AISA PACKAGING

PACKAGING TECHNOLOGY INNOVATION

2023


360°


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Content

SAESA®

COMPONENT ASSEMBLY TECHNOLOGY

What is it?

Saesa® tube packaging assembly technology is a process using sleeves, moulded shoulders and caps in order to assemble them into finished tubes ready to be filled.

Advantages

- Scalability by simply multiplying the assembly stations, machines run from 100 to 600 tubes per minute with compact footprints.
- High performance, process times are not slowed down by cooling time required for a component moulding process.
- Shoulder and cap are assembled on the same mandrel.
- High flexibility to add additional value capabilities such as cap or shoulder orientation, oval and safety seal applicator.
- Cold shoulder allows for a more stable capping process eliminating the risk of shrinkage from an inline moulding operation.

Available

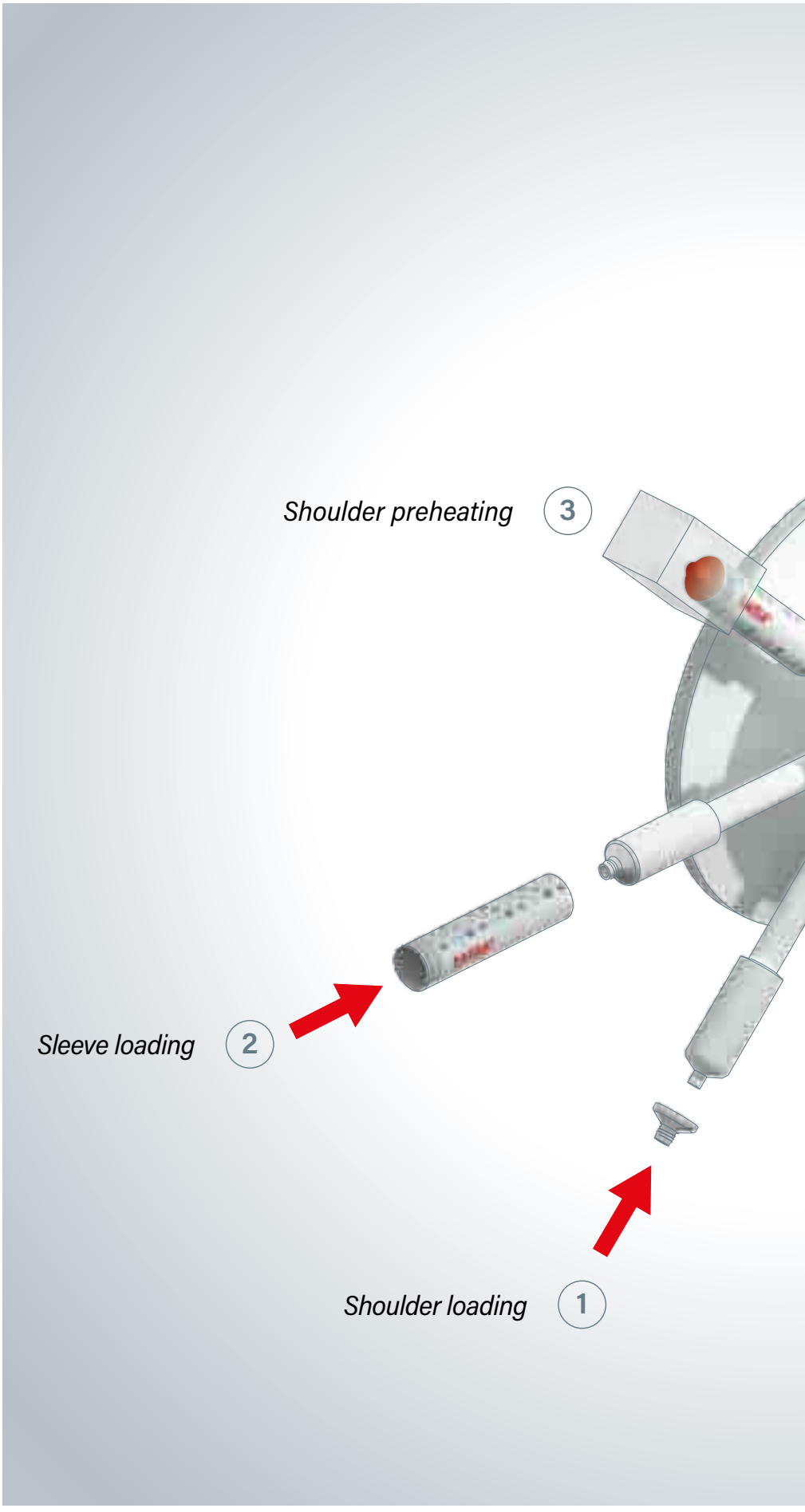
On Saesa® Performance and Hiflex machines running at outputs of 100, 120, 200, 240 and 600 tubes/min.

Markets

- According to our knowledge, more than 33 billion laminate tubes, are sold yearly and when looking at the installed machine capacity more than half comes from machines delivered by Aisa.
- The largest market segment for laminate tubes are toothpaste producers but not only, from 12.7 mm diameter artistic paint tubes, over 19 mm pharmaceutical eye ointments all the way to 40 mm sweet condensed milk and 50 mm cosmetic hair treatment shampoos, Saesa® tubes have countless applications today.

***SAESA®**

Stands for "Système automatique pour le façonnage d'emballages SA" or "Automatic system for packaging processing".



