

**Chengdu, Sichuan**

**CIDPEX 2014 Conference**



**FAMECCANICA LIFE+ PROJECT FOR COST  
SAVING IN DIAPER PRODUCTION PROCESSES**

**AND**

**FAMECCANICA KEY RECENT INNOVATIONS  
FOR THE DIAPER INDUSTRY.**

# Chengdu, Sichuan

# CIDPEX 2014 Conference



## Summary

1

**Fameccanica Life+ Initiative**

2

**Key Fameccanica Recent Innovations for the Diapers Industry**

3

**General overview of Fameccanica Company and machines**

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# **Fameccanica Life+ project for cost saving in diaper production processes**



# What is EU's LIFE programme?

The LIFE programme is the EU's funding instrument for the environment.

The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental policy and legislation by co-financing pilot or demonstration projects with European added value.

LIFE began in 1992 and to date there have been three complete phases of the programme (LIFE I: 1992-1995, LIFE II: 1996-1999 and LIFE III: 2000-2006).

During this period, LIFE has co-financed some 3104 projects across the EU, contributing approximately €2.2 billion to the protection of the environment.



# Fameccanica and LIFE+

On July 1st, 2013 **Fameccanica** was granted financial support to project proposal N° LIFE12 ENV/IT/000423 concerning the development of means for cost savings in diaper production processes.

The project LIFE Glueless "Petrol based Glue and Energy consumption reduction in diapers production processes", aims to demonstrate to industry and policy makers that **significant environmental impact reduction** in Absorbent Hygiene Products (AHP), such as diapers, can be realized, with appropriate solutions that will be the subject of this project.

The project will showcase how environmental impact can be reduced, while **cost competitiveness can be held or even increased**.

The project shall run for three years, starting July 1st, 2013 to Dec. 31st, 2016.

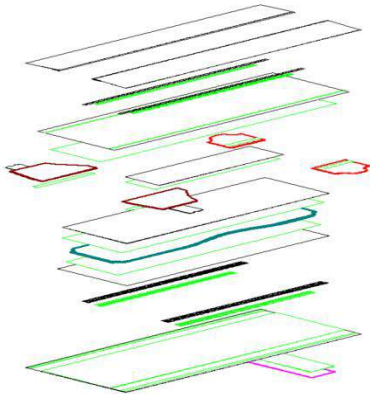


**LIFE+PROJECT**  
AS NATURAL AS WE CAN



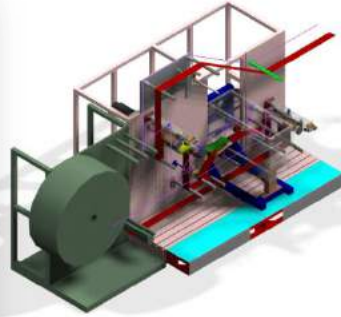
# Key activities

## Saving opportunities



A number of saving opportunities have been analyzed

## 4 new test stands



Fameccanica will install 4 new test stands in the R&D labs

## Validation of solutions



Results will be validated with University of Manchester

## First step achieved



Already achieved **GLUELESS** lamination of back ears

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# GLUELESS lamination of back ears is Fameccanica Life+ project First Achievement







# GLUELESS lamination of back ears for baby diapers

The first achievement of the project has been reached at the end of December 2013, with the completion of the qualification of a new

**GLUELESS lamination concept  
for back ears for baby diapers**

This GLUELESS construction is now a commercially available solution with Fameccanica laminating machine model **FLS**.



