



Tea, Coffee & Beverage Division

CL123



T H E " S H A P E " O F C O F F E E



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Purely the taste of coffee

HIGHEST PRODUCT QUALITY

The IMA CL123 represents the latest generation of packaging machines capable of guaranteeing the tradition of highest product quality in the most user-friendly packaging solution ... pods .

Coffee was not discovered until around 600 AD in the Middle East and was only introduced into Europe in the 16th century, nevertheless people have concentrated all their efforts to make it become one of the most popular drinks in the world.

People started crushing the beans into powder and pouring boiling water over them to make a drink, but in 1822 a Frenchman, Louis Bernard Rabaut, invented a machine that forced the hot water through the coffee grounds using steam instead of merely letting it drip through – the first espresso machine had arrived – The continuous research and use of sophisticated technologies to better appreciate the quality of coffee and at the same time facilitate its preparation, has been a recurrent theme throughout the last centuries.



The ideas take shape

HYDRO-PNEUMATIC CONTROLLED PRODUCT COMPRESSION



POD SEALING AND CUTTING



OXYGEN RESIDUE DETECTOR



POD INTRODUCTION INTO THE OUTER ENVELOPE



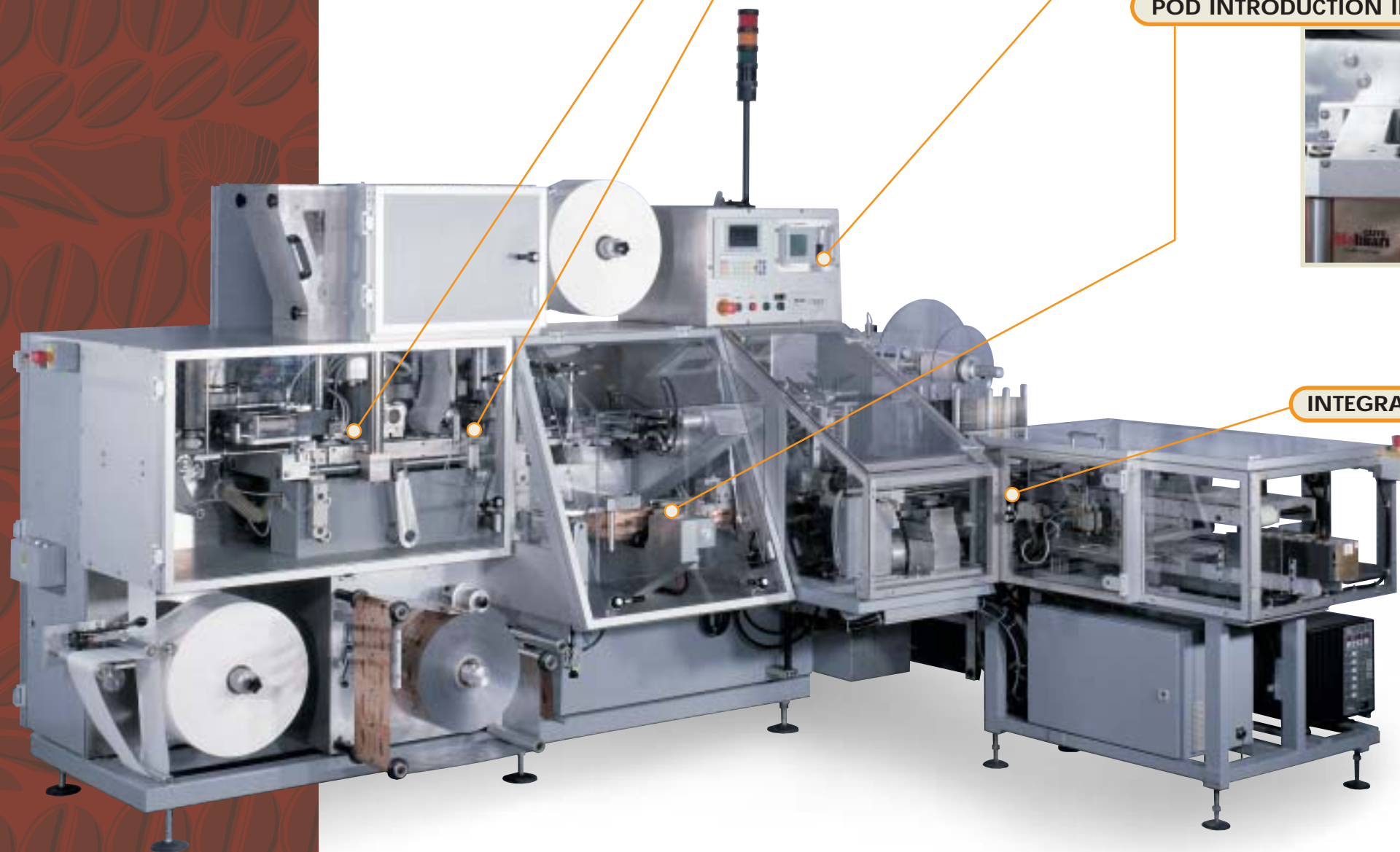
INTEGRATED CARTONING ATTACHMENT



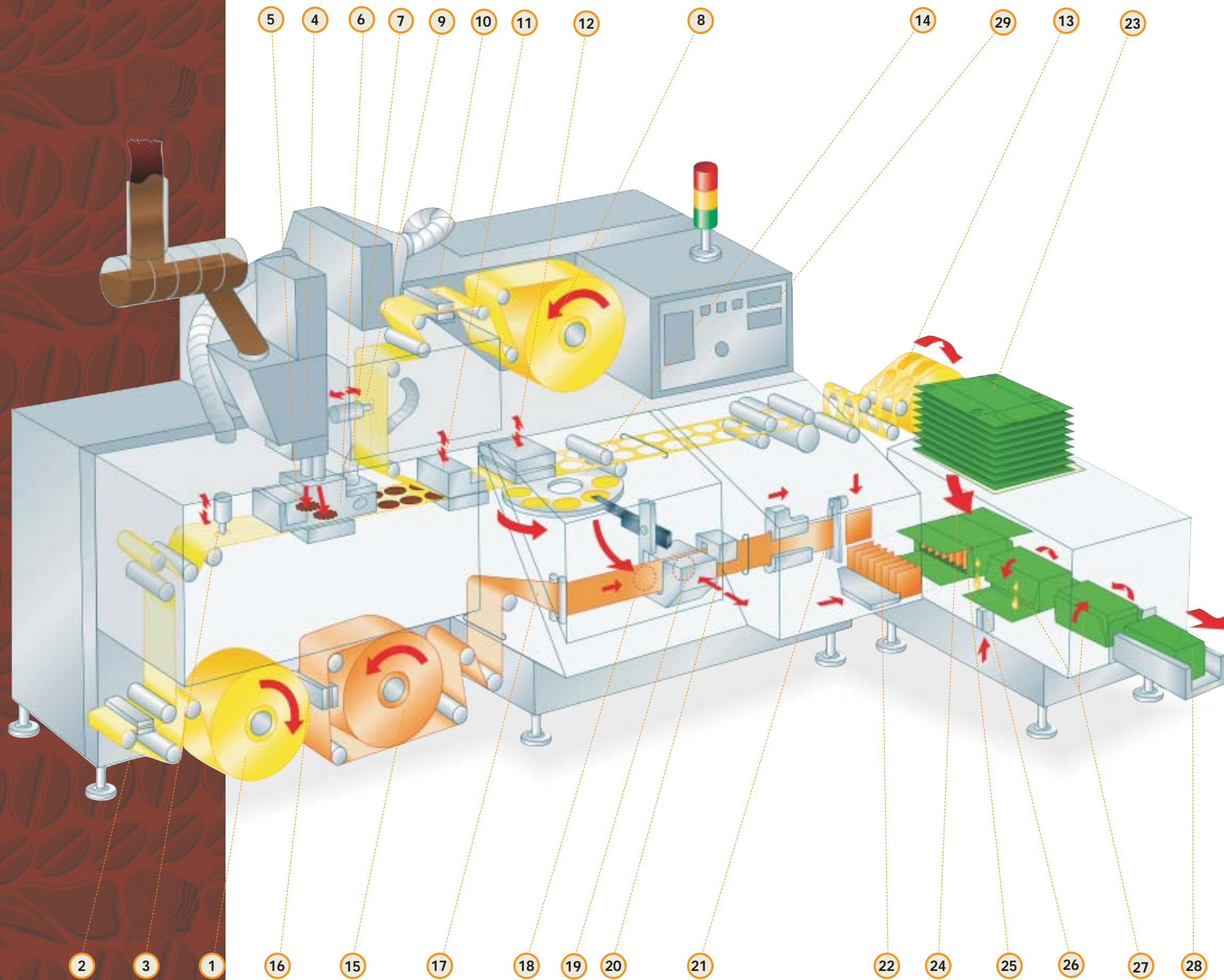
CHOOSING A CL 123

- Modified atmosphere for the entire pod production cycle
- Oxygen residue control
- Integrated production line for ready to sell product
- Hydro-pneumatic controlled product compression
- Pod profile stability
- Pod shape flexibility
- Quick size change over
- Wide range of final packaging solutions
- High production efficiency
- Low maintenance

