



L E A D E R S T O G E T H E R

4th RANGE
FRESH-CUT, LEAF
and MIX SALADS
- Overview -





4th RANGE PARTNERSHIP

CFT Group, through the integration of technologies and expertise by the affiliate brands **LABS**, **LEVATI** and **MECPARMA**, provides complete solutions for vegetables processing and thermal treatment plants. Recently, thanks to a new team of persons with consolidated and proven experience, CFT introduced and enter the 4th range market for salads and fresh-cut .

NADDEO, designs and implements innovative, complete and customized solutions, especially for 4th range fresh salads and vegetables. Starting in 1987, today the company is an international reference point for the construction of machinery and lines for the “ready to eat” products, also by introducing innovative technologies and system in the last few years!

COMMERCIAL PARTNERSHIP
in **FRESH-CUT** and **SALADS**
(4th RANGE) EQUIPMENTS.
SHARING EXPERIENCE, KNOW-HOW,
ENGINEERING, R&D and NETWORKS
to **ACHIEVE NEW GOAL TOGETHER!**



L E A D E R S T O G E T H E R



LINE DESIGN GENERAL FEATURES & IMPROVEMENT

All lines and machinery were completely **RE-DESIGNED** following, for each single step, such targets:

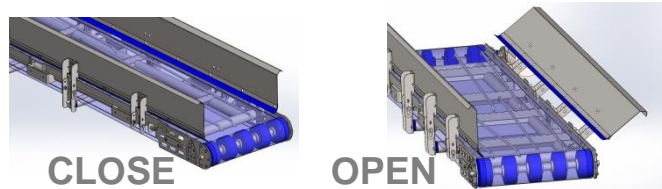
- ❖ MAX HYGIENE DESIGN;
- ❖ ENERGY SAVING (power, water, cleaning and down time)
- ❖ MAX MACHINE ACCESSIBILITY;
- ❖ REDUCED FOOTPRINT/LAYOUT;
- ❖ AUTOMATION and LINE INTEGRATION;



WHAT'S DIFFERENT ?



- ❖ High hygiene and clean design for all frame and construction (round shape);
- ❖ All conveyors without standard straps K13, to avoid any product and bacteria contamination;
- ❖ All SS gearmotor with IP69K protection with no need of carter and for **energy saving of 35%** compared to traditional gearmotor;
- ❖ All conveyors and transport with easy removable side guide for a perfect and fast cleaning and easy maintenance;



- ❖ Washing line with countercurrent water saving and circuit to minimize all water consumption;
- ❖ Total parameter automatic control and automation HMI (recipe base);



ZEPHYR **ECO₂**



TUNNEL DRIER - ECO2

- ❖ **CO2 gas** for heating and cooling in the air drier instead of the standard one (R404A), that will be forbidden in the 2020!
- ❖ Naddeo drier is now considered the **benchmark** in the market for capacity, residual humidity and exit temperature!
- ❖ Possible water saving system due to connection and circulation of the water in combination with the washing section;



SPIN DRIER – C600

- ❖ New SPIN DRIER concept with complete hygienic design;
- ❖ Floor/basement positioning for total and easy accessibility for cleaning and maintenance, with just electronic safety barrier with no hidden area;
- ❖ High efficiency motor with inverter regeneration system and energy saving;
- ❖ Drum washing/rinsing by water/air;

PRODUCT & TECHNOLOGY index



TECHNOLOGY



loading



selection



washing



drying



cutting



logistics



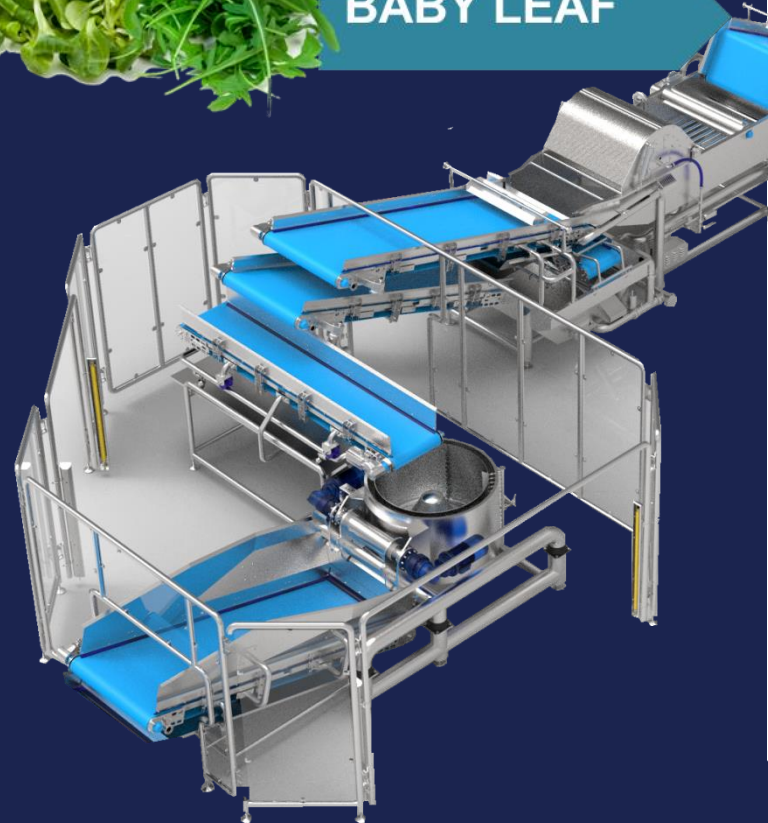
PRODUCT



ADULT SALAD



BABY LEAF



Fresh-cut, leaf and mix salads (4th range)

Complete solutions for fresh-cut and mix preparation for **ADULT SALAD** and **BABY-LEAF** fresh and ready to eat.





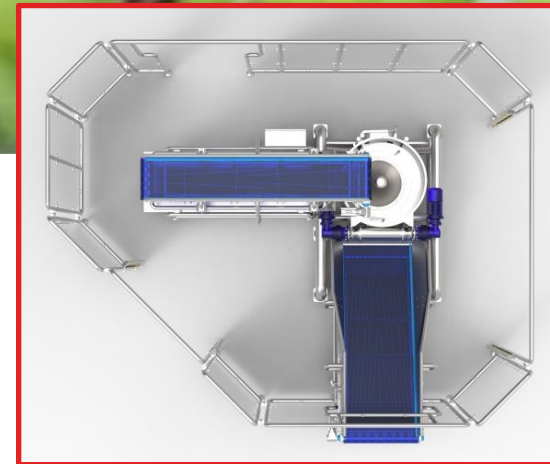
ADULT SALADS

- ✓ LOADING
- ✓ WASHING
- ✓ CORING
- ✓ DRYING
- ✓ SORTING
- ✓ LOGISTIC



PRODUCTS

- ✓ ICEBERG
- ✓ RADICCHIO
- ✓ CRAUTI
- ✓ RICCIA
- ✓ ROMAINE
- ✓ ENDIVE



Capacity RANGE
(Each line)