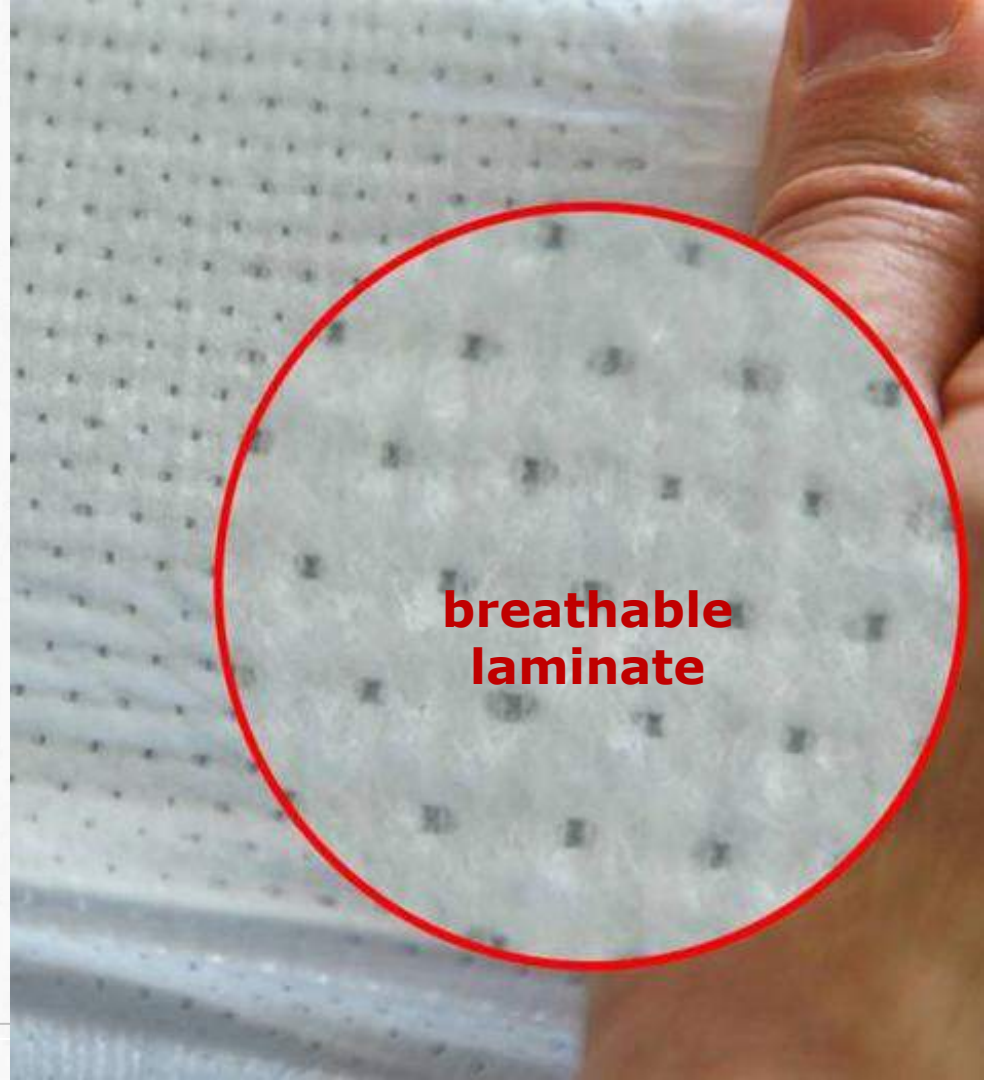


# GLUELESS lamination of back ears for baby diapers

Fameccanica is known for its patented solution for a

**unique technology for in-line processing of  
breathable laminates with ultrasonically bonded  
transpiring spots**

The latest improvement has been reached with the complete elimination of the glue applications in this laminate and this is by itself, an evident step in the direction of cost saving in diaper production processes and environmental impact reduction.



**breathable  
laminate**



# GLUELESS lamination of back ears for baby diapers



**Example of real  
application  
on a baby  
diaper**





# GLUELESS lamination of back ears for baby diapers

## Equipment overview



Version of FLS Lamination system with rewinding in spool (rewinding in reels also available)

## Equipment detail



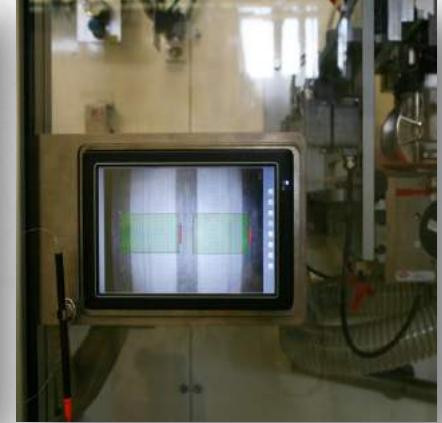
Detail of the elastic film stretching and sealing section to create the web laminate

## Laminated web



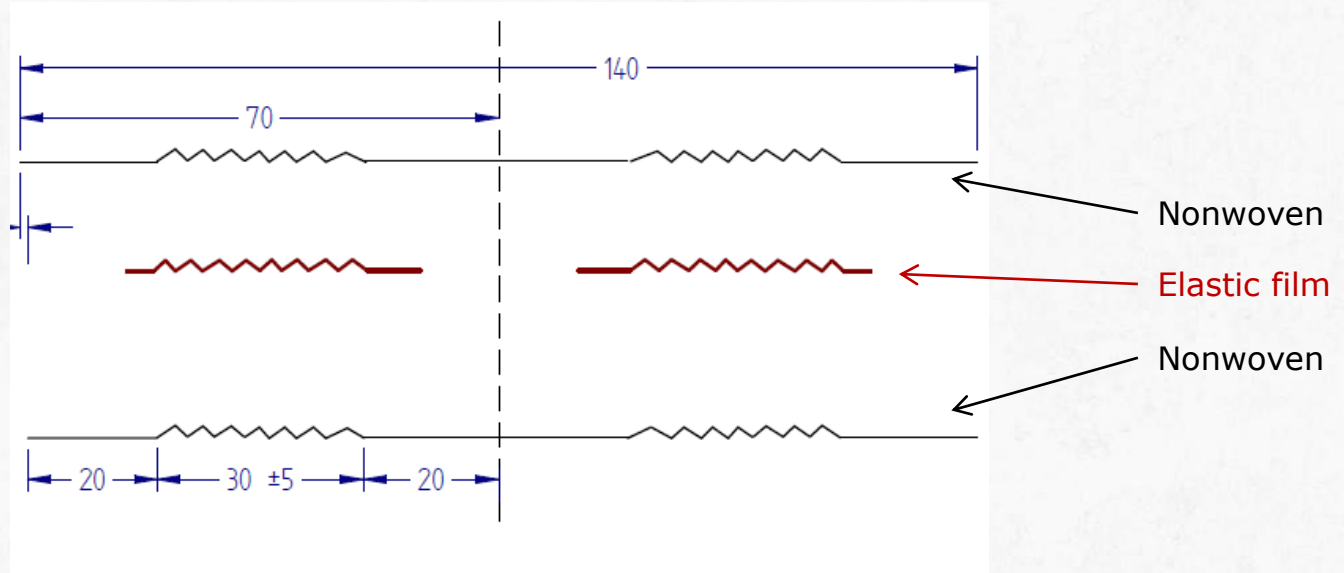
The laminate can be a dual laminate (e.g. picture) or can be split in two individual webs