The IMA CL123 is the first and totally unique monobloc machine capable of packing, in a modified atmosphere, not only pods containing coffee, but also barley or herbs, heatsealing them in a protective outer envelope and finally packing them into cartons. The product quality is 100% guaranteed thanks to the use of sophisticated and highly advanced technology encompassed in the CL123 pushing it a step ahead in this delicate packaging sector which expects the highest traditional product quality together with the exacting safety coefficients.



Step by step



MAIN FUNCTIONS

- 1 Lower filter paper reel
- 2 Lower filter paper manual splicing
- 3 Lower filter paper pre-cutting
- 4 Product feeding and dosing
- 5 Pocket pre-forming station
- 6 Product dose transfer and compression
- 7 Pod de-dusting
- 8 Upper filter paper reel
- 9 Upper filter paper pre-cutting
- 10 Upper filter paper manual splicing
- 11 Pod sealing
- 12 Pod cutting
- 13 Waste paper collecting unit
- 14 Pod transfer wheel
- 15 Outer envelope paper reel
- 16 Manual outer envelope paper splicing
- 17 Outer envelope folding station
- 18 Pod introduction into the outer envelope
- 19 Envelope sealing
- 20 Envelope coding and pre-cutting
- 21 Envelope cutting
- 22 Envelope stacking and programmable counting
- 23 Pre-glued carton magazine
- 24 Carton erection station
- 25 Stack introduction into the carton
- 26 Carton coding
- 27 Carton closing station (hot-melt)
- 28 Carton exit station
- 29 Oxygen residue control device

The "shape" of coffee

TRADITION IN PODS

The strong Italian tradition of coffee is entirely respected on the IMA CL123. The handling of the product is constantly controlled by means of sophisticated devices specifically designed for this purpose and fully compliant with IMA's traditional concept of quality, durability, user friendly operation and hygiene.

Thanks to an advanced system for coffee dosing and compression, the product is pre-dosed, according to a quantity previously set on the machine, and then transferred to a compression station that guarantees a uniform distribution of coffee in the pod ensuring optimum filtering. The compression system is hydro-pneumatically controlled and this allows constant compression adjustment.

The pod profile stability and precision are guaranteed by the sophisticated design of each single component; this feature allows a perfect fit of the pod while used on espresso machines. Furthermore, a dedicated dedusting unit, activated to eliminate any trace of coffee from the sealing area, guarantees a product totally free from dust in the seals.

The IMA CL123 offers a wide range of pod shapes and dimensions (round, rectangular, tear-drop, etc.): this kind of personalisation is achievable with little effort by means of a dedicated cutting group. However, in order to change the pod dose weight, a complete set of change parts is necessary. Size change over can be performed easily and in less than 30 minutes.



Coffee dosing and pod forming area



Pod sealing and cutting station

PROTECTION GUARANTEED

Coffee and similar delicate products deserve the greatest protection against oxidization in order to maintain their distinctive qualities and aroma.

The CL123 offers an integrated heatsealed outer envelope group that allows the wrapping of a single pod into a three or four sided heatsealed envelope.

The wrapping process is performed in a modified atmosphere and additional nitrogen flushing directly into the envelope ensures a very low oxygen residue.

The outer envelope can be coded directly on the machine and provided with a tear notch to facilitate its easy opening.

According to the kind of product to be packed, coffee, barley, or herbs, different types of heatsealable packaging material can be used on the CL123. It's flexibility in this sector allows the use of all heatsealable materials available on the market, from the most sophisticated with "aroma barrier" to the most simple.

Like the pod, a wide range of outer envelope sizes is available and size change over can be achieved very quickly.



Filter paper waste collecting unit



Pod removal from transfer wheel



Pod introduction into the outer envelope



Outer envelope cutting and stacking



Ready for sale...

