



NONWOVEN
GET INTO BABY CARE
WITH THE RIGHT
CONVERTING TECHNOLOGY

FOR YEARS TO COME

ANDRITZ

ENGINEERED SUCCESS



TECHNOLOGY SOLUTION PROVIDER

As the market becomes more and more demanding, ANDRITZ Diatec offers the latest technology solutions with a wide range of customization options to help customers find the right machine configuration to save time and money.



FULL MACHINE PORTFOLIO RANGE

ANDRITZ Diatec is able to supply turnkey converting machines for the production of a comprehensive range of sanitary products:

- Baby diapers
- Baby pants
- Adult diapers
- Adult pants
- Underpads
- Light Inco products
- Shaped pads
- Sanitary napkins
- Panty shields
- Food pads
- Lamination



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A reliable partner



ANDRITZ Diatec designs and manufactures a wide range of machines and technology solutions for the production of baby diapers, baby pants, adult incontinence products, sanitary napkins, panty shields and underpads. Always at the forefront of innovation, ANDRITZ Diatec has broadened its production horizons by delivering new lines for food pads, lamination, medical products, disposable gloves, headrests, surgical drapes and spool winding equipment. ANDRITZ Diatec is now part of the ANDRITZ Nonwoven business.

KEY TO SUCCESS

The key factor in our success is the relationship that we create and maintain with our customers from the design of the machine to the “nurturing” phase during machine installation intended to offer specialized support for a smooth start-up in the customer’s plant.

DISTINCTIVE TRAIT

Important added-value from ANDRITZ Diatec is the capability to respond quickly and promptly to the changing needs of the present-day market, allowing customers to seize opportunities and translate them into concrete projects. We also provide full project management, from planning control to start-up of the line in order to secure a prompt return of investment.

YOUR BENEFITS

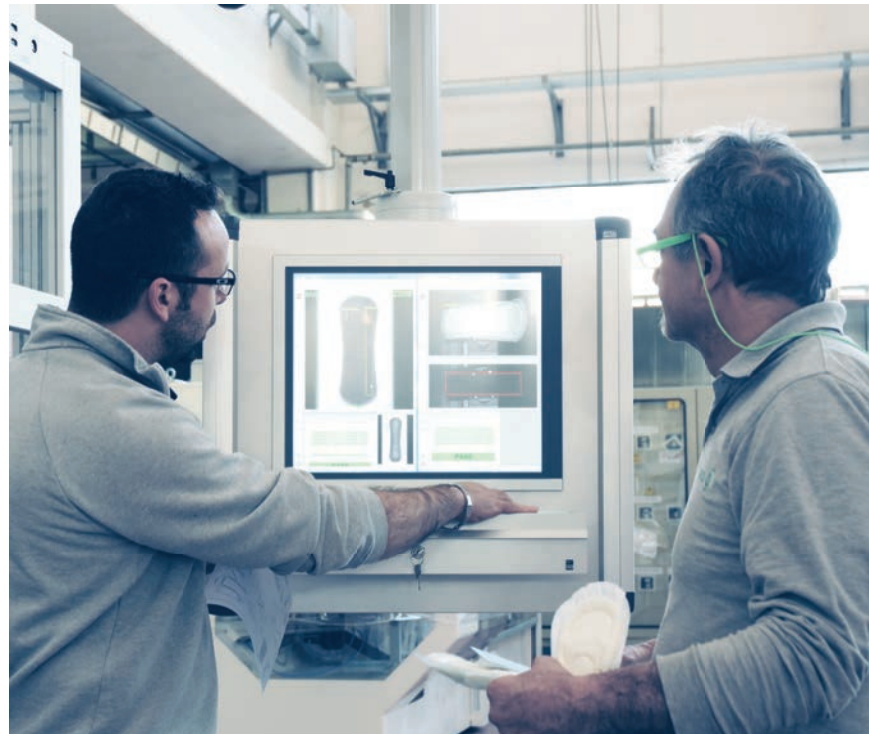
- Customer care
- Customer satisfaction
- Spare parts
- After-sales assistance
- ANDRITZ guarantee

Build your future in hygiene converting

In order to cover all of your final product and production requirements, our machine portfolio ranges from market entry to high capacities, precisely designed to meet your needs. The machines are built with a modular frame that allows customized configuration. Moreover, the compact layout ensures a smooth start-up and easy machine maintenance. Machines and retrofits can be installed easily according to customers' requirements. The full servo-technology simplifies ordinary operations and adaptation of the raw materials to the environmental conditions.

BENEFIT FROM A TRUSTWORTHY PARTNER

ANDRITZ Diatec machines are characterized by the use of high-precision mechanical tooling and high levels of automation. The bulky structure of the core formation provides stability and ensures minimized vibrations, thus making the production environment more pleasant. The production process is easy to monitor and adjust during operations. Our machines achieve high efficiency in terms of OEE and low waste rates. The use of top-notch components ensures long-term reliability of the machines and consistent savings in terms of spare parts and technical intervention.



CONSTRUCTION PHILOSOPHY

All our machines are designed, manufactured and tested entirely in Italy, using EU or US components, in compliance with CE regulations. Depending on customers' needs, ANDRITZ Diatec offers customized solutions according to production volumes, product recipes and all requirements relating to the customer's production plant. We

also ensure that we respect the project timing in order to meet customer's requirements. We are able to offer a full-range of extensions and retrofitting kits to keep our customers' machines state-of-the-art.

MACHINE MANAGEMENT

Our machines are easy to manage. All machine parameters can be

easily set, stored in the memory, recalled and changed according to the needs of the customer. All operations are carried out with the highest efficiency and security levels in order to simplify daily operations on the machine. A fast and easy size change configuration reduces machine downtime and hence increases production output.

YOUR BENEFITS

- Easy machine management
- Fast size change
- Limited number of operators required
- Linear production process
- Optimized raw material consumption
- Reduced energy consumption



Dedicated service

We know how important uptime is for your production efficiency:
We do everything to keep interruptions to a minimum. With remote assistance and a highly responsive service team, we can react to your issues in the shortest time possible.

FAST MACHINE START-UP

Our machines are thoroughly checked before shipment so as to speed up the start-up in the customer's plant and reduce machine downtime.

SPARE PARTS

We guarantee the supply of original spare parts with onsite installation, in accordance with the customer's timing and efficiency demands.

MAINTENANCE

Machine maintenance is made easier by the compact machine

layout, which leaves wide spaces for movement around the machine. Every process is linear and complies with the highest safety levels. Cost and time savings, efficiency and durability are guaranteed by the high quality of engineering and components used.

REMOTE ASSISTANCE

ANDRITZ Diatec is there for you at all times. Remote assistance is critical to guarantee that machine performance is kept high. Our engineers are always at your disposal by helping you identify problems and find remedies

promptly. In this way, operators' maintenance skills are improved and after-sales costs for interventions and machine stoppages are reduced.

AFTER-SALES SERVICE

ANDRITZ Diatec shares trust and growth with customers. This value is mirrored in the wide range of services that we offer.