## Quality control



The machine can be equipped with on-line web inspection system to guarantee quality

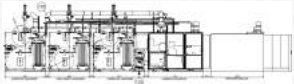
# EXAMPLE OF STRUCTURE FOR BABY DIAPER EARS



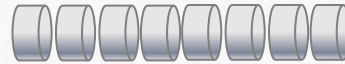
**LAMINATE WITH TWO EARS WITH WIDE ELASTIC ZONES**

# FLS SERVING SEVERAL CONVERTING MACHINES

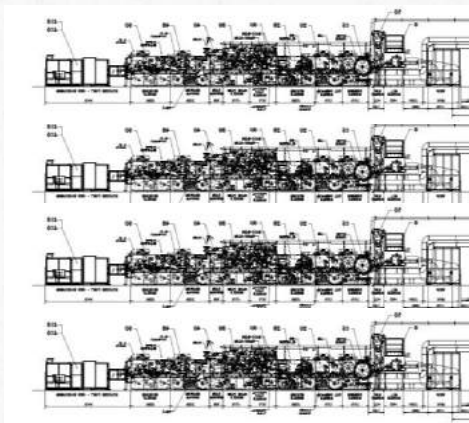
A NORMAL MANUFACTURING PLANT USES **1 FLS LAMINATOR**  
TO SERVE UP TO **8 BABY DIAPER MACHINES**



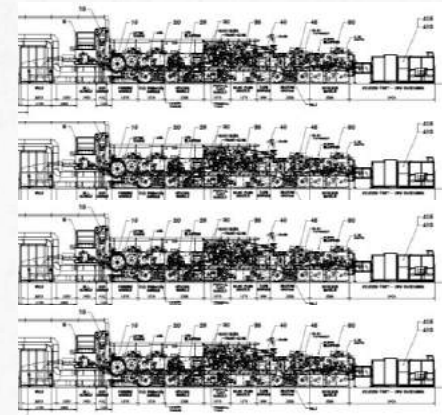
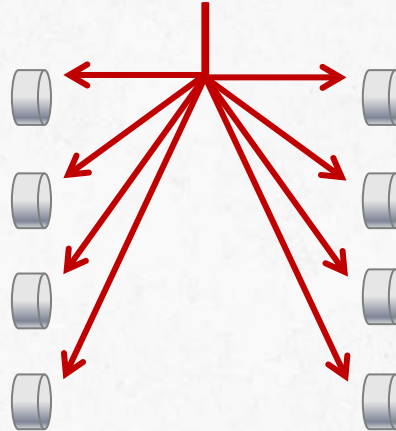
**FLS LAMINATOR**



*Reels of material for back ears*

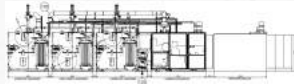


**BABY DIAPER MACHINES**



**BABY DIAPER MACHINES**

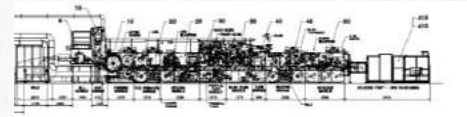
# FLS SAVING ESTIMATE COMPARED TO PREMADE MATERIAL



**FLS LAMINATOR**



*Reels of  
material  
for back  
ears*

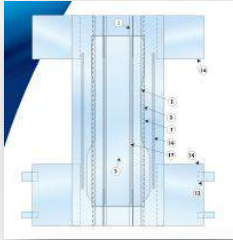


**BABY DIAPER MACHINE**

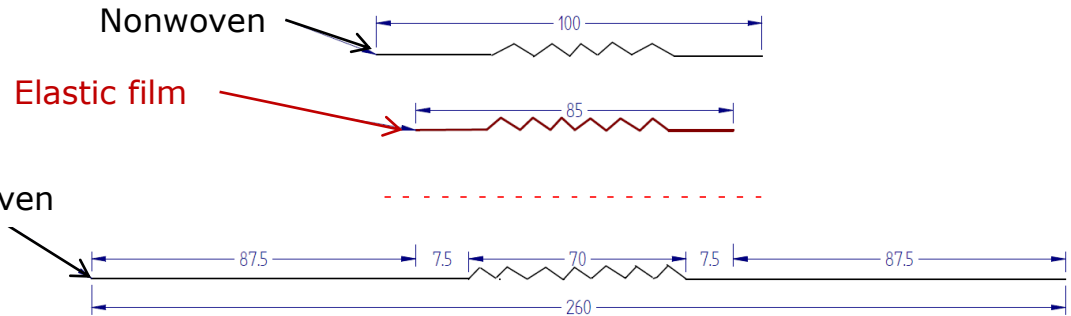
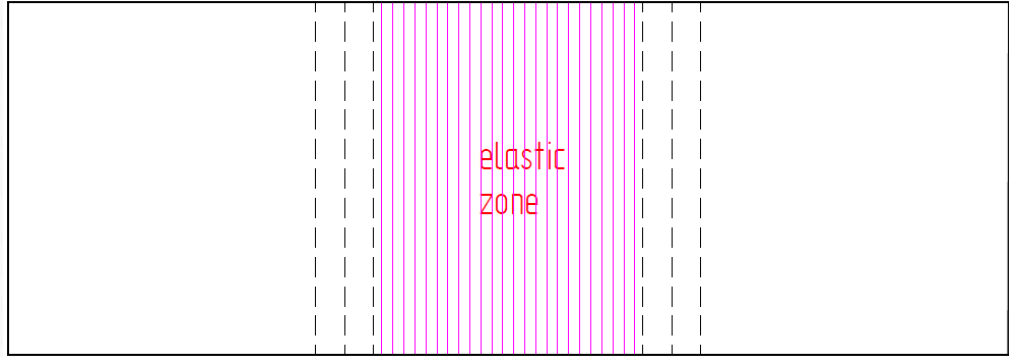
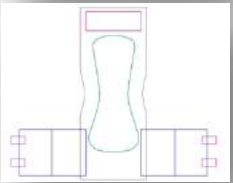
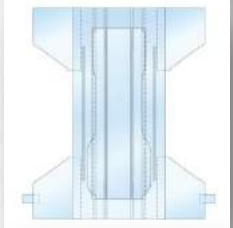
Estimated saving for each baby diaper machine using the Fameccanica laminate is in the range of **200.000÷300.000 US\$ per year** compared to common premade materials available in the market today