4 *Shoulder welding*

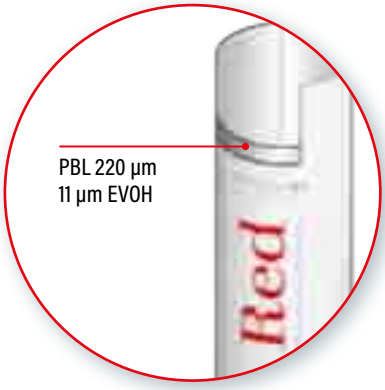
5 *Safety seal applicator*

6 *Capping*

7 *Assembled tube unloading*

Packaging technology

- Saesa® tube Ø35 mm.
- Flexo printed.
- The laminate used is an ultra-thin 220 µm PBL from Huhtamaki, certified as recyclable in the HDPE stream by RecyClass.



DECOSEAM™

EDGE WELDING TECHNOLOGY

What is it?

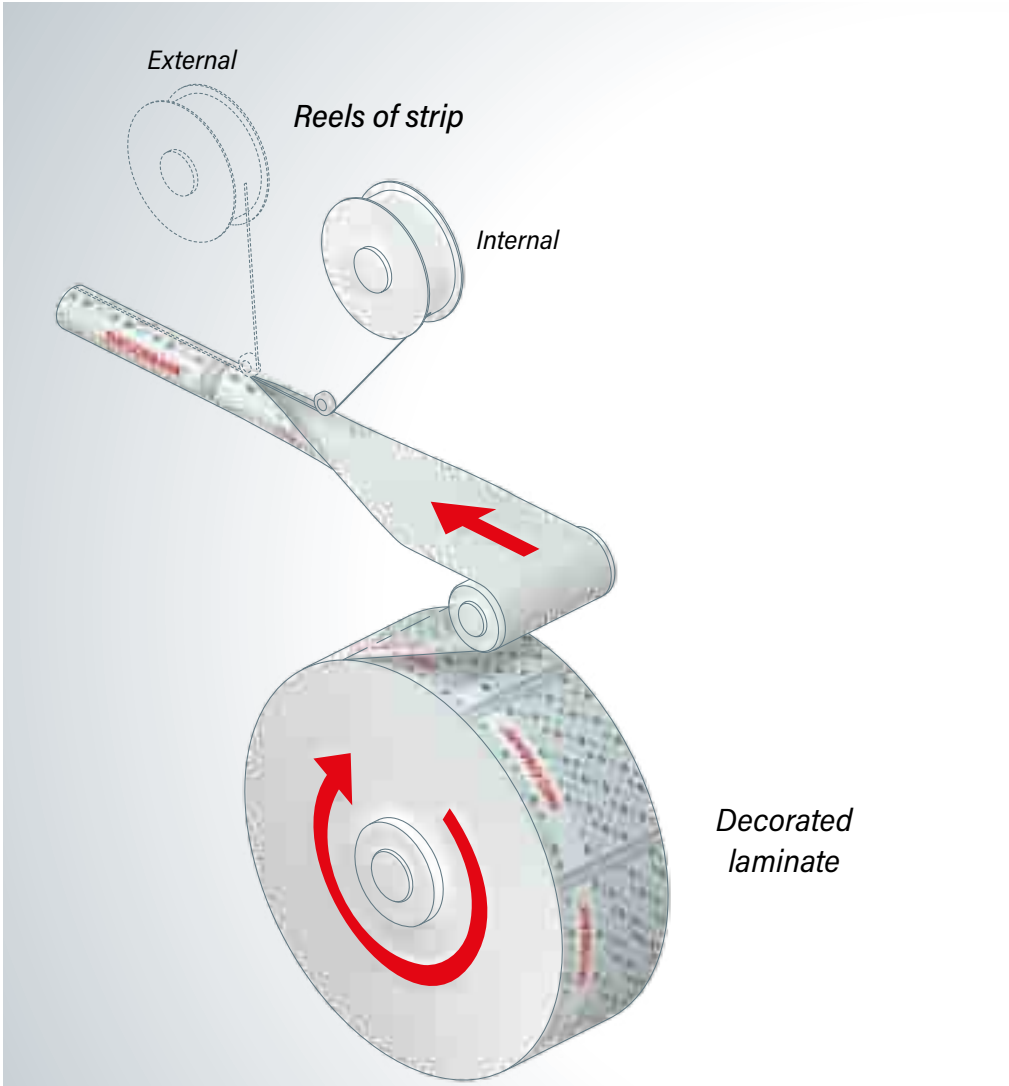
Decoseam™ is Aisa's unique side seam welding technology. For the first time, this technology allows to change properties of the outer web layer independently from the inner web layer. In fact, because the outer layer is no longer welded onto the inner layer (overlap), we can now optimise for sustainability, security, touch, decoration or any other value added functionality that markets desire.

Available

On Aisa Hiflex machines running at outputs at 100 up to 240 tubes/min.

New market opportunities

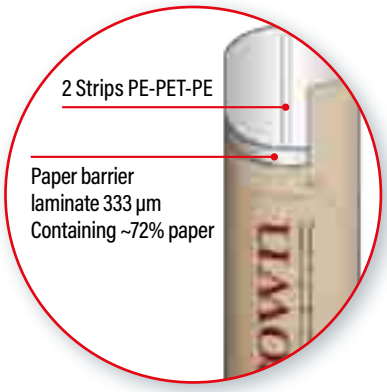
- Allows the use of new functional web structures.
- Tube performance guaranteed.
- Decoseam™ uses DIBS welding system in order to edge weld a tube side seam with a reinforcement strip.
- 360° decoration.
- Tube range covers diameters from 19 to 63.5 mm.