YOUR BENEFITS

- Spare parts installation
- Safety inspections
- Preventive inspections for routine maintenance
- Production supervision
- Technical documentation



UPGRADES AND RETROFITS

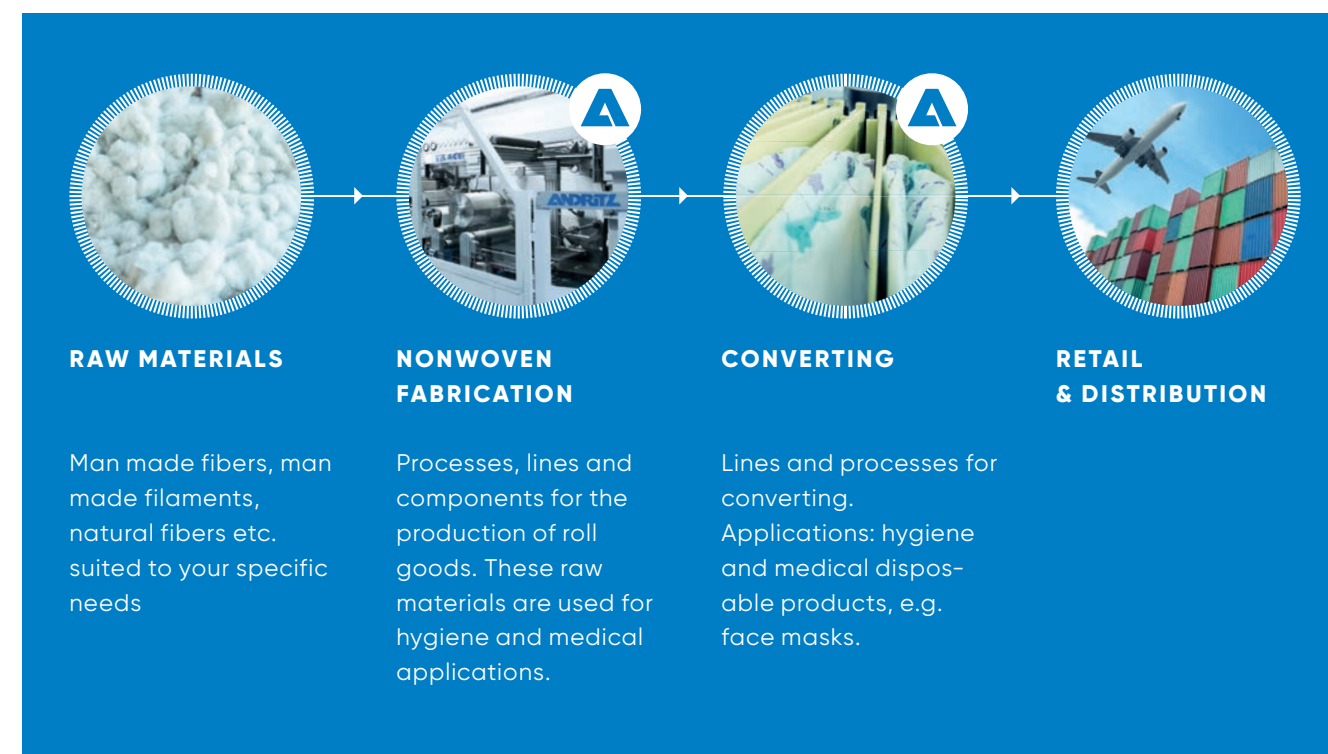
Our machines have a long lifecycle. The modular and compact frame makes refurbishment operations easier. Throughput can be optimized significantly by means of tailored upgrades, which also enable the final product structure to be updated in line with market demands.

SERVICE SUPPORT

- Control equipment and software upgrades
- Analysis of existing machines to upgrade and optimize production
- Training programs for machine operators

Full range in nonwovens production

Let our experience drive your innovation: A remarkable impact on nonwovens technologies: Whether hygiene or medical, automotive or building, household or technical – nonwovens applications are manifold. Their outstanding properties require excellent engineering in an increasingly changing and growing market. You can rely on a competent partner: with a passion for nonwovens technologies and with spot-on solutions perfectly suited to your specific needs.



NONWOVENS UNLIMITED

ANDRITZ is a machinery supplier to offer nonwoven processes for roll goods production and also converting lines. In this way, ANDRITZ covers a great part of nonwovens value chain. Its expertise in the treatment of raw materials and market know-how of

possible end uses bring unique added-value for the nonwovens industry. Hygiene is a part of the DNA at ANDRITZ and thanks to the spunbond, spunjet, air-through bonding and spunlace pilot lines, all materials used in the converting lines can be tested and approved by the market in advance.

Develop your hygiene products with our experts

Continuous research and development targeting your needs: In an ever more demanding market, get the most out of your investment with the support of our test equipment and highly skilled engineers. You can benefit from more than three decades of experience and expertise.

RESEARCH AND DEVELOPMENT

Being dedicated to high quality and innovative production technologies propels us to seek ideal solutions. Let our combined forces achieve maximum results.

Highly skilled staff provide unique know-how drawn from our installed base and continuous R&D.

SPUNLACE TECHNICAL CENTER

Our spunlace pilot line in Montbonnot, France, includes state-of-the-art equipment to produce a wide range of spunlace fabrics. During the trials, the pilot line is able to operate at up to 500 m/min. Tests can be conducted in-line with the TT card or off-line with an unwinder. It is also equipped with a complete water filtration system so that trials can be conducted with all types of fibers. You can test natural or synthetic fibers, short or long fibers, paper fibers, and so on.

SPUNLAID TECHNICAL CENTER

Our spunlaid technical center in Krefeld, Germany, includes a wide range of pilot calenders for different applications and needs, more than 200 engraved rolls and shells, various sleeves, measurement systems and a 3D-microscope. It is well-equipped to handle many

fields of application like embossing for wipes, calibration for melt-blown material, laminating of roofing material or filters, thermo-bonding, perforating of top-sheets, compacting of wetlaid fabrics, comparisons between thermal and ultrasonic laminating, or textile finishing.

WETLAID TECHNICAL CENTER

Our wetlaid pilot line in Krefeld, Germany includes state-of-the-art equipment to produce a wide range of wetlaid fabrics for the automotive, aerospace, agriculture, construction, medical, wipes and hygiene industries, as well as the household goods sector. Arrangement of the components on a rail system ensure highest flexibility when extensions or modifications are needed.

AIR-THROUGH-BONDING TECHNICAL CENTER

CETI, the European Center for Innovative Textiles, is a research center for new textile applications and is located in Lille, France. ANDRITZ has been supplying the institute with the latest nonwoven technologies, including air-through bonding. The air-through bonding pilot line provides CETI and its customers with a R&D platform

for both flat and Omega ovens for prototyping the fast growing trends in hygiene applications.

YOUR BENEFITS

- Process expert support
- Equipment containing the latest technology
- Integrated laboratory to test nonwoven fabrics
- Simulation tool



Innovative solutions for hygiene products

ANDRITZ offers you customized solutions: For the production of hygiene products, we can deliver tailor-made processes. Take advantage of the vast expertise that ANDRITZ has to offer in a wide range of hygiene nonwovens technologies, such as web forming and finishing (air-through bonding, spunlace, spunlaid, spunjet, wetlace) and converting (baby diapers, feminine hygiene, adult incontinence).