In case of feeding 8 baby diaper machines saving can exceed **2 Million US\$ per year**

# THIS TECHNOLOGY CAN BE USED ALSO FOR ADULT INCO



**EXAMPLE OF  
STRUCTURE FOR  
ADULT INCO  
DIAPER EAR**



**LAMINATE FOR ONE EAR WITH ELASTIC ZONE IN THE CENTER**



# Chengdu, Sichuan

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**A new lamination concept for back  
ears with pigmented glue**

# BACK EARS WITH PIGMENTED GLUE

Another opportunity for **Back Ear Lamination** is the possibility to realize a CD-extensible material adhesive lines comprising a **pigmented adhesive material** (Fameccanica patent pending) which represents an additional appealing **visual feature for baby diapers**.

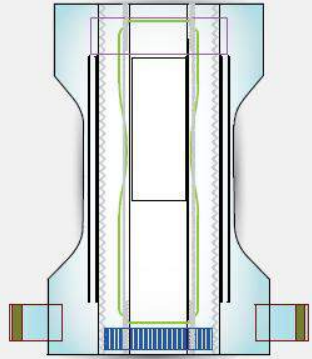


This construction is available with a special version of Fameccanica laminating **machine model FLS**.

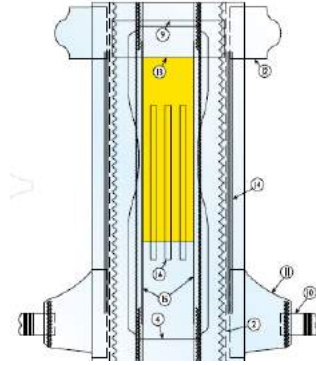
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# **Zero Trim application of back ears for baby diapers**

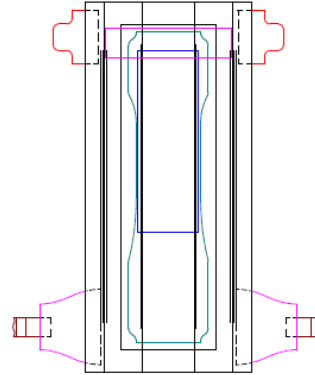
# General overview of back ears for baby diapers



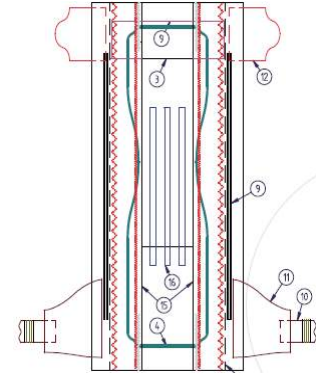
Classic leg-shaped  
Product



Version with "reduced trim"  
back ears

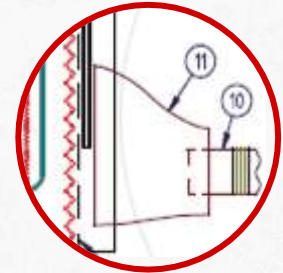
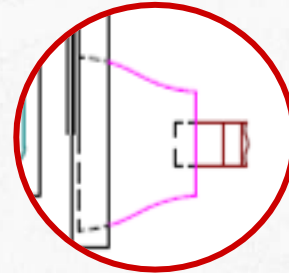
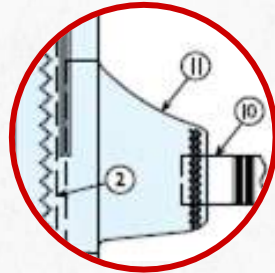


Version with "zero trim"  
symmetric back ears



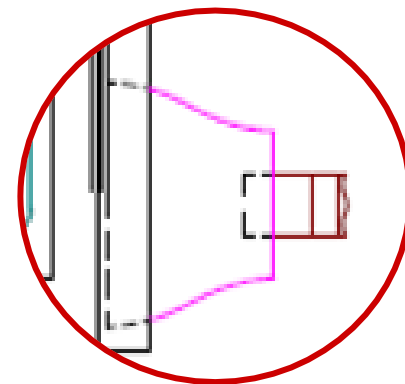
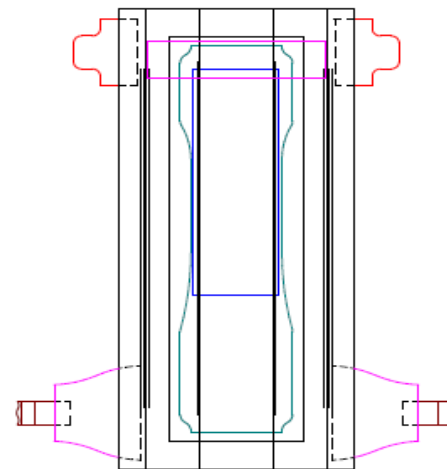
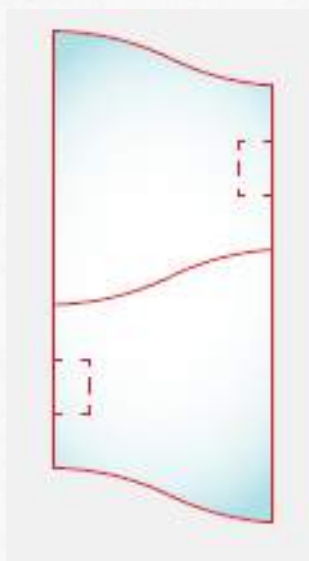
Version with "zero trim"  
asymmetric back ears