AUTOMATIC CARTONING ATTACHMENT FROM PRE-GLUED CARTONS

The CL123 can be equipped with an integrated and automatic cartoning attachment for pre-glued cartons. Cartons are erected and filled with the stack of envelopes, and then transferred, first to the Hot-Melt closing station and then to the exit chute.

A wide range of carton sizes are available and size change over can be achieved very quickly.

The cartoning attachment can be equipped with additional items such as :

- a) coding unit (embossing)
- b) checkweigher unit complete with automatic dosage adjustment

ELECTRONIC COUNTING

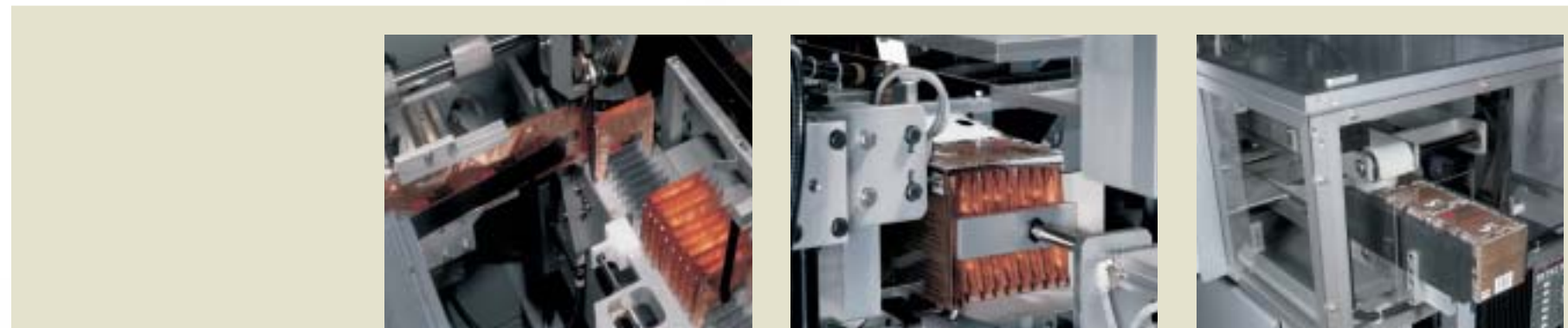
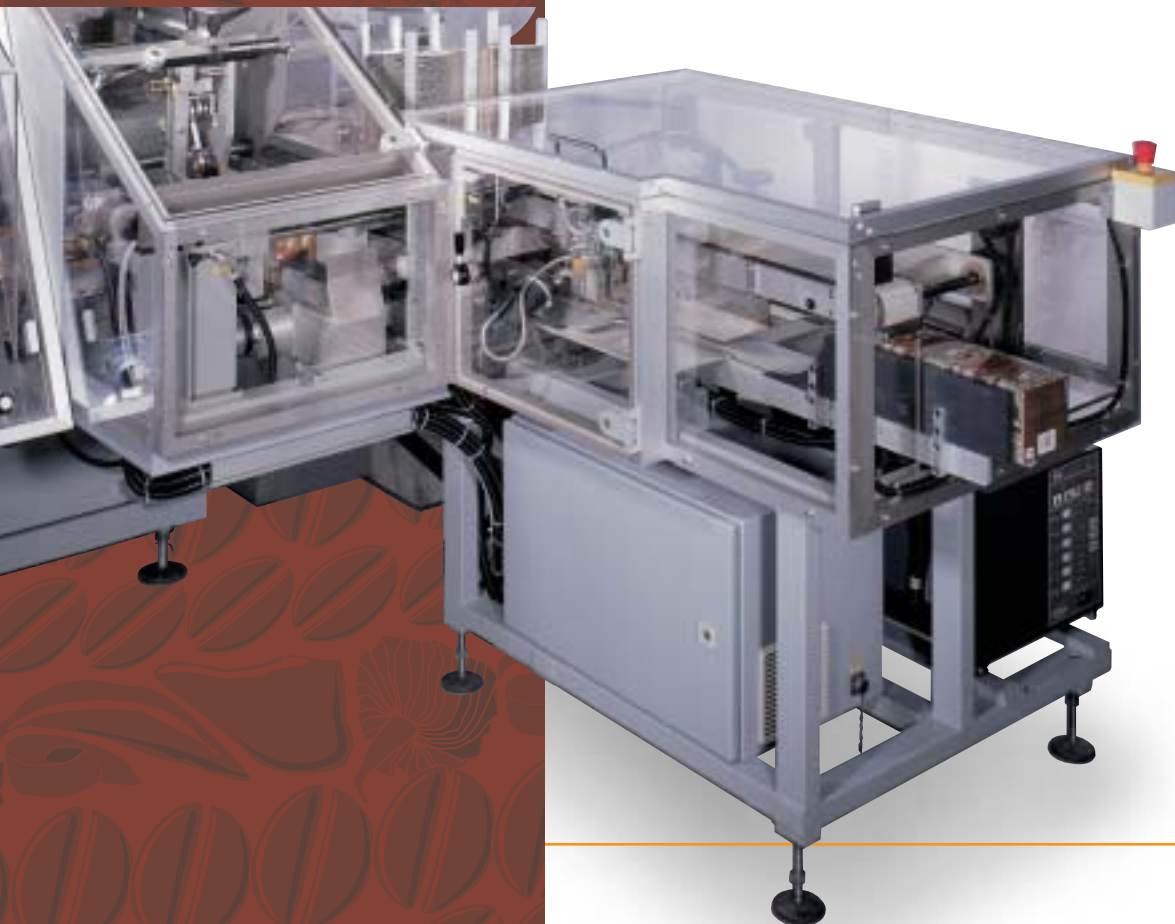
The CL123 is equipped with an electronic counting system which allows a swift count change over, reducing to a minimum the need of any part replacement and guaranteeing always the correct number of pods or envelopes in the stacking unit.



