

SAPLI

Packaging Technology

MULTIFORMAT MACHINERY FOR FILLING AND PACKING LINES



COMPANY PRESENTATION



SAPLI designs and manufactures a wide range of machines for powdered and solid products, mainly for the food industry. Today, a lot of SAPLI's complete lines are working around the world. Sapli designs, lay-out and install complete lines to fill, seam and pack powdered products into rigid containers (glass jars and bottles, aluminium cans and metal cans, plastic jars and bottles) and flexible packaging (sachets, doypacks).

CUSTOMER'S BENEFITS:

- Multiple formats at the same line
- Fast format changes
- Customer-tailored solutions for each products production process
- Turn-key complete equipment integrations
- Compact machine design and adaptable layouts
- Intuitive interface
- Customer Support at all project stages



PACKED PRODUCTS



POWDERED MILK AND INFANT FORMULA

Infant Formula, Buttermilk Powder, Coffee and Tea Whitener, Fat-filled milk powders, Skim Milk Powder, Whole Milk Powder, Coconut milk powder, Whey Protein, Whey Isolate, Isotonic Powder, Powdered Vitamins and Supplements, Powdered Medicines, Veterinary Products.

COFFEE AND COCOA PRODUCTS

Coffee, Coffee Substitute, Cocoa, Breakfast Nutritional Drinks, Instant Drink Powder, Powdered Cereals Drinks.

SOLID & GRAINS PRODUCTS

Confectionary Products, Chocolate, Cookies, Cornstarch, Pastries, Bakery, Sweets, Candies, Hard-candies, Chewing gums, Caramels, Dry Fruits and Vegetables, Spices, Pet Food, Snacks.



PACKAGING FORMATS (but not limited to)

- Metal Tin Cans
- Glass Jars
- Plastic Cups and Bottles
- Flexible packaging
- Composite and Paper Packaging

CAPS AND LIDS FORMATS (but not limited to)

- Snap Caps Lids
- Spoon/Scoop Caps Lids
- Metal Lids with or without painting
- Metal/Plastic Screw Caps
- Metal/Plastic Screw Caps with Liner
- Aluminium Protector, Foam Sealing

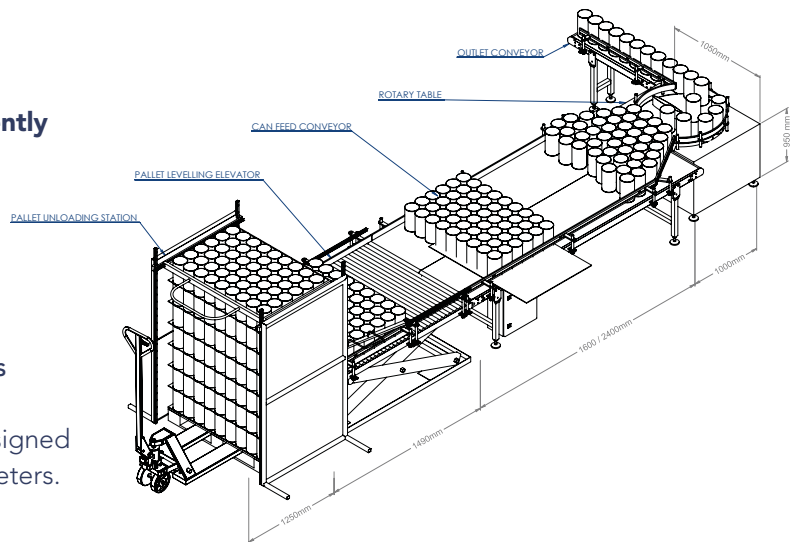
DEPALLETIZING SYSTEMS

Sapli's Packaging Feeding System is designed to depalletise containers from pallets and subsequently feed them to the Filling & Packing Line.

The system consists of the follow parts:

1. Pallet Unloading System
2. Pallet Levelling Elevator
3. Containers Feed Conveyor
4. Oriented Containers Exit and Handling Conveyors

Suitable for any kind of pallet size and specially designed to handle any kind of packaging heights and diameters.
Made of AISI -304 stainless steel

