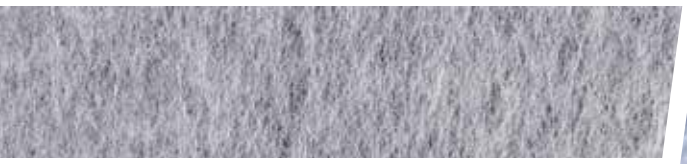
BETA

Italian Finishing Technology

Impregnation
Calendering
Thermosetting
Pre-Treatment



Who we are

BETA Machinery inherited the legacy and continues the tradition of the historical Officina Meccanica Beta Spa in the field of finishing machinery for textile fabrics, technical textiles, and nonwovens.

Established in 1959 in Busto Arsizio, Italy, BETA distinguished itself in the design and production of high quality finishing machinery, in particular squeezing padders, dyeing padders, and high pressure calenders. In more than 60 years of activity, over 2.000 machines and 10.000 rolls have been built and sold all around the world.

BETA Padders and Calenders are equipped with the Beta-Roll®, an exclusive patented system that assures the uniform distribution of both working pressure and temperature along the width of the rolls.

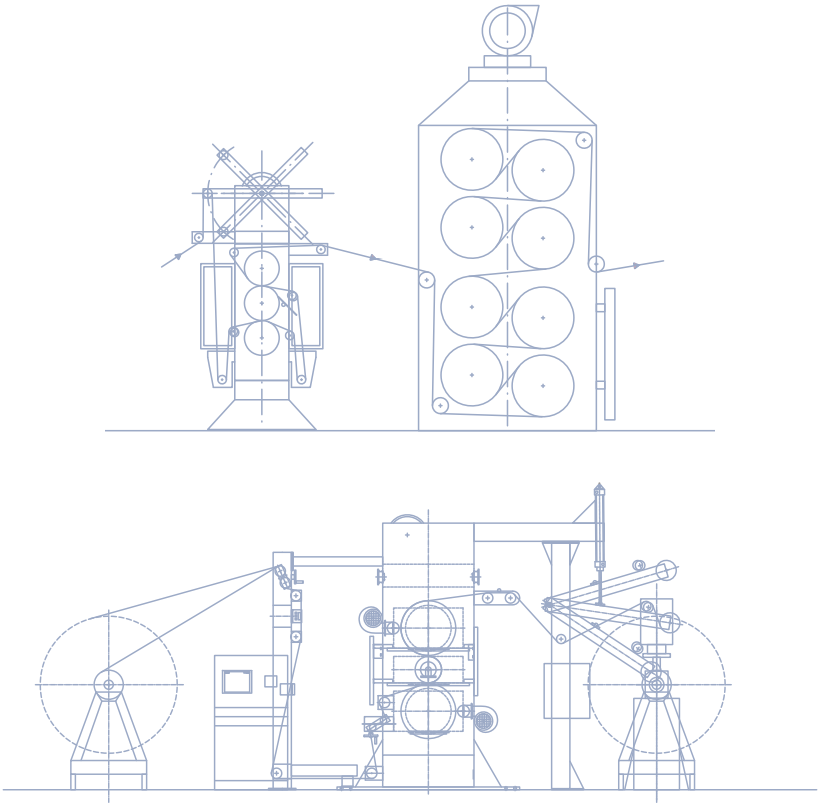
BETA machines are designed using 3D and FEA software solutions and are built with high quality raw materials and primary brands components. Our machines are recognized worldwide for their top quality, sturdy construction, long life, and high flexibility. Particular emphasis is devoted to the design of the safety systems, in accordance with the strictest regulations.

In 2021, with the objective of producing a machine that could respect the most recent requests from the market, we came up with the most impressive, powerful, precise, and biggest Padder ever: the BETA Mammoth Padder, with a width of 7.000mm.

Since 2010 BETA is part of the Comerio Ercole Group, with a turnover of 120+M€. Within the Group we share the same innovative spirit, dedication, technological solutions, and safety procedures.