NOT ONLY CARTONS

The CL123 flexibility is emphasized by the many alternative solutions available:

- c) hand removal of counted and stacked pods with outer envelope
- d) exit belt with flip-flop system with programmable count for carton hand packaging
- e) exit belt with flip-flop system with programmable count for bag packaging
- f) continuous and counted pod strip for hand packaging (1 or 2 rows)
- g) exit belt for pods without envelope for hand packaging (with flip-flop option)
- h) connection to end of line machines



High product quality...

...in modified atmosphere



PLC

The CL123 is equipped with an automatic PLC (Programmable Logic Control) that guarantees complete quality control. All main machine stations have been provided with a specific product control device and all main PLC functions can be easily controlled by the operator on the push-button panel, ensuring the highest level of production efficiency.

MOTORISATION

The CL123 is provided with Brushless motors that allow a precise product dosage and a quicker and safer electronic count changeover.

All transmission belts operate in dry conditions reducing therefore the cleaning and maintenance costs by increasing the net production efficiency.

NO LUBRICATION

No lubrication is required on the CL123. All bearings are sealed and made of high quality material.

HYDRO PNEUMATIC CONTROLLED PRODUCT COMPRESSION

The oil pressure inside the hydro-pneumatic circuit of the special hydro-pneumatically controlled product compression unit guarantees a constant and accurate regulation of coffee compression.



INTEGRATION WITH COFFEE GRINDER

The production cycle of the IMA CL123 can be completed by the integration of a coffee grinder that can be installed on the machine product hopper. Coffee grinding can also be performed in a modified atmosphere.

