIX**



Modular and extendable hermetic units for the automatic metering of powdered and granular minor ingredients. Trimix systems consist of modular and extendible hermetic units for the automatic metering of powdered and granular minor ingredients, able to handle challenging materials such as milk powder, cocoa powder, salt and others. Trimix system meets your needs for high precision and reliability for both volumetric and by weight dosages. Completely hygienic thanks to the the dust exhausting system acting directly during the discharge of each unit, which prevents powder leakage in the surrounding environment, and the pneumatic transport removing leftovers within the storing units or scale during the dosage towards the lines system. It's suitable for the production of confectionery such as snacks, cookies, pastries, cakes, chocolate, candies, drinks, as well as bakery such as bread, pizza, short and long pasta. Scale can be mobile or fixed: the TME model with fixed scale allows ultra fast discharge and more batches with exceptionally accurate metering, ideal for high production volumes.

#### LIQUID TANKS



Indoor and outdoor tanks for liquids in stainless steel of variable size. Indoor and outdoor tanks for liquids in stainless steel of variable size, for the storing of liquid sugar such as glucose, syrup, fructose, inverted sugar, and also oil, fat, eggs and others. Double jacketed and/or insulated, with temperature control unit for the management of heating and cooling processes. Liquid tanks are used in the systems for the production of inverted sugar, fermentation systems, cold fat metering and liquid fat metering systems.









#### CIP



Cleaning system for a complete hygienization of tanks and pipes, particularly recommended for processes including oil, eggs, and yeast. Manual or automated washing, detersion, recircle and recovering processes through an integrated management of pumps and valves on the pipes.











Depending on the model, components and systems for extraction, sifting, dosing and weighing of powders and liquids from silos and hoppers, suitable for: Baby and functional food, Bakery and biscuits, Beverages, Cacao, Cereals, Chemical, Chocolate, Confectionery, Confectionery Eggs, Dairy, Eggs, Flour, Glucose and syrup, Oil & fats, Pasta, Pet Food, Premix, Salt & Additives, Sugar, Yeast & sourdough.

#### **TRANSPORT**



Pneumatic conveyance of powders and granular products and pumps for liquid products. Pneumatic conveyance of powders and granular products, by suction or low pressure compression or dense phase, and mechanical conveyance with feeding screws, belts and chains. Centrifugal and volumetric pumps for liquid products. Pipes in stainless steel, insulated or heated. Lift deviator to separate pneumatic lines, with integrated transition and all parts coming in contact with the product in stainless steel. Gravity deviators with one or more ways to discharge on hoppers and mixers. Safety systems including overpressure valves on silos, CEPATIC system on loading, dispersing valves, magnets, pressure switches and sensors. Slide valves to stop the propagation of explosions and flames in the conveying system. Air is fully sanitised with filtering system, automatic removal of leftovers and CIP washing system. Integrated automation of all conveyance and safety operations and control of all utilities on touch panel. Our conveyance system are designed to optimise energy consumption with an individual analysis of energetic impact. We only employ high-efficiency motors such as IE3 motors to save energy and reduce CO2 emissions.









#### **EXTRACTION**



Components and systems for the single or multiple extraction of powders and liquids from silos and hoppers. Extraction from silos can be single or multiple with multiline distributor, on vibrating cone or fluidization system for a more continuous movement of product. Rotary and butterfly valves for pneumatic conveyance and feeding screws for accurate metering from silos and hoppers. Extraction systems for microingredients on dosed container, fixed or mobile according to the needs of product and process. All extraction systems are completely automated for a chronological emptying and can be controlled on touch panel for maintenance.

#### **SIFTING**



Sifting systems for powders to ensure food security, for pneumatic or gravity conveyance and for extraction cones. Vibrosifters for pneumatic lines of variable size and capacity, equipped with container and sieving net in stainless steel, supporting structure in painted steel, conveying reduction to avoid the formation of stale product, automatic removal of impurities on the expulsion channel, connection to pneumatic line in and out, antivibration devices and vibrating group with motovibrator. Vibrosifter for lines in gravity with double sifter, equipped with container and sieving net in stainless steel, supporting structure in painted steel, conveying reduction to avoid the formation of stale product, automatic removal of impurities on the expulsion channel, entry from high and double exit, antivibration devices and vibrating group with motovibrator. Sifting kit for extraction cones with sieving net and fixing ring for dump stations.