COMPLETE AIR-THROUGH BONDING (ATB) LINES

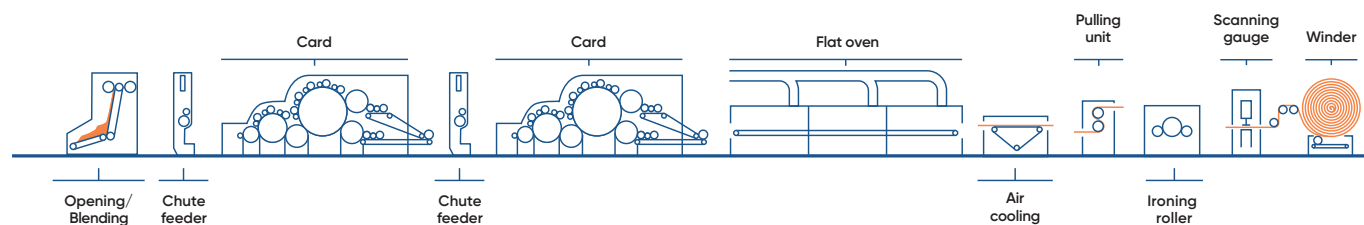
The ANDRITZ air-through bonding lines deliver all nonwovens fabric characteristics for hygiene end uses, such as top-sheets and acquisition distribution layers, and back sheets. The well-known ANDRITZ carding machines are the key to success in achieving perfect web uniformity and comfort. With the ANDRITZ air-through bonding line, you can benefit from high production capacity and high-performance fabrics from 16 to 80 gsm made from bi-component fibers produced at high speeds of up to 250 m/min.

COMPLETE SPUNLACE LINES

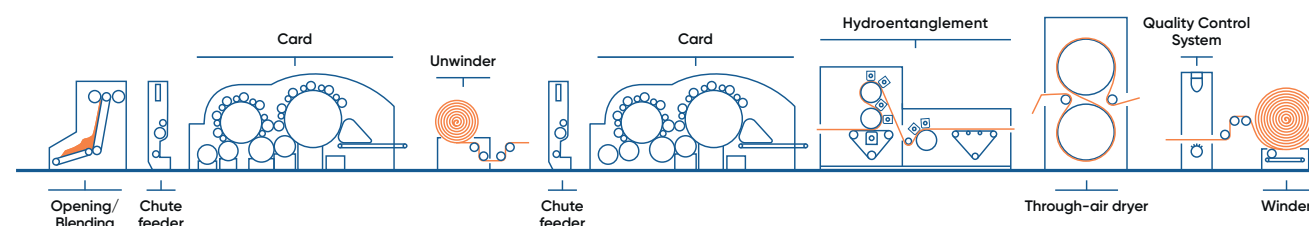
ANDRITZ is an active player in most of the world's spunlace production. In order to meet the market demands, ANDRITZ offers you a wide range of complete spunlace lines combining performance, efficiency and profitability. The premium line layout combines very high capacity of up to 25,000 t/a with low energy consumption and is able to produce all types of spunlace roll goods. Spunlace fabrics are made from all types of raw materials – natural or synthetic. Softness, drape, comfort, comfortability, high strength, and the fact that they contain no chemicals are the major characteristics that make spunlace nonwovens unique.

YOUR BENEFITS

- ANDRITZ expertise in hygiene market
- Perfect web uniformity
- Versatility of fibers
- Technical centers: spunlace in Montbonnot, France; spunbond/calendering/wetlaid in Krefeld, Germany and air-through bonding at CETI, France
- Expertise in testing and converting



ANDRITZ air-through bonding line for hygiene end-uses, 16-80 gsm



ANDRITZ spunlace line for medical and wipes end-uses, 30-100 gsm

COMPLETE SPUNBOND FINISHING LINES

ANDRITZ spunbond solutions: You benefit from the highest capability, reproducibility, reliability, and efficiency. Find the best solution, perfectly suited to your needs, for thermobonding and finishing processes like embossing, compacting, lamination, or perforation. Besides calendering technologies, you'll find solutions for your complete finishing process with neXline finish. This encompasses calender, spunjet technology, finishing solutions, and dryer – turnkey solutions from just one source.

PRECISELY WHAT YOU NEED

If you need a complete system solution, a single unit, a rebuild, an automation system, or comprehensive life-cycle services: We can meet your demands and deliver precise technologies, from bonding to finishing, for your product.

THE EXPERTS IN CALENDERING

Let your products benefit from over 60 years of experience and comprehensive project management. With more than 600 nonwovens calenders in operation worldwide and installations in all high-end nonwovens lines, you are ensured top performance from ANDRITZ.

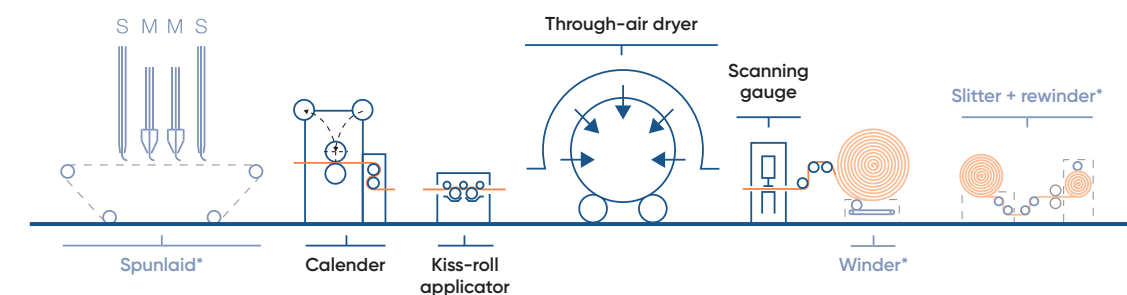
Benefit from reliable, flexible and proven technologies based on more than 750 innovations with worldwide patents along with innovative processes and engineering depth.

Depending on your final product and its parameters, such as strength, softness, or air permeability, our nonwoven calender portfolio ranges from low and medium capacities (aXcess range) to high capacities (eXcelle range), precisely designed to meet your needs.

