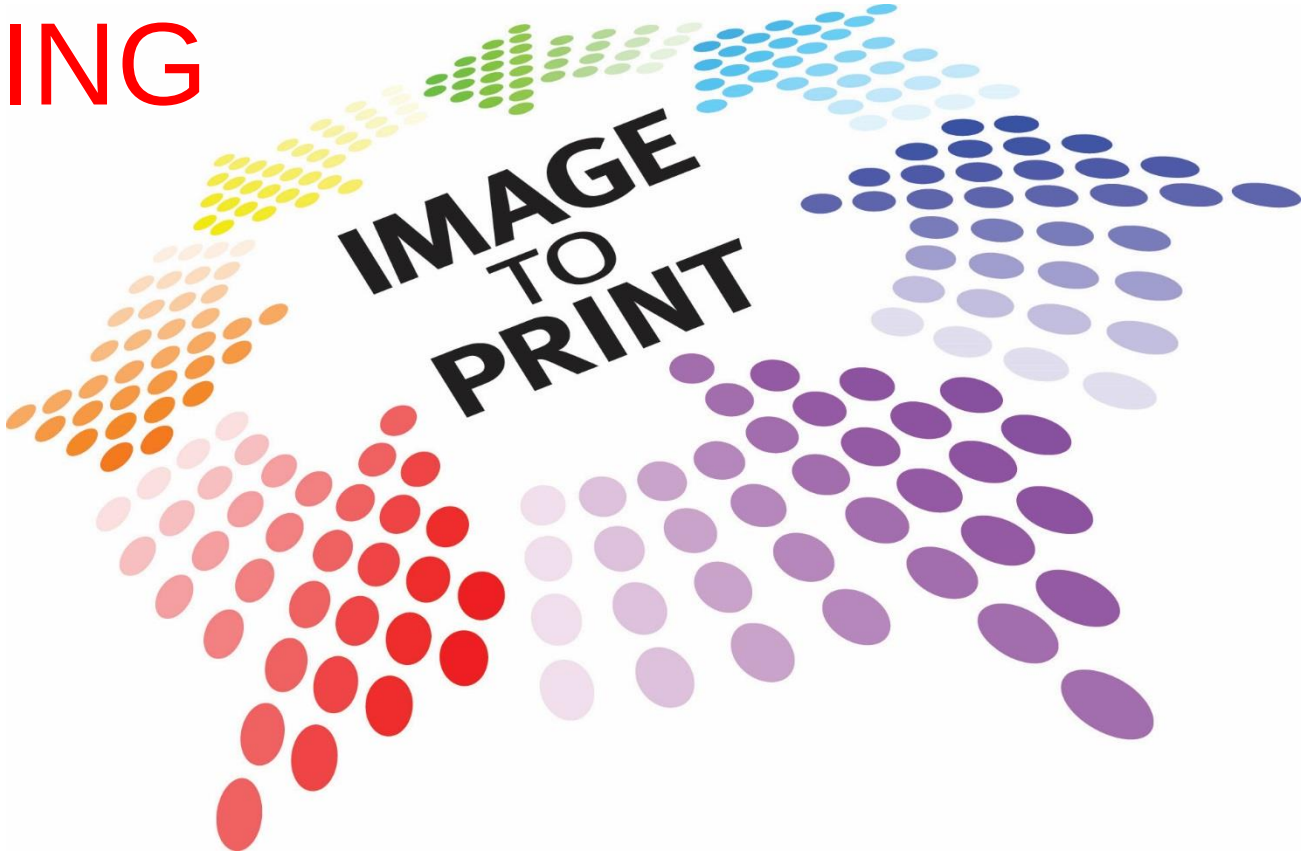
PRINTING TECHNOLOGY & INNOVATION DAYS FOR FLEXIBLE PACKAGING

03 / 04 July 2019

Istanbul, Turkey



PRINTING TECHNOLOGY & INNOVATION DAYS FOR FLEXIBLE PACKAGING

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IMAGE TO PRINT

PRINTING TECHNOLOGY & INNOVATION DAYS FOR FLEXIBLE PACKAGING

EVOLUTION IN SPECIAL COATING-LAMINATION

ANDRIGHETTO IVANO
AREA SALES MANAGER,
NORDMECCANICA GROUP

The real evolution in coating and laminating process is the sustainability. What can we really do for the planet where we live?

The answer is simple but on same time not easy:
It is called culture and technology

Let’s start from the Solvent Base Coating & Laminating

How it can be green?

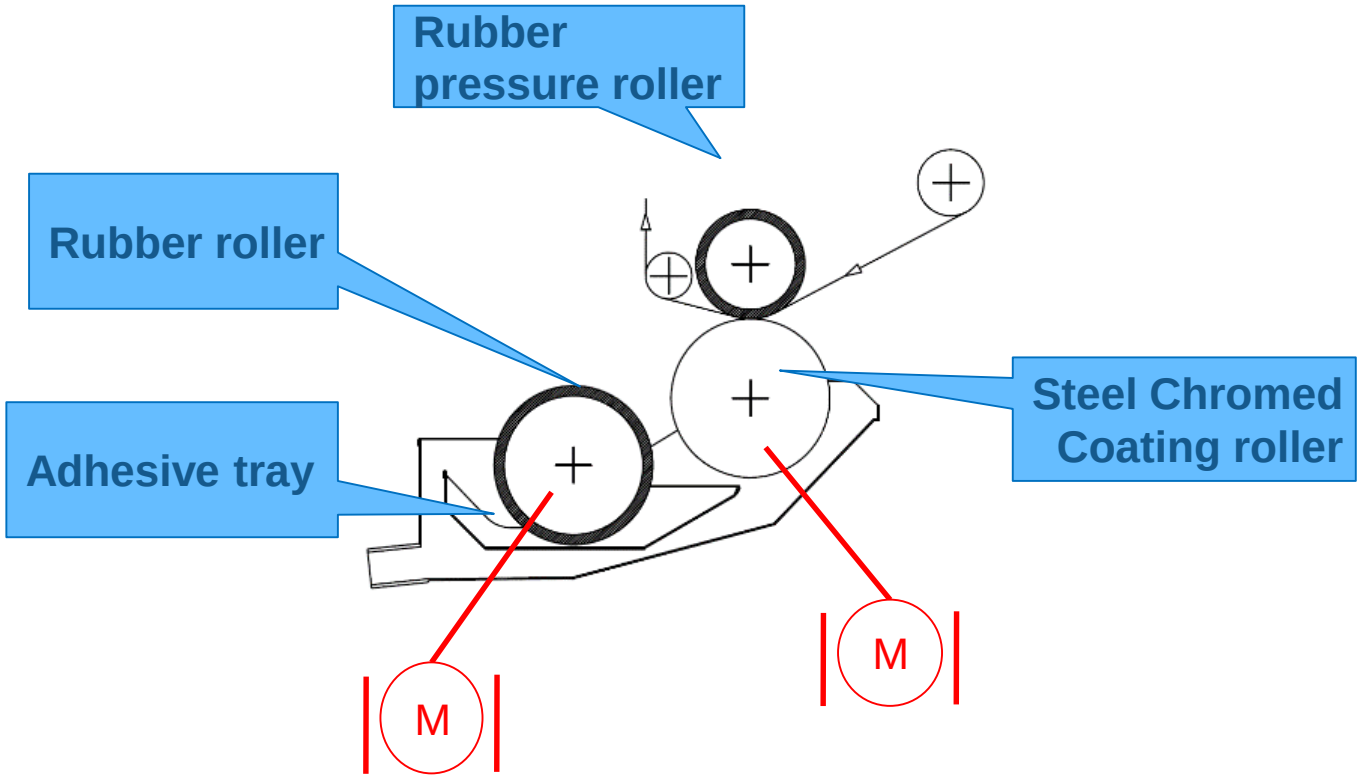
1) New Coating processes where the solid % is higher
2) High efficiency dryers
3) High efficiency electronic platform

<u>The answer of all these points are here!</u>

New Coating processes where the solid % is higher.