no ears



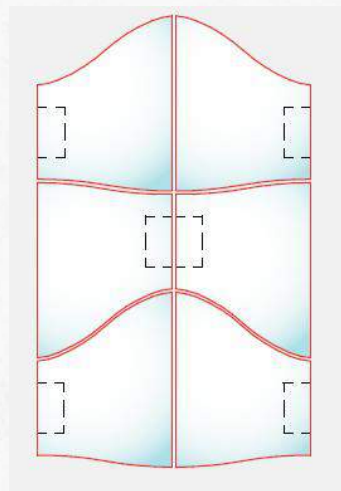
# Symmetric back ears application

This solution allows to manufacture a baby diaper with symmetric shaped elastic ears with **zero-trim technology** process

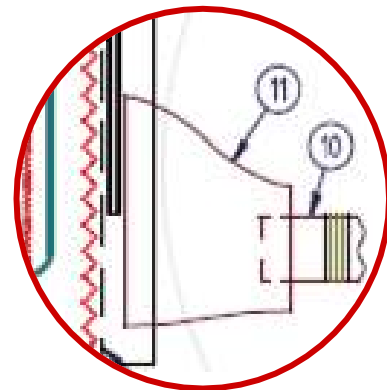
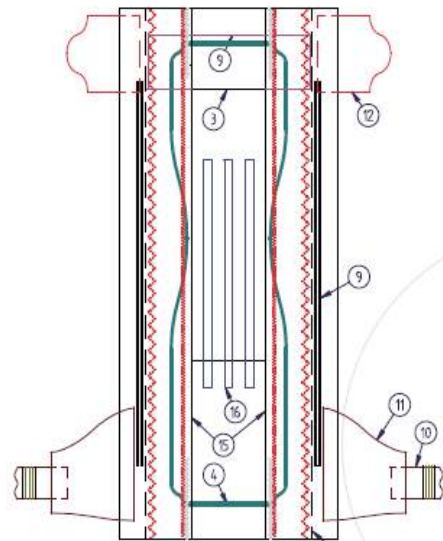


# Asymmetric back ears application

This **zero trim** solution (Fameccanica patent) allows to manufacture a baby diaper with asymmetric shaped elastic ears.



**The asymmetric shape gives better fit to the diapers.**



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**Zero Trim application of back ears for  
adult incontinence diapers**

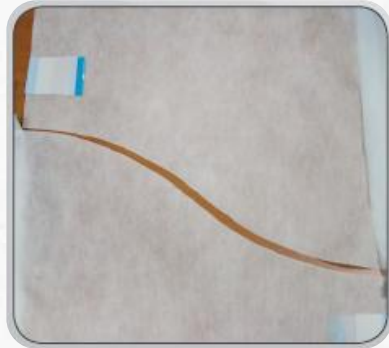


# B.E.S.T. for Adult diapers

“Back Ears Sans Trim”

**Zero trim** solution is now available on **multipiece adult diapers** giving you the possibility to apply both symmetric and asymmetric side panels.

**B.E.S.T.** technology accepts both Back ears with elastic nonwoven/laminates and non-elastic common nonwovens with the opportunity of differentiating products made by the same machine.

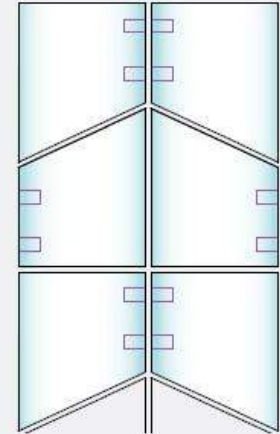
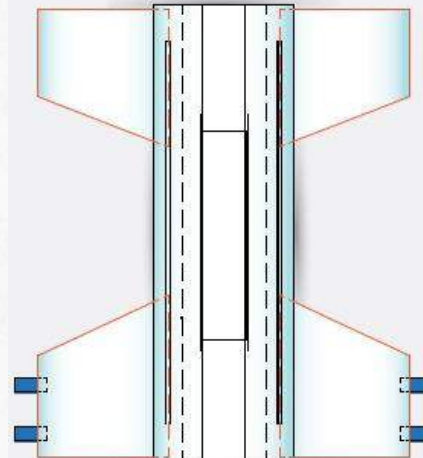
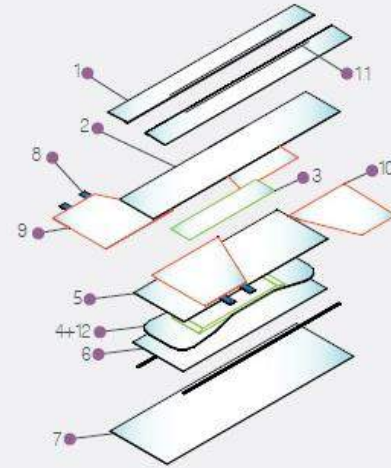


## ADULT DIAPER

Version with asymmetric front and back

### RAW MATERIAL SPECIFICATION

- 1 N.w. for cuffs
- 2 N.w. topsheet
- 3 Acquisition & distribution layer
- 4 Fluff pad
- 5 Upper core nonwoven
- 6 Lower core nonwoven
- 7 Laminated backsheet
- 8 Fastening tapes
- 9 Back ears
- 10 Front ears
- 11 Elastics for cuffs
- 12 S.A.P.