Since 1959

Designed and Made in Italy



Finishing Machinery for:

Nonwovens
Technical Textiles
Fabrics

Impregnation / Dyeing
Calendering
Thermosetting
Pre-Treatment

Impregnation

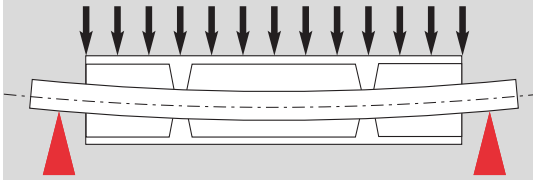
Padder: Impregnation, Squeezing, Dyeing

- Nonwovens
- Technical Textiles
- Fabrics

All BETA padders are equipped with the Beta-Roll®, our exclusive patented system for equipressure.

The design of our Padders allows great accessibility for maintenance, cleaning, roll disassembling, and threading.

Beta-Roll® for Padder

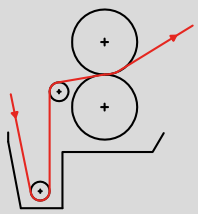


MAX Pressure	MAX Roll Width	MAX Speed
120 N/mm	7.0 m	300 m/min

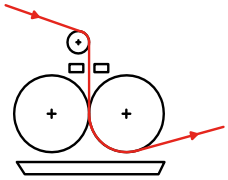
- No roll deflection
- Pick-up (residual water percentage): 38%
  (depending on rubber type, speed, pressure, web...)
- OPTIONAL: stainless steel frame

Layouts

2-ROLL

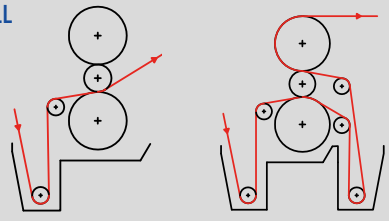


- Dyeing
- Simple impregnation



Foam Padder

3-ROLL



- High squeezing
- Pre-treatment for digital printing

IMPREGNATION

PADDER

3-roll Differentiated Equipressure Padder

It's a unique machine from BETA, the bestselling Padder since the 60's.

Two sets of pistons guarantee two different squeezing pressures in the two nips, independently selectable from zero to the Max pressure of the machine.

The Differentiated Padder is like two 2-roll Padders in the same machine.

The two troughs allow a double impregnation with two different chemicals, usually for the impregnation on wet.

The excess chemicals after each squeeze are collected in the respective troughs for reuse.

BETA Exclusive

BENEFITS OF BETA PADDERS

BETA machines are designed with great attention toward energy saving and sustainability. Our Padders deliver a very high pressure, which translates into higher production speed and productivity; a consistent reduction in water consumption; a huge energy saving in the drying of the squeezed fabric/nonwoven web; and a dramatic cut in the operational costs of the production line.

Impregnation

Mammoth Equipressure Padder

- Nonwovens
- Technical Textiles
- Fabrics

MAMMOTH

Impregnation & Squeezing Equipressure PADDER up to 7.000mm

The Beta "Mammoth" Padder boasts a roll width of 7.000mm and is used to impregnate and squeeze large geotextile nonwoven webs and fabrics.

It's equipped with the newly designed exclusive Beta-Roll®, a patented system that assures the uniform distribution of the working pressure on the rolls' width.

The impregnation of the web takes place in a stainless-steel trough, with any sort of dye or chemical (antibacterial, antiviral, antimicrobial, antistatic, waterproof, flame retardant, UV resistant...).

The only Padder this size on the market

BETA-ROLL®

All BETA machines are equipped with the Beta-Roll®, an exclusive BETA patented system. This patent underwent further modifications and improvements in order to allow its use for Calenders' rolls too.

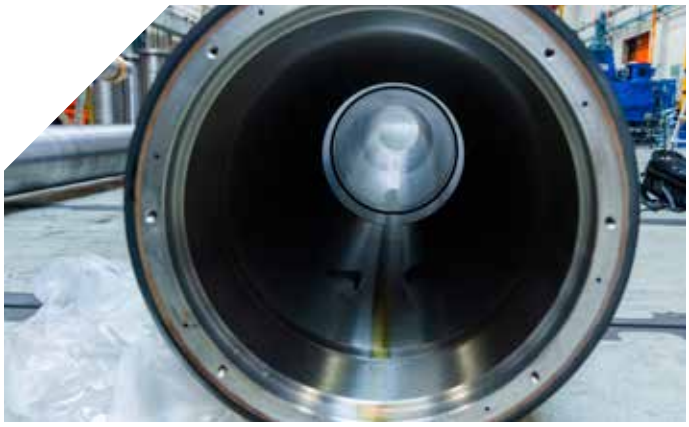
The Beta-Roll® is now produced in two main versions, one for Padders and one for Calenders.