Decoseam™ strip is fed into the center of the butt weld seam, while the flat decorated laminate is formed into an endless tube!

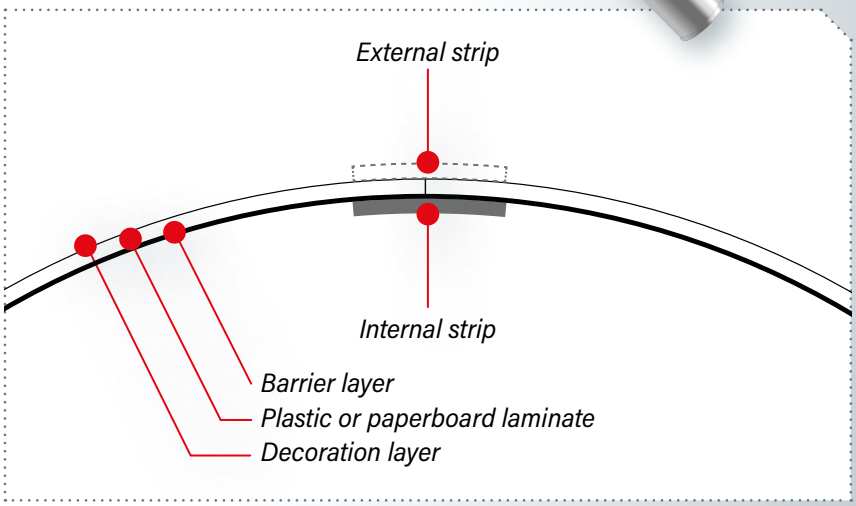
Packaging technology

- Bio-based, carbon-reducing paper tubes.
- The sleeve is composed of a Natura™ paperboard barrier laminate from Stora Enso, containing 72% paper.
- The BROWN tube "Petra" is a Ø50 mm Decoseam™ paper laminate tube, flexo printed and produced on Aisa's SAESA®100 Hiflex machine.



***DIBS** – Double Induction Belt Sealing for both Aluminium and Plastic Barrier Laminate (ABL & PBL)*

Tube cut side seam area



To prevent the paperboard from absorbing external moisture, a second strip is welded on the outside of the sleeve.

DECOSEAM™ NANO

SIMPLY A PERFECT SEAM

What is it?

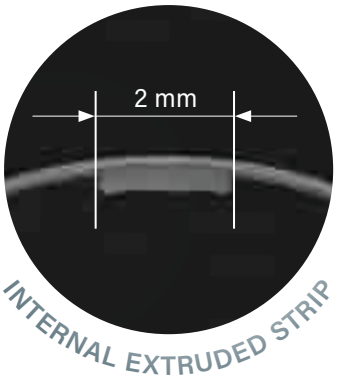
The Decoseam™ Nano has a simple, yet clean production process. It can be implemented on Hiflex machines and complements the standard Decoseam™ technology by covering the smaller diameter range of 30 mm down to 10 mm. It is the edge welding technology of the Decoseam™ Nano that sets it apart.

Advantages

- Extremely good protection of the side seam foil edges.
- No degradation of the decorated outer side seam area.
- No moving parts in the welding shaft, reducing contamination risk ideally suited for pharmaceutical packaging.
- Only few welding parameters, for less production variation.

Packaging technology

- Digitally CMYK inkjet printed, high gloss laminate structure; 180 µm thick, metallised PET surface and 30 µm aluminium barrier layer.
- Edge welded Decoseam™ Nano using extruded PE strip welded to the inside of the tube. Inner PE laminate layer and strip can be Pharmacopeia grades.
- Bacomex™ shoulder, PE with layers of EVOH barrier material moulded onto the tube sleeve.
- Cylindrical screw on cap.
- Improved barrier properties vs standard ABL tube (BIF 2.5).
- Bounce back index: 42%.



SYNCHROFLOW™

COMPRESSION MOULDING TECHNOLOGY

What is it?