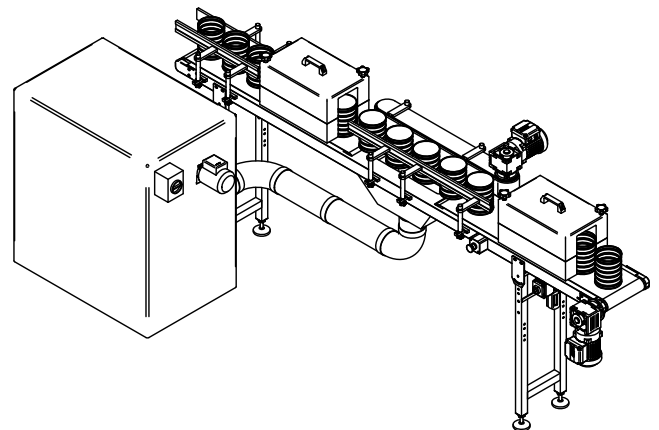


EMPTY CONTAINERS CLEANING

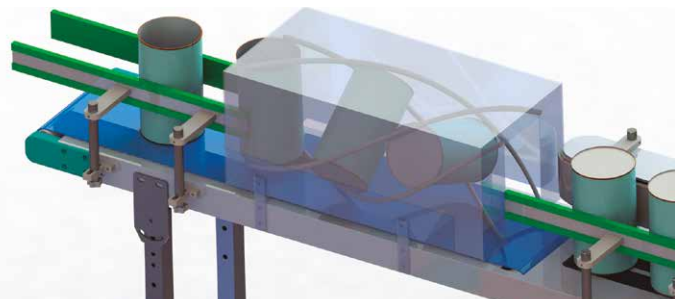
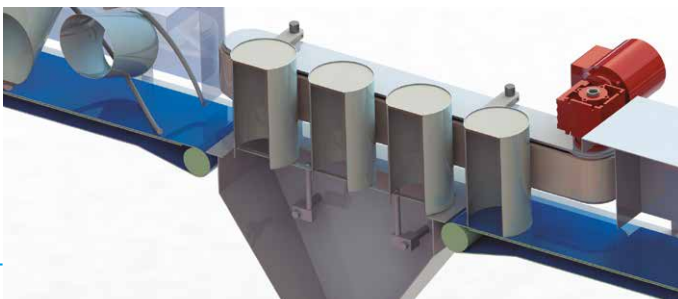
Sapli's Empty Containers Cleaning System allows cleaning all possible dust from the packaging inside.

The system is composed by:

1. Twister: (open side up to open side down)
2. Cleaning System with two ionising nozzles (anti-static system)
3. Dust Collection System (with dust hopper)
4. Twister: (open side down to open side up)
5. Handling Conveyor



Containers enter into twister tunnel, then they are turned from open side up to open side down, and possible dust and dirty particles fall down. Dust Aspiration System collects all dust into Dust Hopper. Two ionising nozzles blow air inside containers, assuring that all dirty is removed from packaging corners and is not stuck to the walls. After this operation, the containers are turned again from open side down to open side up and moved forward to the next production stages by handling conveyor.

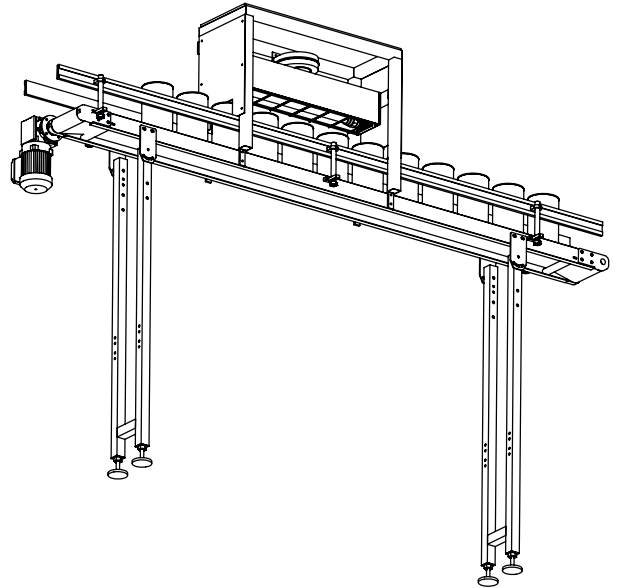


UV-STERILIZATION TUNNEL

Contaminated packaging is one of the primary causes of the contamination of food with bacteria. For this reason, it is very important to treat a packaging with effective system before it will be filled. Sapli's UV Sterilization Tunnel allows to sterilize packaging containers inside and outside, due to a powerful UV lamps what allow to reach LOG3 result. In this way, the treated packaging leaves the tunnel clean and aseptic, totally prepared for filling process.