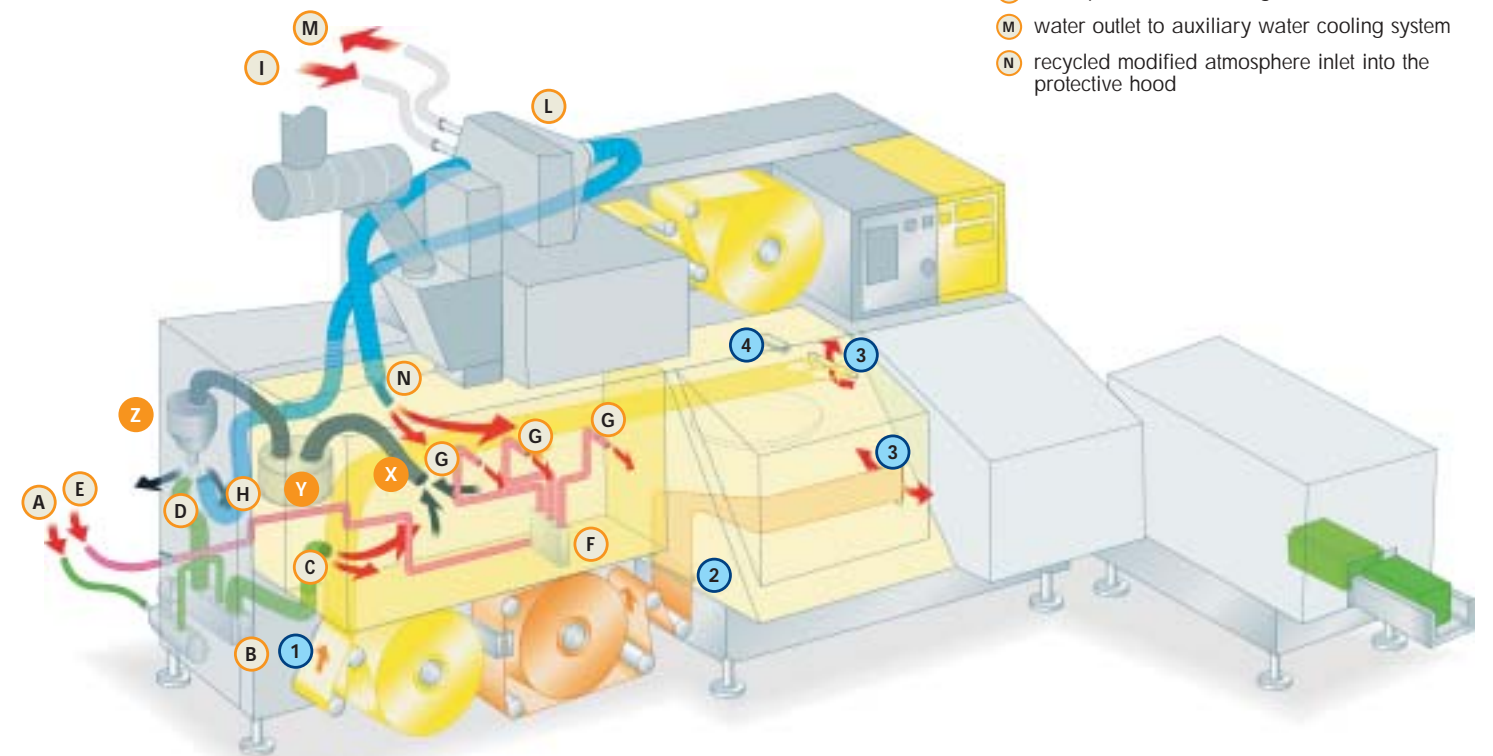
- 1) filter paper inlet into the protective hood
- 2) outer envelope paper inlet into the protective hood
- 3) laminar flow for filter paper waste and outer envelope exit
- 4) detection probe for oxygen residue

ATMOSPHERE RECYCLING - LIQUID NITROGEN

- A) liquid nitrogen supply (very low temperature)
- B) nitrogen mixture and emission unit into the protective hood
- C) nitrogen inlet into the protective hood
- X) modified atmosphere aspiration by means of vacuum filter paper pre-forming and by a pod de-dusting system
- Y) modified atmosphere filtering unit
- Z) modified atmosphere recycle unit
- D) modified atmosphere restoration in the circuit

ATMOSPHERE RECYCLING - GASEOUS NITROGEN OR OTHER INERT GAS

- E) gaseous nitrogen supply
- F) pneumatic nitrogen emission unit into the protective hood
- G) gaseous nitrogen inlet into the protective hood
- X) modified atmosphere aspiration by means of vacuum filter paper pre-forming and by a pod de-dusting system
- Y) modified atmosphere filtering unit
- Z) modified atmosphere recycle unit
- H) modified atmosphere restoration in the circuit
- I) refrigerated water inlet
- L) atmosphere heat exchanger
- M) water outlet to auxiliary water cooling system
- N) recycled modified atmosphere inlet into the protective hood



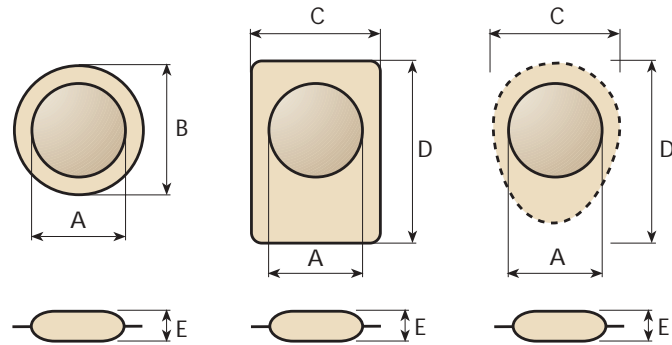
1) The whole pod production cycle until its packaging into the heatsealed outer envelope is carried out in a modified atmosphere due to a constantly controlled introduction of nitrogen (liquid, gaseous or other inert gas) into a protective hood. Furthermore, to guarantee the safety of coffee packaging by maintaining unaltered the modified atmosphere inside the hood, the CL123 is also equipped with a laminar flow unit, operating at the exit of the envelope (already containing the pod) and the filter paper waste strip, to avoid oxygen inlet.