1st trolley: SEMI FLEXO

Semi-flexo (Offset Gravure)



Semi-flexo (Offset Gravure)

Solvent and water born

- Adhesives.
- Coatings: Lacquer, Heat seal, Release, Primers.

- Coating technology: 2 rollers Semiflexo.
- Speed: Up to 450 m/min (1450 fpm)
- Coating weight: 2,5÷8 g/m2 (1-6 ppr) Dry
- % Solid: 30÷45%
- Coatings: Solvent-based; water based; lacquer
- Viscosity: 18 – 23 sec. (cup ford 4)

2nd trolley: FLEXO COATING

“Flexo Coating 4 Rollers”

Mainly Solvent born coatings.
Medium to High Viscosity.

Coating speed: 450m/min

Coating weight: 1 ÷ 5 g/m2

Solid content:35÷50%

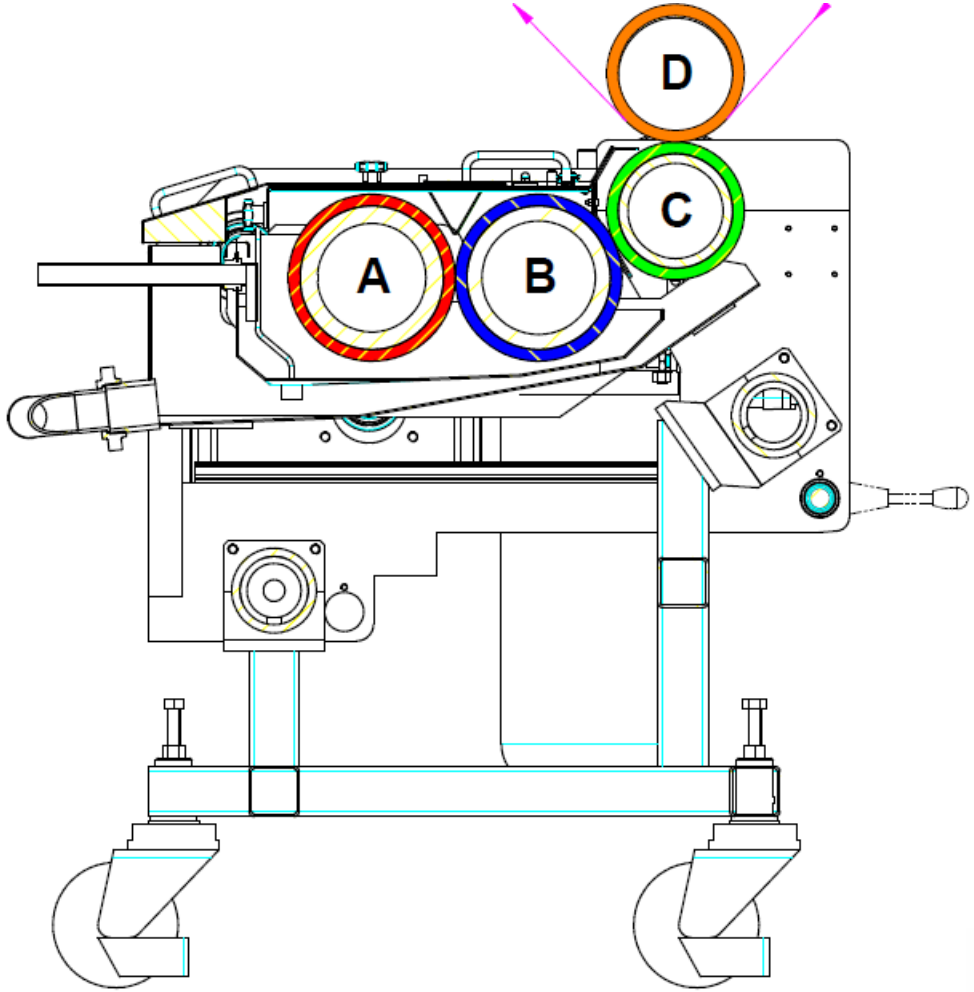
Configuration:

Roll A is Rubber, picks-up adhesive from the tray.

Roll B is engraved and ceramic coated.

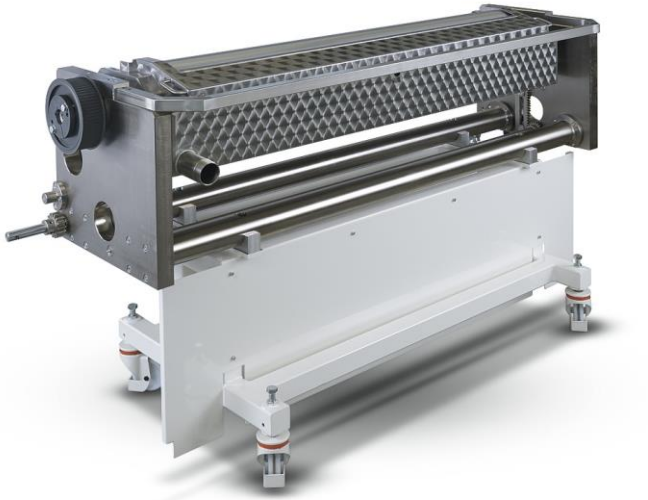
Roll C is rubber, sleeve type, is used to adjust the coating width.

Roll D is back-up roll (metallic sleeve)

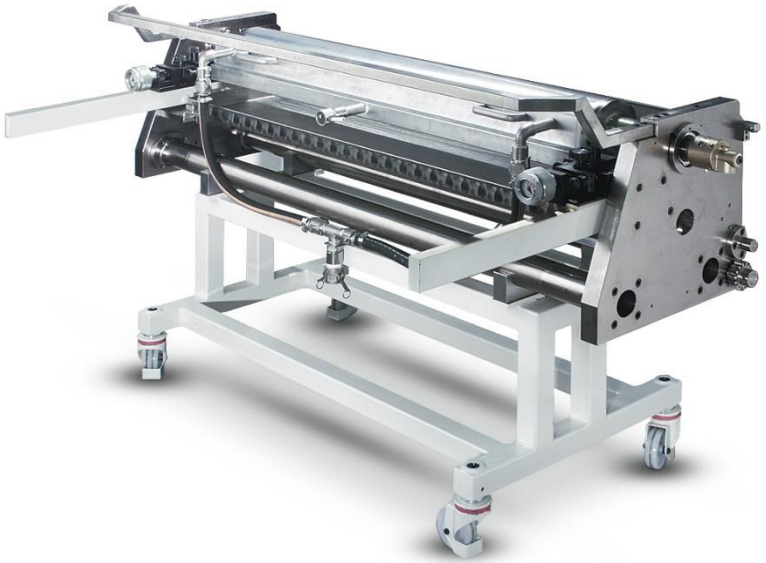


3rd: A LARGE VARIETY OF TROLLEYS TO MATCH CUSTOMER'S NEEDS

“Variety of Trolleys”



