

General
Catalogue



Specific solutions for wet textile finishing

www.tve-escale.com

About us

We are manufacturers of textile machinery specialized in wet finishing. We adapt to the needs of our customers, with cutting-edge products and technology that allow us to achieve exceptional results in pre-treatment and bleaching, washing, and dyeing processes.

We develop continuous, semi-continuous, and discontinuous high-performance processes, applying our own vacuum and submerged suction technology. The commitment to our customers is to develop products that save water, energy, and chemicals.

Thanks to our adaptability, quality, and efficiency, we have customers in over 30 countries around the world. We have over 35 years of experience backing us.



Adaptability:

We customize our products to meet the needs of our customers.



European quality:

We manufacture in Europe using products from the best global suppliers.



Sustainable processes:

We develop specialized processes that save water and energy.



In 1986, life gave me the opportunity to start a personal and professional project in the textile machinery world. This is how Sistemas Industrials Escalé SA was born, focused on providing specific solutions for wet finishing. Thanks to the effort, talent, and enthusiasm of the group of people who started with me, we grew steadily.

Today, the company is being led by the second generation. The experience and knowledge from the past, combined with the transferred values and the innovative culture of the present, commit us to the continuous improvement of our products, aiming to reduce the environmental footprint towards our planet and make TVE ESCALE a leading company in the textile industry.

To all the people who helped create this future, I wish them all the best!

Marcel Farré Subirana

President of TVE ESCALE

TVE ESCALE History



1986

We were born as Sistemas Industrials ESCALE, S.A. to offer wet finishing continuous lines.



1989

We became one of the leading manufacturers of textile machinery for the wet finishing in Spain.



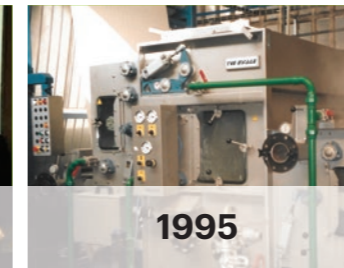
1991

We launched JIGG-TRONIC, the first jigger with electric motors, which made us a benchmark in the market.



1993

We merged with Textile Vacuum Extractor Co, the leading American company in vacuum systems, and became TVE ESCALE.



1995

We launched Shark, a new high-performance washing unit which revolutionized the market.



1996

We consolidated globally with customers on all five continents.



1999

We introduced Smartex, a new washing line.



2000

We implemented the use of 3D design software programs.



2001

We manufactured our first high-temperature Jigger.



2004

We developed new causticizing lines for denim with excellent results.



2011

We created TVE ESCALE Engineering to develop projects tailored to the needs of our clients.



2016

We launched Optimus, a new line for polyester oil removal



2019

We presented Hydra at ITMA Barcelona, with the second generation leading TVE ESCALE.



2022

We introduced the latest developments in semi-continuous washing lines at ITM in Istanbul.



Sustainability

Since our inception, we have been committed to developing products and processes with the primary goal of promoting efficiency and sustainability.

Our mission is to contribute to the creation of an industry that is more environmentally friendly. To achieve this, we apply vacuum and submerged suction technologies, which allow us to achieve proven savings in water, energy, and chemicals.

In the manufacturing of our machinery, we prioritize robust construction using high-quality and durable materials, which extends the lifespan of our products. This not only improves return on investment but also reduces waste. Additionally, the entire manufacturing process is carried out locally, using products from European suppliers.

Machinery 4.0

Our machinery is equipped with 4.0 technology, enabling a significant enhancement in service, customer relationships, and product efficiency. The integration of sensors and monitoring systems ensures real-time data visualization, information gathering, and the proactive alert notifications.



CONNECTIVITY

- Machine monitoring from anywhere in the world.
- Real-time visualization.
- Access from any type of device.



AFTER-SALES SERVICE

- 24/7 customer support.
- Alarm and notification system.
- Preventive maintenance management.



CONTINUOUS IMPROVEMENT

- Collection of all machine data.
- Graphical data visualization.
- Customization for each customer

Continuous installations

We manufacture continuous installations for pre-treatment, bleaching, washing, and dyeing, applying vacuum and submerged suction technologies. The adaptability and versatility of our installations ensure maximum efficiency, performance, and tension control.

The smart design of our installations allows a reduction in the total length of the setup. This reduces space requirements and initial investment while maintaining line productivity.

Reliable construction

- Robust construction throughout.
- Completely enclosed design.
- Easy maintenance.

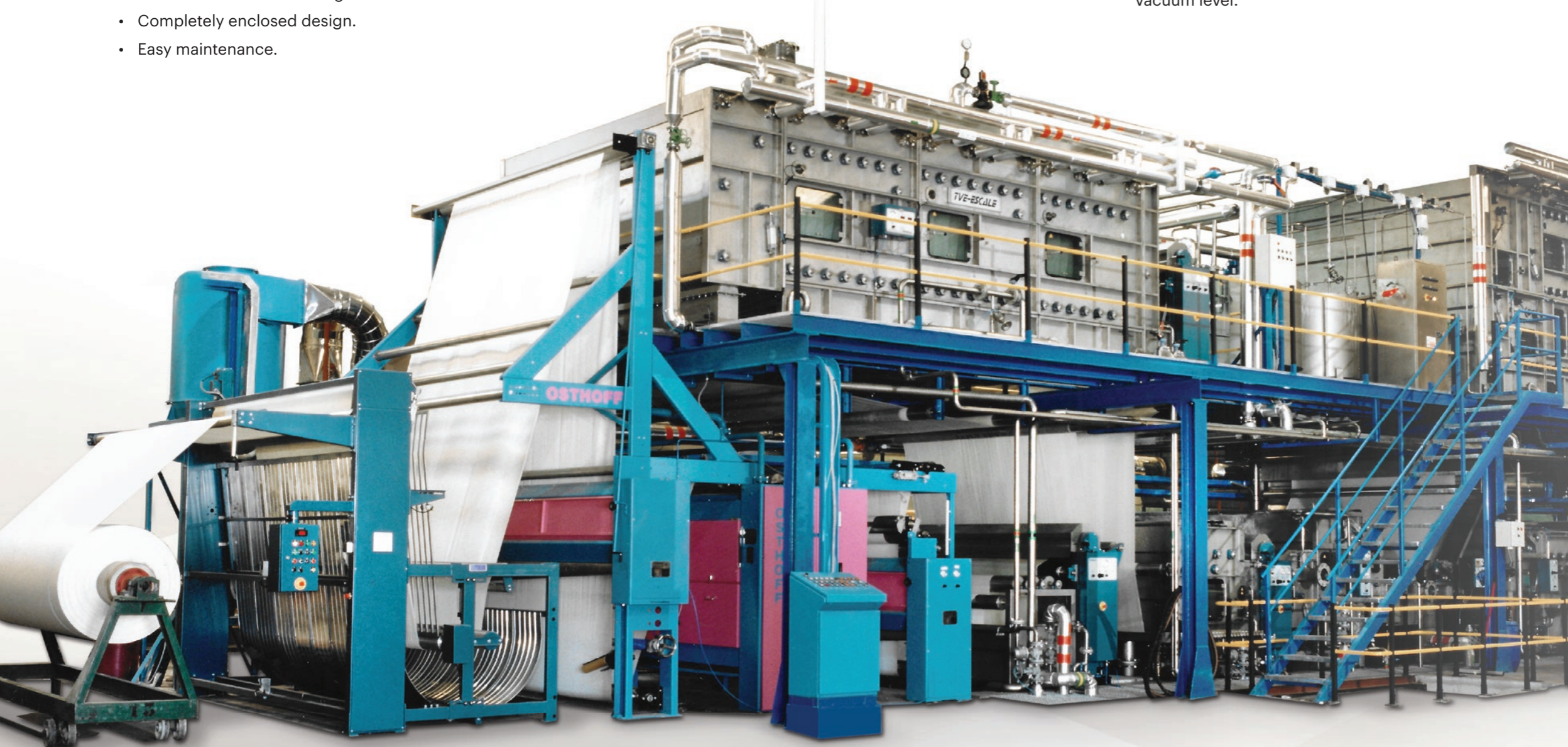
Tailor-made solutions

- Flexibility in design.
- Modular system.
- Various models of washing chambers.