The Beta-Roll® is parallel ground and, with the new HS-HighSpeed version, can reach unprecedented working pressures and speed. For the Padder, it delivers a pressure of 120 N/mm and a speed of 300 m/min, while for Calenders it tops 300 N/mm, with no deflection along the whole roll's surface and assuring the equipressure at any working pressure, from zero to the maximum load.

With the introduction of the BETA Mammoth Padder, a new 7.000mm Beta-Roll® had to be designed, with new internal components and technological solutions to allow a uniform pressure distribution at any working pressure.

Beta-Roll®/HS
High Speed

New internal design for increased working pressure and speed, ideal for demanding performances



Calendering

High Pressure Calender

- Nonwovens
- Technical Textiles
- Fabrics

MAX Pressure	MAX Roll Width	MAX Temp
300 N/mm	4.0 m	220°C

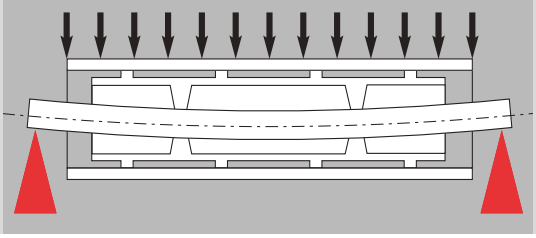
All BETA calenders for hot and cold treatment are equipped with the Beta-Roll®, our exclusive patented system for equipressure.

BETA High Pressure Calenders are ideal in the treatment of heavy felts or fabrics, when high squeeze and high temperature are needed.

The design of our Calenders allows great accessibility for maintenance, cleaning, roll disassembling, and threading.

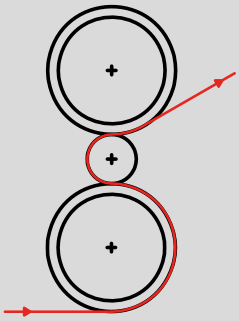
- No roll deflection at any working pressure
- Compact and light frame
- Temperature deviation on the roll table ± 1 °C
- OPTIONAL: micrometric rolls' spacer devices

Beta-Roll® for Calender



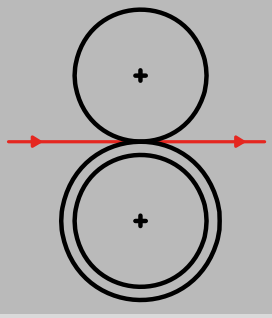
LAYOUTS

Nylon/Steel/Nylon

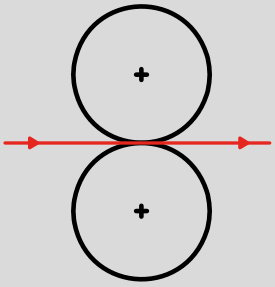


Ideal for high squeezing, due to the reduced contact area between the small diameter central roll and the large diameter Beta-Rolls®

Steel / Nylon



Steel / Steel

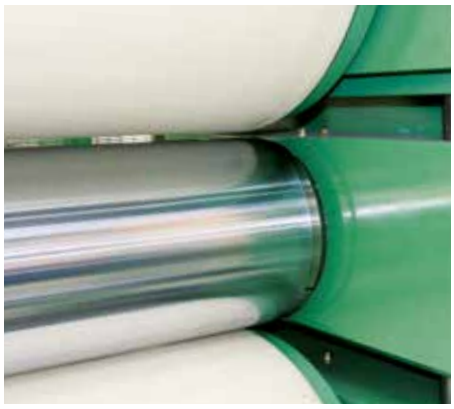


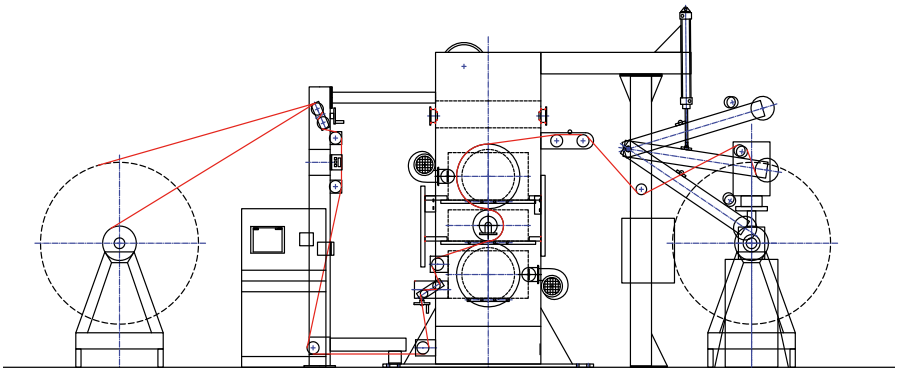
BETA strongly suggest the adoption of a Nylon/Steel/Nylon layout, with a small diameter stainless-steel heated central roll. Compared to a 2-roll Calender, the advantages of this layout are the following:

- **Increased working pressure**, due to the reduced contact area between the rolls, ideal for high-squeezing
- **Quick heating phase** before starting the production
- **Quick cooling phase** before starting a new production
- **Huge savings in energy** for the Calender's heating, due to the little quantity of oil contained in the heated roll

Heating is by diathermic oil circulation up to 220°C.

The pneumatic pressure system assures a damping effect and protects the rolls from accidental damage.





Thermosetting

Calender

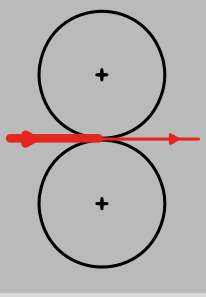
- Nonwovens
- Technical Textiles
- Fabrics

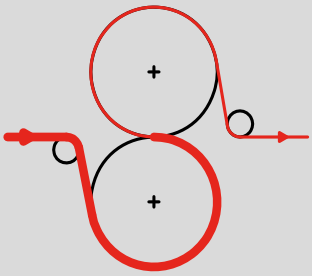
MAX Roll Width	MAX Speed	MAX Pressure	MAX Temp
7.0 m	600 m/min	20 t	220°C

All BETA thermosetting calenders for hot and cold treatments are equipped with standard rolls with an internal gap for diathermic oil or cooling liquid circulation.

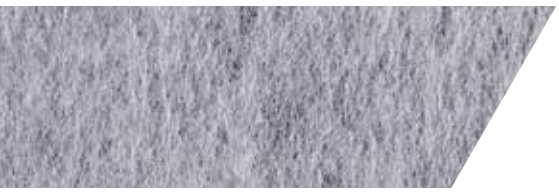
- Rolls designed for limited deflection
- Temperature deviation on the roll table ± 1 °C
- Automatic proportional pressure regulator
- Chromium-plated steel surface
- OPTIONAL: micrometric thickness regulators
- OPTIONAL: cross-axis, crown surface, hardening

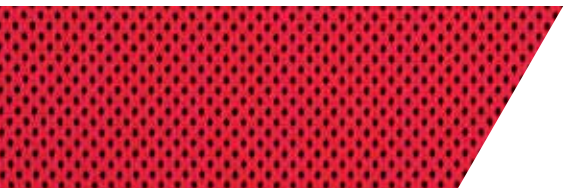
Threading





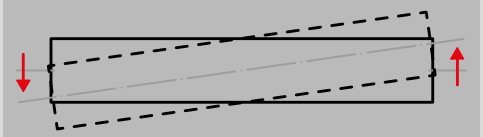
Thermosetting





Rotary joints and special rolls allow the circulation of dia-thermic oil or cooling liquid.

Cross-Axis



The cross-axis system compensates for the roll bending under the pressure load.

It is used to obtain a uniform thickness of the web on the whole roll width.

The micrometric movement of the roll is actuated by means of gear motors.

Pre-Treatment

for Digital Printing

Online / Offline Pretreatment Padder

Impregnation + Squeeze

The high working pressure applied by BETA Padders (120 N/mm) guarantees a higher production speed, thus enhancing productivity. Also, a high working pressure returns a lower Residual Water Percentage that translates in huge energy and money savings during the drying process of the fabric.

Two troughs for impregnation on wet.