Features:

- The tunnel is completely made of stainless steel.
- Secure and lasting system
- Multiple lamps with individual security control
- Easy installation and low maintenance requirement.
- Recommended lamp replacement: every 10.000h
- Adjusted to packaging requirement and production rate
- Suitable for any kind of can heights and can diameters
- The current status is displayed via LED

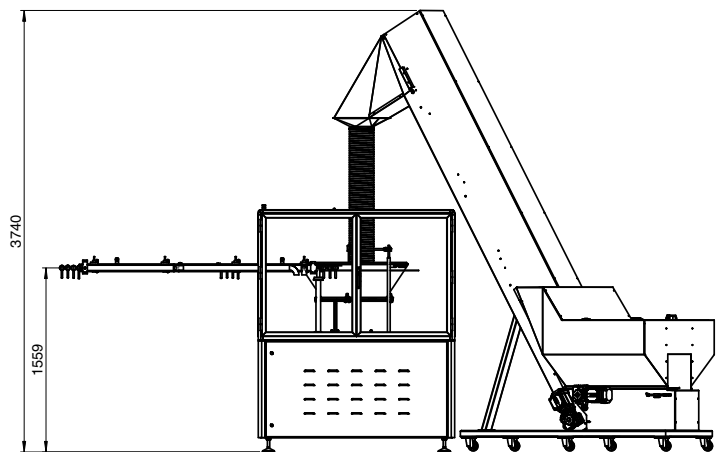


SCOOP INSERTER

After cleaning and UV sterilization, packaging containers are placed on the conveyor, with passes through a centrifugal scoop feeder that places a scoop into each container. The scoops are dropped into a hopper, from which an inclined water-fall type feeder lifts them up to the sorter, where they are oriented. The scoops are handled through discharge tunnel, which maintains the orientation and then they are dropped into each container. A sensor at the entrance of the scoop feeder detects the presence or absence of packaging and turns the feeder on or off accordingly.

Sapli's Scoop Dropping System consists of:

- Scoop Hooper
- Water-Fall Type Feeder-Elevator
- Vibrating Sorter
- Discharge Tunnel



VISION SYSTEMS

Sapli offers customized solutions for quality control and defects detection at the main production stages by Artificial Vision systems. The quality control solutions allow to eliminate risks for consumer safety and preserve the brand reputation.

SPOON INSERTION INSPECTION

The inspection module can control the follow aspects:

- Presence/Absence of the spoon
- Deformed or broken spoon
- Double or multiple spoons
- Detection by design and colour

Also able to detect and inspect transparent spoons.
Rejection function. Storage of pictures and statistics.



CONTAINERS INSPECTION

Packaging Containers Defects Inspection Module can be installed before or after filling process. The sensitivity for the inspection can be adjusted to fit product requirements with setting the software adjustment. All defective containers are rejected from the production line and their images are stored and an alarm is generated. For optimal security 360° inspection is available.

The main functions are:

- Confirmation of the correct can design
- Rejection of dirty and contaminated packaging
- Rejection of scratched and defective packaging



CAPS INSPECTION

Caps Artificial Vision Inspection Module is installed after the capping process. The inspection features can be adjusted depending on product formats range and the production requirements.

The mains points to be inspected:

- Correct closure position
- Caps colour
- Cap model, shape and format
- Rejection of defective, dirty and scratched caps
- Rejection of no oriented spoon caps in relation to the can's front side

INLINE POWDER FILLER

Sapli's Linear Powder Filler can be configured with Single or Double Filling stations. In case of required higher production rate the 4 filling stations configuration is proposed (two Double Filling stations).

The equipment includes easy-clean conveyor and stainless steel food-grade product contact parts, vibration at point of fill, lift system for smooth bottom-up filling, no-container no-fill control, no tools changeover, and positive container indexing.

- Auger with servo driving
- Compact and clean machine design
- Intuitive user-friendly interface
- High precision auger machined from solid
- Food grade stainless-steel parts in contact with the product
- Format change without use of tools
- eWON VPN Router for Sapli remote technical support
- No bottle – no fill safety system Hopper coupling, self-aligning, quick disconnect
- Automatic base cabine