Wet finishing lines tailored to the specific needs of each customer.

Submerged suction and vacuum technology

- Forced bath through the fabric.
- Improved impregnation and washing results.
- Electronically programmable recirculation flow and vacuum level.



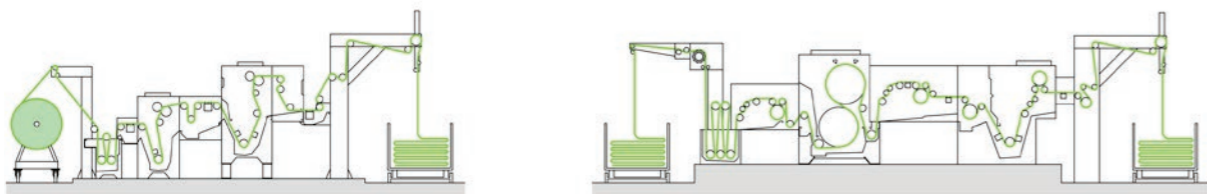
FEATURES

- Fully AISI-316L stainless steel construction.
- Robust roller construction, covered in AISI-316L stainless steel.
- Easy access to all machine parts.
- Fully automated and programmable process control.
- Rollers with individual drive.
- Precise and programmable fabric tension control.
- Automatic water and chemical dosing.
- Counterflow system.
- Temperature control for washing up to 98°C.

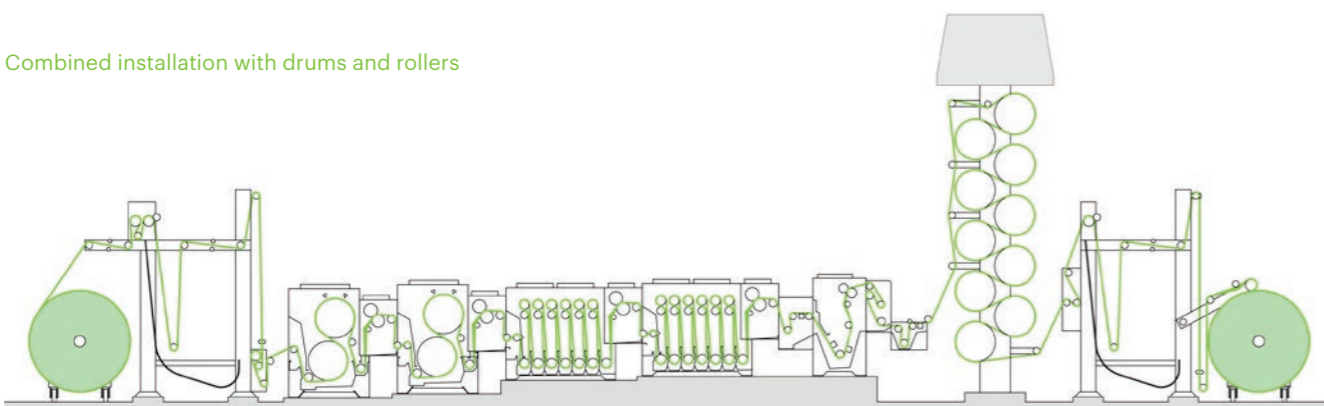
Continuous installations Washing



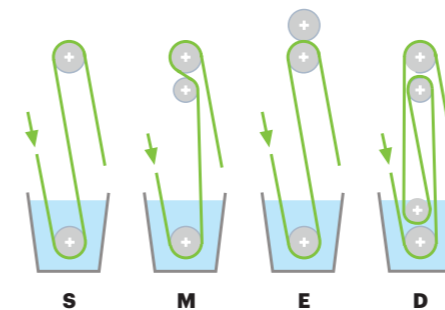
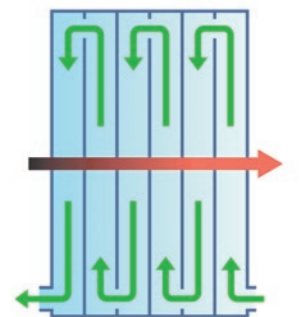
Installations for scouring washing



Combined installation with drums and rollers



Continuous installations / Washing Smartex



Adaptable models

Configurable modules in terms of passage type, number of passages, as well as the drive system.

Zig-Zag

Separate compartments to reduce water contamination.

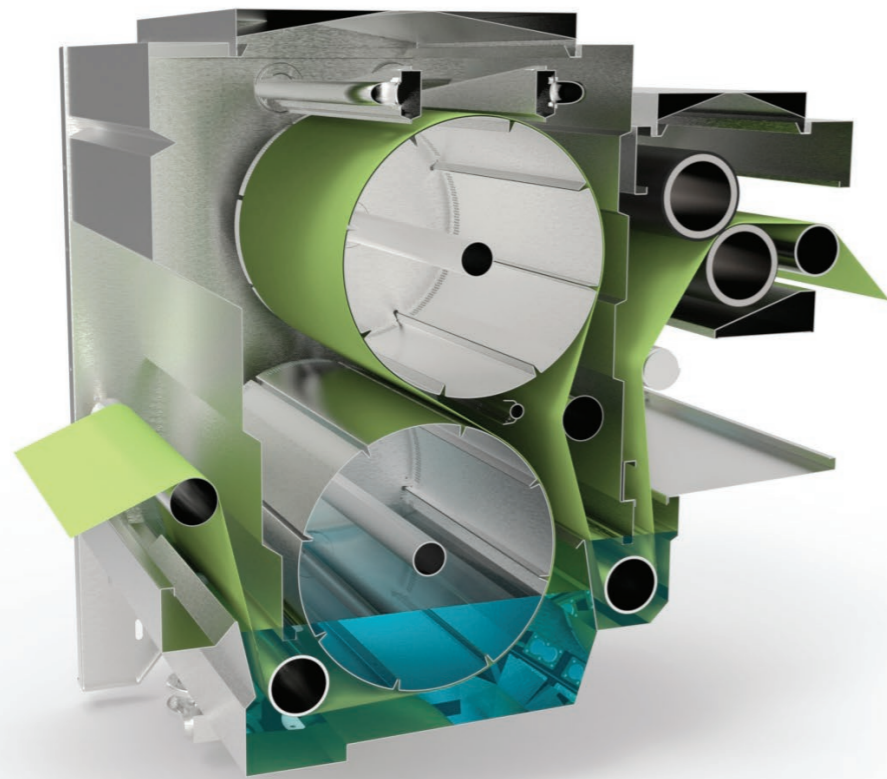
Steamtightness

Fully enclosed washing chamber and paddler for improved washing effectiveness and reduced energy consumption.



Continuous installations / Washing

Rotopress



Fabric guidance

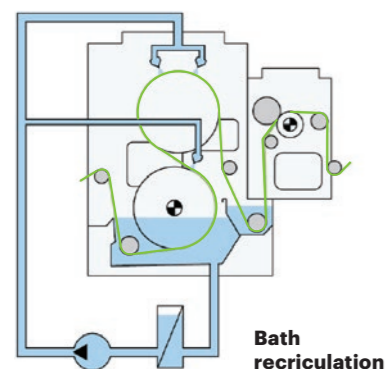
Proper fabric guidance and careful advancement with drum drive enable working with all types of delicate and tension-sensitive fabrics.

Steamtightness

Fully enclosed washing chamber and padder for improved washing effectiveness and reduced energy consumption.