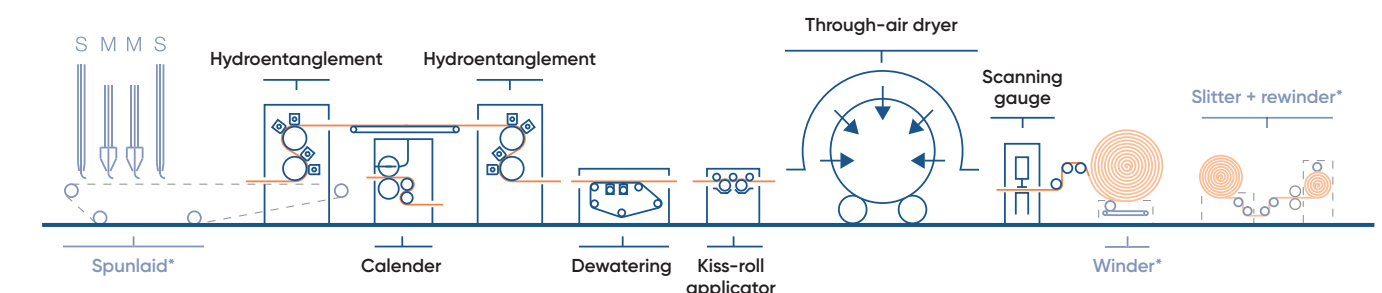
SPUNJET – A BONDING SOLUTION FOR ENDLESS FILAMENTS

The patented nonwovens process called Spunjet is the in-line hydroentanglement of continuous filaments, creating a new generation of spunlaid nonwovens. Spunjet offers you the best properties ever achieved in 80% of existing and in new nonwovens applications.

By combining two first-class bonding technologies, you can benefit from the typical strength of spunlaid as well as the softness of spunlace. The spunjet process offers you additional softness, bulkiness, drape, and tensile strength while maintaining the isotropic MD / CD ratios in your fabric properties.



ANDRITZ spunlaid finishing line for hygiene and medical end-uses, 8-80 gsm



ANDRITZ spunjet line for the production of new generation spunlaid nonwovens, 20-80 gsm

* Technology provided by cooperation partners

Foresee digitally with Metris

Industrial Internet of Things (IoT) Industry 4.0, digitalization – current buzzwords that industries use when seeking to improve their performance and equip themselves for the future of industry.



ANDRITZ DIGITAL SOLUTIONS

As a technology leader with extensive and long-term experience in supplying industrial measurement, control, and optimization solutions for various industries, ANDRITZ is combining process and equipment expertise with the latest enhancements in the digital era. The result of this powerful combination is Metris: a portfolio of ANDRITZ Digital Solutions.

METRIS OPP

One of the flagship capabilities of the Metris assortment is its ability to optimize industrial processes with Metris OPP. It has been developed over the past decade within the pulp and paper sector and has recently been introduced to the nonwovens industry. It combines powerful analytical and data mining software with the knowledge of the world's top process experts to deliver a smart service initiative for customers.



A CONSTANTLY GROWING PORTFOLIO

The depth and effectiveness of the Metris portfolio continues to improve thanks to ongoing R&D, collaboration with key customers and institutions, and venture activities. Portfolio options all rely on the three strategic focus areas of the Metris brand: Industrial IoT



technologies, Smart Service concepts, and Venture activities. The main technological advancements integrated into individual Metris products are derived from big data analytics, smart sensor technologies, and augmented reality solutions. The Metris UX platform providing full support throughout the entire lifecycle of a



plant is the most recent of our IoT developments. With Metris solutions, customers foresee digitally due to the continuously improved portfolio and its performance – and to ANDRITZ providing tailored and fully integrated digital solutions from a single source.



Metris – ANDRITZ Digital Solutions

Benefits

- IIoT solutions across business segments
- Combined know-how from ten years' experience with Metris OPP
- Using the latest smart sensor technologies
- Big data analysis with tried-and-tested models for deviation analysis
- Providing information locally with augmented reality
- Extensive solution and process engineering knowledge
- Cyber security solution to safeguard data on the network

Baby diaper converting machines

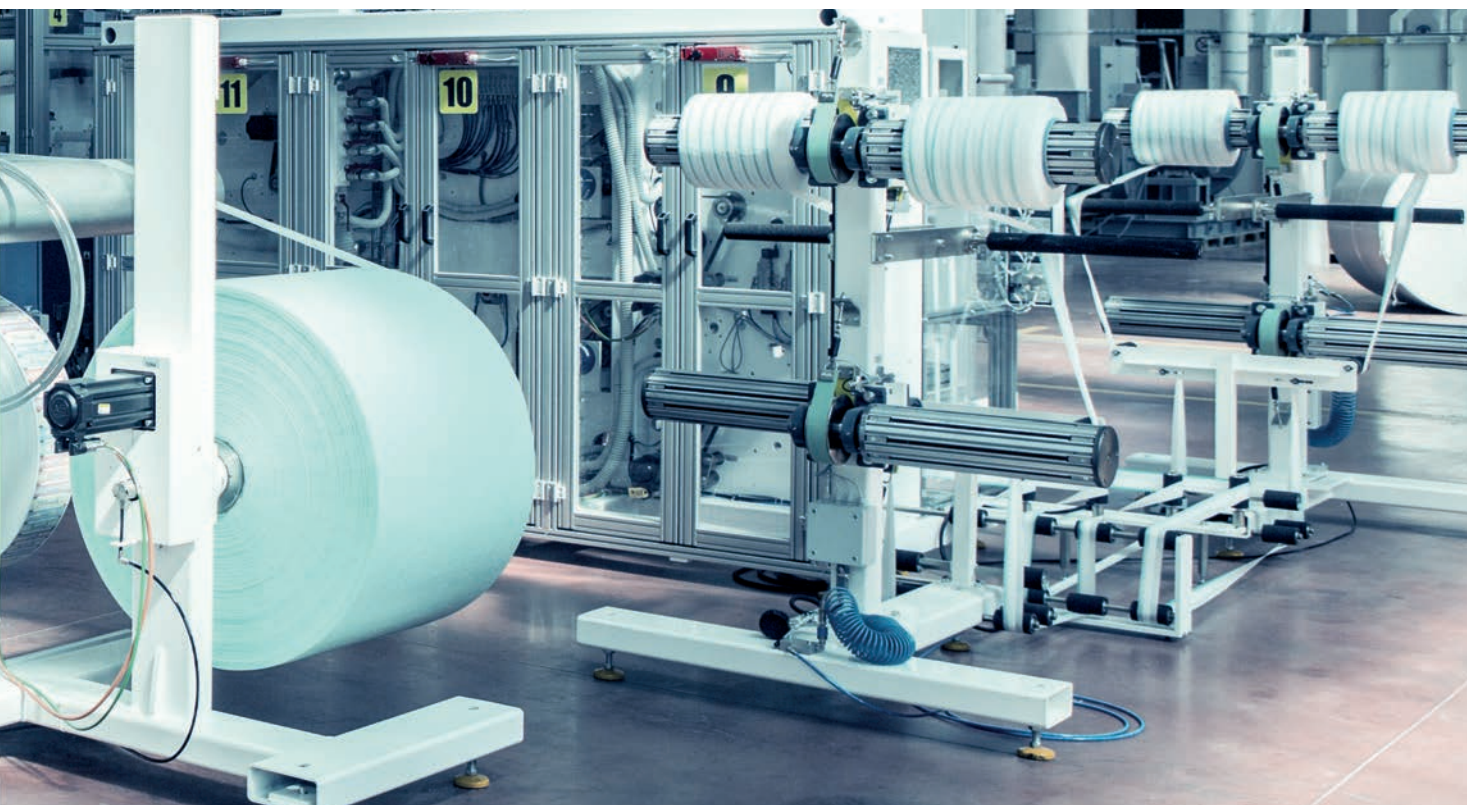
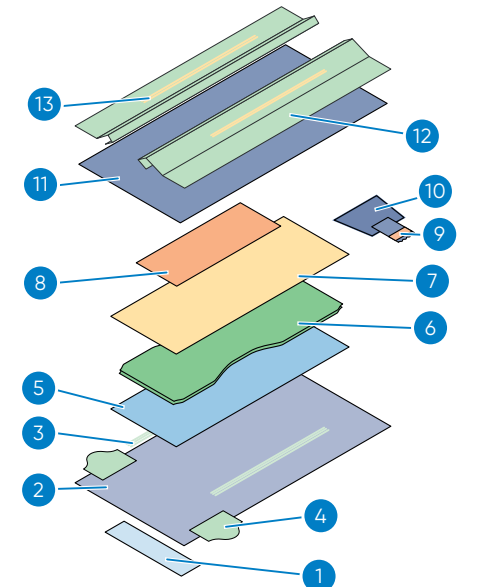
Baby care solutions fitting in with market needs: As a result of its unique experience in the baby care industry, ANDRITZ Diatec offers turnkey and comprehensive solutions to cover the needs of all producers around the world with its D-TECH baby diaper machines. Each machine platform can be customized according to customer requirements. Our machine portfolio is able to cover the whole range of production speeds: low, medium and high. Our flexibility in providing the best possible solution makes us the ideal partner for producers all around the world.