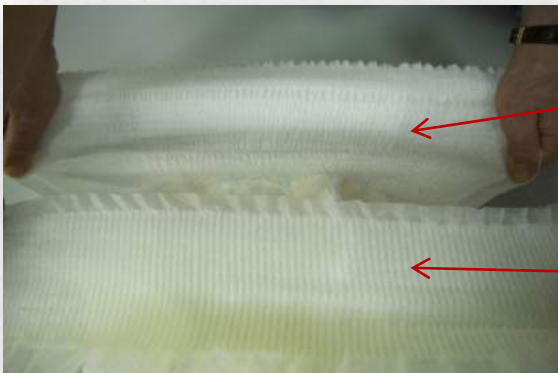
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**Innovative solution for the waist  
elasticization of baby and adult pants**

## 4 New waist elasticization for baby and adult pants

This new waist elasticization system is an **alternative to standard elastic threads** which are **replaced by an elastic film**.

The in-line lamination of nonwoven and elastic film creates transpiring spots making the material breathable and comfortable. The result is a soft and comfortable waist band.



Standard pull on with  
elastic threads

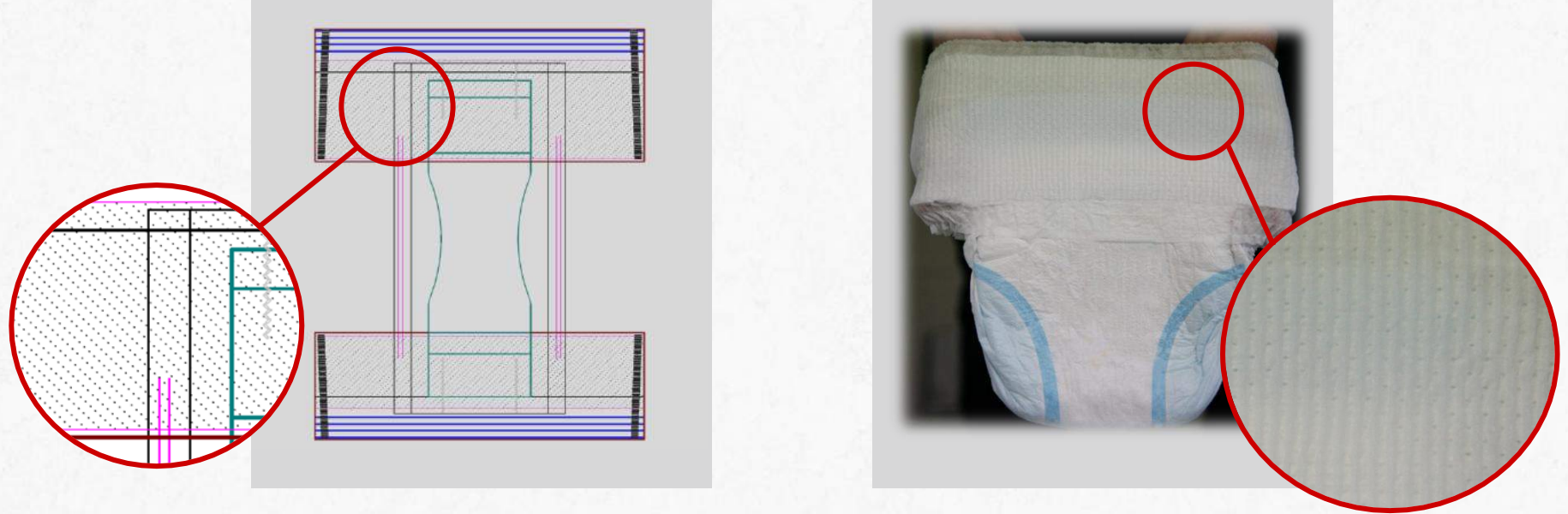
Pull on with  
breathable  
laminate  
(Fameccanica  
patented process)

**POWERFUL,  
BREATHABLE,  
UNIQUE**



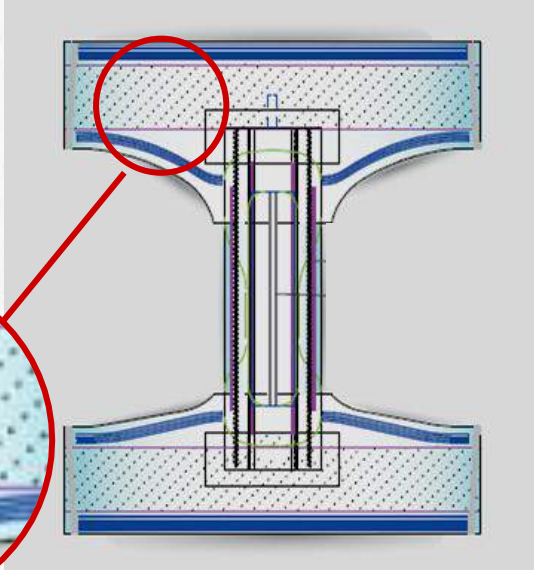
# New waist elasticization for baby and adult pants