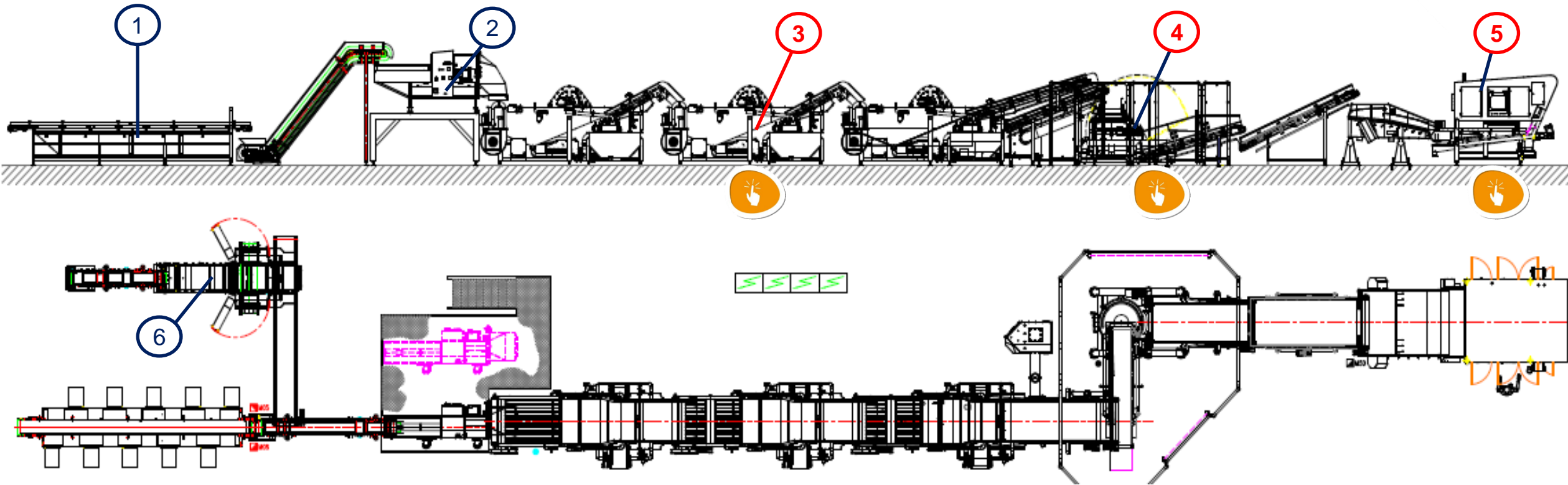


From 500 KG/H – (FRESH)
Up to 2000 KG/H – (FRESH)



ADULT SALAD

(Std. Layout)



Key (main plant)

1 MANUAL SORTING/PREPARATION

2 CUTTING SECTION

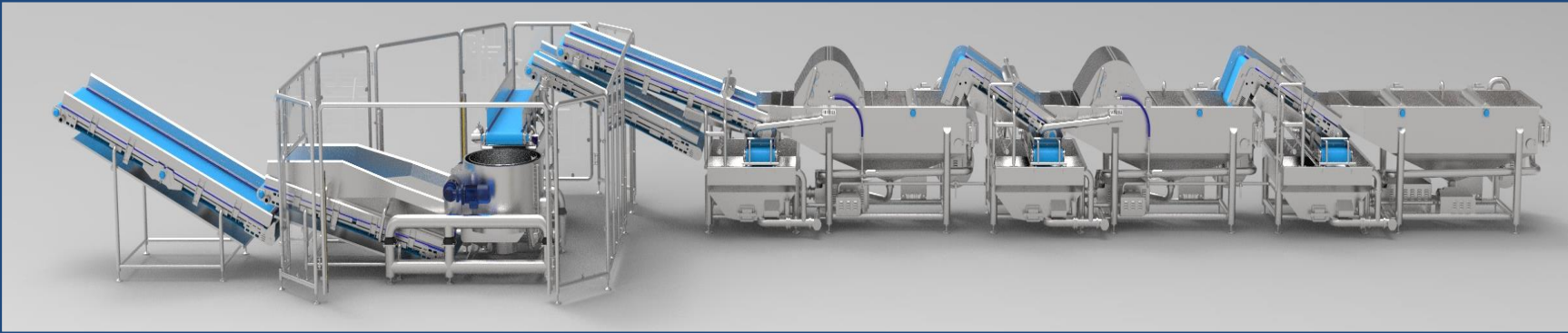
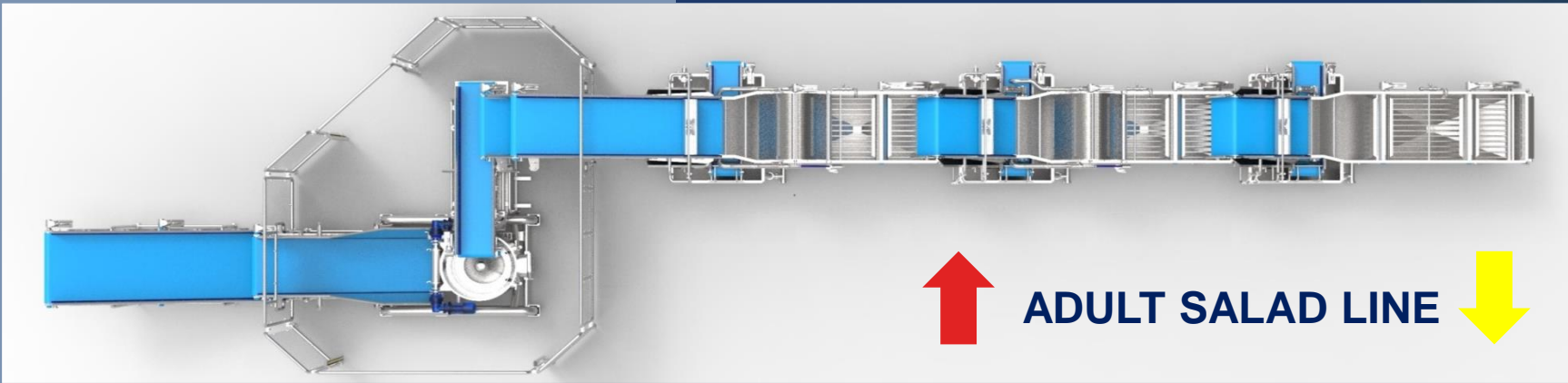
3 WASHING SECTION
(SINGLE/DOUBLE/TRIPLE WASHER)

4 SPIN DRYER mod.C600

5 OPTICAL SORTING
«RAYTEC VISION»

6 CORING SECTION





BABY LEAF

- ✓ LOADING
- ✓ WASHING
- ✓ DRYING
- ✓ SORTING
- ✓ LOGISTIC



PRODUCTS

- ✓ ILETTUCE
- ✓ SPINACH
- ✓ RED CHARD
- ✓ VALERIANA
- ✓ ROCKET

Capacity
RANGE
(Each line)



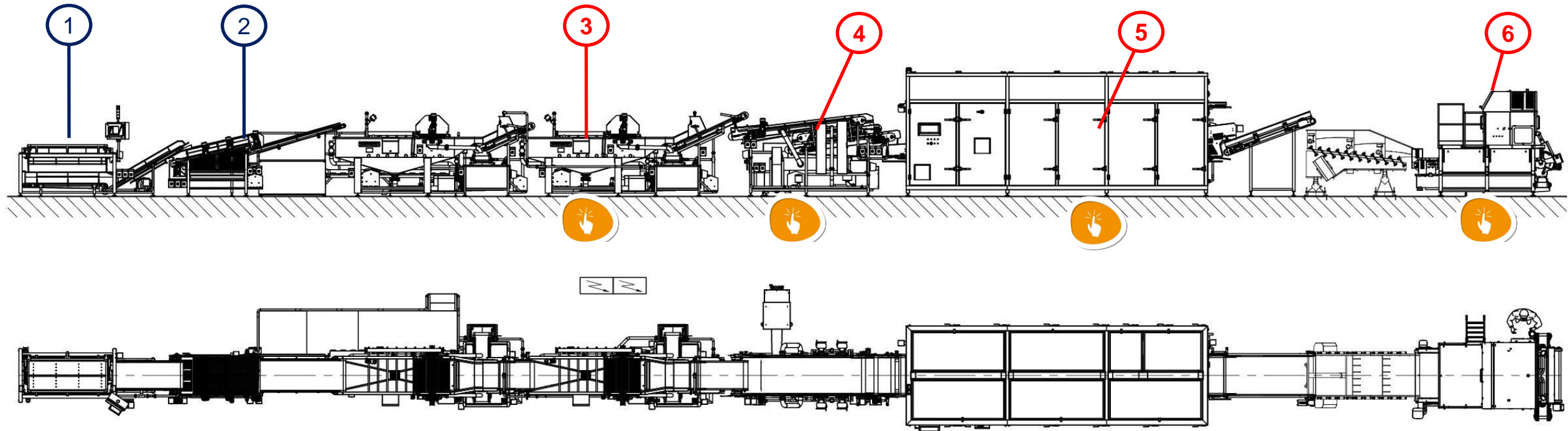
From 500 KG/H – (FRESH)
Up to 1300 KG/H – (FRESH)