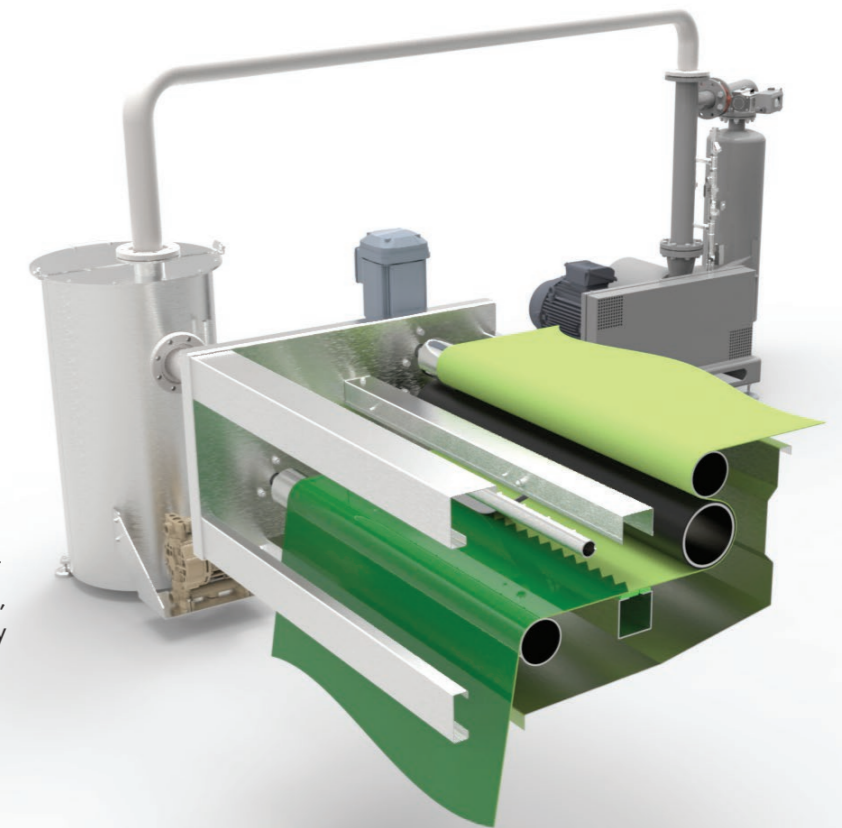
Washing effect

The bath is continuously recirculated using spraying pipes positioned around the drums during fabric advancement.



Continuous installations / Washing

Spray Vacuum Washer



Washing Effect

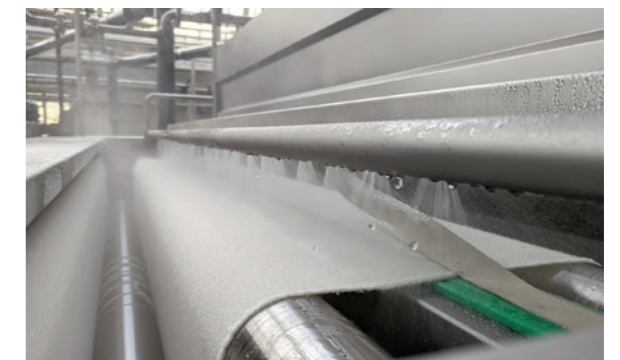
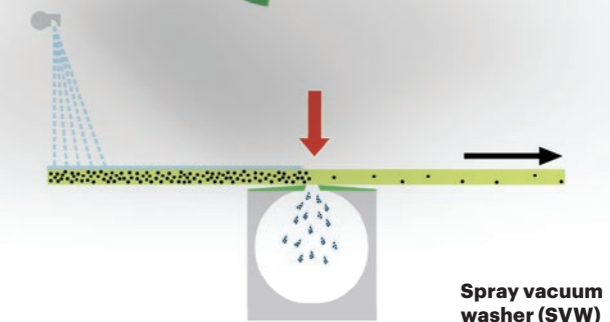
High washing efficiency achieved by aspirating the water through the fabric at high speed, effectively removing the majority of unfixed contaminants.

Moisture Reduction

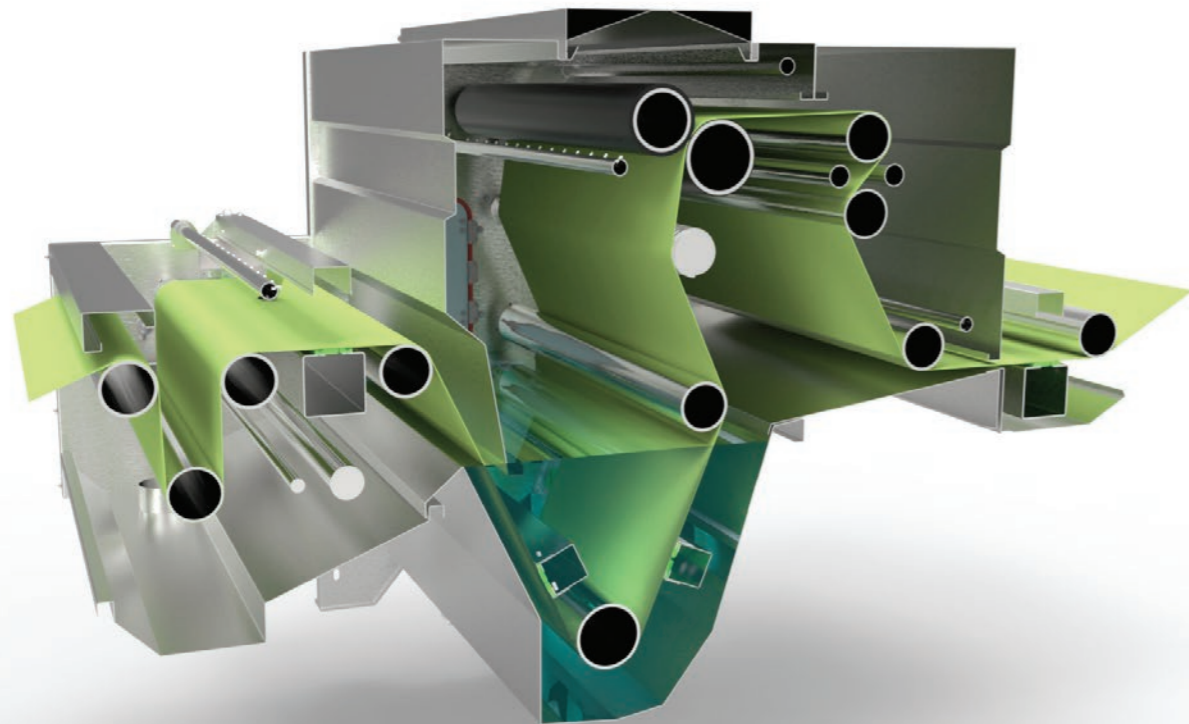
The fabric finishes the process with a very low percentage of residual moisture.

Compact accessory

The modular system is easily adaptable to any installation due to its small size.



Continuous installations / Washing Shark



Submerged Suction

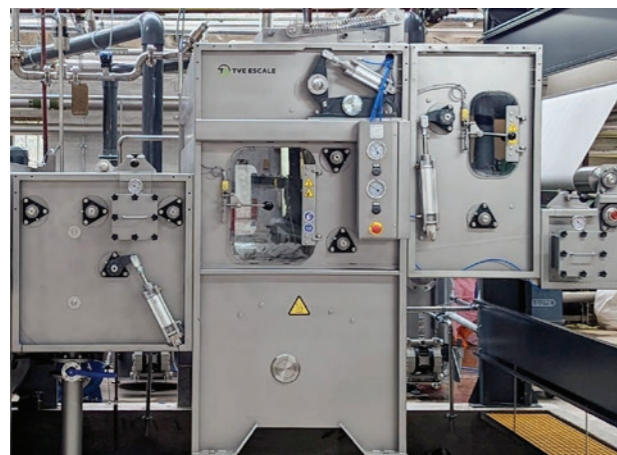
Powerful washing capability due to the high mechanical effect of passing the bath through the fabric.