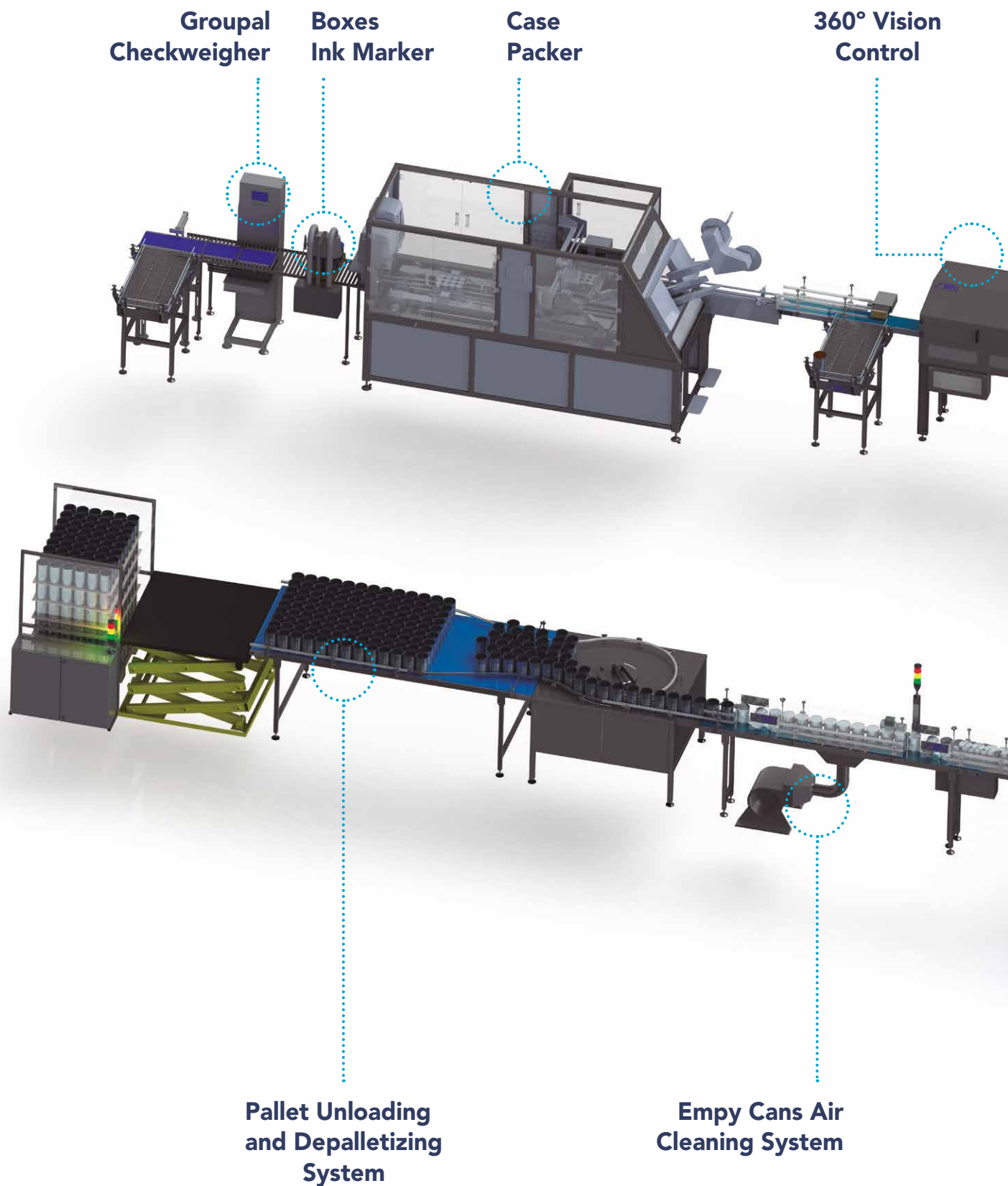
ROTARY POWDER FILLER

Continuous or Intermittent motion highly Accurate Rotary Powder Filler is a suitable solution for a wide range of powdered and granuled products to be filled with medium and high production rates. One or more filling stations options, depending on product flow characteristics and a packaging formats. Rotary machines are available with over turrets of 12 to 48 pockets, with outputs up to 400 containers per minute. These can be integrated with gross or tare and gross check-weigher feed-back systems.