Rotogravure trolley



Direct/reverse gravure trolley

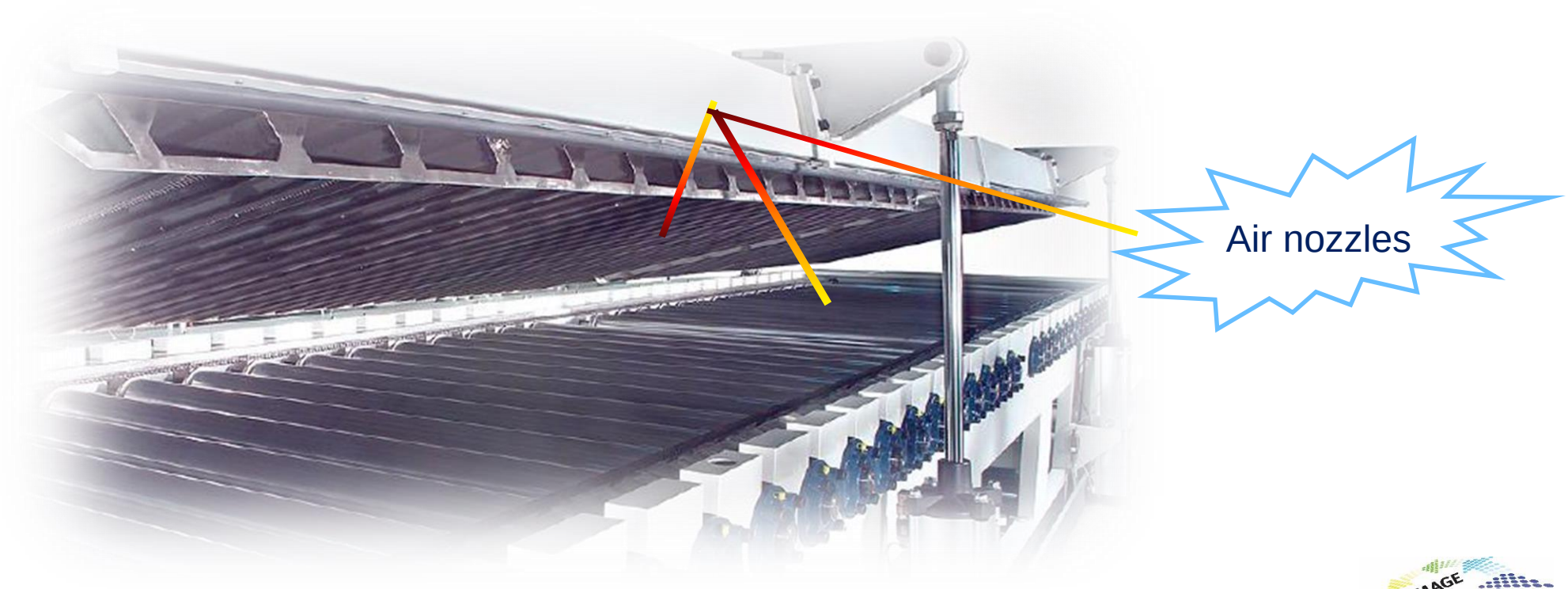
Mayer bar coating trolley

Solventless trolley

AND MORE….

2) High efficiency dryers

Air delivered on both sides of the web for ultimate drying efficiency.



Drying System

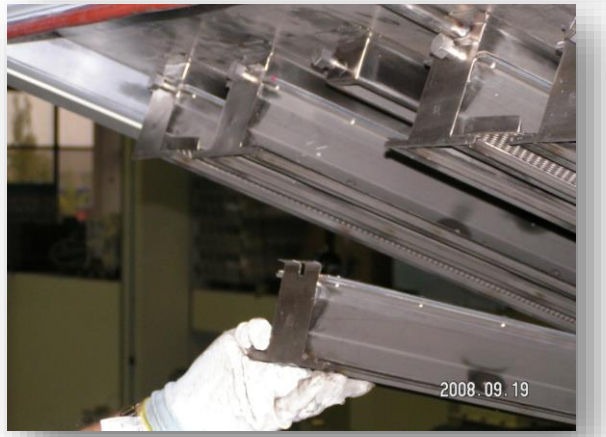
Integral Stainless Steel Construction. ✓

4 Blowers System. Independent speed. ✓

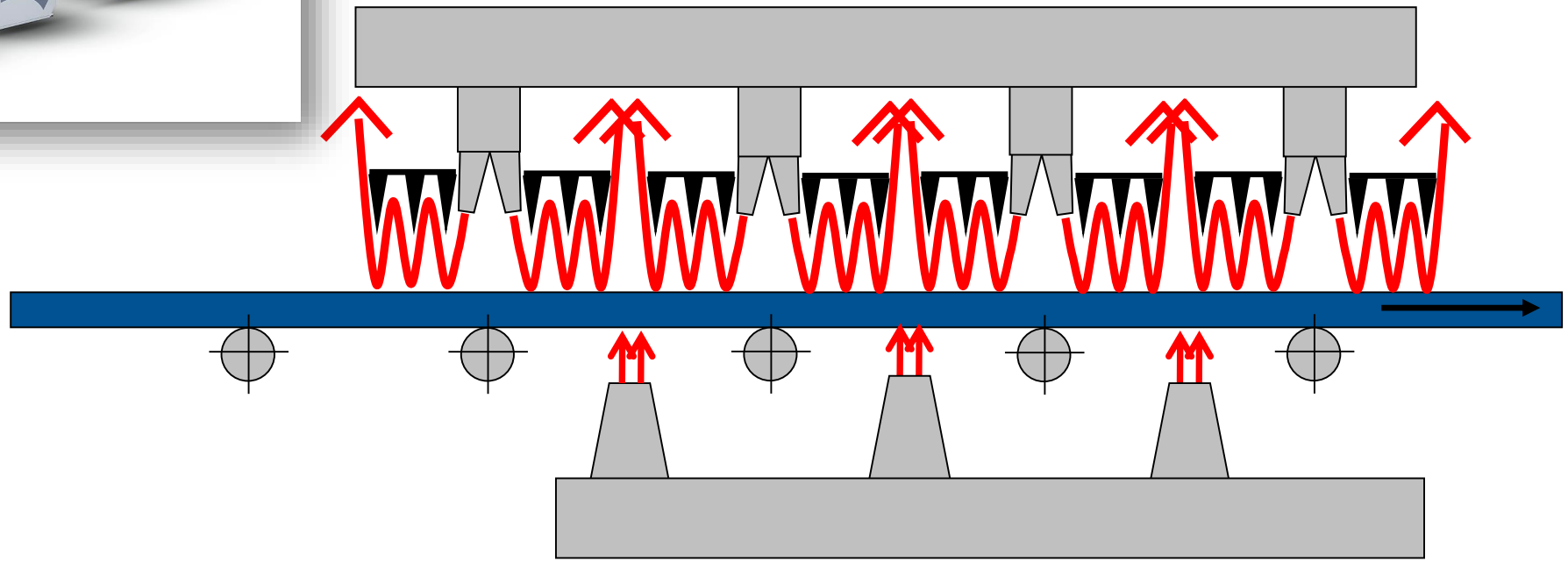
High Efficiency Heat Exchange. ✓

Low Solvent Retention. ✓

Production Speed up to 450 m/min. ✓



BI-LATERAL HEATING



In general the System efficiency is done by:

- **Mechanics: utmost attention to passive inertia and mechanical friction reduction.**
- **Drying systems: developed with the latest in energy savings and thermal energy dissipation prevention.**
- **Inverter driven blowers in the drying system.**
- **Thermal insulation of ovens.**
- **Energy saving levels, achievable through the implementation of what above, can reach up to 35% once compared to a low energy efficiency laminator.**

3) High efficiency electronic platform

SIEMENS Industry

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Vostro riferimento
Nostre sigle MS
Data 2014 February 19th

Siemens S.p.A., V.le Piero e Alberto Pirelli, 10 - 20126 Milano

Spett.le
NORDMECCANICA SpA
Att. Ing. Vincenzo Cerciello

Object : Siemens Technology and energy efficiency – references letter

Siemens by this letter certifies that :

Nordmeccanica Group is our very important customer and technological partner since many years.

Thanks Siemens Totally Integrated Automation, based on Simatic, Sinamics, Profinet solution, the whole Nordmeccanica machinery range are equipped with the most updated and advanced technology in terms of automation, energy efficiency and performance.

We support continuously Nordmeccanica projecting and sizing components in order to get best performance, low energy consumption and long term reliability.

Nordmeccanica takes great care to the issues of energy saving, selecting components and solutions fitted to achieve high power factor. Power consumption and performance are constantly monitored and traced by Sentron PAC 3200 Power meter.

Main motors used, 1PH8 series, are suited only for frequency converter operation.

Standard Drives System is Sinamics S120 with regenerative infeed unit, combined with 1PH8 motors that allows to achieve optimized energy consumption thanks to :

- Regulated DC Link voltage, balanced between axis, depending on the torque request.
- Rigenerative feedback capability (instead of braking resistors)
- Sinusoidal line currents
- Extremely low current and voltage harmonic distortion with ActiveInterfaceModule (AIM) combined with ActiveLineModule (ALM) .

We also state that Nordmeccanica has been selected by Siemens Industry Headquarter in Germany (Nurenberg) as one of 10 customers worldwide for the project "GLOBAL ACTING OEM".
Scope of the project is to work together with trend setter customers in order to develop and tailor solutions based on the need of the market and support at the highest level the Oem's abroad.

Yours in service

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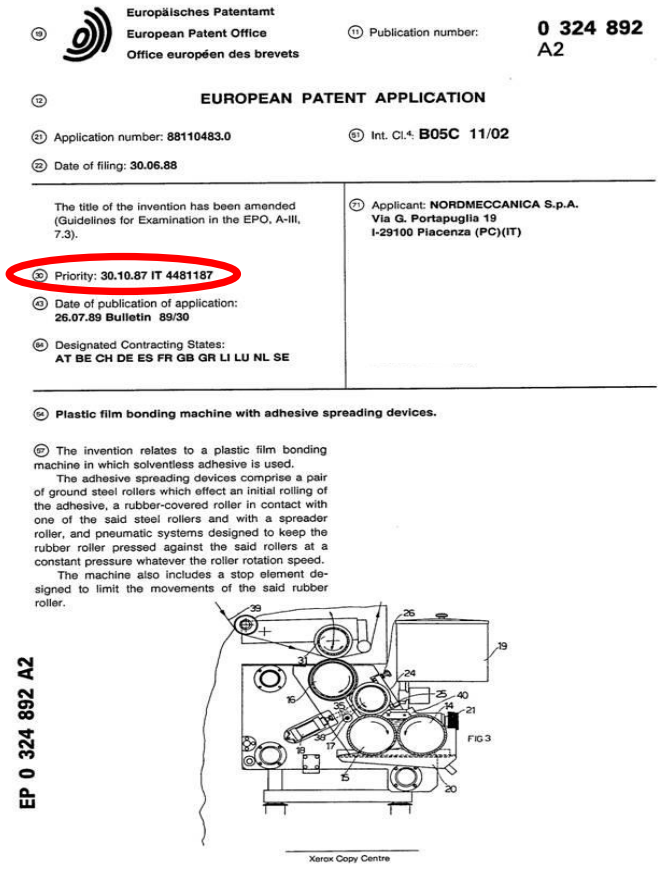
Nordmeccanica takes great care to the issues of energy saving, selecting components and solutions fitted to achieve high power factor. Power consumption and performance are constantly monitored and traced by Sentron PAC 3200 Power meter.

- **Regenerative drives.**

…but of course let’s move forward with Solvent Less

Invented by NORDMECCANICA

Vertical Green Building designed by Arch. Boeri – Milan Italy



(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: 0 324 892 A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: 88110483.0

(51) Int. Cl.⁴: B05C 11/02

(22) Date of filing: 30.06.88

The title of the invention has been amended (Guidelines for Examination in the EPO, A-III, 7.3).

(30) Priority: 30.10.87 IT 4481187

(43) Date of publication of application: 26.07.89 Bulletin 89/30

(84) Designated Contracting States: AT BE CH DE ES FR GB GR LI LU NL SE

(71) Applicant: NORDMECCANICA S.p.A.
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I-29100 Piacenza (PC)(IT)

(54) Plastic film bonding machine with adhesive spreading devices.

(57) The invention relates to a plastic film bonding machine in which solventless adhesive is used.

The adhesive spreading devices comprise a pair of ground steel rollers which effect an initial rolling of the adhesive, a rubber-covered roller in contact with one of the said steel rollers and with a spreader roller, and pneumatic systems designed to keep the rubber roller pressed against the said rollers at a constant pressure whatever the roller rotation speed.