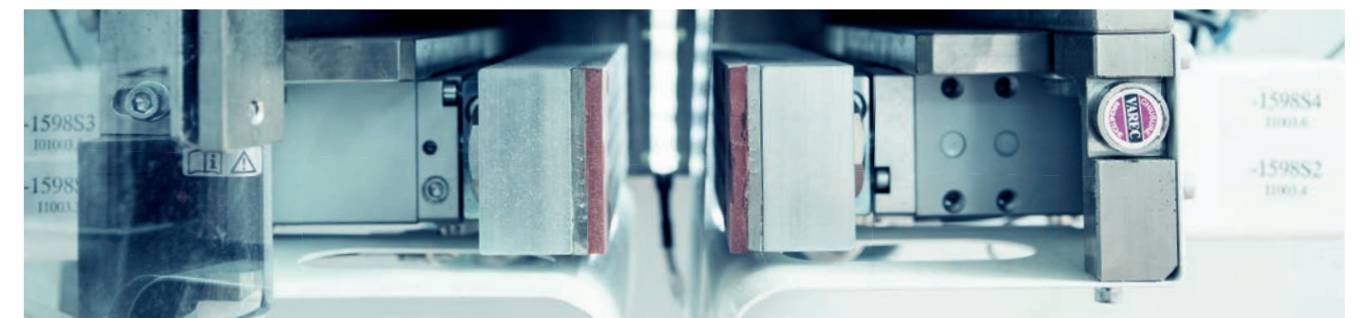
Open baby diaper

PRODUCT COMPOSITION

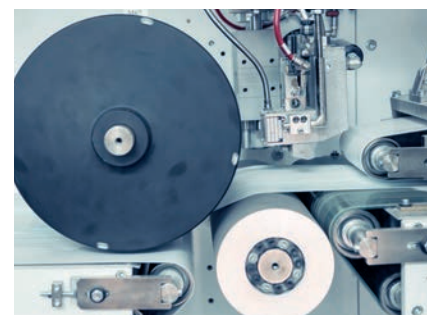
1. T/T loop
2. TXT backsheet
3. Leg elastic
4. Front ears
5. Lower tissue
6. Core fluff + SAP
7. Upper tissue
8. Acquisition layer
9. Hook tape
10. Back ears
11. Topsheet center
12. NW leg cuffs
13. Elastic cuffs



D-TECH baby diaper line



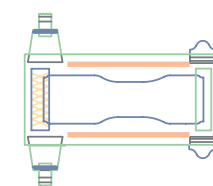
Automatic splice for raw materials



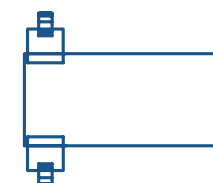
Preparation for folding process



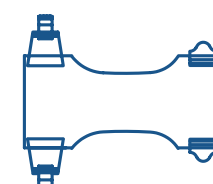
Stacker for final product



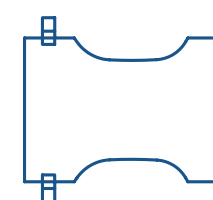
Zero waste baby diaper with shaped back and front ears



Baby diaper with rectangular back ears



Low waste baby diaper with shaped back and front ears



Traditional baby diaper with leg shaping

PRODUCT FEATURES

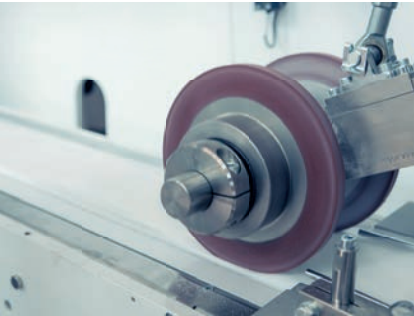
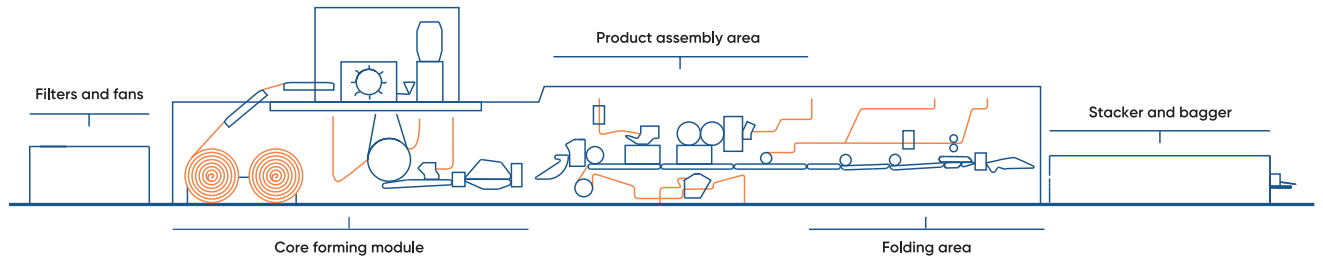
- Different sizes and customizable shapes
- Thin, comfortable, highly elasticized products
- Sinusoidal zero waste front ear; back ears available in six different styles (zero or low waste, shaped or rectangular, symmetrical or asymmetrical)
- Back ears created with an elastic material with side tapes applied inline
- Back ears folded onto the nonwoven topsheet
- Leg cuffs provided as standard and created offline, with glue, ultrasonic or thermosealing
- Stacking and packaging phases made easier by longitudinal folding, bifolding system, rotary blades and final press