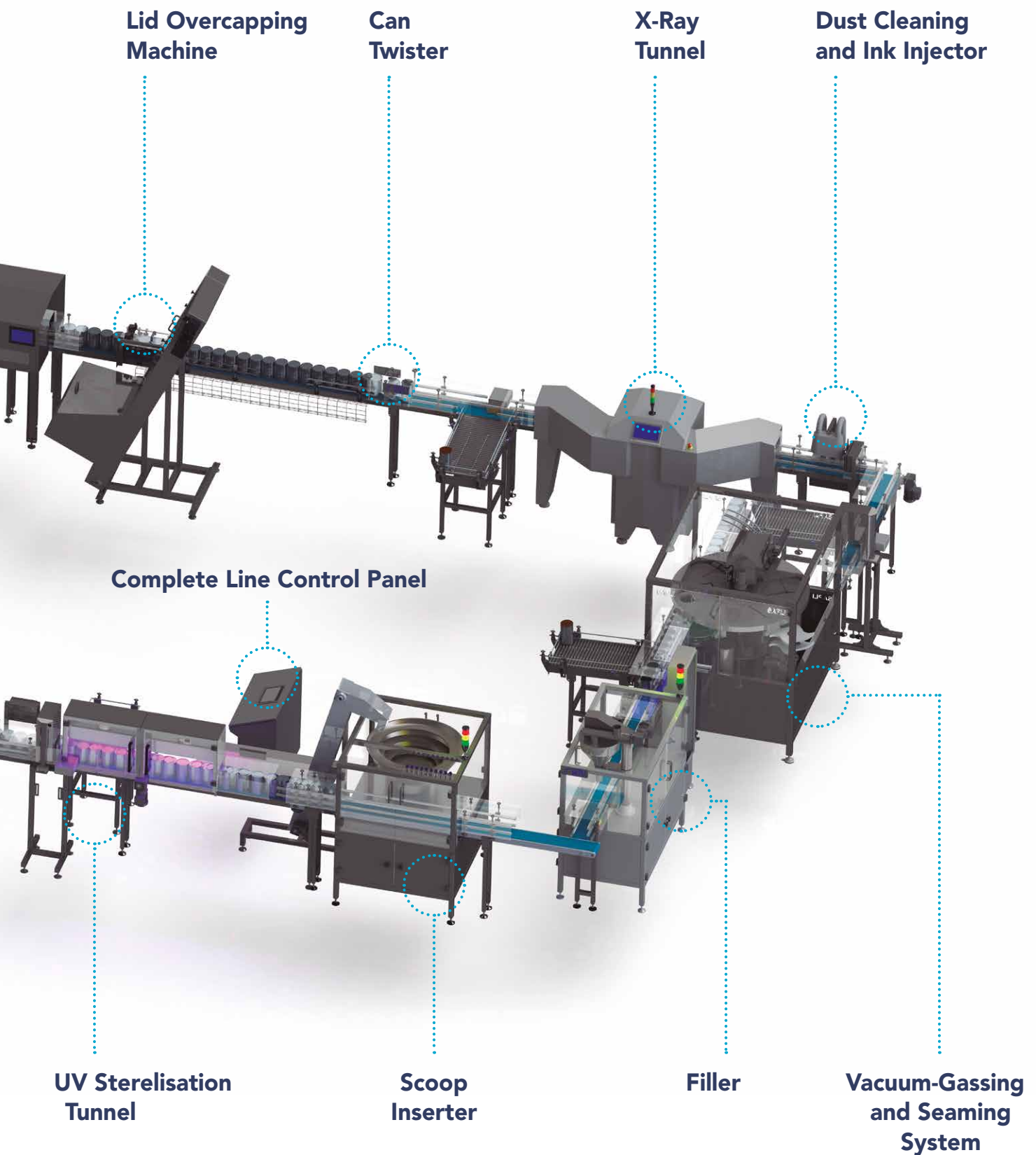
- Quantity of filling stations and turrets changes depending on required production rate
- One infeed and outfeed star wheel
- Clean filling process with completely sealed turrets with food grade seals
- Intuitive user-friendly interface
- Dust retention and extraction system
- High precision auger machined from solid
- Food grade stainless-steel parts in contact with the product
- Easy and simple format change without tools
- eWON VPN Router for Sapli remote technical support
- No bottle – no fill safety system
- Hopper coupling, self-aligning, quick disconnect
- Automatic base cabinet
- Servo-motor for auger drive, variable speed brushless direct drive with no pulleys, clutch/brake or belts, totally enclosed with integral precision shaft encoder



FULLY AUTOMATIC CAN FILLING



G, SEAMING AND PACKING LINE



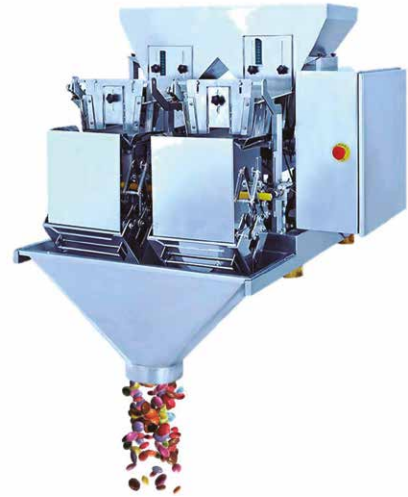
WEIGHTING FILLING AND DOSING

Sapli's Multi Head Weight Filler can be configured with Single or Multi stations.