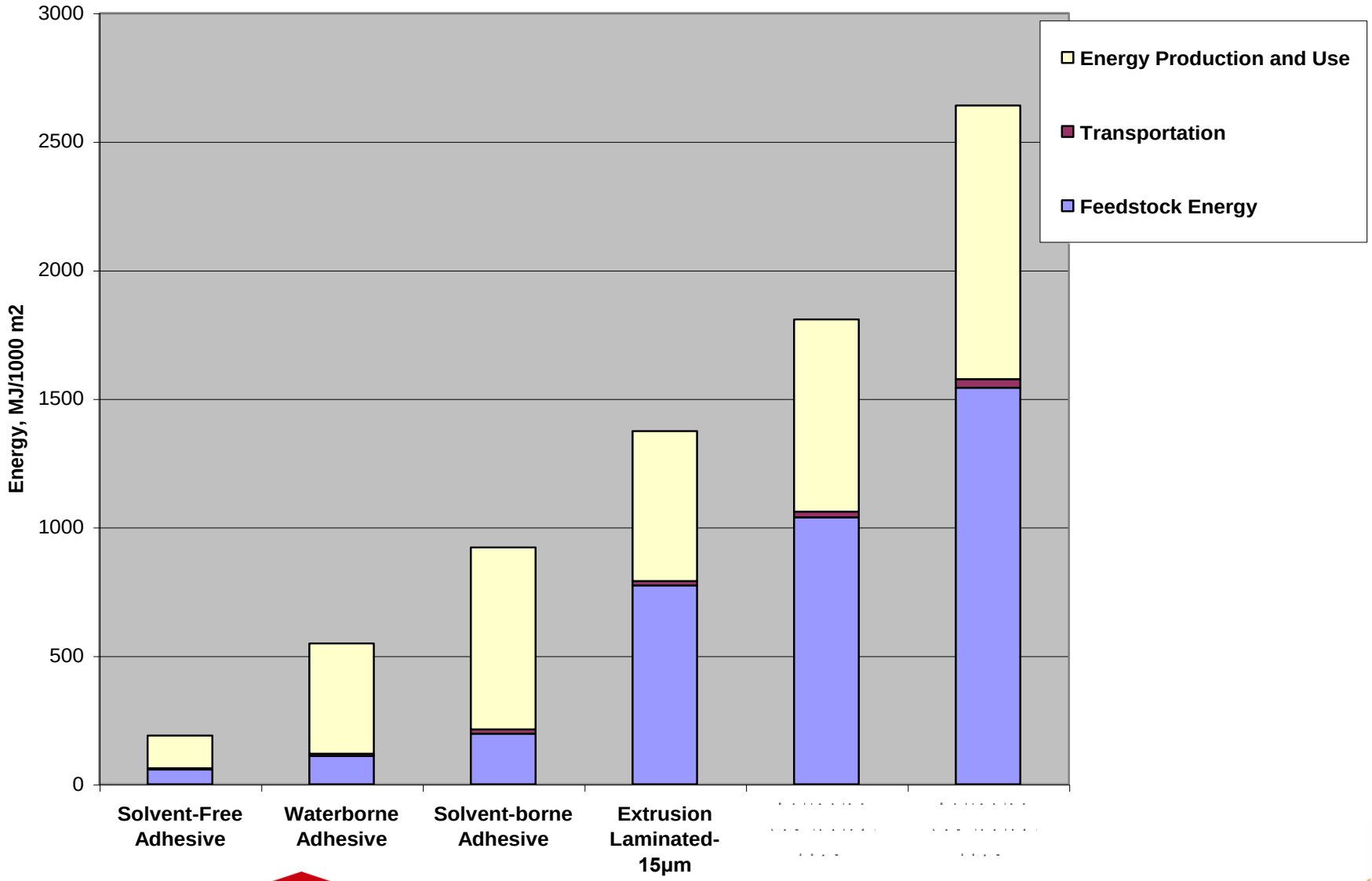
The machine also includes a stop element designed to limit the movements of the said rubber roller.