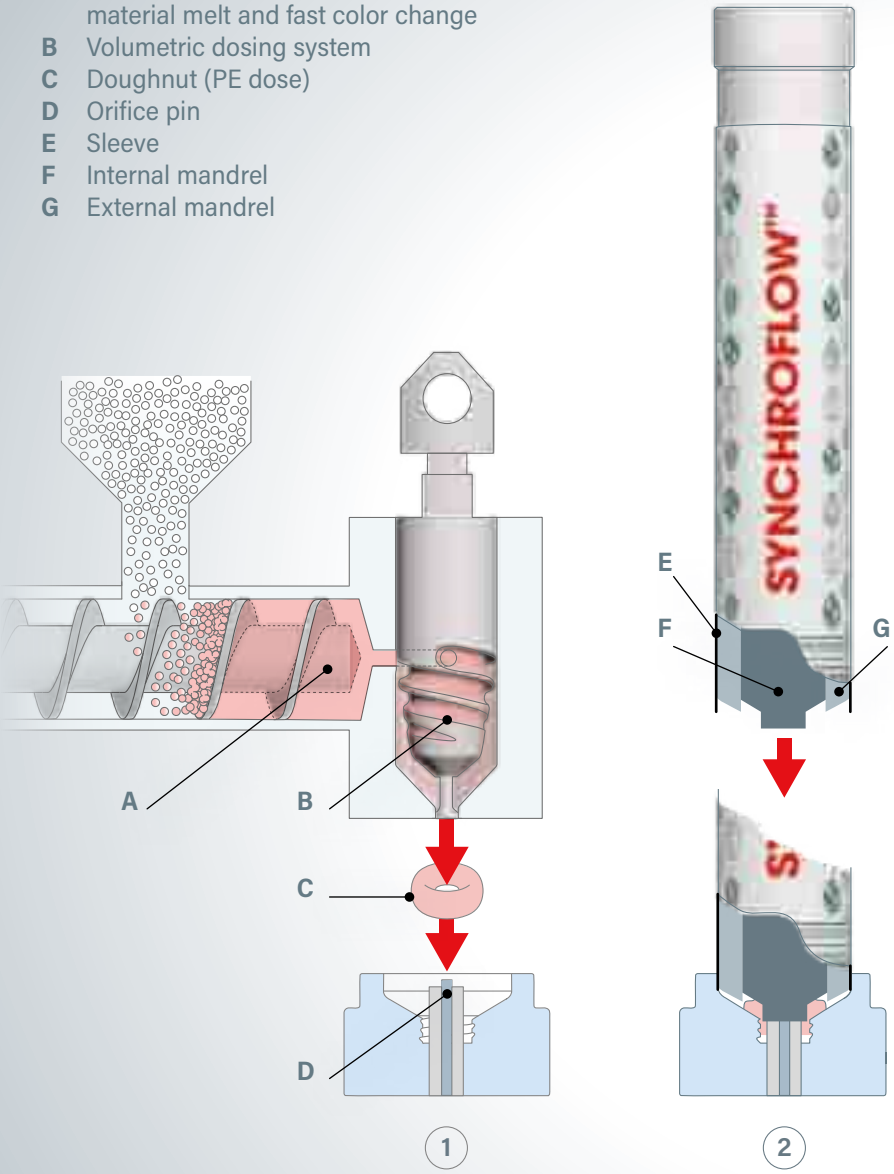
Aisa's compression moulding technology at the forefront

- Extruder with axial pressure piston for better material melts and fast colour change.
- Optimised extruder and dosing heating profile for evenly low tempered doses and improved sleeve welding.
- Spiral flow dosing head for stress free symmetrical doses.
- Volumetric dosing eliminates dose weight variation.
- High cooling moulds available designed and produced in-house with laser sintering.
- Adaptive two-step compression process enabling compression mode choice according to material and design criteria.

Available

On Aisa PTH machines running at outputs from 90 to 240 tubes/min.

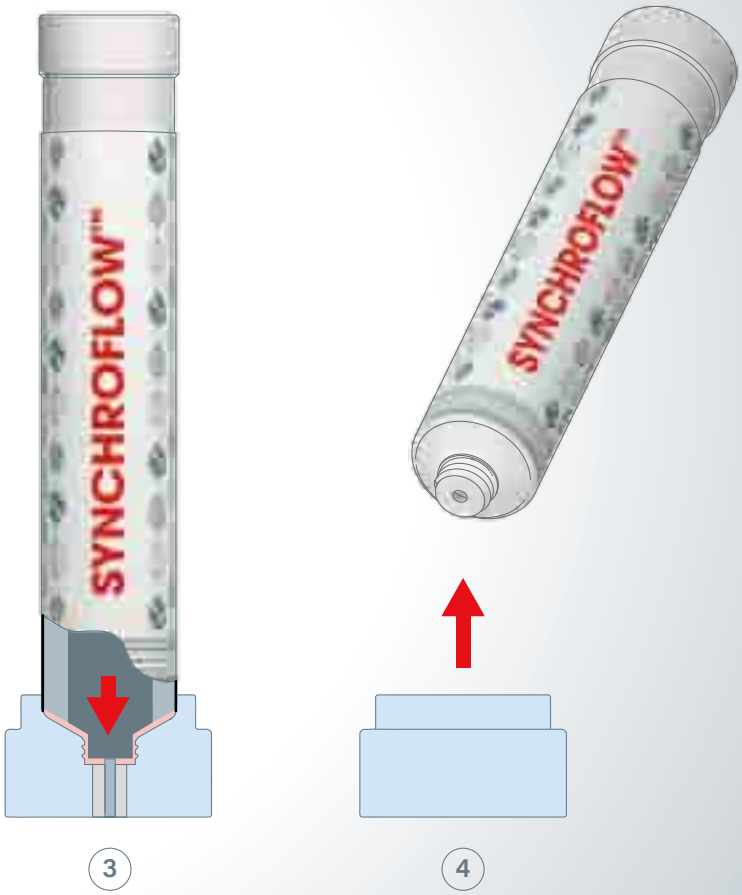
A Extruder with axial pressure piston for better material melt and fast color change
B Volumetric dosing system
C Doughnut (PE dose)
D Orifice pin
E Sleeve
F Internal mandrel
G External mandrel



(1) Volumetric dosing (B) eliminates dose weight variation of the donought (C).
(2) Outer and inner parts (F)(G) of the mandrel are pushed down. The outer part (G) of the mandrel is closing the mould before pressure is applied.

Synchroflow™ technology benefits

- Enhanced tube shoulder appearance.
- Excellent aesthetics, no flow lines on coloured shoulder.
- Perfect welding for round and oval shoulder.
- Cleaner and smaller orifice.
- No air trapped on shoulder head.
- No crooked shoulder head.
- Improved economics.
- Faster and less frequent tooling change-over.
- Improved process stability leading to higher productivity.
- Reduced tooling needs through standardisation.
- Up to 60% lower investment on dosing nozzles.
- Faster colour change-over.