- A multihead weight filler can be used for a variety of products and weights, because of the many differences between the available versions. It is mostly applied for filling consumer packaging such as up to 1000 g tin cans, jars, bags and boxes.
- Two Head Weight Filler model can be used in small production lines.

The equipment includes easy-clean conveyor and stainless steel food-grade product contact parts, vibration at point of fill, lift system for smooth bottom-up filling, no-container no-fill control, easy format change.

At the multihead the product is transported to the feed hoppers by a central vibrating top cone and vibrating feeders. The hoppers will discharge the product into the weigh hoppers, where the highly accurate load cells determine the weight. Each weigh hopper contains approximately a quarter of the set weight and the weigher itself will calculate the combination which is closest to the target weight. The selected hoppers are opened and flow together into the central discharge chute. Subsequently, the products are dumped into the packaging machine.



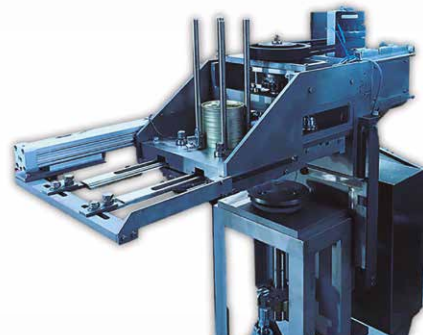
SEAMING AND VACUUM GASSING

The core technology of the packaging process is the reliable vacuum gassing system, what allows to reach correct modified atmosphere conditions, with very low levels of O₂ inside the can. Thus, a long shelf-life of the seamed product is guaranteed. Sapli's Vacuum Gassing and Seaming stations can be configured with or without vacuum-gassing option (adding of inert gas in vacuum chamber).

The Customer chooses:

- Atmospheric
- Vacuum
- Vacuum and gassing seaming operations machine.

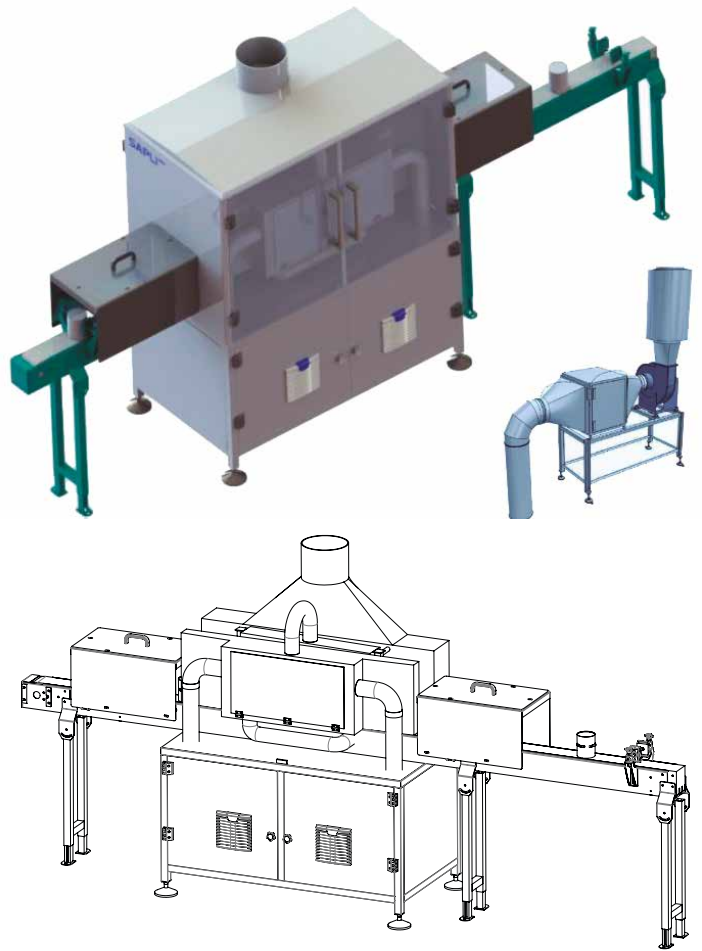
The vacuum-gassing option is needed depending on the product requirements. The single station machine is applied in low speeds production and semiautomatic lines. Sapli offers the unique on the market highly-efficient cans feeding system, developed specially for maximum reduction of vacuum gassing and sealing cycle and achieving of the optimal level of Oxygenating rates



CLOSED CONTAINERS CLEANER

It is very important to clean already filled and closed packaging, especially in case of aluminium peel off lids, in order to prevent the future contamination of the clean material while the container opening. Sapli offers an effective solution for the external packaging cleaning, based on air cleaning concept. Containers enter into the tunnel where powerful air nozzles blow air from different angles assuring the complete elimination of possible stuck powder or dust. The aspiration system absorbs dust particles. The packaging leaves the tunnel completely clean and ready for the next processes.