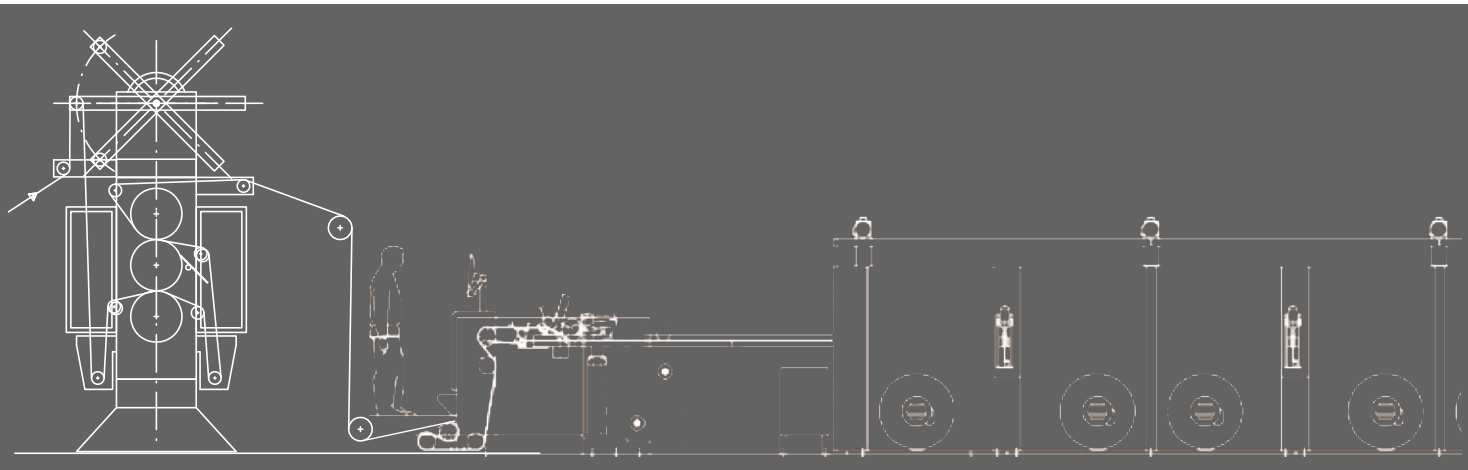
All synchronization options available.

Usable with any drying solution (stenter, oven, dryer).

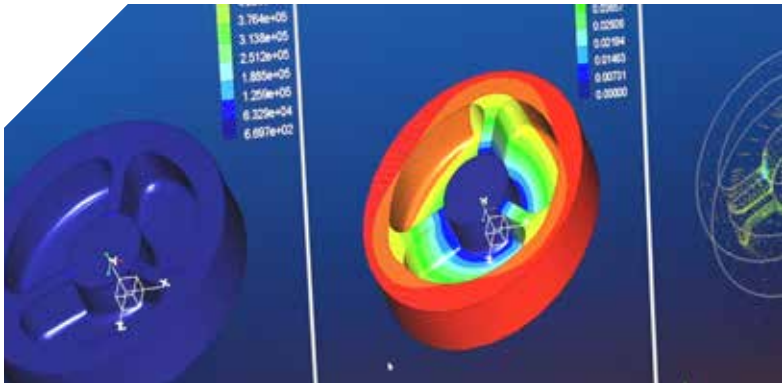
Perfect printing quality: Sharp-edged and flawless absorption of the printing ink

Reduced water consumption: A huge quantity of water is squeezed out and reused

Huge energy saving: Less water in the fabric means less energy used in drying



Quality & Safety



BETA Machinery has created a company trade-mark called "BETA Quality Proof" featuring a wide range of technical traits, product quality, authenticity of spare parts, and ability in Customer Service.

By applying a serial-coded tag and releasing a certificate with this trade-mark for all original BETA spare parts, BETA Machinery certifies important product requirements and a greater transparency in the supply.

BETA machines comply with all European safety standards and include the most updated design principles about machine safety. Three redundant modules are used with the highest available safety level: one for emergencies, one for interlocked safety guards, and one for zero speed detection.

All dangerous zones (main rolls, scroll spreader rollers, transmission, liftable trough, batcher) are properly protected with different systems depending on risk type and access frequency, by means of fixed lids and interlocked sliding guards with electromagnetic door locking or RFID switches.

The control systems that manage the safety-related parts (SRP/CS) of the machines (emergencies and interlocked safety guards) use high-quality and well-tried components, and are classified in Cat.3 with PL d (according to ISO 13849-1).

The control systems and all related safety parts are designed so that a single fault in any of these parts does not lead to the loss of the safety function.

Also, every part of each Beta-Roll® is marked with a micro-percussion marking device, ensuring a complete traceability of the Beta-Roll® and of all of its components.

Contact Us

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