EP 0 324 892 A2

FIG.3

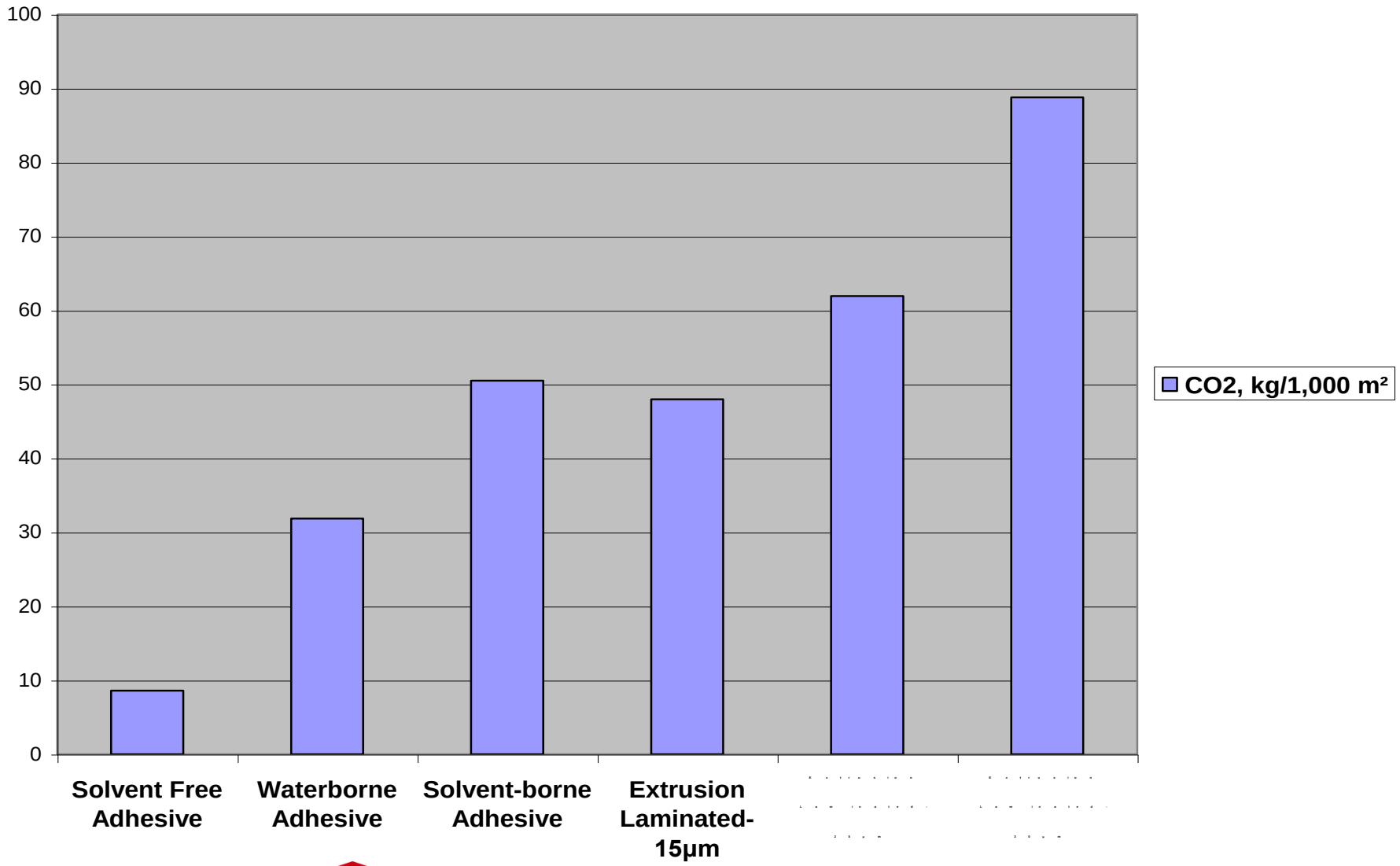
Xerox Copy Centre

Energy Use in MJ/1000 m ^{2}



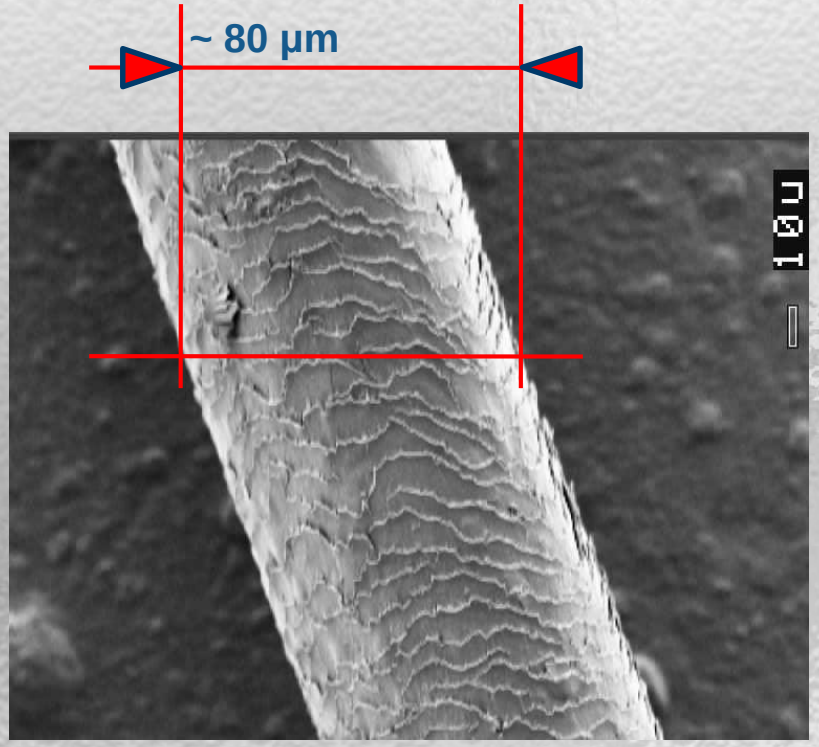
Courtesy: DOW®

Global Warming Potential in CO_2 Equivalents

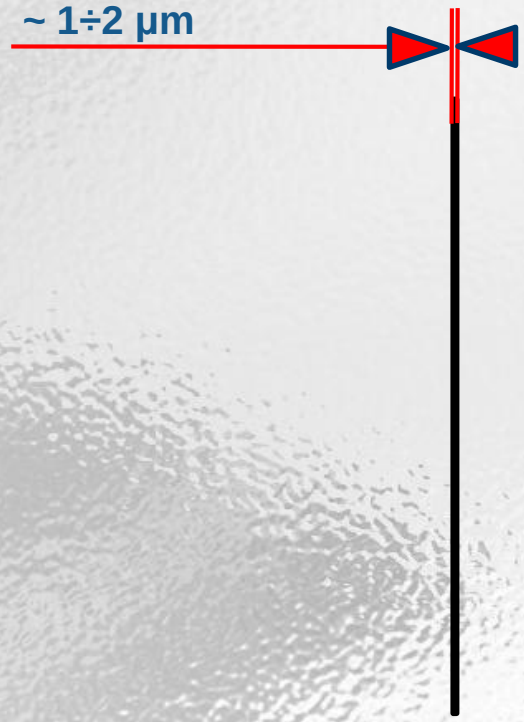


Courtesy: DOW®

Nature of the task



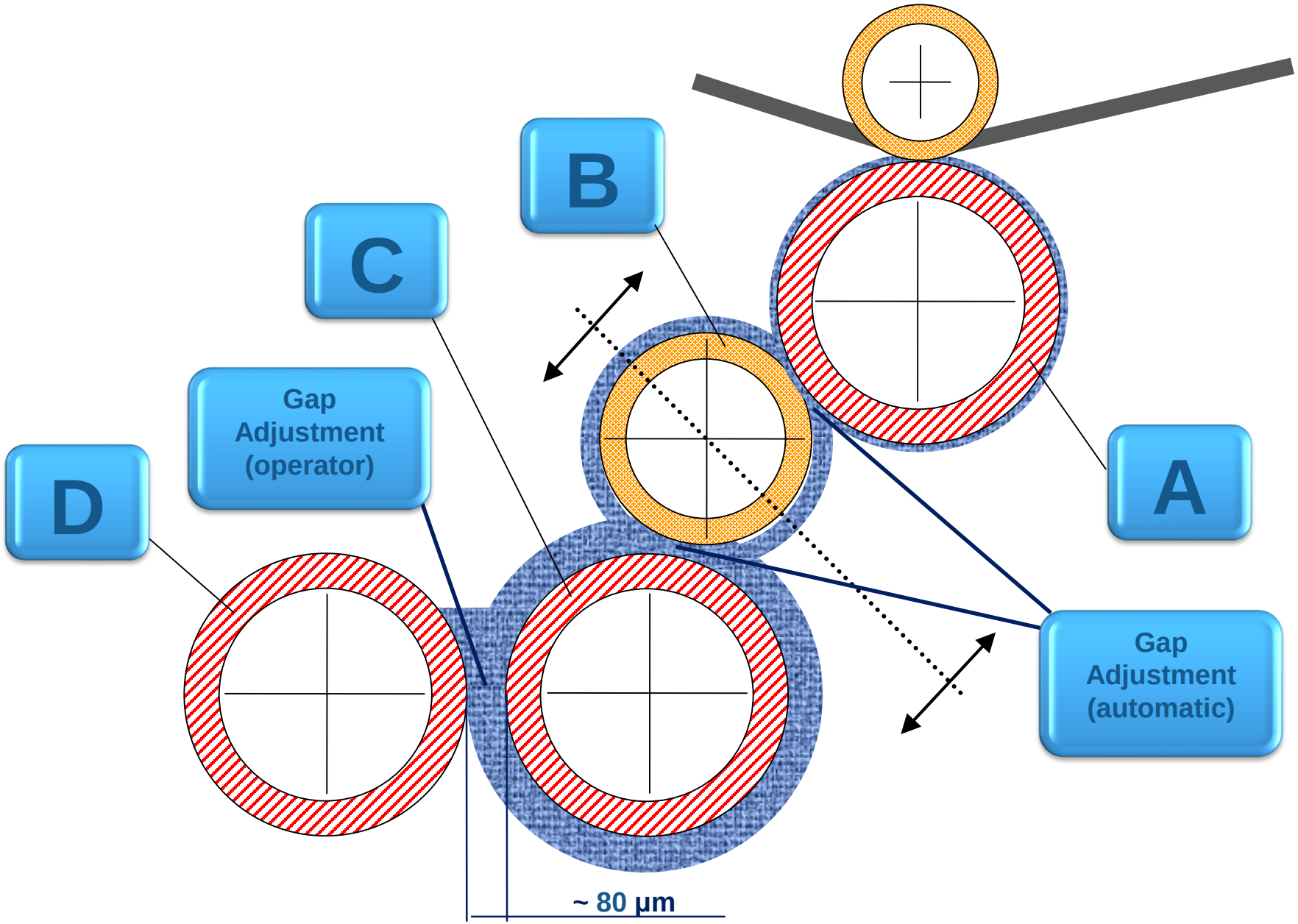
Human hair



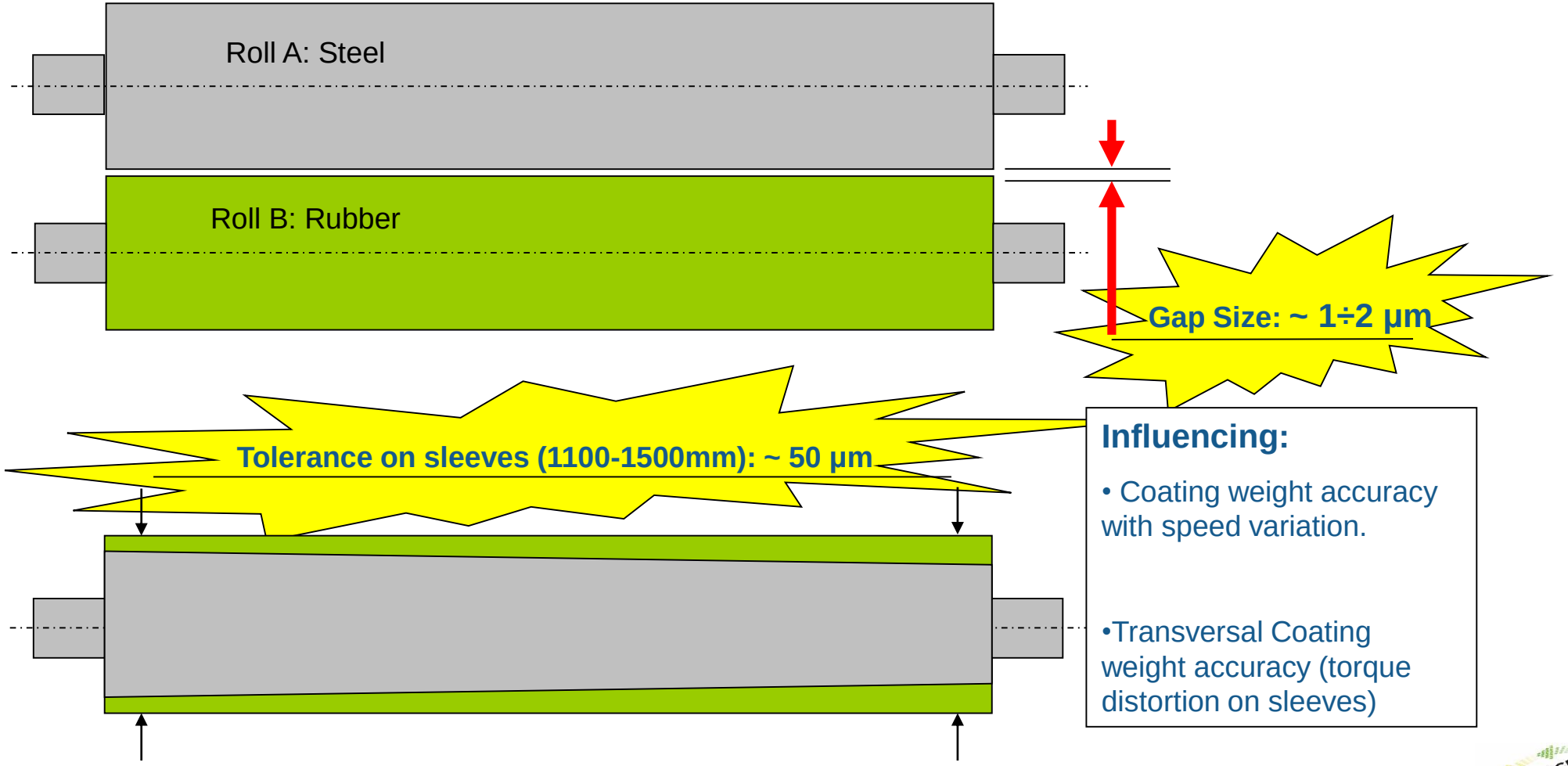
Coated Adhesive layer