ZEPHYR **ECO₂**



BABY LEAF

(Std. Layout)



KEY (main plant)

- 1 LOADING/WHEIGT SYSTEM
- 2 KNOCKING BELT

- 3 SINGLE/DOUBLE/TRIPLE WASHER
- 4 DEWATERING

- 5 AIR DRYER TUNNEL
- 6 OPTICAL SORTING



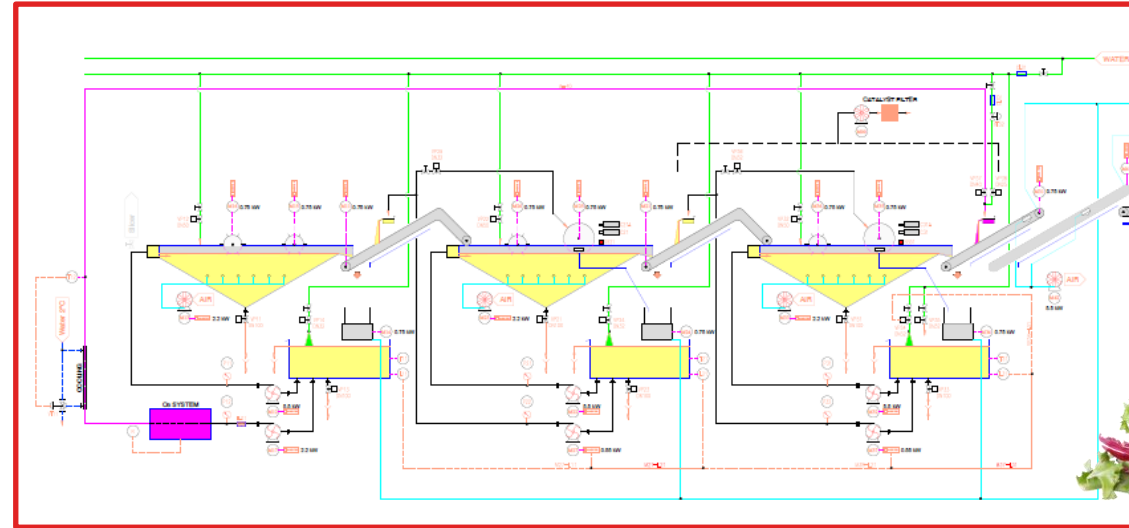


WASHING SECTION (single/double/triple)

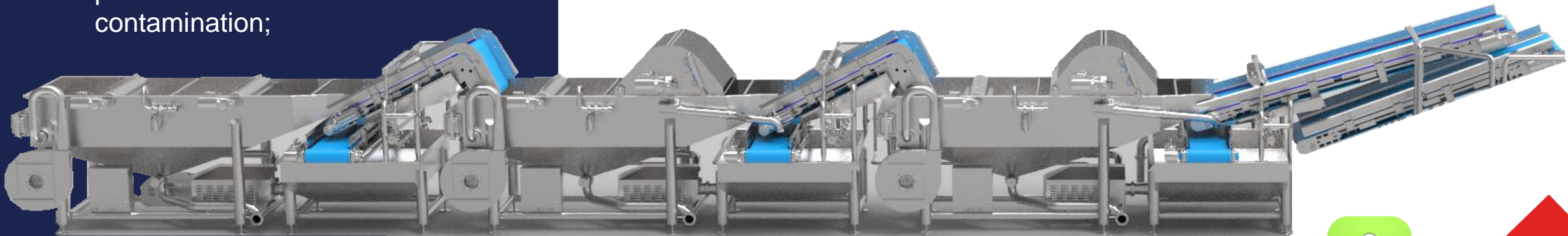
Customized WASHING solutions with single/double/triple washing stage with water circulation and saving system

KEY TOPICS

- ❖ High hygiene and clean design for all frame and construction (round shape);
- ❖ All conveyors without standard straps K13, to avoid any product and bacteria contamination;

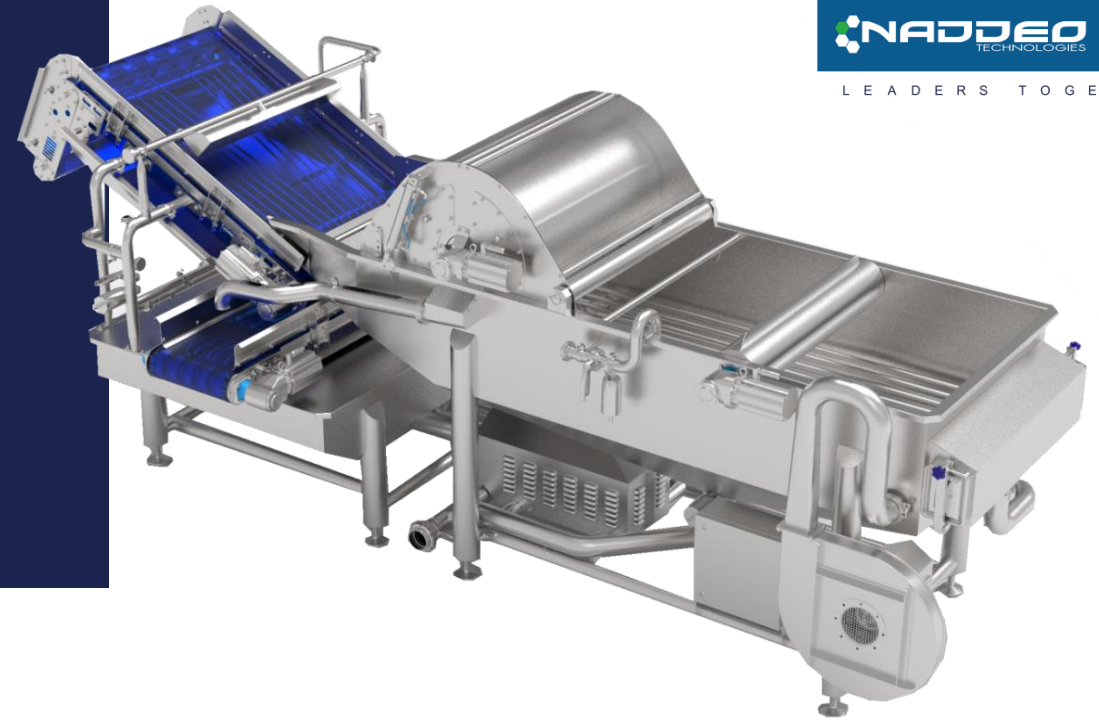


- ❖ All SS gearmotor with IP69K protection with no need of carter and for **energy saving of 35%** compared to traditional gearmotor;
- ❖ Washing line with countercurrent water saving and circuit to minimize all water consumption;
- ❖ Total parameter automatic control and automation HMI (recipe base);



WASHER MACHINE mod WS (single-double-triple stage)