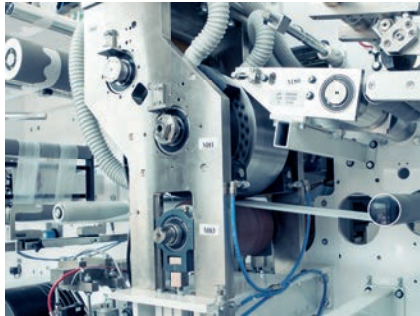
90° offline unwinder

MACHINE SPECIFICATIONS

| | |
|-----------------------------------|---|
| Linear speed | Up to 450 m/min |
| Production speed | Up to 1,000 pcs/min |
| Uptime efficiency | 85% |
| Waste | 1-3% |
| Product dimensions | W: 250-400 mm L: 360-600 mm |
| Electric power supply | 220/480 Vac, 50/60 Hz 3 phases + N + PE (24 Vdc auxiliary) |
| Consumed/installed electric power | 330-600 kW |
| Compressed air supply/consumption | 6 bar/2,500 NI/min |
| Overall dimensions (LxWxH) | 25,500 x 9,700 x 6,200 mm |
| Total weight | 95-105 tons |
| Required crew | 2 persons (1 operator + 1 auxiliary) |
| Safety standard | CE |



Closure for wrapped core



Cut and place for AQL



Front ear preparation



YOUR BENEFITS

- State-of-the-art technology
- Fully customized solutions
- Process flexibility
- Fast size change
- Full lifecycle service and support
- Full project management

Third-generation channel technology

In baby diaper machines, components can be freely combined and configured for the specific product required.

CORE FORMING MODULE

- Cellulose pulp stand
- S.A.P. dosing system
- Compact disc mill (or hammer mill) with double inlet
- Drum former, 3D or flat, continuous or discrete
- Core processor
- Take-away drum
- Pad wrapping system (single or double layer, C-folding or flat)
- Core cutter

PRODUCT ASSEMBLY AREA

- Backsheet unwinder with online lamination and registering control
- Leg elastic unwinder
- Acquisition layer unwinder with cut and slip unit
- Elastic waistband unwinder with disc applicator
- Frontal tape unwinder with inline lamination and registering control

- Topsheet (nonwoven and leg cuffs) unwinder
- Cuff elastic unwinder
- Leg cuff creation system (thermosealing, glue or ultrasonic)
- Front ear application module
- Back ear application module with reduced trim or zero-trim
- Three-roll press/pulling unit

FOLDING AND FINAL CUTTING AREA

- Longitudinal folder
- End-sealing system (ultrasonic)
- Final cutting unit
- Turning device
- Final longitudinal folder
- Reject system

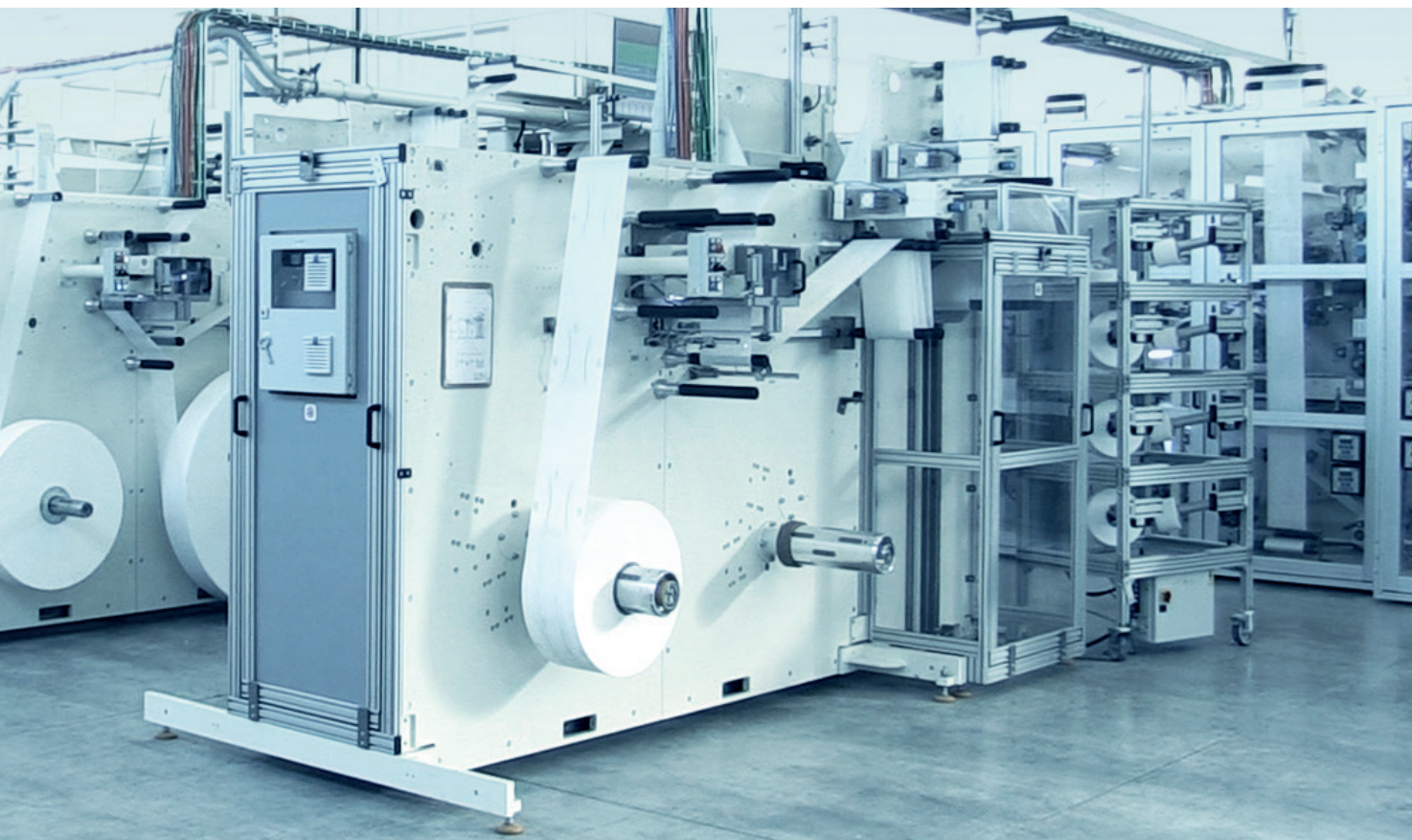
- Full servo-motion system
- Web guiding system
- Hot melt system
- Manuals, drawings and software

