CIDPEX 2014 Conference

FAMECCANICA LIFE+ PROJECT FOR COST SAVING IN DIAPER PRODUCTION PROCESSES

AND

FAMECCANICA KEY RECENT INNOVATIONS FOR THE DIAPER INDUSTRY.
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
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.


During this period, LIFE has co-financed some 3104 projects across the EU, contributing approximately €2.2 billion to the protection of the environment.
On July 1st, 2013 Fameccanica was granted financial support to project proposal Nº 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.
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
GLUELESS lamination of back ears is Fameccanica Life+ project
First Achievement
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.
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.
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

Nonwoven
Elastic film
Nonwoven
FLS SERVING SEVERAL CONVERTING MACHINES

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

Reels of material for back ears
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.

- Nonwoven
- Elastic film
- Nonwoven
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A new lamination concept for 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.
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.
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.
Innovative solution for the waist elasticization of 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)
New waist elasticization for baby and adult pants

Case of baby pant
New waist elasticization for baby and adult pants

Case of adult pant
Different solutions for ultrathin absorbent cores for diapers
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.
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.
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.
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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

WWW.FAMECCANICA.COM
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

### FEATURES & STRENGTHS

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<tr>
<th>BABY DIAPERS PPM</th>
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<tr>
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<td>FA-X CATHAY X-PANT</td>
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- **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

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

LADY SANITARY NAPKINS PPM

<table>
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<th>Model</th>
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<tr>
<td>FNL P40 TWIN</td>
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# ADULT INCONTINENCE MACHINERY

## FEATURES & STRENGTHS

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<td><strong>FIX B2 CATHAY</strong></td>
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**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.
Several options of stackers and baggers to meet the needs of every type of business, very friendly for operators

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

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

Safety features and protective covers comply with European EC Regulations.
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.

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.

If you need spare parts, we will give the quickest response to your request, guaranteeing the **finest quality of the components purchased**.
A superior technical support is provided by expert technicians, on which you can rely on during the whole life of your machine.

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

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