Modular System

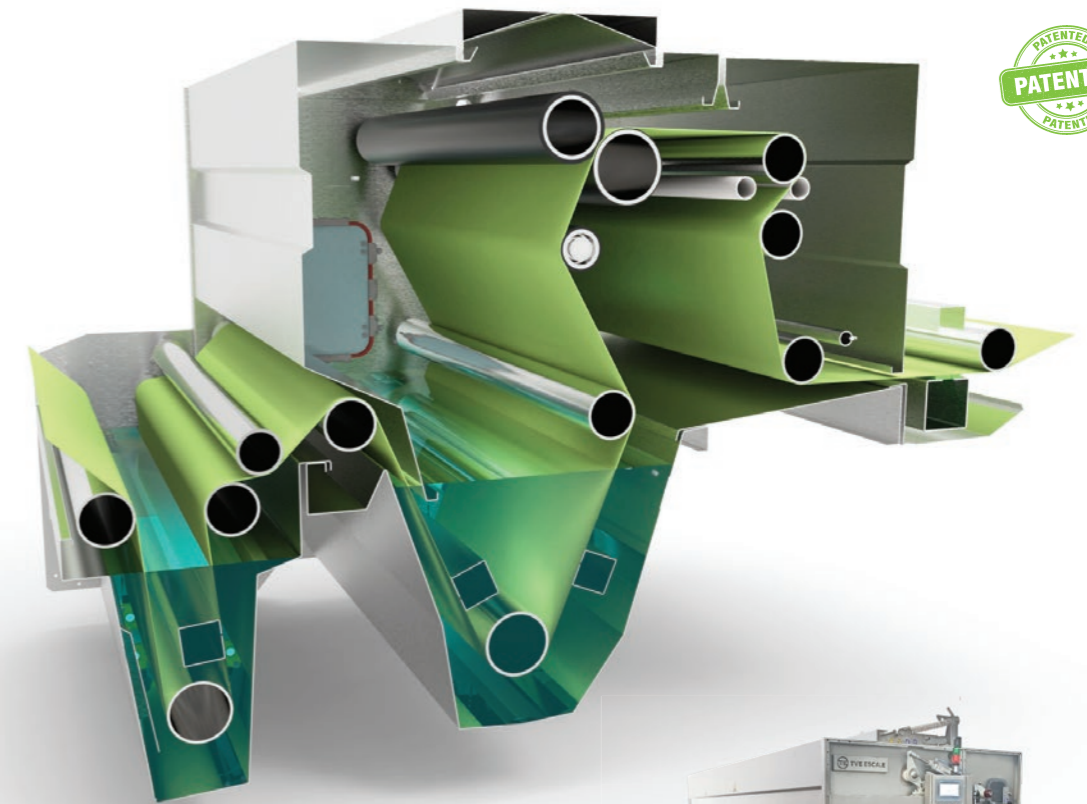
Washing unit adaptable to any existing installation to enhance process performance.

Spray Vacuum Washer

Dual spray vacuum washer system. One at the inlet for intensive pre-washing and another at the outlet for final rinsing and reducing residual moisture.



Continuous installations Optimus



Minimum water consumption

Compact and high-performance washing line for oil removal in synthetic fabrics in line with the stenter.

Submerged Suction

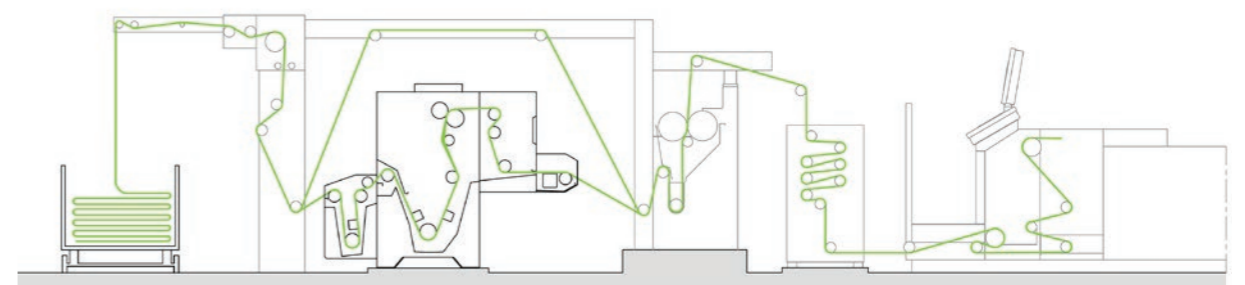
Powerful washing capability due to the strong mechanical effect of passing the bath through the fabric.

Spray Vacuum Washer

Deep and uniform final rinsing with minimal residual moisture.