The final thickness of the coated adhesive layer is about 80 times thinner than a human hair.

Coating Weight Control Technology



Solid Rubber Roller



Influencing:

- Coating weight accuracy with speed variation.
- Transversal Coating weight accuracy (torque distortion on sleeves)

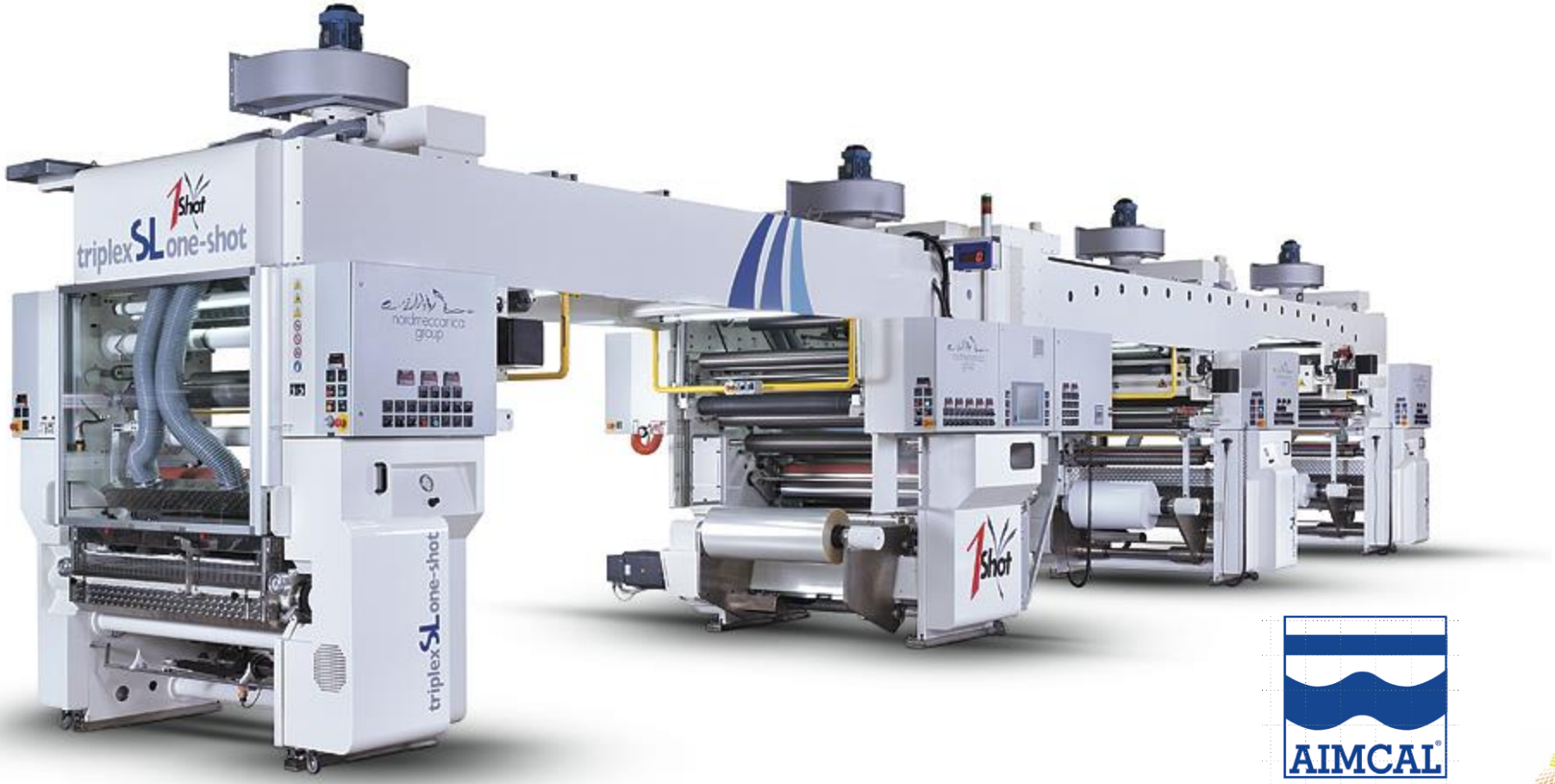
ACCURACY ON COATING WEIGHT

Nordmeccanica performance guaranteed in coating weight variation:
+/- 5% length wise
+/- 2% across.