OPTIONAL EQUIPMENT

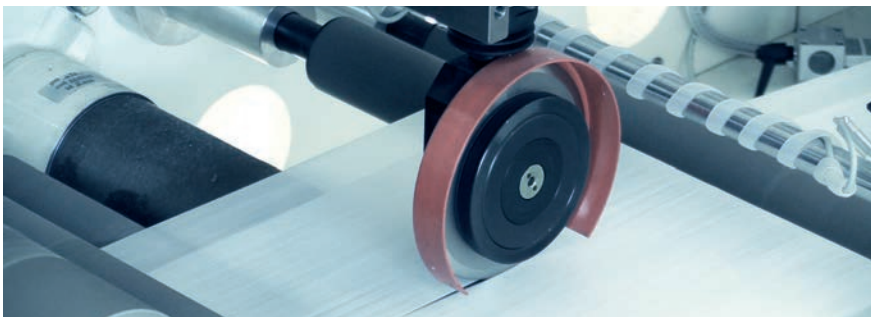
- Second drum former with pad repitch and deposition
- Core channels
- Rotary filter with second stage
- Additional size change kits
- Horizontal stacker
- Manual exit for stacker
- Single packaging system
- Packaging machine
- Cartoning machine
- Soundproof cabin
- Quality system LS with line scan camera
- Ultrasonic sealing
- Wetness indicator
- Metal detector
- Lotion application system
- Sanyprint kit for flexographic printing on backsheet
- Glue vision system
- Material handling units

Baby pants converting machines

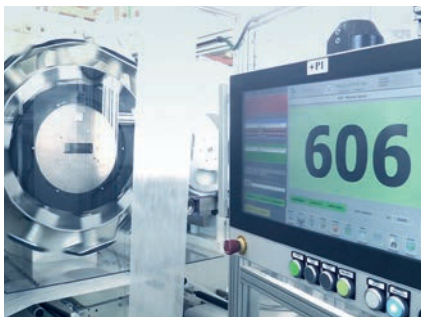
Baby care solutions trust a global supplier: With its unique experience in the baby care industry, ANDRITZ Diatec is able to offer tailor-made machines and technology solutions for the production of baby pants combining performance, efficiency and profitability. Our baby pants machine portfolio is able to cover the whole range of production speeds: low, medium and high.



D-TECH baby pants



Slitting for waistband



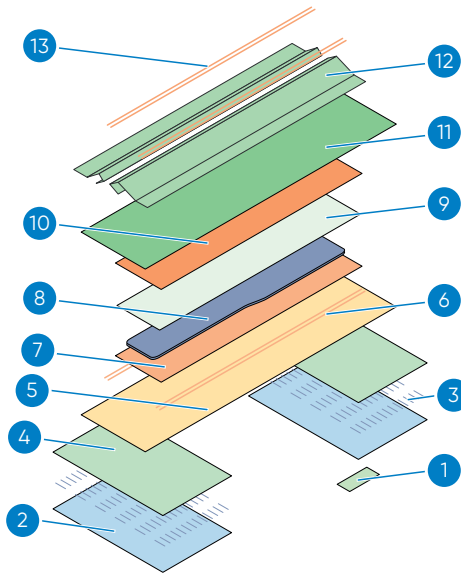
Rotator for final product and operator panel



Baby pants

PRODUCT COMPOSITION

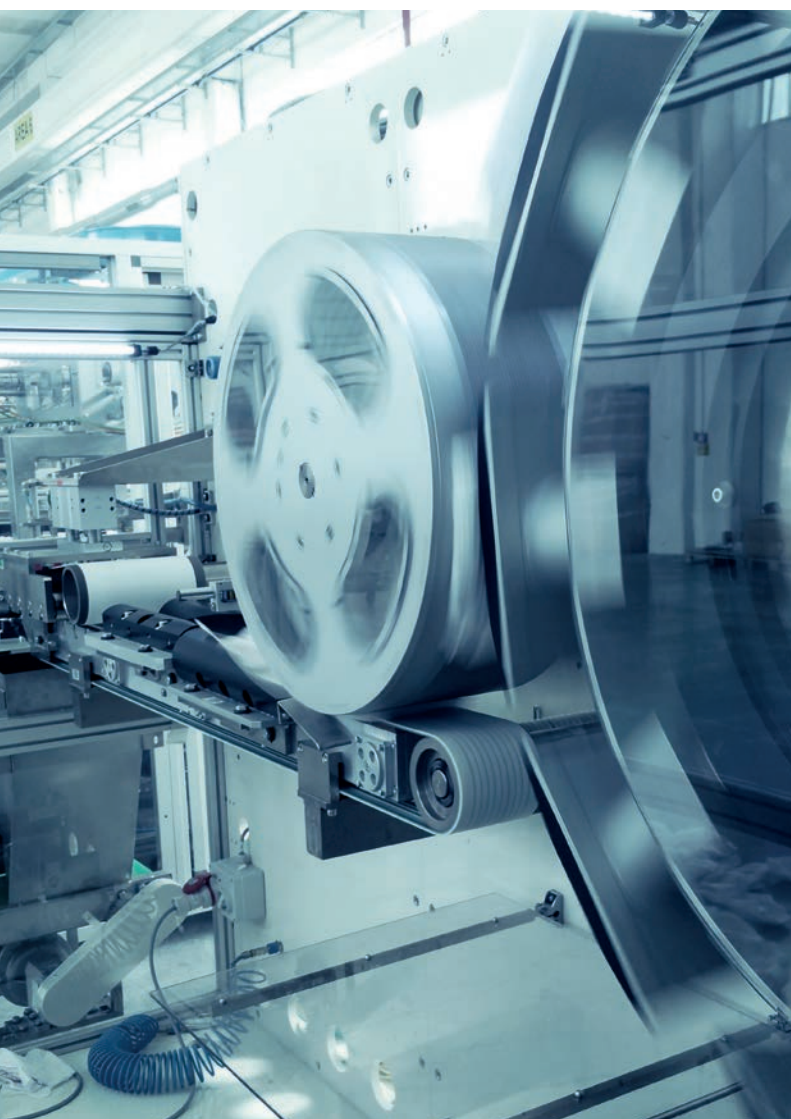
1. Disposable tape
2. Lower external NW
3. Waist elastic
4. Upper internal NW
5. PE backsheet
6. Leg elastic
7. Lower tissue
8. Core fluff + SAP
9. Uppertissue
10. Acquisition layer
11. Topsheet center
12. NW leg cuffs
13. Elastic cuffs



Closure system for core wrapping

PRODUCT FEATURES

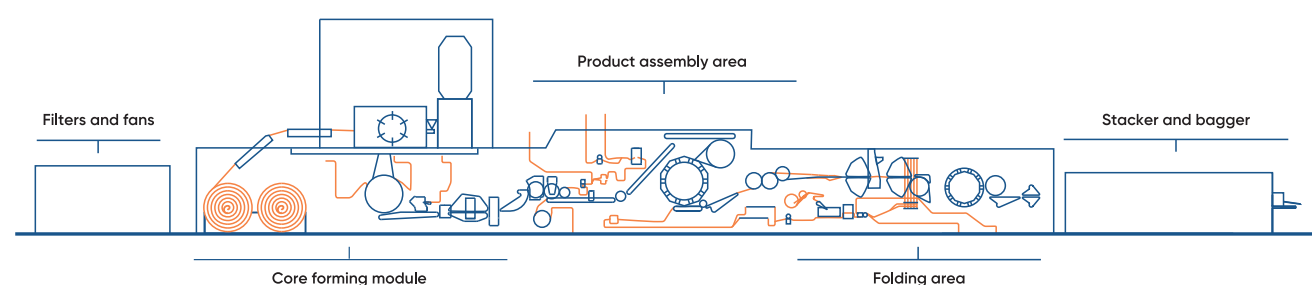
- Elastic waistband
- Topsheet
- Skin care lotion
- Absorbent core
- Acquisition layer
- Elastic for cuffs
- Leg elastic
- Cloth-like or breathable PE backsheet
- Wetness indicator
- Disposable tape