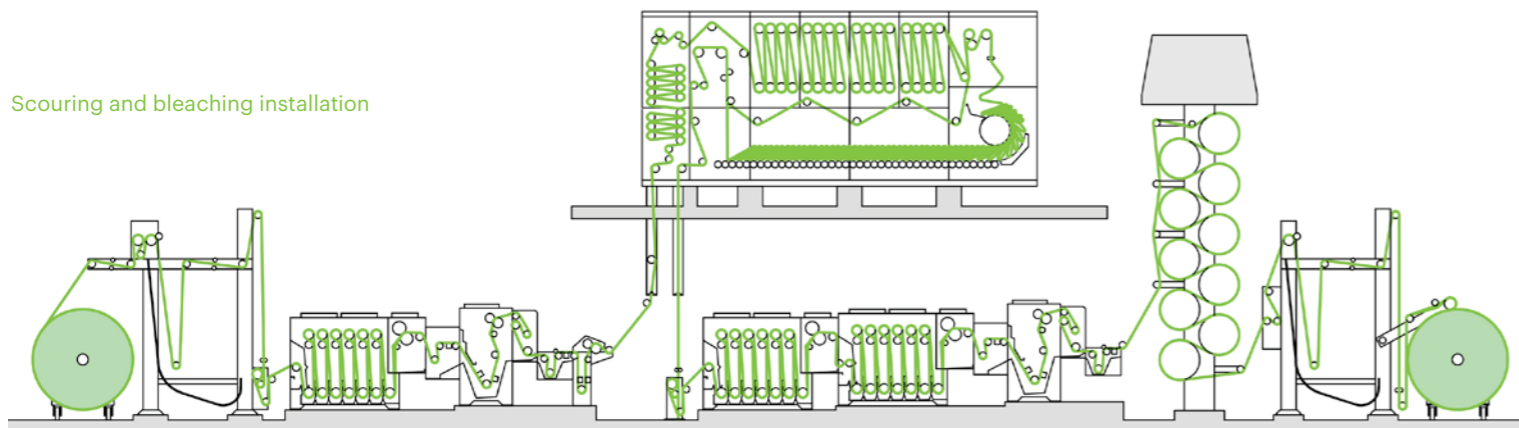
..... Optimus in line with the stenter



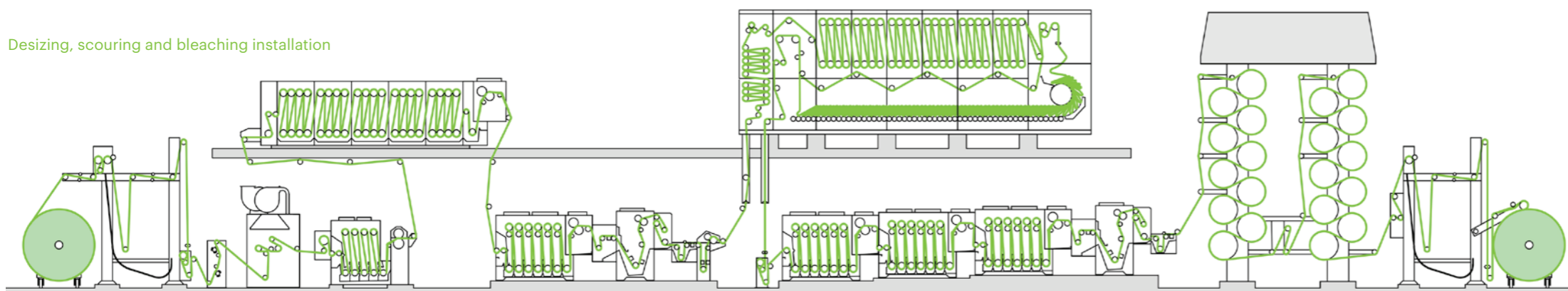
Continuous installations Bleaching



..... Scouring and bleaching installation



..... Desizing, scouring and bleaching installation



Continuous installations / Bleaching Vac Booster

Spray Vacuum Washer

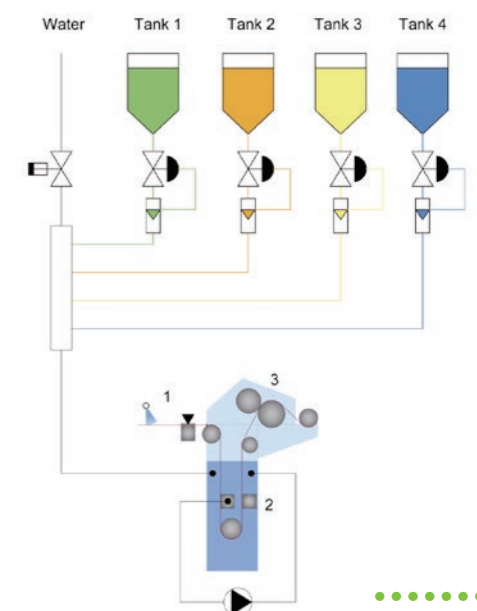
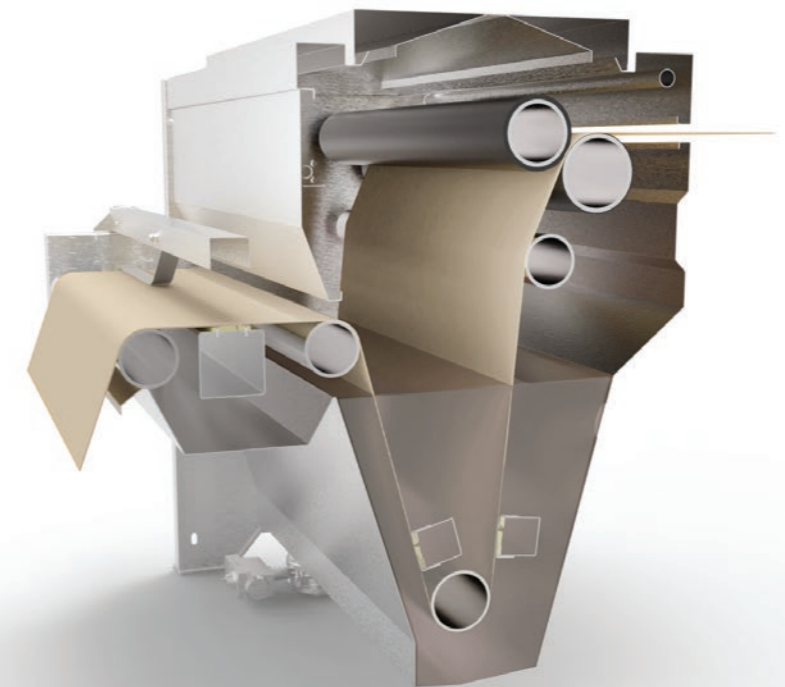
At the entrance of the impregnation unit, a rinsing process is performed to leave the fabric with the lowest percentage of residual moisture for better bath absorption.

Submerged Suction

Powerful bath impregnation capability, even with dense fabrics. The bath is forced to pass through the fabric, ensuring excellent and uniform penetration, allowing for a reduction in chemical consumption.

Modular System

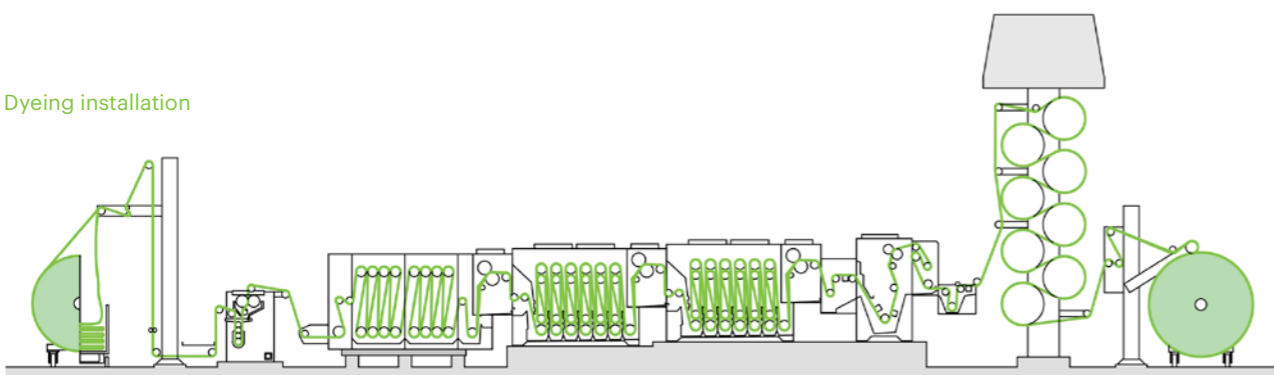
Impregnation unit adaptable to any existing installation to enhance the quality and efficiency of the bleaching process.



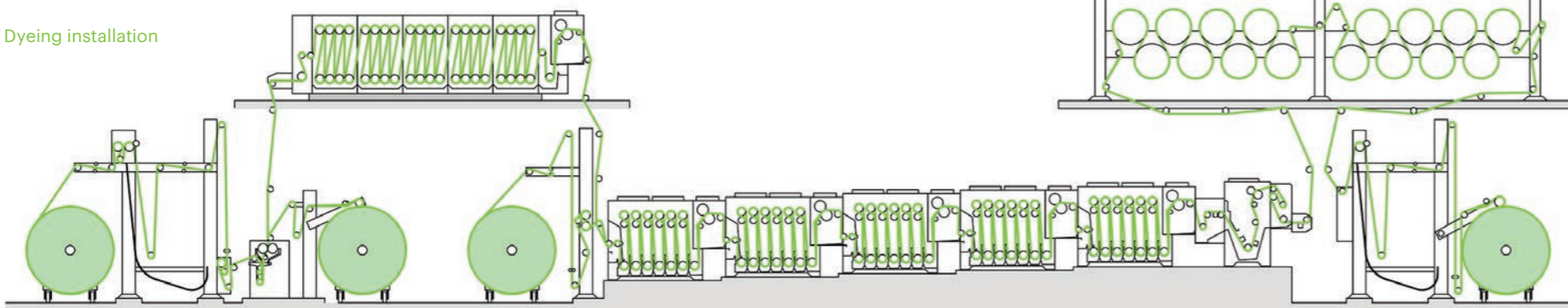
Continuous installations
 **Dyeing**



..... Dyeing installation



..... Dyeing installation



Continuous installations / Dyeing
Steamer



- Air-free inlet.
- Drip-free construction system.
- Constant temperature up to 102°C.
- Saturated steam provided by a steam conditioning station.

- Wrinkle-free fabric transport.
- Teflon-coated and large-diameter rollers.
- Controlled temperature at the outlet.
- Modular construction.