(3) Inner part (F) of the mandrel is pushed further down to form the mold for the tube head. (4) The mandrel lifts up, the shoulder is perfectly moulded and welded with a clean orifice to the sleeve.

BACOMEX™

MULTILAYER BARRIER COMPRESSION MOULDING

What is it?

Bacomex™ is a multilayer barrier moulding technology. In the production of laminate tubes, the moulded shoulder is known as being the weakest part where oxygen can enter and aromas and vitamins escape. Bacomex™ multilayer compression moulding technology is an efficient barrier protection embedded into the entire tube head.

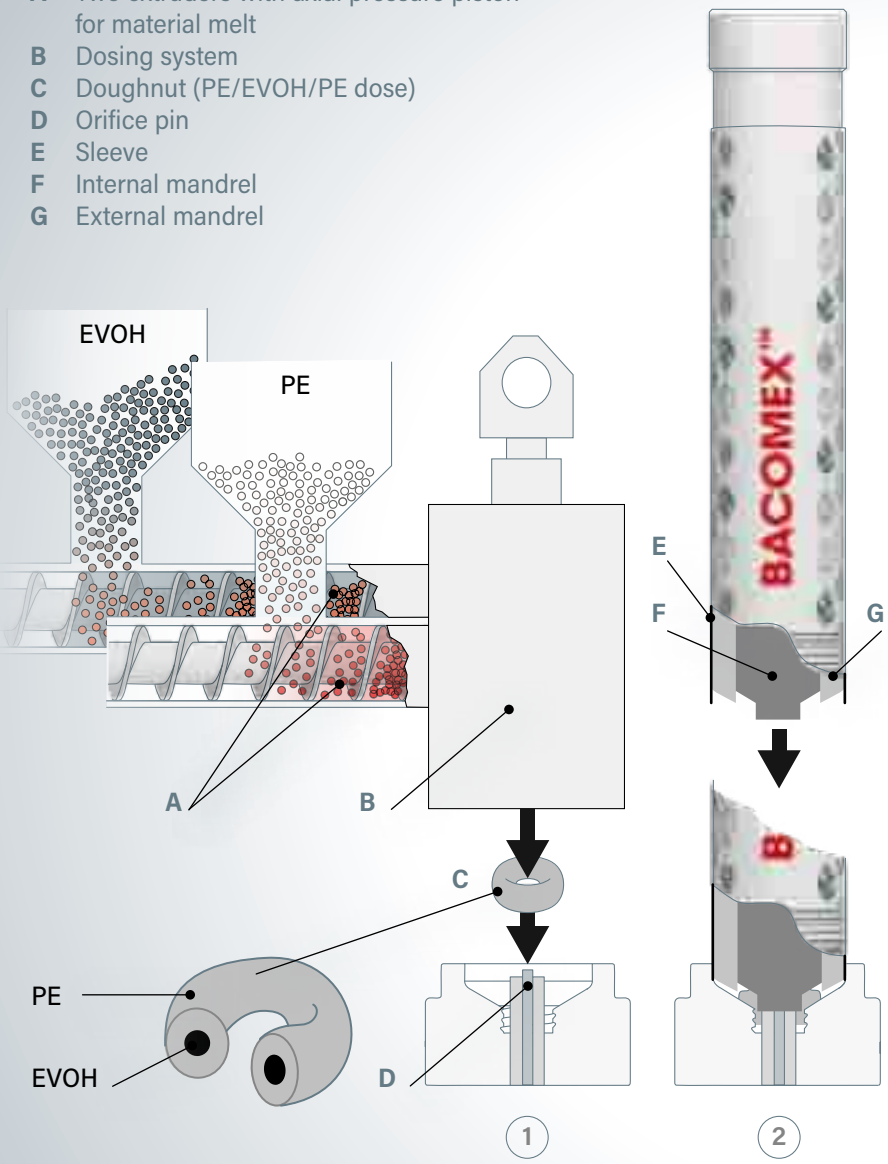
Availability

Aisa proposes a range of PTH heading machines as well as the SFM shoulder-forming machine, equipped with Bacomex™ technology today.

Packaging technology

- Symmetric PE laminate sleeve structure; 250 µm thick and 12 µm aluminium barrier layer.
- Induction welded overlap seam.
- Bacomex™ shoulder, PE with layers of EVOH barrier material.
- Cylindrical screw on cap.
- Improved barrier properties vs standard ABL tube (BIF 12.5).
- Bounce back index: 47%.