2) Contemporarily the oxygen residue level inside the hood can be checked by means of an Oxygen Residue Detector, and consequently automatically regulated thanks to a feed-back system that operates, through the PLC, on the nitrogen flushing unit. An impulse is sent to the nitrogen emission system that injects the necessary quantity of nitrogen into the recycle circuit until the required level of oxygen residue is reached.

3) The modified atmosphere can also be extended to the coffee grinding unit, guaranteeing a further product quality.

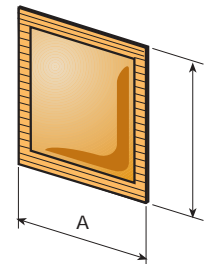
General technical data

POD DOSAGE AND SIZE



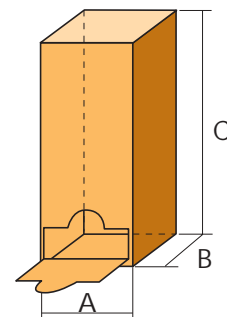
COFFEE WEIGHT grams	A mm Ø inner	B mm Ø outer	C mm	D mm	E mm
min.5	min.38	min.48	min.48	min.58	min.5
max.14	max.60	max.70	max.70	max.75	max.13.5

OUTER ENVELOPE



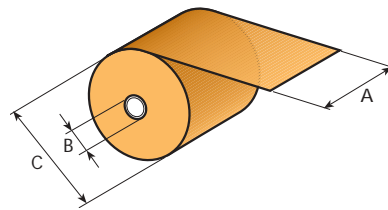
A mm	B mm
min.90	min. 90
max.110	max. 105

CARTON SIZE



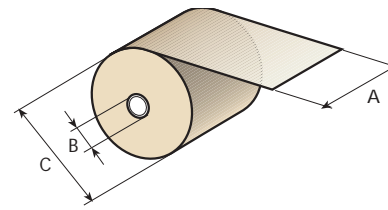
	A mm	B mm	C mm
min.	95	93	100
max.	115	108	270

FILTER PAPER REEL

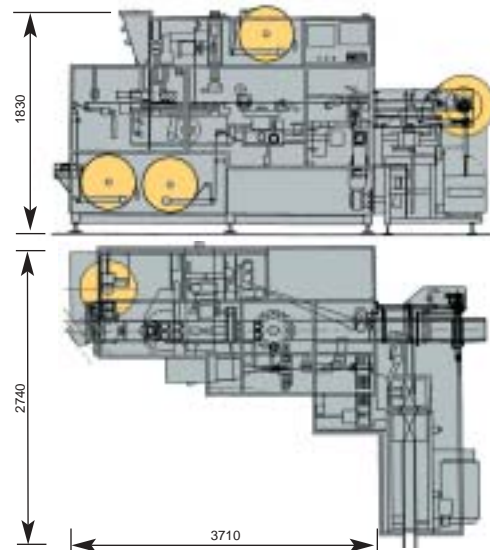


FILTER PAPER WEIGHT gr/sm	A mm	B mm	C mm
min.19	min.160	75	max. 450
max.27	max.190	75	max. 450

OUTER ENVELOPE PAPER REEL



PAPER WEIGHT gr/sm	A mm	B mm	C mm
min.85	min.180	75	max. 450
max.110	max.210	75	max. 450



Machine speed:
Up to 120 pods/minute



Pod capacity:
Up to 14 gr. of coffee



Nitrogen:
~250 NL/minute



Compressed air:
Exercise pressure: 6 bar.
Consumption: max 500 NL/minute.
Air inlet socket: ø 1/2"



Power required:
Total installed power: max 25Kw
Power consumption: max. 9,5Kw



Machine net weight:
Min. 2400 kg
Max. 4000 kg



Noise:
< 78 dB

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