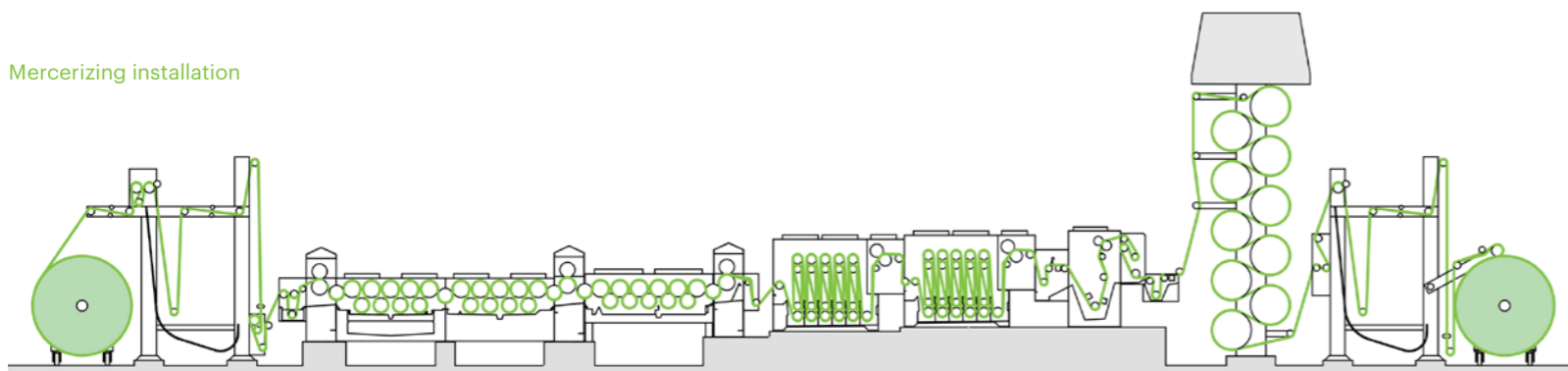


Continuous installations

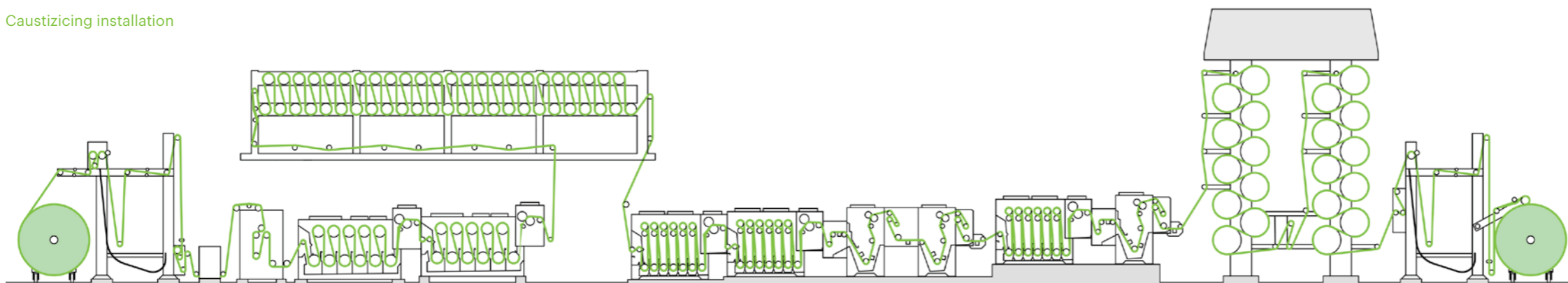
Causticizing



Mercerizing installation



Causticizing installation



We are able to adapt all our lines, both for causticizing and mercerizing, to the needs and specifications of our clients.

The use of vacuum and submerged suction technologies ensures a high washing effect with minimal water consumption.

- Uniform and controlled impregnation.
- Reproducible process conditions.
- Automatic control of caustic soda concentration.
- Self-cleaning rotary filter throughout the impregnation process.
- Cooling system for cold mercerizing.
- Bath heating through a heat exchanger.
- Configurable width stability.
- Automatic control of water flow.

Jiggers

Constant tension electronically controlled with outstanding results.



In 1991, we launched the market's first Jigger with electric motors and electronic control, making us pioneers and industry leaders.

Since then, our jigger models have continuously evolved, leading to the new Ecomatic generation, known for its control, robustness, and performance.

Electronic drive control

- Servo inverter-driven operation.
- Tension control through motor torque.
- Energy-saving through electrical feedback.

Balanced pendulum

- Driven by a pneumatic cylinder with electronic control.
- Constant and programmable distance between the pendulum roller and the rolled fabric.
- Better handling of the fabric.

Reliable construction

- Robust construction throughout.
- Fully enclosed design.
- Easy maintenance.

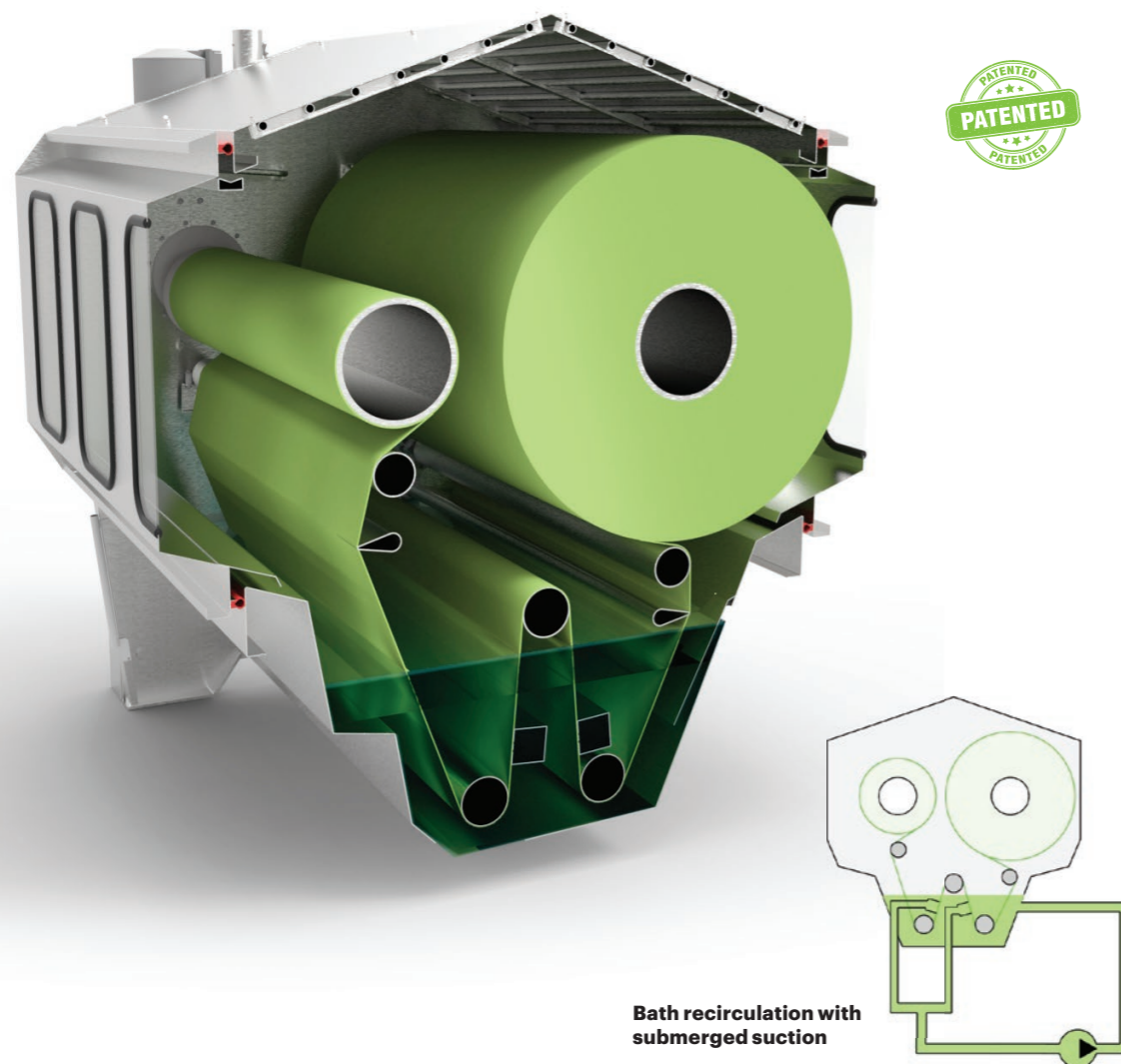


FEATURES

- Monoblock construction entirely made of AISI-316 stainless steel.
- Large-sized doors automatically operated.
- Fully automated process.
- Direct and indirect steam in the bath.
- Indirect steam in the ceiling.
- Bath recirculation pump.
- Automatic centering equipment.
- Automatic bath level control.
- Manual filter.
- Output winder (optional).