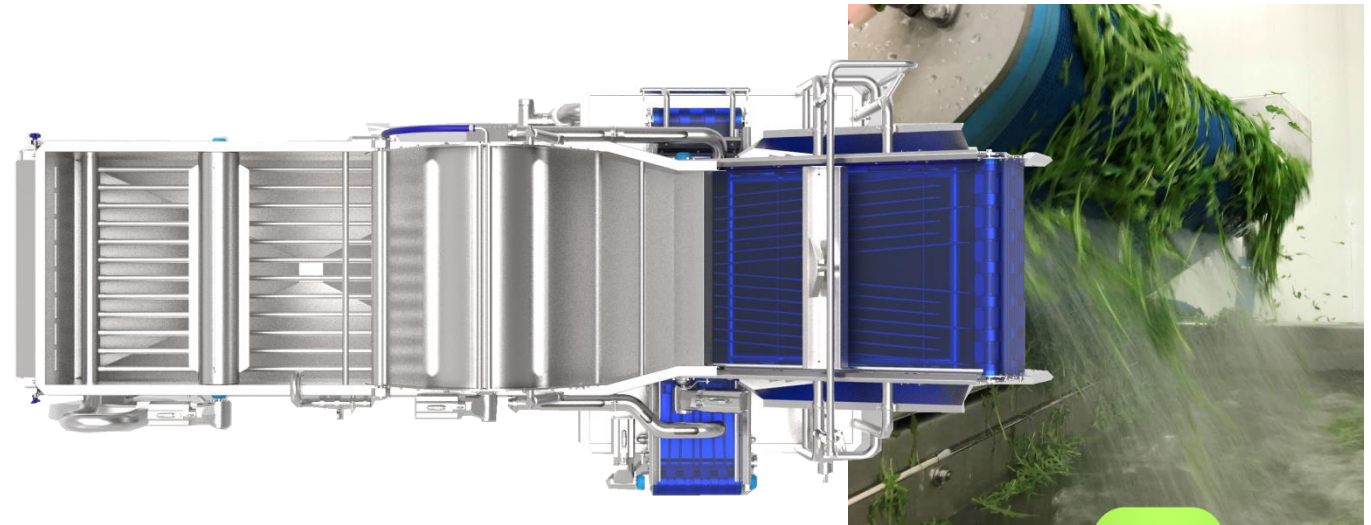
The new washers of the IV range have been engineered following market trends to reduce consumption of water and energy, reduce maintenance.
The washing machine follow HYGIENE design for all components and parts.



KEY TOPICS

- ROUND/CLEAN SURFACE IGENIC DESIGN
- STAINLESS STEEL HIGH EFFICIENT MOTOR
- EASY CLEAN and MAINTENANCE
- WATER SAVING and TREATMENT CIRCUIT

MODEL	CAPACITY	DIMENSION
WS	Up To 1850 KG/H	CUSTOM





SPIN DRYER mod C-600

The new C-600 spin dryer designed by CFT Group has totally transformed the concept of this type of machine, while retaining the technological and operational characteristics of the product. The new technical solutions focus on the possibility to access every part of the machine, thereby making cleaning and maintenance operations easier. The load height makes it possible to monitor each production stage.



KEY TOPICS

- ❖ NEW SPIN DRIER CONCEPT WITH COMPLETE HYGENIC DESIGN;
- ❖ FLOOR/BASEMENT POSITIONING FOR TOTAL AND EASY ACCESSIBILITY FOR CLEANING AND MAINTENANCE, WITH JUST ELECTRONIC SAFETY BARRIER WITH NO HIDDEN AREA;
- ❖ HIGH EFFICIENCY MOTOR WITH INVERTER REGENERATION SYSTEM AND ENERGY SAVING;
- ❖ DRUM WASHING/RINSING BY WATER/AIR;

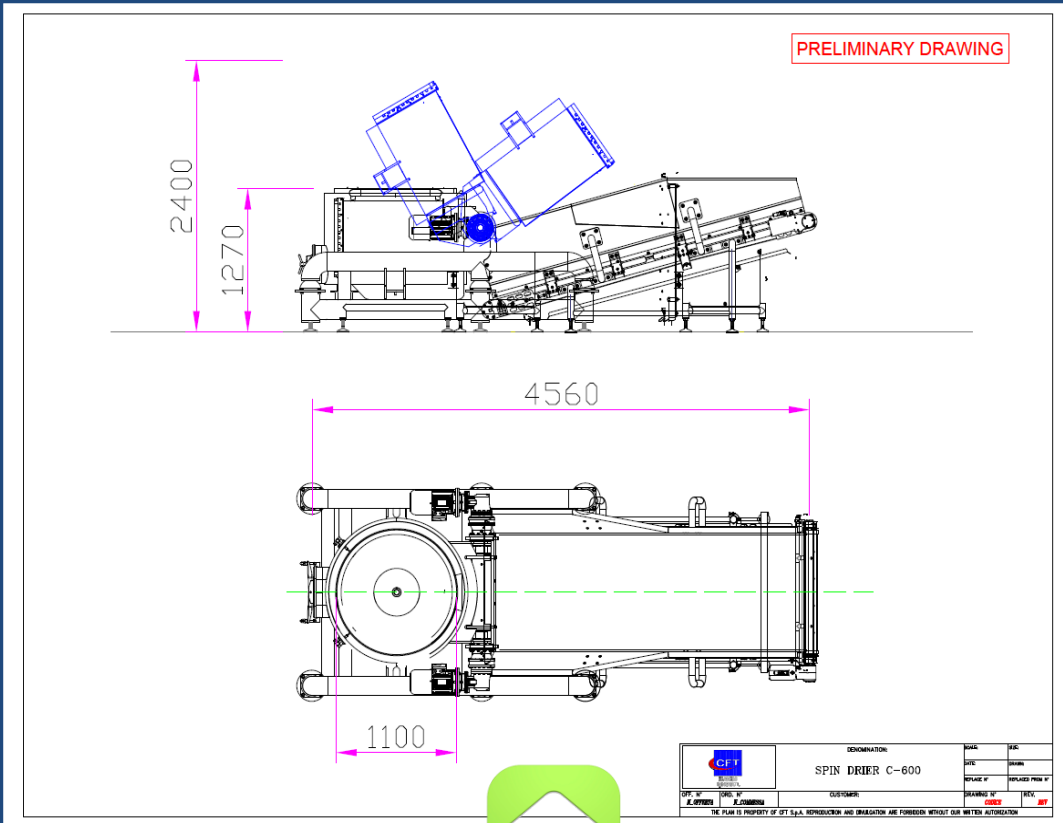
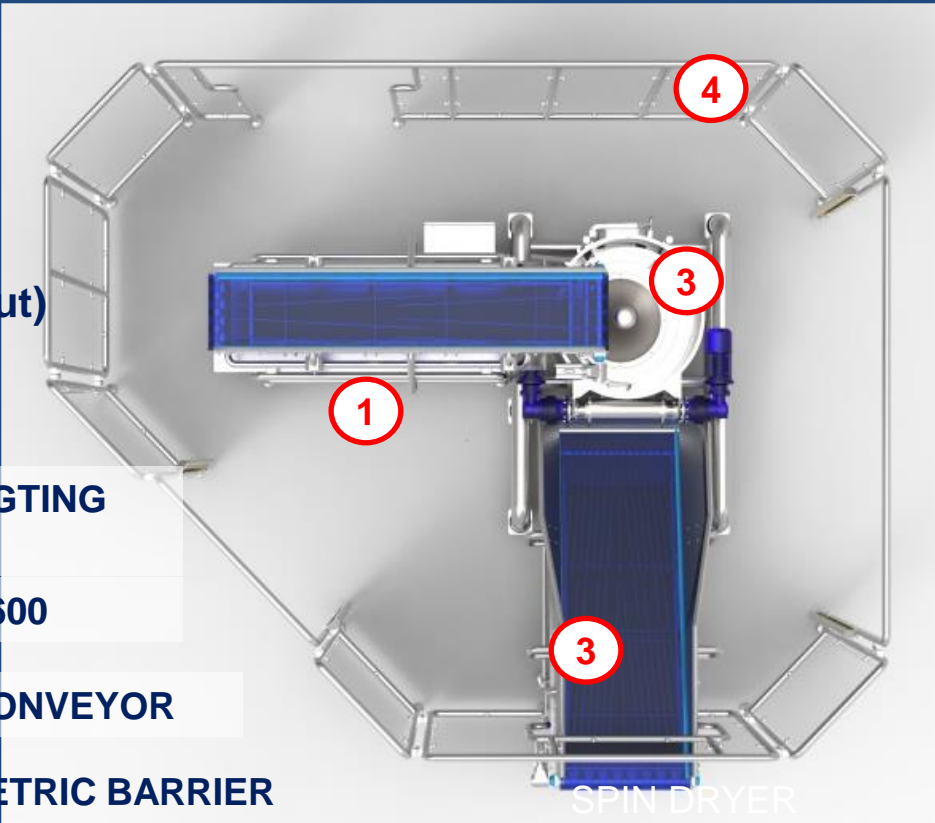