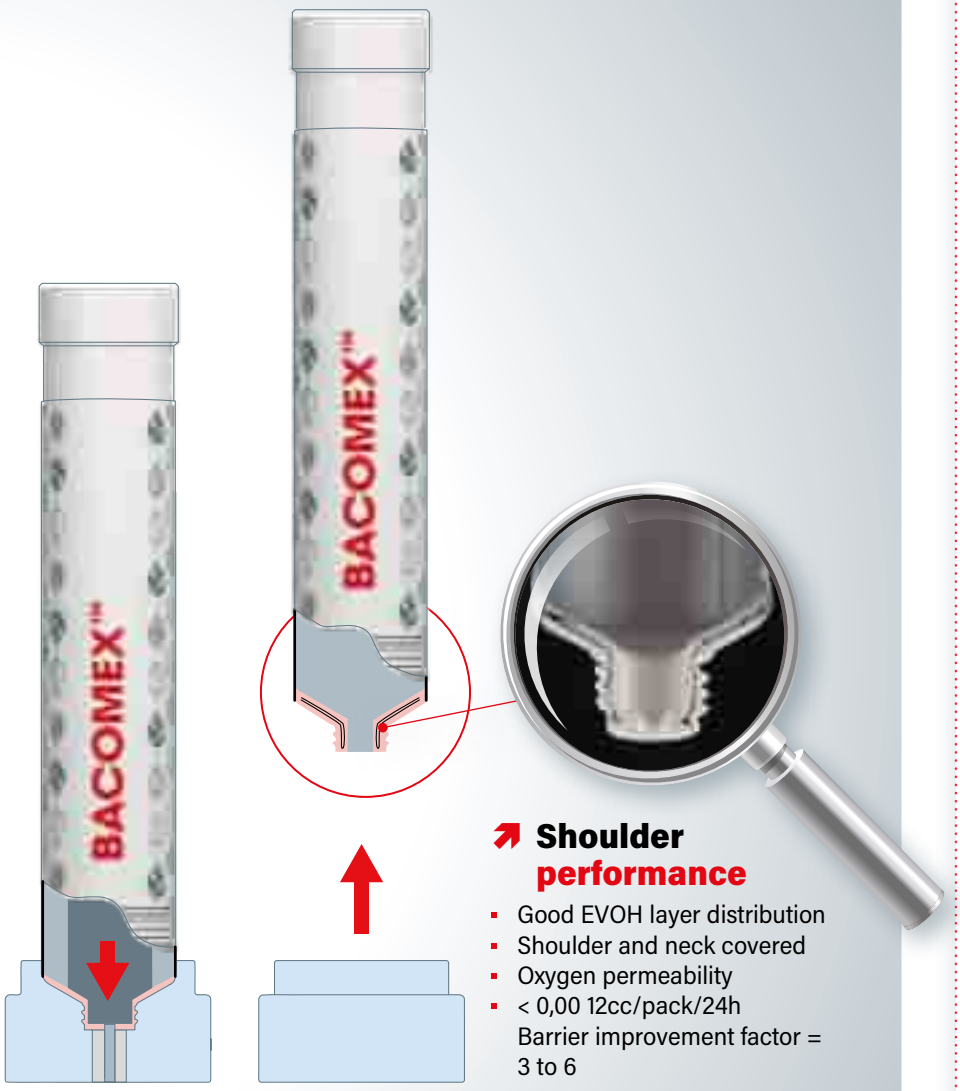
A Two extruders with axial pressure piston for material melt
B Dosing system
C Doughnut (PE/EVOH/PE dose)
D Orifice pin
E Sleeve
F Internal mandrel
G External mandrel



(1) A controlled flow under pressure traps the EVOH barrier in the middle of the PE donought. (2) Outer and inner parts (F)(G) of the mandrel are pushed down. The outer part (G) of the mandrel is closing the mould before pressure is applied.

Technical achievement

- Very low dosing weight
- 25 mg EVOH barrier resin
- 475 mg PE resin
- Precise layer distribution
- Reproducible dosing process and shape



Shoulder performance

- Good EVOH layer distribution
- Shoulder and neck covered
- Oxygen permeability
- < 0,00 12cc/pack/24h
  Barrier improvement factor = 3 to 6

3 Inner part (F) of the mandrel is pushed further down to form the mold for the tube head. 4 The mandrel lifts up, the shoulder is perfectly moulded and welded with a clean orifice to the sleeve. The multi-layer barrier is formed during the compression moulding.

Packaging technology

- Inspiration 375 ml bottle with Bacomex™ barrier components: 1.75 ccO2/pack/year/atm.
- Bacomex™ bottle cap 38 mm BIF=4 or 0.0056 ccO2/pack/day/atm.

Bacomex™ barrier coffee capsules with or without hole at the top.

DECOPLAS™

TUBE LABELLING AISA-STYLE

What is it?

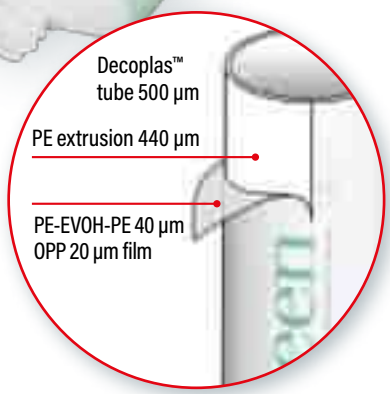
Decoplas™ is a revolutionary technology developed by Aisa which combines standard plastic tube extrusion with innovative labelling decoration.
Decoplas™ tube has unmatched bounce back property and 360° decoration using a printed film.