- Powerful air blowing nozzles
- Dust aspiration system
- Easy maintenance
- No consumables
- Safe and hygienic



INK INJECTOR

Continuous ink injection system has been designed for customers who print six to eight hours a day for five days a week, provides up to 9,000 hours of production before mandatory preventative maintenance.

- Multi-shift or single shift applications
- Ideal for moderate production line speeds
- Single print head
- Up to 5 printing lines
- LCD with membrane keyboard display
- Auto cleaning print head for fast start-ups
- Nominal character height from 2mm to 10mm



LASER CODER

Laser marking system delivers versatile, permanent coding with a small footprint and low maintenance requirements.

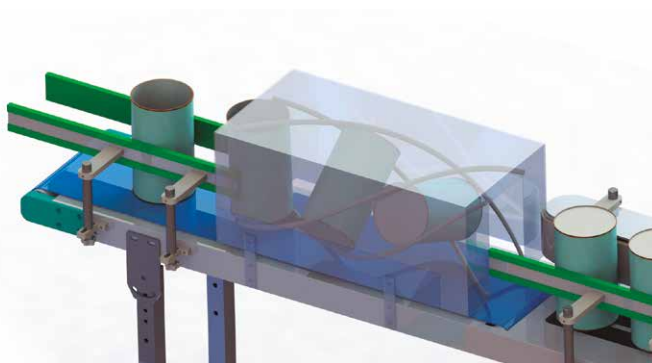
- Compact size
- High quality printing
- Low maintenance
- Power level adjustments
- Beam orientation
- Automatically
- Suitable for metals, plastics and other hard-to-mark materials
- Intuitive software



PACKAGING CONTAINERS TWISTER

Sapli supplies an inline 180° degree packaging containers twisters, which gently and rapidly invert or rotationally position rigid packaging containers. These devices are normally needed in tree points of line:

1. Before **Containers Cleaning System** (open side up to open side down)
2. After **Containers Cleaning System** (open side down to open side up)
3. After **Seaming, Cleaning and Laser Coding Processes** (bottom side up to bottom side down)



LEAFLET INSERTER

Non-stop twins model leaflet attaching machine:

- Easy date backup
- Top can labelling
- Product sensor: light barrier and reflector
- End of label roll – signal lamp
- Conveyor speed: up to 74 m/min
- Max diameter of label roll: 400 mm



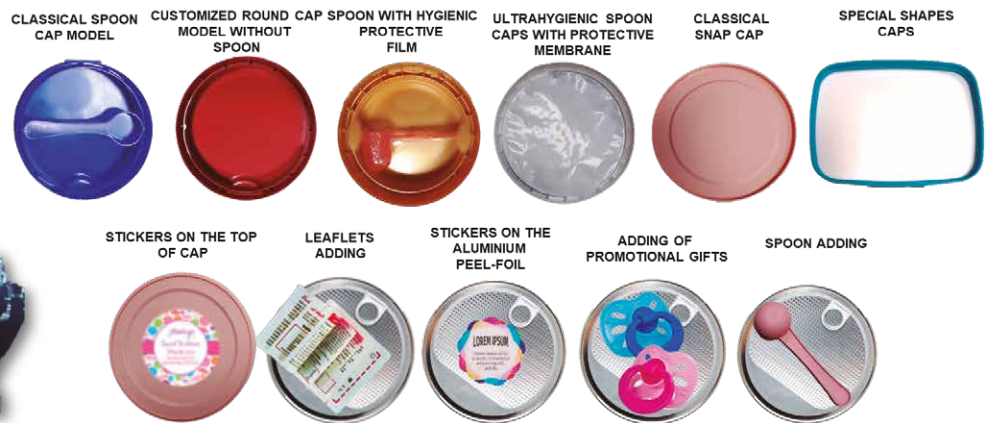
CAN BARCODE READER

Can barcode reader is based on 3 cameras, able to capture the barecode on the can lateral side from all possible angles. The system allows to assure the correct tracibility of the packing process.