SPIN DRIER C-600 (Std. Layout)

KEY

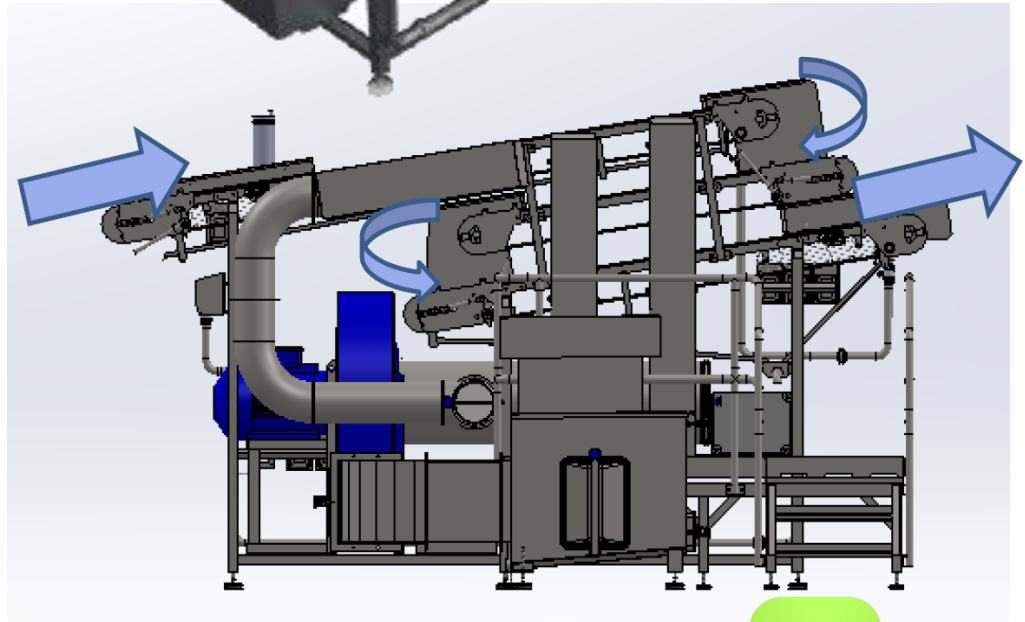
- 1** LOADING WHEIGHTING CONVEYOR
- 2** SPIN DRYER C-600
- 3** EXTRACTION CONVEYOR
- 4** SAFETY PERIMETRIC BARRIER



DEWATERING EVO

Usually installed before a tunnel drier, thanks to a combined system of aspiration and blowing of air it is possible to remove the biggest water drops from the leaves.

Along the path of the belt there are some air blades to invest the product by air pressure, to move the product and let it also turn upside down, and some sucking points to suck the water from the leaves. Before dropping on the next belt the product is invested by a blow of air pressure, in order to guarantee that all the leaves are removed and not sticking



Naddeo, introduce the innovative AIR TUNNEL DRIER mod.ZEPHYR ECO2, re-defining the state of art for this equipment in 4TH range for BABY LEAF and SALADS.

Naddeo is the only company using today CO2 gas for heating and cooling in the air dryer instead of the standard (R404A), that will be forbidden in the 2020!

Naddeo drier is now considered the benchmark in the market for capacity, residual humidity and exit temperature!



 KEY TOPICS

- ❖ **CO2 GAS** FOR HEATING AND COOLING IN THE AIR DRYER INSTEAD OF THE STANDARD (R404A), THAT WILL BE FORBIDDEN IN THE 2020!
- ❖ NADDEO DRIER IS NOW CONSIDERED THE **BENCHMARK** IN THE MARKET FOR CAPACITY, RESIDUAL HUMIDITY AND EXIT TEMPERATURE!
- ❖ POSSIBLE WATER SAVING SYSTEM DUE TO CONNECTION AND CIRCULATION OF THE WATER IN COMBINATION WITH THE WASHING SECTION;





NEW DRYER ADVANTAGES

NEW CO2 DRYER vs STANDARD COOLANT DRYER



NO GREENHOUSE GAS EMISSIONS (NATURAL GAS)



+ 30% WORKING EFFICIENCY and YIELD



< OPERATING COSTS

		R404A <i>(std coolant)</i>	CO₂
CAPACITY	AELOUS	450 KG/H	650 KG/H
	ZEPHIR	900 KG/H	1200 KG/H
WATER MOISTURE		< 5 %	< 3 %
PRODUCT OUTLET TEMP.		< 6 °C	< 4 °C