#### DOSING AND WEIGHING



Systems for the weighing and metering of powders and liquids at the end of the line, through modular hoppers for powders and tanks for liquids controlled by electronic metering scale for the weighing. Metering can be continuous or batch, positive, by loss of weight, by volume or by weight. High precision metering of micro ingredients such as salt, improvers, aromas, spices, starch, inclusions, and other additives. Preparation, storing and metering of salt solution and invert sugar. Cold and hot metering of fats. The metering process is coordinated by an integrated automation system including touch panel managing the production process (recipe management, production, product and hopper parametrization) and our TRACKING SYSTEM software for full traceability with digitalization through barcode of the movements of all ingredients. Our TRACKING SISTEM includes recipe, ingredient and warehouse managers, and analysis of production history.

#### 3 IN 1



The 3 in 1 (weighing, filtering, blending) weighs the ingredient, separates air from product during pneumatic transport and at last blends, all in single unit. The vertical blender inside is a system for the production of premix that ensures the highest flexibility across a wide range of food sectors. It is fast, accurate and clean, delivering a homogeneous mix of powders even for quantities lower than 1% in the span of 3-5 minutes. It can dose in the mixer in a single solution or by loss of weight in small batches. The blender is fully automated and optimizes mixing and production times, as the blend is already homogenous before reaching the mixer. The 3 in 1 can be used in place of the dosing hopper, and its speed makes it very suitable for continuous mixing systems. In installations with multiple lines it can be combined with hoppers to achieve the highest flexibility in production. Available in sizes from 60 to 1000 liters, it can be loaded pneumatically or by gravity. It is equipped with slide valve and extraction is by with rotary valve or feed screw. The 3 in 1 is made in stainless steel and is ATEX conform. Hygienic design with total dischage, easy to clean, fully inspectable and washable. Integrated automation and full traceability.









#### **ROTARY VALVE**



Extraction and metering machine. Suitable for all powders with flushing for abrasive products. Ensures accurate metering on pneumatic conveyance lines. Varying size and capacity. Gravity unloading available.

#### **BUTTERFLY VALVE**



Extraction and locking machine that ensures leak-tightness up to a 1.5 bar. No leaks and no loss on loading. Suitable for all powders and abrasive products thanks to the gasket in long-lasting anti-abrasive rubber. Body in cast iron, disk in stainless steel, inductive limit switch, double acting pneumatic actuator and inductive limit switch. Operating temperature up to 100°c.

#### LIFT DIVERTER



Line diverter for pneumatic conveyance lines, with separate ways to avoid contamination in the product. Suitable for all powders.









#### SLIDE VALVE



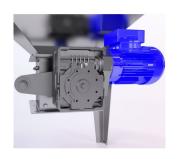
Anti-explosion protection system which rapidly insulates the container to stop the propagation of the event. Can be installed on pneumatic conveyance both by suction and pressure. Suitable for all powders, including abrasive ones.

#### **MAGNET**



Safety system to avoid contamination from metal parts and damage to machinery removing extraneous matters from equipment installed downstream. Magnets are covered with a detachable pipe and do not come into contact with the product. Easy to clean and suitable for all powders.

#### LUMP BREAKER



Extraction machine to break lumps to ensure homogeneous product in pneumatic conveyance lines. Suitable for all products that form lumps and typically used with sugar storage.









#### MULTILINE DISTRIBUTOR



Extraction machine to distribute product from a feeding point entry up to 8 on pneumatic conveyance lines. Suitable for all powders and conform to ATEX legislation.







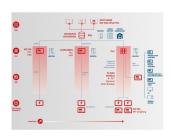


## **Automation**



Components or complete systems for the automation of all operations including production management on PLC with HMI, full traceability and warehouse management on native software, total information exchange with SQL database and weight control in real time.

#### INTEGRATED AUTOMATION



We provide a turn-key system that includes the automation. Hardware and software design is done completely in-house, and each system is the result of a decades long experience of parallel development alongside the mechanical side. With a team of 24 programmers, we provide technical and human continuity through the development of a project that can become highly specific and complex. Our solutions provide full horizontal and vertical integration, managing dialogue and data received by other partners operating in the lines, after the dosing and before the raw ingredients management. For the management of production operations, different HMIs are provided to match diverse needs: Personalized 4-15" touch panel on Siemers or Allen Bradley platform, for non-typical processes; native PLC Leonardo for typical processes; Weighing processor WP140 with LCD display for simple one line productions; Local control box for weight control in real time; For the management of process data, native Tracking System software provides: Full traceability, Warehouse management, Total information exchange with SQL database, Communication with ERP / MES. The automation team provides full 24/7 support.