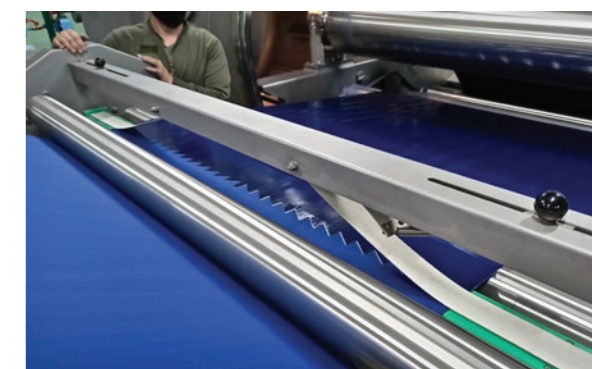
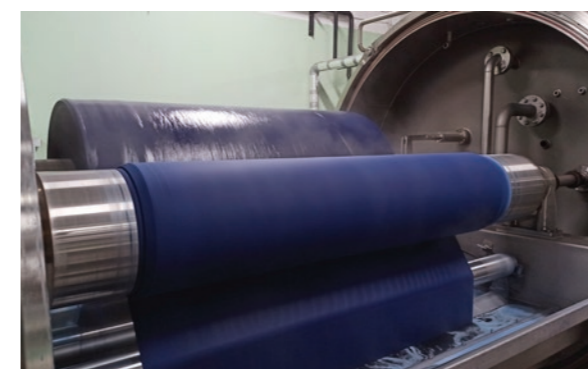
Jiggers
 **Turbo Jigg**



ADVANTAGES

- Increased productivity by 20% up to 40%.
- Improved washing and dyeing effects.
- Higher quality of processed fabrics.
- Savings in water and chemicals.
- Energy savings.

Jiggers
 **Ecomatic HT**

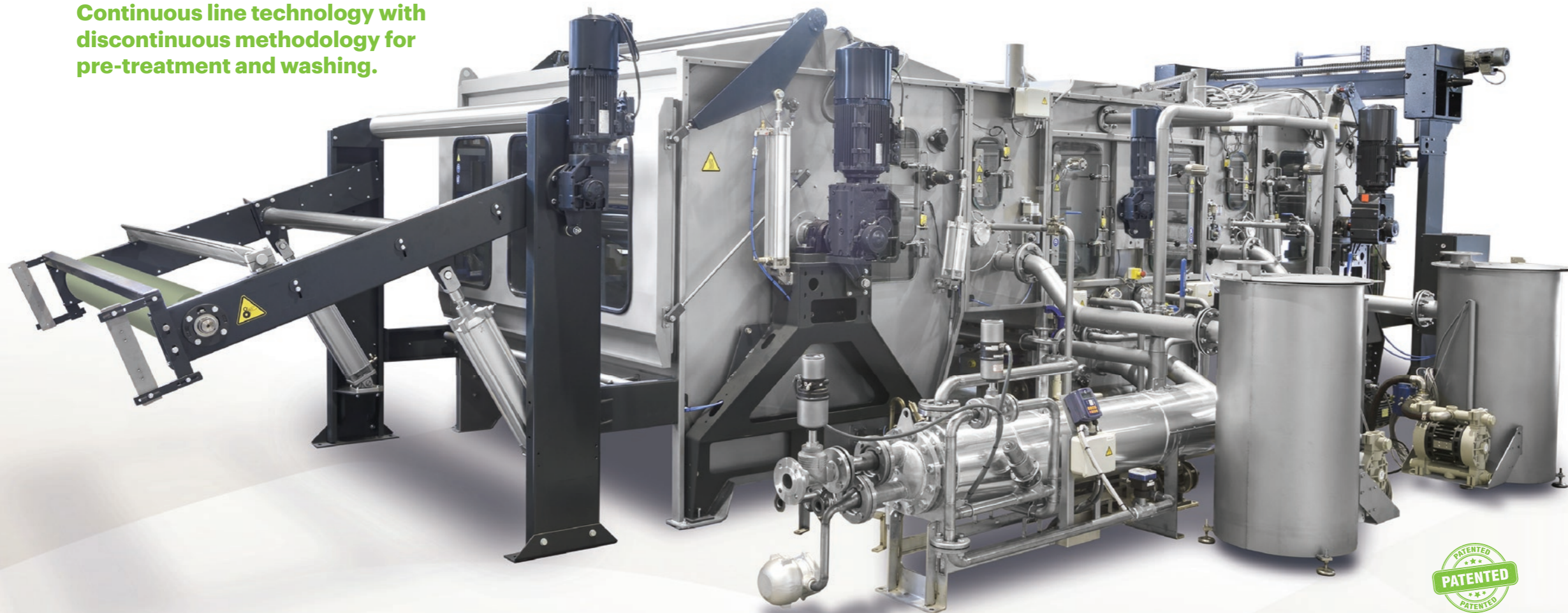


FEATURES:

- Automatic clamp-type closing system.
- Temperature up to 141°C.
- Indirect heating of the bath through a high-performance heat exchanger.
- Automatic centering equipment with torpedo system.
- Unloading with vacuum system for fabric drying (optional).

Hydra

Continuous line technology with discontinuous methodology for pre-treatment and washing.



Our patented semi-continuous process machine is the best choice for high-performance textile pre-treatment and washing. It offers savings of up to 26% in water, 17% in electricity, and 23% in steam compared to the complete wet finishing process using traditional technologies.

To achieve the best results, we use various washing techniques such as vacuum, submerged suction, and counterflow washing. All of this is done autonomously and automatically.

Semi-Continuous Process

- Continuous technology with discontinuous methodology.
- Up to 200 m/min in both directions.
- Flexibility for each treatment.

Electronic Drive Control

- Drive system with servoinverters.
- Tension control using motor torque.
- Energy savings through electrical feedback.

Submerged Suction and Vacuum Technology

- Forced bath circulation through the fabric.
- Improved impregnation and washing results.
- Electronically programmable recirculation flow and vacuum level.