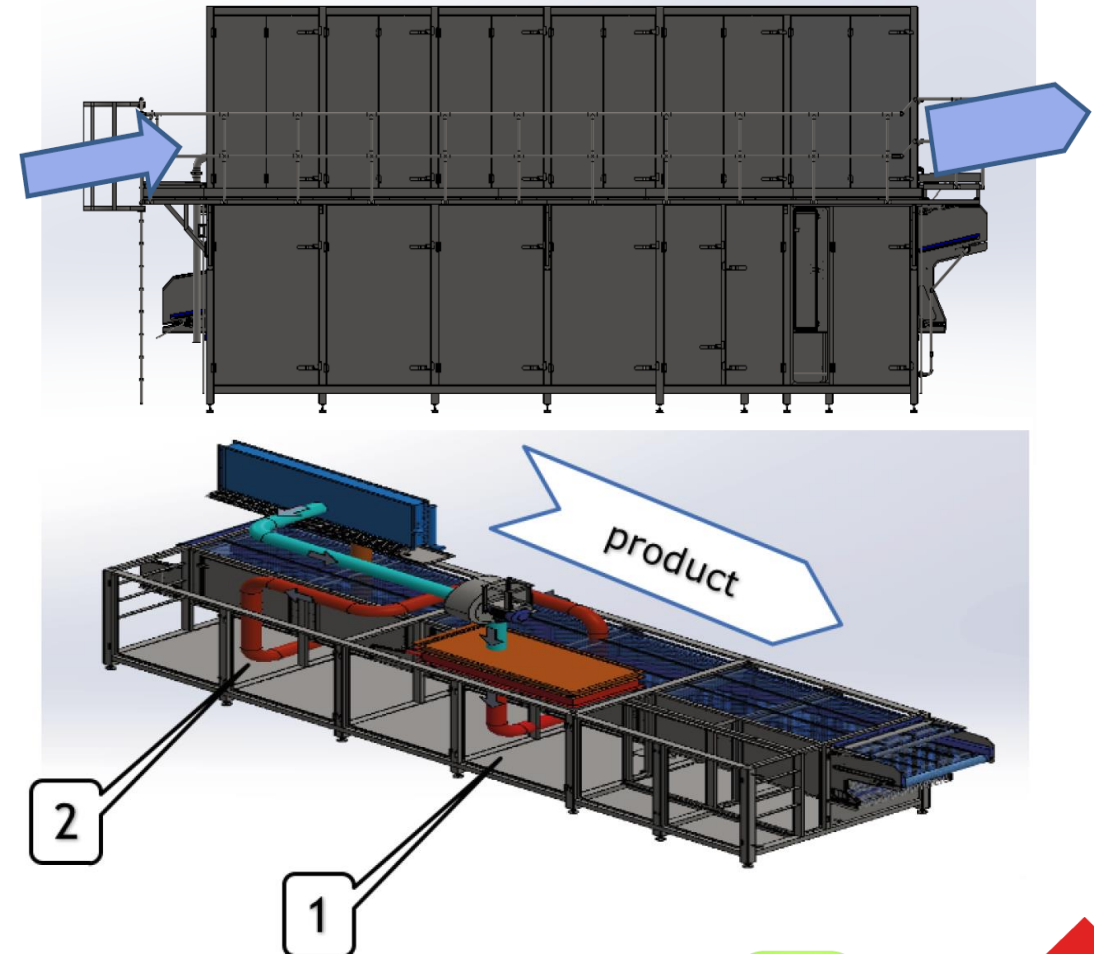
+CO2



After a mechanical removal of the water, the product will enter the air drier where it will be dried using a thermodynamic process and combination of hot. The scope of the development of such kind of dryers comes from the necessity of drying and eliminating moisture of the surface of delicate products such as **BABY LEAVES** without causing mechanical damaging's that usually appeared when utilizing the traditional drying systems, such as manual or automatic spin dryers. As a matter of fact, it is not easy to control the level of humidity of the finished products before packing, but more the product is dry, with less mechanical damages, the best quality is obtained, which can only ensure fresh appearance together with longer product shelf life. The system can dry also adult salads such as, Iceberg lettuce, Romaine, Endive, Frisee, and vegetables and others again.

Usually the goods after the dewatering system has a humidity of more or less of 14%, so the purpose of the continuous drying unit is to reduce such humidity to the 2% necessary to ensure the good quality output.

Another important issue that effect the product shelf life is the bacteria concentration. This concentration depends on effective washing of the goods, the water activity and overall the temperature of the final product coming from the drying tunnel before packing. For this reason comes the necessity to use an air drying tunnel divided in due sections, one **(1)** for the **PRODUCT DRYING** and the second **(2)** is for the **PRODUCT COOLING** in order to reach a temperature that is less than 5 °C for a good shelf life.

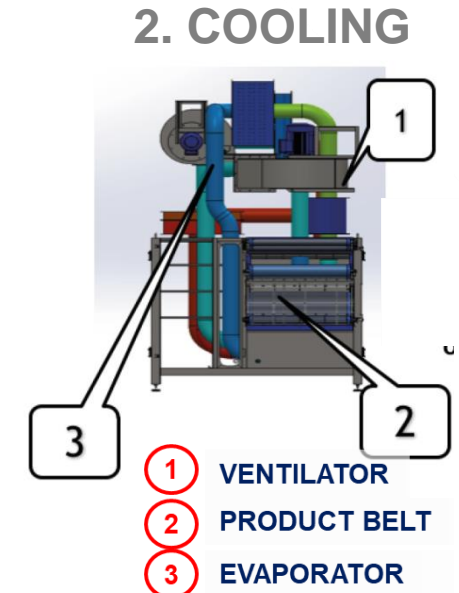
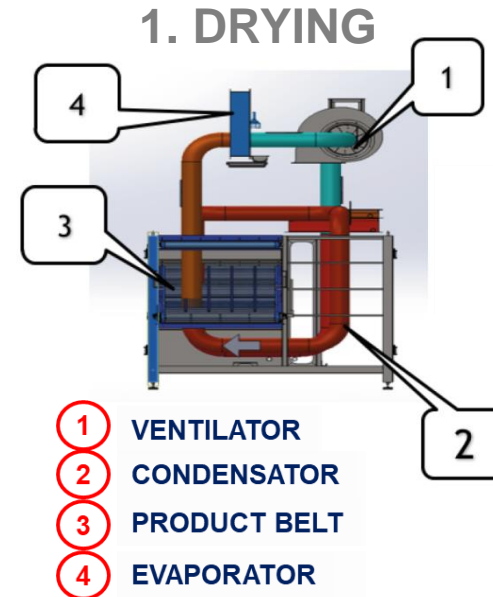


The advantage of the system is that all the heat and cooling energy is well conserved in the tunnel itself, no heat transfer with the outside environment of the factory, due to excellent thermal insulation of the whole system.

The temperature as well as humidity and all process parameters are controlled via a PLC. The free moisture is absorbed by a dry air flow thus allowing a complete drying of the product.

THE NEW INNOVATION IN THIS FIELD IS THE ISSUE TO INTRODUCE THE CO2 GAS FOR HEATING AND COOLING IN THE AIR DRYER INSTEAD OF THE OLD USED ONE (R404A), THAT WILL BE FORBIDDEN IN THE 2020.

The CO₂, or carbon dioxide, is a natural substance that can be used as a fluid in different heating or cooling applications thanks to its high heat exchange properties and high volumetric cooling capacity. The CO₂ is an important component in the earth's atmosphere. It is present in the air with a concentration of 0.03 to 0.06%. Together with other natural greenhouse gases (GHGs), it absorbs infrared radiation and heats the planet's surface ensuring the survival of the human race. However, due to the continuous increase in concentration in the atmosphere due to the use of fossil fuels, CO₂ is increasingly becoming the predominant greenhouse gas on Earth. The bad reputation of CO₂ is partly due to the fact that the measure of global warming is measured by the GWP or Global warming Potential, measured by a CO₂ scale divided over 100 years.