## **Automation**

#### **OPERATOR PANELS**



Touch panels providing production management on single or multiple lines, including: recipe creation and management, ingredient and hopper parametrization, synoptic overview with maintenance of utilities. For the management of production operations, different HMIs are provided to match diverse needs: Customized 4-15" touch panel on Siemers or Allen Bradley platform, for non-typical processes, native PLC Leonardo for typical processes Weighing processor WP140 with LCD display for simple one line productions Local control box for weight control in real time, The automation team provides full 24/7 support which includes: testing, optimization, start-up and training, remote support on all tools with live visualization on VPN network remote management of production and intervention on the source code virtual and personalized tutorials, live assistance with dedicated devices support from local teams who are fully trained in our devices and are part of our global network.

#### TRACEABILITY



Native software providing process control, traceability, warehouse management, and total information exchange. For the management of process data, our native Tracking System software provides: Full traceability, Warehouse management, Total information exchange with SQL database Communication with ERP / MES. Our Tracking System provides storing and recipe data history, match report, material consumption report with dynamic visualization and digitalization of all material movements with barcode system. The automation team provides full 24/7 support which includes: testing, optimization, start-up and training, remote support on all tools with live visualization on VPN network, remote management of production and intervention on the source code, virtual and personalized tutorials, live assistance with dedicated devices, support from local teams who are fully trained in our devices and are part of our global network.











Depending on the model, various specialized systems, suitable for: Baby and functional food, Bakery and biscuits, Beverages, Cereals, Confectionery, Dairy, Flour, Oil & fats, Pasta, Pet Food, Premix, Snacks, Sugar, Yeast & sourdough.

#### **FERMENTATION**



Fermenters, yeast melters and bread re-work dissolvers for sourdough, pre-dough and poolish. For healthy, natural and aromatic products with long shelf life. For this reason, it is especially suitable for the production of rye, wheat and multigrain breads, pizza, focacce, brioches and crackers. Our fermentation technology are highly versatile and diversified. We offer fermenters, yeast melters and bread re-work dissolvers for sourdough, pre-dough and poolish. The systems are highly customized and can stand-alone or be easily integrated in the production process, allowing for bread making through both direct method and indirect two steps method depending on the need of the manufacturer. They are modular and suitable for small, medium and big production lines. Our systems fully preserve the characteristics of the raw materials and meet the highest standards of hygienic production. Built in stainless steel, the systems are easy to clean and can be equipped with CIP or PIG cleaning system. Fermentation improves the quality of the final product and rationalizes the resources involved, saving space, manpower, additives and yeast.









#### FLOUR COOLING



Centralized system for the gradual reaching of set temperature, based on the direct exchange of pre-cooled air through a fluidized bed. Correct and linear management of the dough temperature is essential in bread-making and similar processes. Seasonal changes cause considerable variations to the temperatures of work areas and raw materials, impacting leavening times and creating unevenness in the finished product. We offer a centralized cooling system for a gradual and automatic reaching of set temperature, based on the direct exchange of pre-cooled air through a fluidized bed. With constant temperature of flour in the mix the final product is constant all year round. With an increased exchange capacity and a bigger air flux, our system has been recently perfected to automatically and independently take the flour to the temperature required for further processing. As such, it is a highly rational and accurate system that eliminates the need for cooling agents such as cooled water or ice, and the constant manual intervention they require. Cooling agents not only add unnecessary costs to your process but lead to instant decreases and unstable temperatures through time.

#### SUGAR MILL



System for the grinding of crystal sugar with automatic feeding, and storage tank with stirrer to avoid build-up of product and facilitate its discharge. Sugar mill enables you to create an always fresh and controlled product in complete independence, tailored to the particle size and quantity requirements of each production. The system is provided with safety devices such as anti-explosion hatch and quench valve, and comes with dust recovering filter. Completely hermetic. No leakage in the surrounding environment thanks to the air recycling system. Sugar cleaning by means of in-line sifter and magnet detector upstream of the mill further guarantees safety and hygiene.