## Case of baby pant



# New waist elasticization for baby and adult pants

## Case of adult pant



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# **Different solutions for ultrathin absorbent cores for diapers**

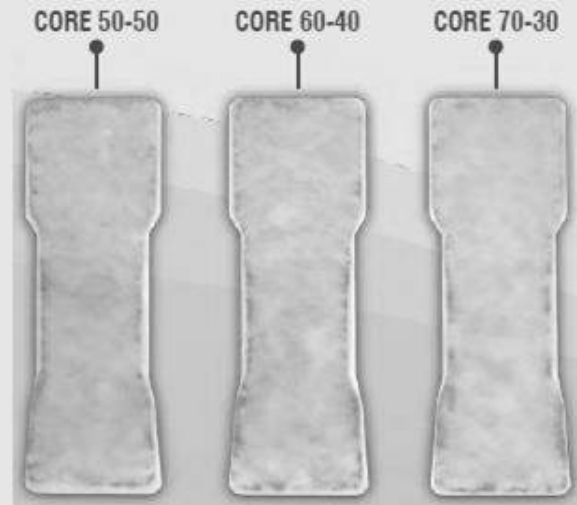
# 11 Baby Diaper with thin core

Up to 70/30 Sap/Fluff ratio

One of the most recent trends in the industry is **THIN CORE**.

Fameccanica has introduced two different forming systems which are designed to accept a wide range of SAP/Fluff ratios to produce **ultrathin absorbent cores**:

- **H-Forming** is the re-engineered forming system with a perfect flow distribution and optimal SAP/Fluff mix with ratios up to **50% / 50%**, pad's integrity and weight control. H-Forming system is the standard forming system for machines up to 600 ppm.
- **U-forming** system is capable of producing ultrathin absorbent cores with a SAP content higher than **70%** and is the standard forming system for our high speed baby diaper machines.



Range of achievable SAP/FLUFF Ratios

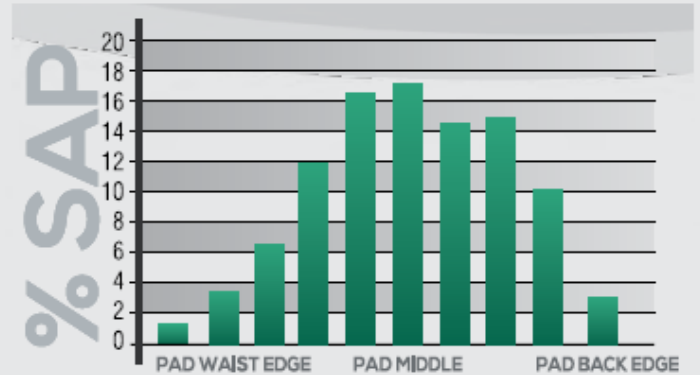
# Intermittent S.A.P. application

Fameccanica has recently introduced a new system for the **intermittent dosing of SAP**.

This system gives the advantage of targeting the amount of SAP in the middle of the diaper.

It works in combination with Fameccanica **Optisap** 700 loss-in-weight dosing system.

This system allows for an average saving of 2g per diaper



**S.A.P Distribution according to different pad areas**



# Fluffless core

Fameccanica introduces its new concept for absorbent cores.

**HEXACORE is a fluffless core solution** suitable for application in baby diapers, heavy and light incontinence as well as for feminine hygiene pads.



**HEXACORE patented structure** with expandable cells enables the superabsorbent material to expand significantly inside the absorbent core.



Also, the possibility to use differentiated glue types makes possible to create preferential directions for expansion across the cells and to manage core integrity levels accordingly.

# INTRODUCING HEXACORE



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# OUR EVERYDAY MISSION: NON STOP INNOVATION.