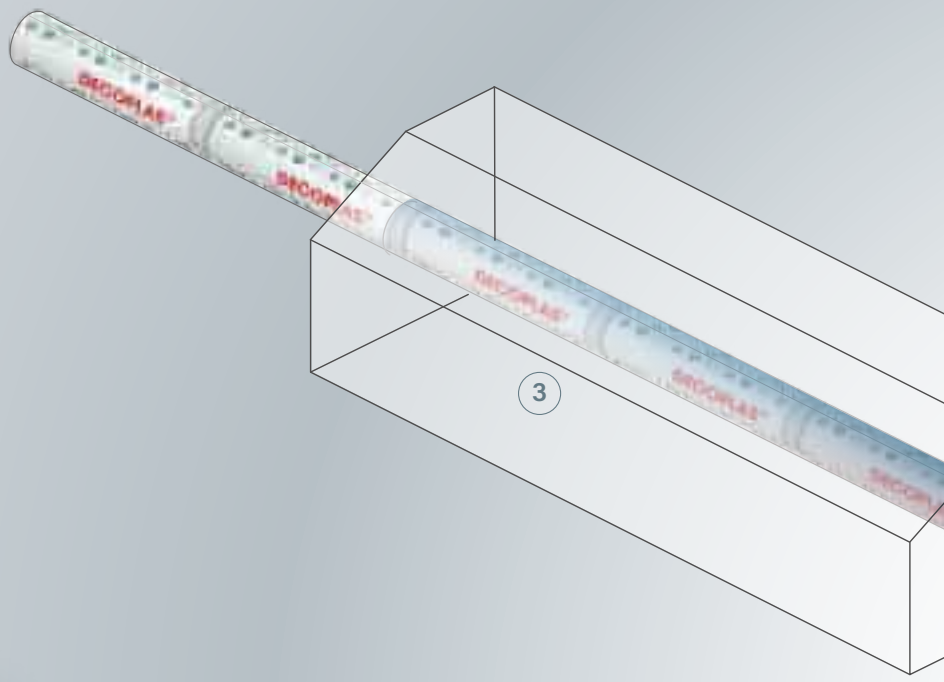
Markets

- Packaging users who want the decoration and logistic advantages of the label in a tube format but with the feel and touch of an extruded tube.

Packaging technology

- Decoplas™ extruded tube Ø50 mm.
- Flexo printed.
- Complete polyolefin made, recycling ready.
- Bounce back index of 71.4%.



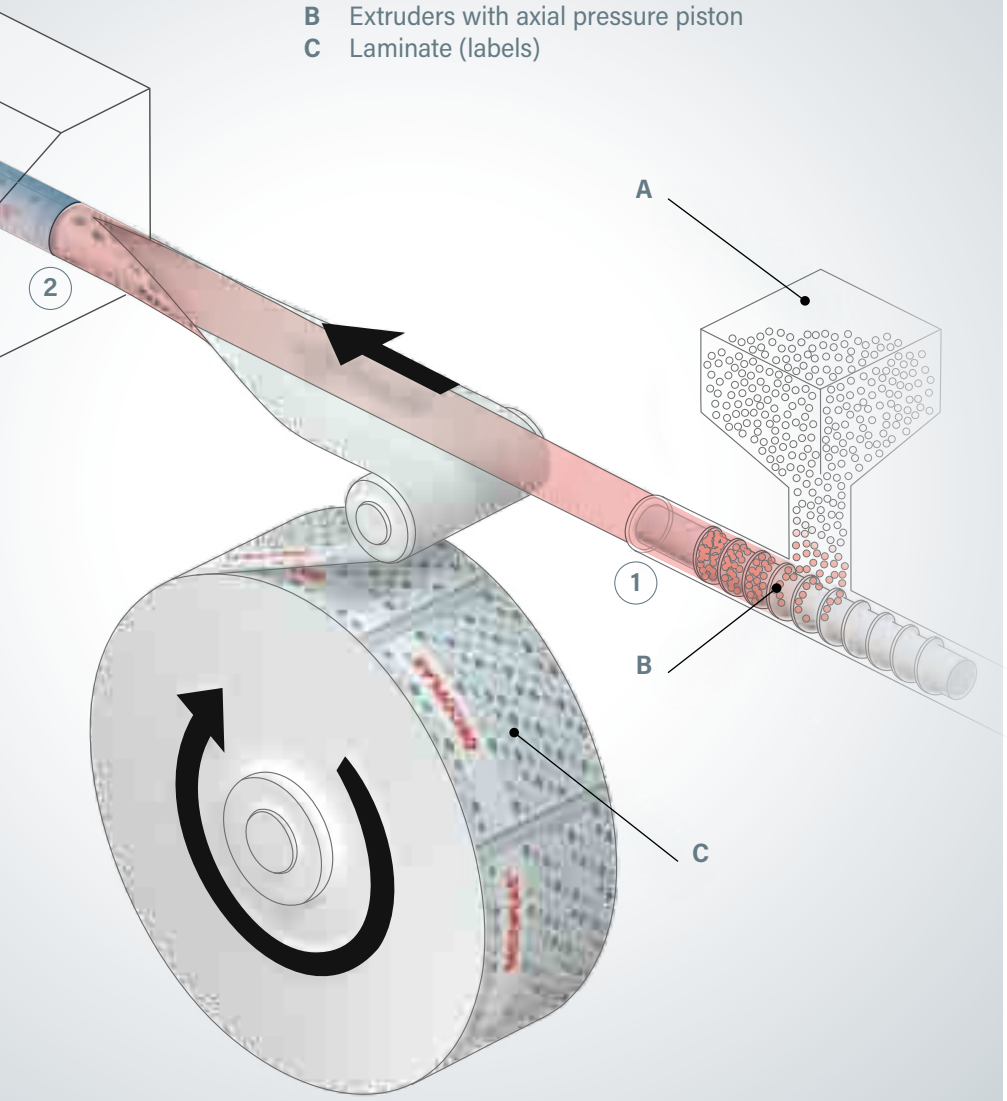


1. Extruded tube.
2. Laminate wrapped and welded by heat around the tube.
3. Tube calibrated and cooled.

DECOPLAS™ TUBE WITH UP TO 100% PCR ALSO POSSIBLE!

Find out more

A Raw material for extrusion
B Extruders with axial pressure piston
C Laminate (labels)



Packaging technology

- 80 micron PET/PE evoh PE film.
- Digital hybrid decoration can combine inkjet, flexo UV, cold foil and silk screen printing efficiently in-line.
- Extruded monolayer PE tube sleeve with barrier added through film.
- Cylindrical screw on cap.
- Identical barrier properties as co-extruded or PBL tube.
- Bounce back index: 80%.