#### **INVERTED SUGAR**



Systems for the preparation, storage and metering of invert sugar. Inverted sugar has extensive benefits: it has a sweetening power about 20-25% higher than sucrose, highly reducing consumptions; it lowers the freezing point and delays crystallisation and as such, it improves the upright power of creams and makes ice cream and fillings creamier. It is very useful for icings and glazes and provides a consistent, soft centre to candies and chocolates; with its higher affinity for water, it can be used as humectant in cakes and similar products, and it enhances colour and flavour as well as freshness; it makes baking faster as well as adding softness to baked goods with less crystallisation, invert sugar creates a smoother texture and improved mouth feel; due to the presence of free fructose and its natural affinity for fruit flavours, it is used for soft drinks as well as confectionery or bakery goods that contain fruit or are fruit flavoured; it gives a richer crust colour to bread and pastries as it boosts the Maillard reaction, the chemical reaction between amino acids and sugars that adds distinctive colouring and flavour to browned food; it is ideal for use in energy drinks and sports drinks, because fructose is more satiating and because of the added taste from glucose and fructose. Our system handles the preparation, storage and metering of invert sugar.









#### **COLD METERING**



Technology for the cold metering in paste form of fat, margarine and butter. Cold dosing of fat, margarine and butter in paste form, through a closed system that allows total control on the temperature of the product before and after dosing. Cold fat dosing stabilizes temperatures and preserves the organoleptic characteristics of ingredients such as fat, margarine and butter. Dosing in paste form achieves a product that is easier to amalgamate with the dough, and is especially suitable for the production of biscuits, cakes and other confectionery. It also ensures time saving, higher hygiene in the storage and production rooms and accurate dosing due to absence of air in the pipe. Fully automated and traceable. The process includes manual loading of blocks in a weighed double jacket tank and conveyance to the discharge point through worm pump and jacketed pipe. The product is then dosed in bowl through a massic flow meter at the same temperature of the block initially inserted in the system.

#### **FAT TANK**



Metering of fat products in liquid form, in stainless steel tanks with heating system, optimized circulation and fat cutting knife on multiple levels.









#### SCRAP REWORK SYSTEM



Fully automated rework systems for bread and biscuit scraps. Fully automated rework systems for bread and similar products such as toasts, loaves and sandwiches. The final product can be fed back into production in place of flour, sold, used for animal feed, or worked again to produce croutons or bread crumbs. Biscuit rework systems are also completely automated are re-use the powders on the production line. Product can be put directly on the conveying line. Reworking production scraps is good for the planet and leads to excellent return on moderate investments within a short time period. The process eliminates the need to store scraps and guarantees a high quality end product with no loss of proteins compared with the flour used in the beginning of the process.

#### SALT SOLUTION



Centralized systems for the production, storing and metering of salt solution. Ideal when a cold dough is needed (below zero) to prevent eccessive heating during processes such as fermentation, avoiding the problem of water freezing. Salt solution also makes it easier to to amalgamate the salt in the dough.









## End of Line, Packaging and Palletizing



Integrated / dedicated palletizing cells, with robot and automatic and programmable palletizing system. Designed specifically for the customer's needs, they can manage from one to five pallets with 5 products at the same time, with just one robot. However, pallets of different sizes and materials can also be managed simultaneously. The systems can be completed with labeling machines or markers that determine the identification of the pallet. We supply the conveyors for the product to be palletized and the conveyors for the pallets. It is possible to integrate pallet wrappers for stretchfilm and provide software interfaces for integration with automatic shuttles such as AGV or LGV from any supplier.

#### **Product Boxing Line**



The products are boxed using robotic systems that can use both flexpickers (link to flexpicker) and anthropomorphic robots as in the boxing of the bags of the 4 pan jumps. The systems are particularly flexible in terms of size and scope of the products to be packaged and are solutions that are always customized according to the customer's needs.









## End of Line, Packaging and Palletizing

### Complex palletizing systems



Complex palletizing systems with robots system operating automatically, with the possibility of palletizing multiple lines on the same robot and management of complex systems with the production of multiple pallets at the same time. The system is always designed according to the particular needs of the customer in terms of products, types and palletizing schemes, speeds and available spaces. It is possible to supply systems that work in extreme conditions such as cold storage rooms at -30 ° C. The systems are always integrated by Stim which also takes care of the management of the product codes and the packages that are managed, being able to guarantee perfect traceability of the product from the entrance to the plant to the finished pallet. All palletizers can be completed with code reading systems (QR bar etc.) or vision systems for quality management and packaging integrity detection. The gripper grippers of the robots are always adapted to the products to be handled in order to guarantee their grip and precise positioning and avoid any damage.