Advantages:

Lower adhesive consumption.
Improved optics.
No delamination risks.

triplex 1Shot three

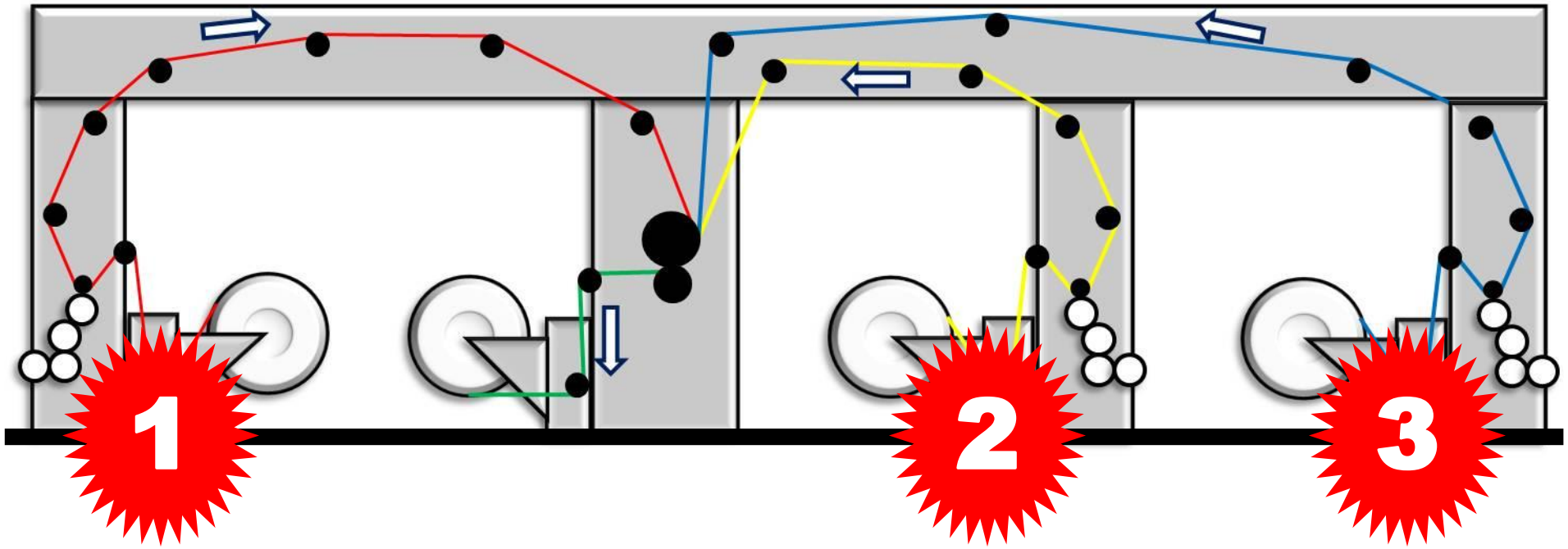


AIMCAL

2010
Innovation Award

IMAGE TO PRINT

triplex 1Shot three



PATENT 2015

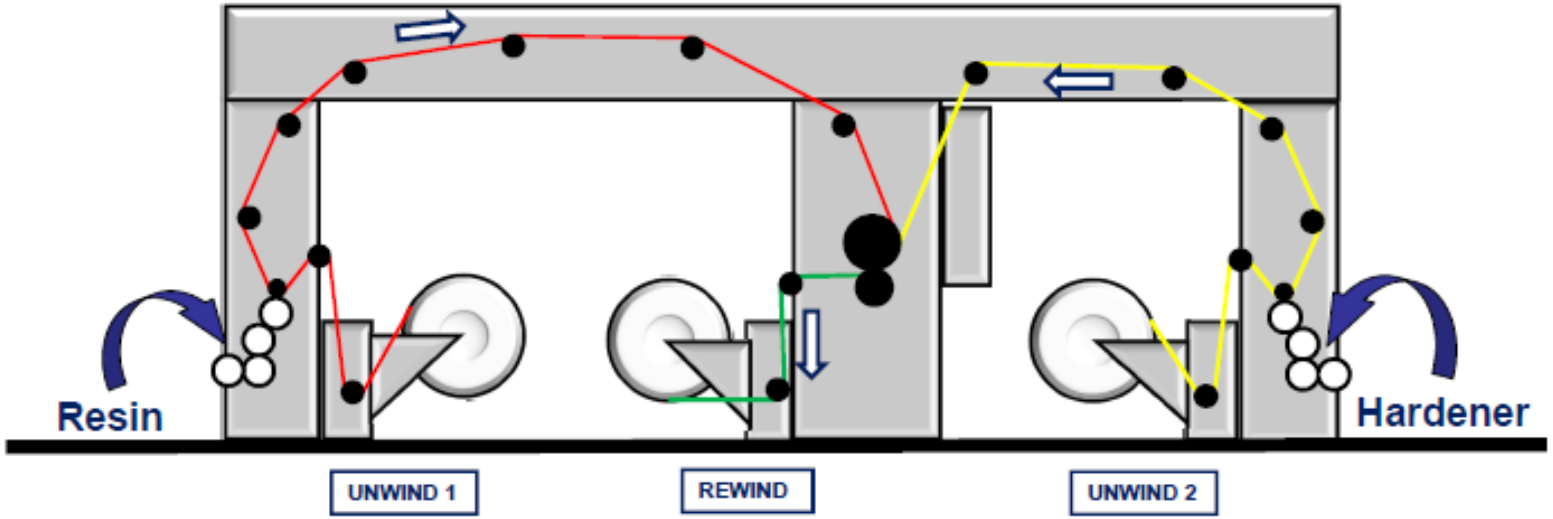
First model shown in Drupa 2016

DOW | WORLDWIDE PARTNER

IMAGE TO PRINT

DUPLEX ONE SHOT

DuplexSL 1Shot



And where with dedicated technology we achieved

Compounds	Performance with Duplex SL One Shot™ and Symbiex™ (m/min).
BOPP printed // BoPP	400÷450
PET printed // PE	400÷450
OPA printed // PE	400÷450
BOPP printed // Met PP	350÷450
(PET printed/foil)// PE	400÷450
BOPP printed // Met PET	300÷350
Paper // MET films	400÷450
PET printed (unprinted)// Foil	200÷250
PET printed (unprinted) // Met PET	250÷300
OPA // PE-EVOH	250÷300

…is that enough?

Being a company committed in a specific field of application becoming a market leader, we should work together with our partners to develop tailor made solutions…

Combi Horizontal Tandem Photovoltaic

Foil Coater for High Speed Cold Form applications

High Performances coater for PSA applications

High Performances
Bi-Laquering Coater

HOPING IN A GREEN FUTURE FOR THE NEXT GENERATIONS, AS NORDMECCANICA WE

THANK YOU FOR YOUR ATTENTION.

janoschka

nordmeccanica group

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IMAGE TO PRINT