Connection type	Ethernet
Scanner design	Line scanner
Scanning frequency	400 Hz ... 1,200 Hz
Code resolution	0.2 mm ... 1 mm
Reading distance	60 mm ... 365 mm 1
Bar code types	All current code types, Code 39, Code 128, Code 93, Codabar, GS1-128 / EAN 128, UPC / GTIN / EAN, Interleaved 2 of 5, Pharmacode, GS1 DataBar, Telepen, MSI/Plessey
No. of characters per reading interval	1,500 500 (for multiplexer function in CAN operation)



LID OVERCAPPING SYSTEM



FEATURES

- Production speed: up to 350 caps per minute (21 000 caps per hour).
- Range: plastic or metallic caps with different shapes/designs and diameters
- Available caps sizes: from 20 to 250 mm inner diameter or size and multiple caps high
- Package heights (cans, tins, bottles ...): from 40 to 400 mm
- Quick and easy format changes: manual or semiautomatic

ADDITIONAL OPTIONS

- Orientation between cap and package
- Automatic teaching of new formats of caps and cans
- Extensible tactile HMI
- Inspection vision systems before and after capping
- Cans sizes inspection: height, product, quality
- Caps inspection: product, quality
- Assembly inspection: quality
- Easy addition of new formats in future needs of new caps or packages designs
- Remote diagnostic and technical assistance
- Adjustable configuration for multiple layouts in customer's factory

SCREW CAPPERS

Sapli's Screw Type Capping System is a machine designed to cap multiple packages, bottles, cans, tins, jars of different sizes by applying direct pressure, screwing it or applying other solutions required for special caps. It allows to cap multiple packages with simple format changes. Machine performance is extremely heavy duty with multiple products in the same machine. Automatic capping with rotary system.

- Easy, intuitive and quick format change
- Adaptable to different shapes and sizes of the caps and packages
- Different configurations to setup the layout on site
- Flexible or rigid caps, press type or screwed in the same machine
- Cap presence checking system
- Adjustable number of heads depending on production required induction



X-RAY INSPECTION

The end-of-line X-ray inspection system detects contaminated, damaged and defective products and packaging. Besides metallic and non-metallic foreign objects it detects missing, defective or misshaped products.



All foreign objects are detected due to their density, chemical components or mechanical dimensions: the density differences are compared to the product to be inspected. X-Ray system detects metal, glass, ceramics, stones, raw bones, PVC, Teflon, rubber and glass fiber reinforced plastics, Device detects product defects such as cracks or air pockets in tins.

CHECK WEIGHTING SYSTEM

Equipment for continuous control of weight for the verification of one hundred per cent of the products manufactured in a production line. Able to indicate and/or reject all those that do not comprise with the standard specifications. Maintains flexibility, easy installation and commissioning, betting on the new technology: comprehensive menu-driven touch screen, communication systems and versatility.

Two options: Group weighting and individual weighting



CASE PACKING AND PALLETIZING SYSTEM

Palletizing system can be customized and adapted to the production needs. Different automatizing levels are available.

Sapli Machinery offers the follow equipment options:

- Cardboard box erector
- Cardboard box packer
- Full automatic cardboard boxes folding and closing
- Cardboard boxes labelling
- Palletizing robot cell
- Conveyors of end packaging
- Pallet Stretch Wrapper



WHY CHOOSE SAPLI?

Sapli offers Customers their qualified engineering know-how, the highest technology and the greatest productive flexibility, helping the customers to develop their project from very first steps offering a wide range of services:

- Budgeting and feasibility studies
- Providing of information about building for installation and logistics with condition criteria
- Project planning and project realisation time
- Output and production rates calculations
- Equipment Installation and Start-Up
- Different automation levels
- Customisation of layouts and working space optimization
- Adaptation of production speed according to factory needs
- Guarantying process quality and hygienic standards and certification

After Sales & Service Activities - Technical Service Department

- ✓ Technical Assistance
- ✓ 24 hr. Customer Hot-Line
- ✓ Remote service (via modem/web-VPN)
- ✓ Preventative Maintenance & Expert Advice
- ✓ Latest Developments and upgrading

SAPLI'S VALUES

The continuous investment in R&D allowed developing and patenting the original capping solutions, giving to Sapli an important competitive advantage in quality and features.

- Sapli offers to the Customers complete services and support, including: customized project and equipment engineering; PLC programming; spare parts manufacturing and rapid supply; machine assembling, commissioning and repair; maintenance service in customer's site and training, which is supported by our highly-qualified after sales service.
- The company focuses on custom projects which include turnkey for new plants, modernization of existing production lines or special engineering designs, taking into account the latest standards for health and safety.
- Sapli values are based on the spirit of excellence, creativity and ethics as a way of ensuring customer satisfaction

REFERENCES





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