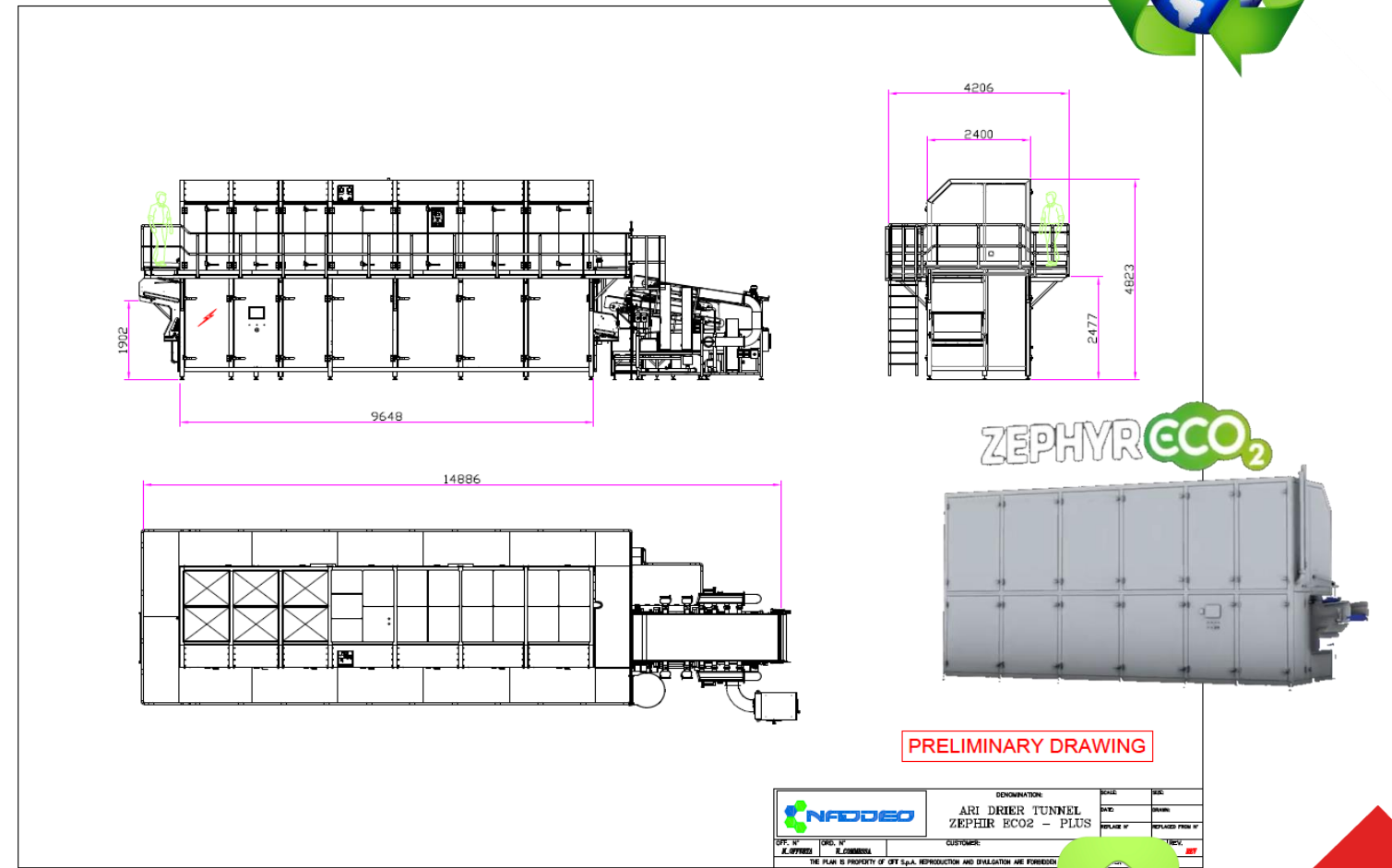


The commercial name of the CO2 gas is R744. Where R is for refrigerant, 7 is the class of natural fluid and 44 weight of the fluid. It is calculated that for 1kg of current refrigerant gas (R134a) has a GWP of 3.922, 1kg of CO2 gas has a GWP of 1. Applying CO2 in vapor compression applications significantly reduces the amount of greenhouse gas emissions in the atmosphere, which are the source of climate change.

The advantages of such gas are reduction of greenhouse gas emissions, high efficiency. Furthermore, since the CO2 in the cooling systems later becomes an industrial waste, it is taken from the natural reserves and used in the plants. The latter is then reused and recycled ensuring the primacy of neutral gas for the environment. In few words, the R404A was the most used refrigerant in refrigeration, and, as we have recently learned, over 50% of world production ended up in the atmosphere. Naddeo Technologies, is the only manufacturing factory that change their actual gas to the CO2 one. Hope that this helps the environment to stay healthy and force others to change again.

Naddeo Technologies, is the only manufacturing factory that change their **actual** gas to the CO2 one. Hope that this helps the environment to stay healthy and force others to change again.

MODEL	CAPACITY	DIMENSION (mm)
AEOLUS	Up To 650 KG/H	7300X2400XH=3000
ZEPHYR EVO	Up To 900 KG/H	10000X2400XH=4400
ZEPHYR PLUS	Up To 1250 KG/H	11300X2400XH=4800



Optical sorting technologies integrated in our solutions, are provided by **RAYTEC VISION**, a company part of **CFT group** since 2003.

DISCOVERY & SPRAY model, best-seller for 4th range leaf and salads sector, is an optical sorting machine with the highest resolution cameras to examine the product on the conveyor belt. The system is used to check whole or cut agro-food products as leaf, fruit and vegetables.

- ❖ Discovery can dispose of colour defects, marked produce and foreign bodies also the same colour as the good product.
- ❖ High production capacity.
- ❖ Significant labour savings (up to 100% according to application);
- ❖ High levels of Quality and Safety of products selected not achievable through labour;
- ❖ Detection in real time of qualitative and quantitative data of raw material;
- ❖ Automatic capture of images of rejected products and their filing for post-production analysis;
- ❖ Constant selection over time, also over 3 work shifts;
- ❖ Low maintenance costs;
- ❖ User-friendly for easy use and programming.





LOADING

- SECTION/MACHINERY -



LOADING HOPPER

The Hopper Mod.WHD1000 is suitable to ensure a continuous production line loading. In fact, thanks to a weighing station before feeding the product to the line and to high quality and precise software it is possible to manage with extreme simplicity the following processing parameters:

PRODUCTIVITY: After setting the desired productivity per hour, the system automatically calculates the number of outlets required over time to achieve the desired result.

MANAGEMENT OF INGREDIENTS IN THE RECIPE: it is possible to manage the different references that make a mix in a precise way.

The hopper's frame is made of stainless steel pimple finish, the feeding belt and elevator belt are managed by inverter.



BUNKER LOADING BELT

The row material crates are unloaded on the bunker belt to have a single layer of the product, the speed of the belt is managed by an inverter. The product movement to the selection table needs to be constant and continuous to give the opportunity to the operator to divide some waste product or some foreign bodies.



BINS DUMPER

The bins tipper is a very important machine for an optimal management of production cost. It allows the entry of the product directly into another production line, and it is indicated especially if it is a very delicate one like baby leaves, that can be easily damaged during the operations of introduction.





SORTING-SELECTION

- SECTION/MACHINERY -

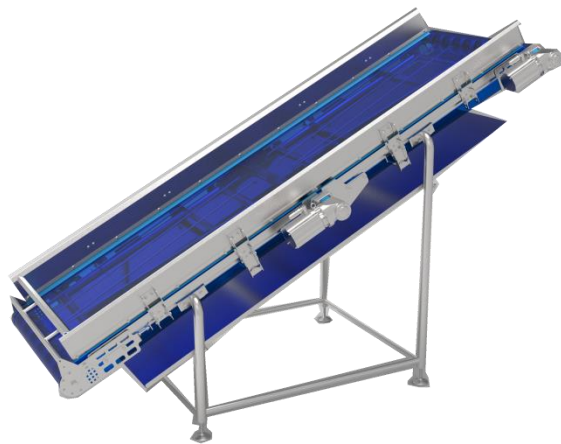
PREPARATION TABLE

Designed and manufactured respecting the ergonomic measures for a very light work, suitable to select and clean the raw product. The system includes a combination of two belts to allow a wide range of flexibility in addition to careful design for maximum utilization of your production space. Our preparation tables can be easily and promptly manufactured to our customers' requirements.



KNOCKING BELT-CONV.

The product coming from the hopper is transferred to the next stage of first selection. The Klopper belt is designed to remove waste product and undersized leaf, by shaking the holed belt. The waste product is collected underneath inside some trays and narrows.



SPRAY

DISCOVERY

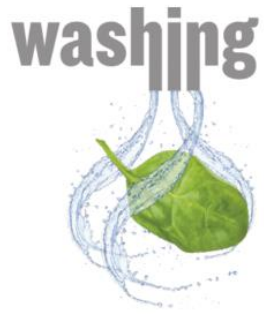


RAYTEC VISION – OPTICAL SORTING

Optical sorting technologies integrated in our solutions, are provided by **RAYTEC VISION**, a company part of CFT group since 2003. DISCOVERY & SPRAY model, **best-seller for 4th range leaf and salads sector**, is an optical sorting machine with the highest resolution cameras to examine the product on the conveyor belt. The system is used to check whole or cut agro-food products as leaf, fruit and vegetables.

- ❖ Baby lettuce
- ❖ Lettuce
- ❖ Spinach
- ❖ Cut carrots
- ❖ Cut potatoes
- ❖ Sweetcorn
- ❖ Peas
- ❖ Rehydrated beans
- ❖ Cut peppers
- ❖ Broccoli
- ❖ Diced onions
- ❖ Peeled garlic
- ❖ Diced peaches
- ❖ Diced pears





WASHING

- SECTION/MACHINERY -

IMMERSION WASHING FOR CRATES

Equipment created for the product washing directly inside its crates. Crates are transported from the tank with a bubbling system in which the first washing takes place, on another belt which introduces them inside a final washing tunnel full of shell sprayers. Then, an elevator belts moves the washed product inside its crates away.



WASHING FOR EMPTY CRATES

Washing system for empty crates divided into two steps: the first is pre-washing that allows a first cleaning and one of washing. In this way, the crates are totally cleaned from all the working scraps to be then moved to the second phase of washing which concerns the sanitizing. Finally they are transported by a modular chain with porters for their progress towards the end of the line.