• WE EMPLOY  
**STATE-OF-THE-ART TECHNOLOGY**  
TO ACHIEVE THE HIGHEST  
MANUFACTURING STANDARDS

• **THE SUPERIOR QUALITY**  
OF FAMECCANICA  
IS IN EVERY COMPONENT  
OF OUR PRODUCTS

• WE ARE RESPONSIVE  
TO MARKET DEMAND  
AND FULLY  
**DEDICATED TO OUR JOB**

• **TECHNOLOGY INSIDE**  
THAT'S WHY WE DELIVER  
BENCHMARK **SOLUTIONS**  
TO OUR MARKET

## FAMECCANICA GROUP AT A GLANCE

1

**FOUNDED IN 1975**, Fameccanica is world leader manufacturer of machinery for disposable hygiene absorbent products

2

**MORE THAN 1000 MANUFACTURING** lines delivered since 1975

3

**CONSTANT FOCUS ON INNOVATION:** technology, manufacturing processes and finished product design

4

**SERVING TODAY OVER 75 MULTINATIONAL**, Regional and Local Companies

5

**GLOBAL PRESENCE** with 4 plants located in **ITALY, CHINA, BRASIL** and **U.S.A.**

6

Over **850** employees worldwide

# FAMECCANICA GROUP

THE WORLDWIDE LEADER IN THE  
HYGIENIC DISPOSABLE ABSORBENT CONVERTING INDUSTRY

## FAMECCANICA NORTH AMERICA



A Business That Speaks Your  
Language And Thinks Like You

## FAMECCANICA.DATA



The Centre Of Excellence For  
Innovation And Development

## FAMECCANICA MACHINERY SHANGHAI



The Asian Technological Pole

## FAMECCANICA DO BRASIL



Close to your world, close to your needs

# PRODUCTS & SOLUTIONS

## BABY



MACHINES FOR DIAPERS, PANTS  
AND CHANGING MATS

## FEMININE



MACHINES FOR PADS, PANTILINER  
AND LIGHT INCO

## ADULT



MACHINES FOR  
DIAPERS, PANTS, BED UNDERPADS

## PACKAGING



MACHINES FOR DIAPERS, PANTS  
AND CHANGING MATS



# BABY MACHINERY

## BABY DIAPERS PPM

FA-X P10	1000
FA-X E8	800
FA-X B6 CATHAY	600
FA-X B6	600
FA-X P5T	500
FA-X CATHAY X-PANT	500

## FEATURES & STRENGTHS

**A**

Three platforms: Premium, Evolution, Business/Cathay to meet the needs of every type of business, very friendly for operators

**B**

Core forming: thin cores, very high integrity and density and a very low weight variation

**C**

Enhanced electrical + mechanical modularity, so that integration in the main machine becomes easy and fast

**D**

Top level process reliability: the new distinctive manufacturing process allows for an excellent web stability at high speed.



# FEMININE AND LIGHT INCO MACHINERY

## LADY SANITARY NAPKINS PPM

FNL P40 TWIN **4000**

FNL P15 **1500**

FNL P12 **1200**

FNL E10 **1000**

## FEATURES & STRENGTHS

**A**

Two platforms: Premium, Evolution, to meet the needs of every type of business, very friendly for operators

**B**

Full modularity and full servo technology for an easy set-up and format change, highest performances, quality and process reliability

**C**

High quality and advanced logic control of machine's functions  
Highest levels of safety standards

**D**

Solutions at low waste and energy consumption, that are equal to low production costs and environment care



# ADULT INCONTINENCE MACHINERY

## ADULT BRIEFS & DIAPERS PPM

FIX P5 **500**

FIU P4 **500**

FIX P5X **400**

FIX E3 **350**

FIX B2X 250

FIX B2 250

FIX B2 CATHAY 250

## FEATURES & STRENGTHS

**A**

Three platforms: Premium, Evolution, Business/Cathay to meet the needs of every type of business, very friendly for operators

**B**

Guarantee high flexibility in terms of different product structures to be manufactured on the same machine with pre-defined and fast product change operations

**C**

Prioritize efficiency and waste levels to aim at the lowest unitary finished product cost

**D**

Fameccanica owns a unique technology for in-line processing of breathable, elastic laminated waist band with ultrasonically bonded transpiring to create a discrete and soft feeling product with maximum fit and comfort.





# PACKAGING MACHINERY – STACKERS AND BAGGERS

## BPM WORKING SPEED

PAKSIS® N-12	120
ROR	120
PAKSIS® D7	65
FIRST	65
PAKSIS® A6	55
PAKSIS® D5 Cathay	50
CPW	50
RAD-DUAL	64
RAD-CATHAY	64
I-WRAP	40

## FEATURES & STRENGTHS

**A**

Several options of stackers and baggers to meet the needs of every type of business, very friendly for operators

**B**

Integrated ("all-in-one") counting-stacking-packing equipment for maximum process control and operability and for easy and fast installation & start-up

**C**

Full servo technology: maximum flexibility in meeting different packaging format requirements and for fast changeovers

**D**

Safety features and protective covers comply with European EC Regulations.

# SERVICE & CUSTOMER CARE

## EVERGREEN MACHINES



Fameccanica Customer Service is thought to allow you to **get the most out of your machine**. A qualified team of 85 Service engineers and 4 regional accounts, who cover each geographical area.

## TRAINING



A **training session**, for basic users or experts, and an **accurate technical documentation** make the customer able to take all the advantages from the machine.

## SPARE PARTS



If you need spare parts, we will give the quickest response to your request, guaranteeing the **finest quality of the components purchased**.

# SERVICE & CUSTOMER CARE

## TECHNICAL SUPPORT



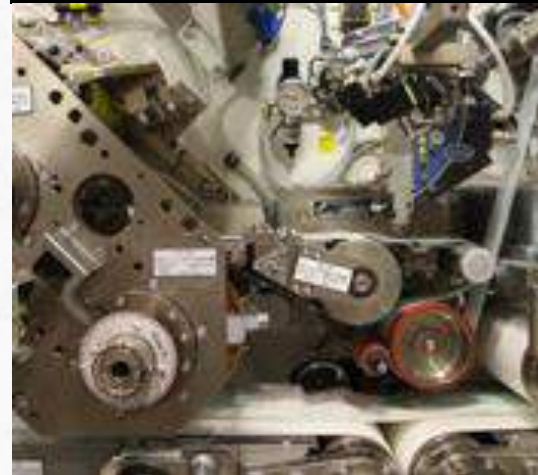
**A superior technical support** is provided by expert technicians, on which you can rely on during the whole life of your machine.

## REBUILDING SERVICES



**A qualified rebuilding service** make available the refurbishment, in compliance with our expertise as original supplier, the best alternative to brand new parts.

## UPGRADE KIT



Finally, one of the most important activity is the supply of updating kits, **to provide installed machinery with the newest technologies** and product features.

**Thank you**