Final turning unit

MACHINE SPECIFICATIONS

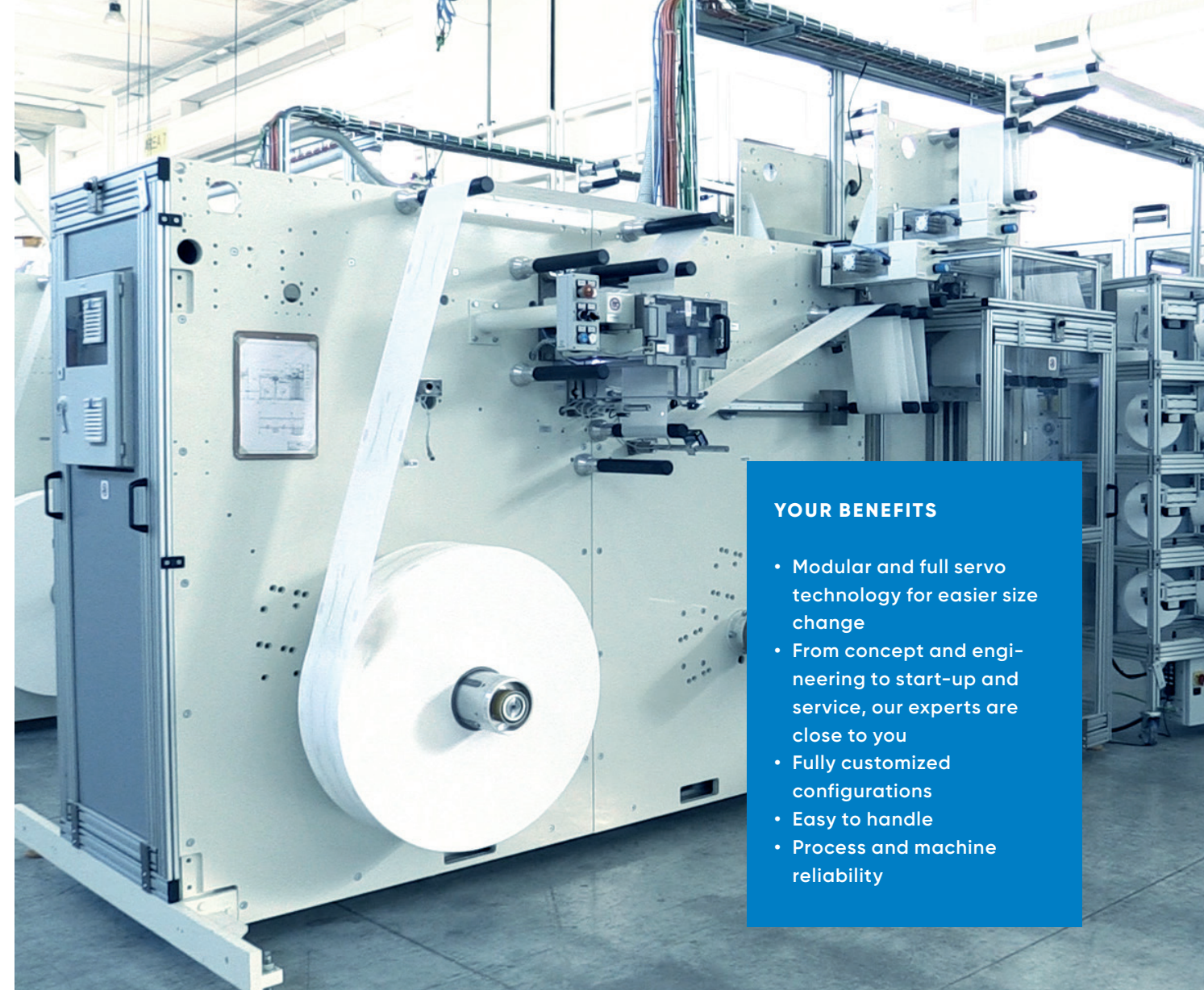
| | |
|-----------------------------------|---|
| Linear speed | Up to 320 m/min |
| Production speed | Up to 800 pcs/min |
| Uptime efficiency | 85% |
| Waste | 1-3% |
| Product dimensions | Maximum width: 420 mm Maximum length: 275 mm |
| Electric power supply | 220/480 Vac, 50/60 Hz 3 phases + N + PE (24 Vdc auxiliary) |
| Consumed/installed electric power | 400-650 kW |
| Compressed air supply/consumption | 6 bar/4,000 NI/min |
| Overall dimensions (LxWxH) | 30,000 x 11,000 x 6,200 mm |
| Total weight | 100-110 tons |
| Required crew | 2 persons (1 operator + 1 auxiliary) |
| Safety standard | CE |



90° insert deposition



Single yarn control unwinding system



D-TECH baby pants

YOUR BENEFITS

- Modular and full servo technology for easier size change
- From concept and engineering to start-up and service, our experts are close to you
- Fully customized configurations
- Easy to handle
- Process and machine reliability

In baby pants machines, components can be freely combined and configured for the specific product required.

CORE FORMING MODULE

- Cellulose pulp stand
- S.A.P. dosing system
- Compact disc mill (or hammer mill) with double inlet
- Drum former, 3D or flat, discrete with pad wrapping
- Core pressing unit
- Core cutter

PRODUCT ASSEMBLY AREA

- Backsheet unwinder
- Acquisition layer with cutting and slip unit
- Elastic unwinders for waistband with tension control
- Waistband creator system

- Elastic cutter
- Topsheet (nonwoven and leg cuffs) unwinder
- Cuff elastic unwinders
- Leg cuff creation system (thermosealing, glue or ultrasonics)
- Insert cutting, rotator and repitch system
- Cross-folder
- Disposable tape applicator
- Offline unwinder with automatic splice

FOLDING AND FINAL CUT AREA

- Final press unit
- Ultrasonic side seam

- Final cutting unit
- Reject system
- Bi-folding unit
- Full servo-motion system
- Hot melt system
- Manuals, drawings and software

OPTIONAL EQUIPMENT

- Backsheet registered
- Core channels
- Leg cuff thermobonding closure
- Wetness indicator
- Lotion application system
- Stacker and bagger
- Ultrasonic elastic bonding



GET THE MOST OUT OF YOUR INVESTMENT

At ANDRITZ Nonwoven, we know that your business depends on satisfied customers and efficient processes. That's why we support you in every aspect of your nonwoven production. Take advantage of technology that lets you produce consistent quality for decades to come. Profit from the highly efficient use of energy and raw materials that our production provides. You can rely on our responsive service teams, who will protect your investment and optimize your processes. Experience how innovative approaches and digital services give you more control than ever before. With ANDRITZ, the leading supplier for the nonwovens market, you get the most out of your investment.

ITALY

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