WASHING & PRE-WASHING

The washer machine is a double action washer for washing various types of fruit, vegetables and mushrooms. Thank to the delicate high flow action applied by the washer, it is possible to mix different products. The washer consists of a stainless steel tank divided into several sections according to the capacity; the first performs washing and in the last a flexible mesh belt transfers the product and gently begins dewatering. A motorised paddle is used to adjust the flow of the product inside the unit, to break and to dip the floating layer in combined action with the perforated drum which allows a perfect removal of much of the foreign material (insects, wood portions, plastic, etc.). The washing water is constantly recycled through the incorporated self-cleaning rotary filter.

- ❖ Excellent washing quality.
- ❖ Wide range of models available with a capacity ranging from 150 kg/h to 1500 kg/h.
- ❖ Many available options – provide customisation to customer





DRYING

- SECTION/MACHINERY -



DEWATERING

Usually installed before a tunnel drier, thanks to a combined system of aspiration and blowing of air it is possible to remove the biggest water drops from the leaves. Some air blades to invest the product by air pressure, to move the product and let it also turn upside down, and some sucking points to suck the water from the leaves.



AIR DRYING TUNNEL

The drying tunnel by means of thermodynamics action allows the elimination of water from the surface of the product. The cycle is divided into two;

DRYING: The product is counter hit by hot and dry air. This flow of hot and dry air "absorbs" the water on the surface of the product.

COOLING: The Dry product is counter-hit by cold air to restore the product to the optimum temperature to guarantee the prosecution of the cold chain



SPIN DRYER C-600

The centrifuge machine is suitable to dry all the leafy or diced vegetables by centrifugal action with a predetermined cycle. It is particularly suitable for fresh cut products. The rotating basket is loaded from a conveyor belt, and at the end of the spin cycle, it spills the product on a discharging belt. The speed of loading and centrifugation are adjustable by the control unit. The standard processing cycle lasts 1 minute.

- ❖ New SPIN DRIER concept with complete hygienic design;
- ❖ Floor/basement positioning for total and easy accessibility for cleaning and maintenance, with just electronic safety barrier with no hidden area;
- ❖ High efficiency motor with inverter regeneration system and energy saving;
- ❖ Drum washing/rinsing by water/air;





CUTTING

- SECTION/MACHINERY -



CUTTER MACHINE - UCM

The UCM Cutter was built for cutting leaf and oval products, iceberg, Roman, radicchio, carrots, peppers, cabbage, cucumbers, zucchini, celery, etc. the products to be cut are conveyed on a high-speed V-belt, where products go toward the rotating cutting head. The correct combination between the belt and the rotation speed of the cutting head determine the desired cut.



CUTTER FOR JULIENNE - CMJ

The cutter is suitable to shredded and slice cut of carrots, potatoes, zucchini, squash, celeriac, etc. Using various types of blades, the cutter is able to cut products within the following dimensions:

- ❖ Shredded 2.8 x 2.8 mm;
 - ❖ Shredded 1.6 x 1.6 mm (Julienne carrots);
 - ❖ or slices from 0.8 mm and up to 4 mm;
- the cutter is easy to manage, enables different types of cutting according to the thickness of the product required.



CUTTER MACHINE - CMPL

The belt cutting machine was built to cut in regular parts, leafy products. The structure of the machine is constructed so as to allow a very flexible use of the machine in different part of the production line. The machine can be used for different kind of products, using different and simple kind of blades. the setup time between a product and the other is very short.

MUSHROOMS CUTTER - CMM

Dry slicer cutter adapted to cut into parallel slices fresh mushrooms "Champignon de Paris". The mushrooms are oriented by means of a series of V-belts and transported to the cutting area where are sliced parallel to the stem with extremely thin blades. The slicer cutter MOD. CMM can be easily integrated into production lines of fresh mushrooms or frozen mushrooms, or individually used by caterers (for pizza, ready meals, etc.).



LOGISTIC

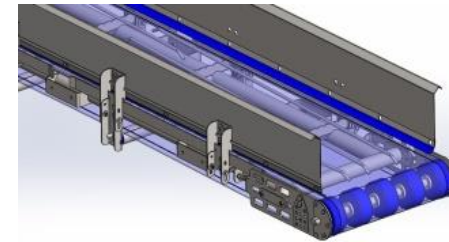
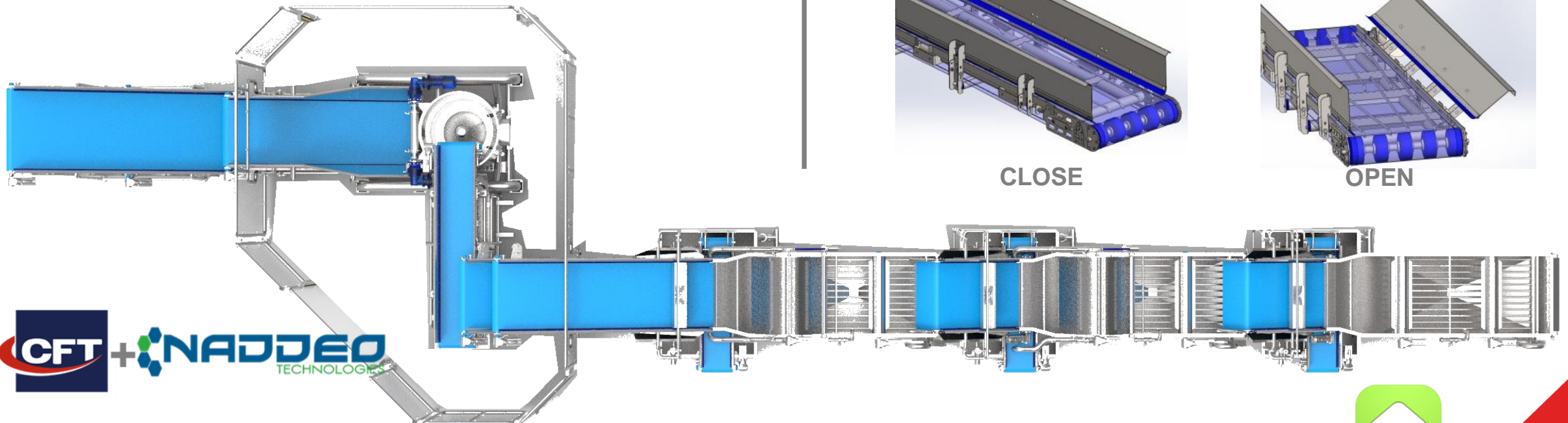
- SECTION/MACHINERY -

LAYOUT and LOGISTIC

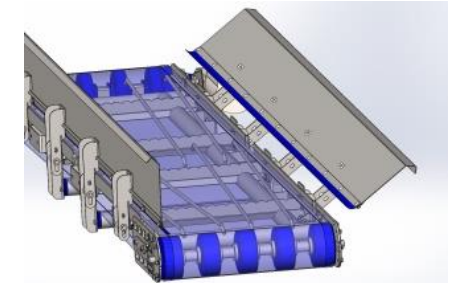
We provide all necessary and customized solutions to handle, transport and connect the machinery beside the line starting from raw material up to final packing;

- ❖ CUSTOMIZED SOLUTIONS and LAYOUT;
- ❖ CONVEYORS and PRODUCT ELEVATORS;
- ❖ IDRAULIC PRODUCT TRANSPORT;
- ❖ KNOCKING BELT AND CONV.
- ❖ WHEIGH MULTI FILLING SECTION FEEDING ELEVATOR;

- ❖ High hygiene and clean design for all frame and construction (round shape);
- ❖ All conveyors without standard straps K13, to avoid any product and bacteria contamination;
- ❖ All SS gearmotor with IP69K protection with no need of carter and for **energy saving of 35%** compared to traditional gearmotor;
- ❖ All conveyors and transport with easy removable side guide for a perfect and fast cleaning and easy maintenance;



CLOSE



OPEN

WHAT'S NEXT?



www.cft-group.com