INDEXED INJECTION MOULDING

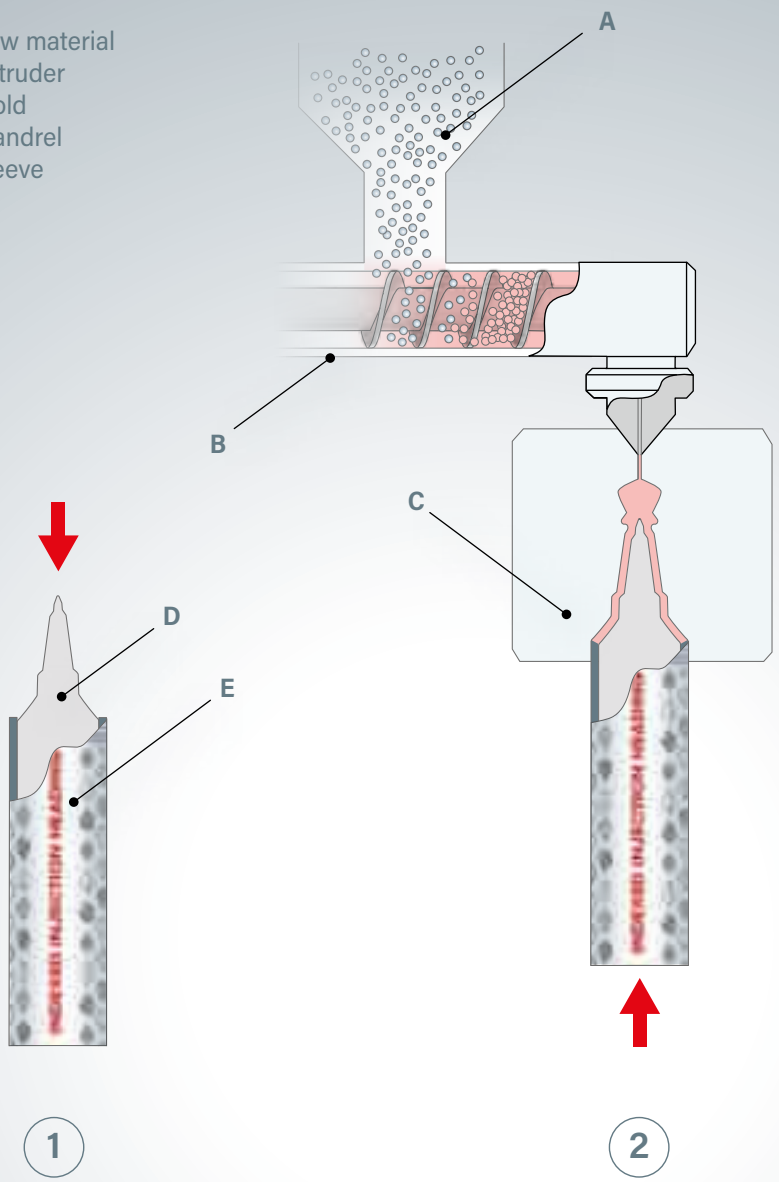
What is it?

Indexed injection heading machines have been developed over the years to serve speciality tube applications such as twist off, temper proof or single use head styles, as well as head styles with applicator tips for various applications.

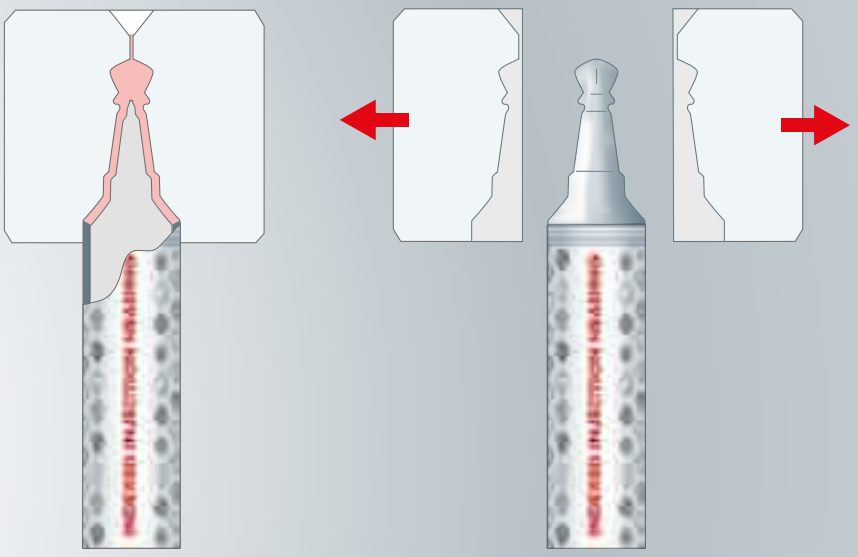
Markets

- Cosmetics.
- Pharmaceuticals.
- Technical.

A Raw material
B Extruder
C Mold
D Mandrel
E Sleeve



1. The sleeve (E) is loaded on the mandrel (D).
2. Once the mandrel and mold are in the injection position, the extruder dispenses the necessary amount of melted material to form the shoulder-cap.
3. Cooling.
4. Tube demolding and unloading.



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Aisa,
a worldwide presence

MACHINERY
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PACKAGING
COATING
INSPECTION

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Tube volume calculator

Download on the App Store

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