PROCESSES

- Desizing
- Scouring
- Bleaching
- All types of washing
- Washing reprocesses
- Stripping
- Pad-roll
- Pad-jigg



Hydra
Hydra L

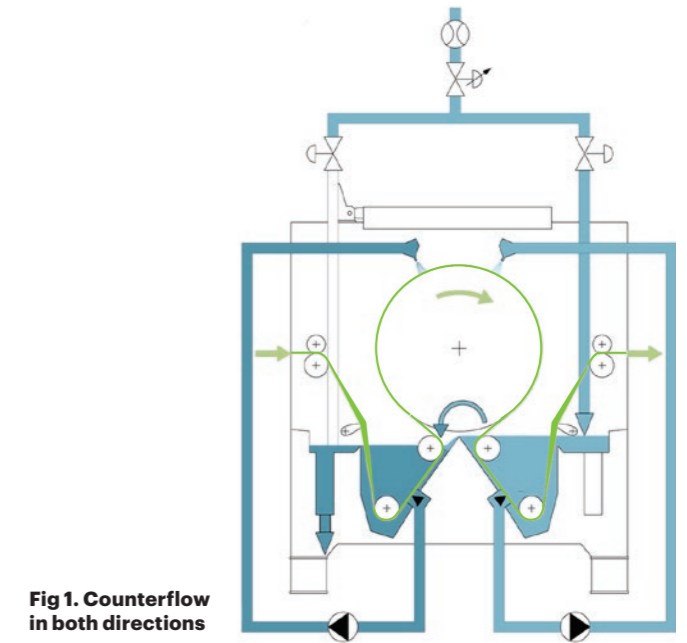
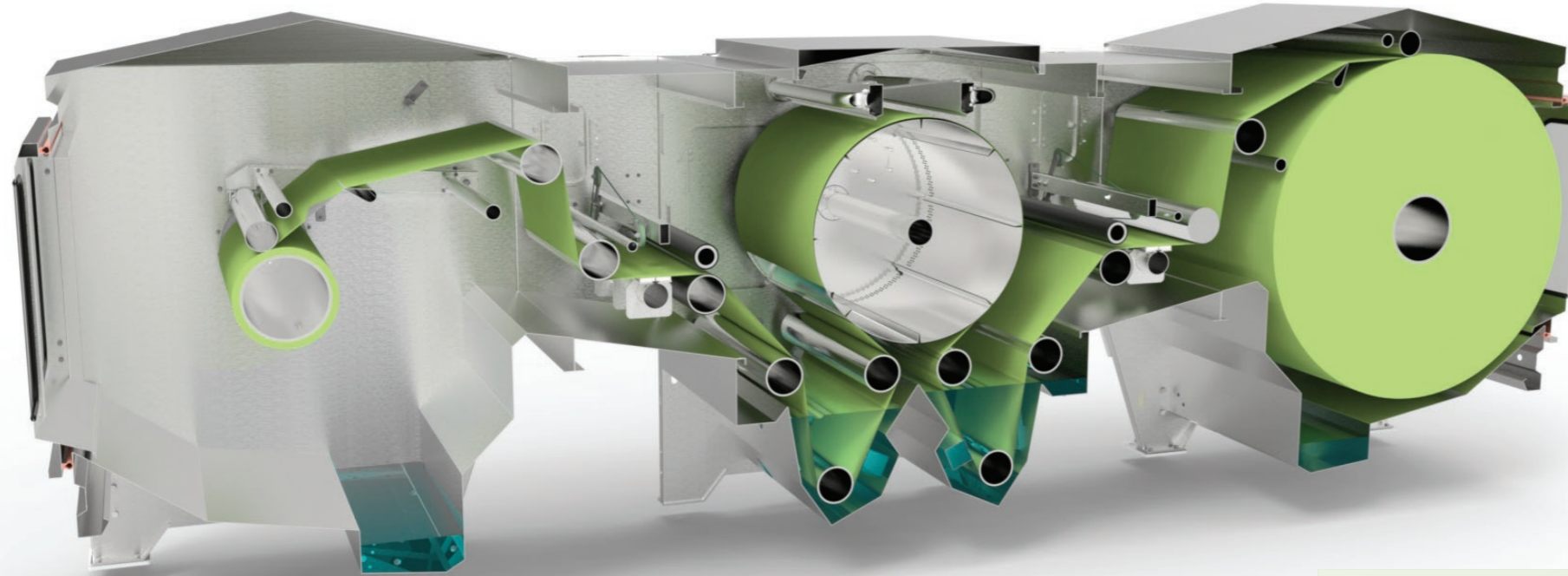


Fig 1. Counterflow in both directions



- Spray Vacuum Washer at the entrance for pre-washing before entering the washing chamber.
- Double-compartment washing chamber.
- Counteflow in both directions (Fig. 1).
- Submerged suction within the baths.
- Motorized large-diameter perforated drum.
- Showers around the perforated drum.
- Small squeezing at the bath outlet.
- Vacuum system with electronic control for reducing residual fabric moisture.
- Tension-controlled winding.
- Loading capacity for fabric rolls up to 1.6 meters in diameter.
- Reaction chamber with saturated steam.

REACTIVE PRINTING WASHING

1st Pass	Loading + Washing at 40°C
2nd Pass	Washing at 40°C
3rd Pass	Soaping at 40°C
4th Pass	Soaping at 40°C
5th Pass	Soaping at 90°C
6th Pass	Soaping at 90°C
7th Pass	Washing at 60°C
8th Pass	Neutralizing and unloading at 40°C

Productivity: 12.000 – 15.000 m/day
Water consumption: 15 – 20 l/kg
Power consumption: 0,058 – 0,064 kWh/kg

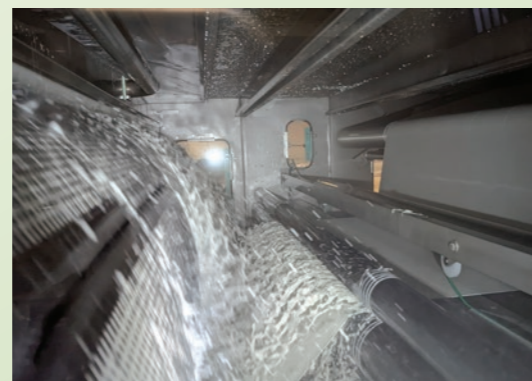


Examples of Hydra processes

COTTON DESIZING AND BLEACHING

1st Pass	Loading + Desizing at 80°C
2nd Pass	Desizing at 80°C
3rd Pass	Washing and bleaching at 95°C
4th Pass	Bleaching at 95°C
5th Pass	Washing at 90°C
6th Pass	Neutralizing and unloading at 40°C

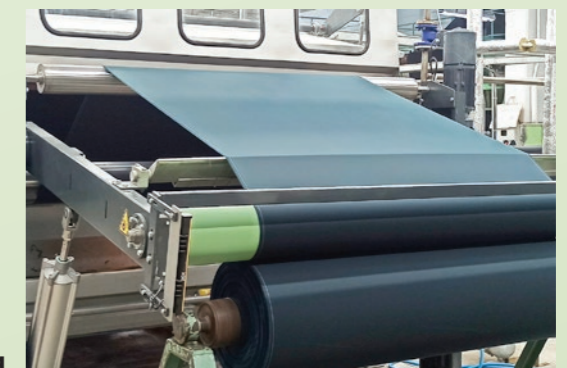
Productivity: 20.000 – 30.000 m/day
Water consumption: 5 – 6,5 l/kg
Power consumption: 0,048 – 0,054 kWh/kg



WOOL SCOURING

1st Pass	Loading + Washing at 80°C
2nd Pass	Steaming at 90°C
3rd Pass	Soaping at 50°C
4th Pass	Soaping at 50°C
5th Pass	Washing at 30°C
6th Pass	Washing and unloading at 20°C

Productivity: 20.000 – 30.000 m/day
Water consumption: 4 – 6 l/kg
Power consumption: 0,045 – 0,050 kWh/kg



Orion

New high-efficiency semi-continuous process for open width washing.



Our patented semi-continuous machine is designed to meet every washing needs with high productivity.

To achieve the best results, we use various washing techniques such as vacuum, submerged suction, and counterflow washing. All of this is done autonomously and automatically.

Semi-continuous process

- No need for loading and unloading
- Up to 140 m/min in both directions
- Flexibility for each treatment

Electronic drive control

- Drive system with servoinverters
- Tension control based on motor torque
- Energy savings through electrical feedback

Submerged suction and vacuum technology

- Forced bath circulation through the fabric
- Improved impregnation and washing results
- Electronically programmable recirculation flow and vacuum level

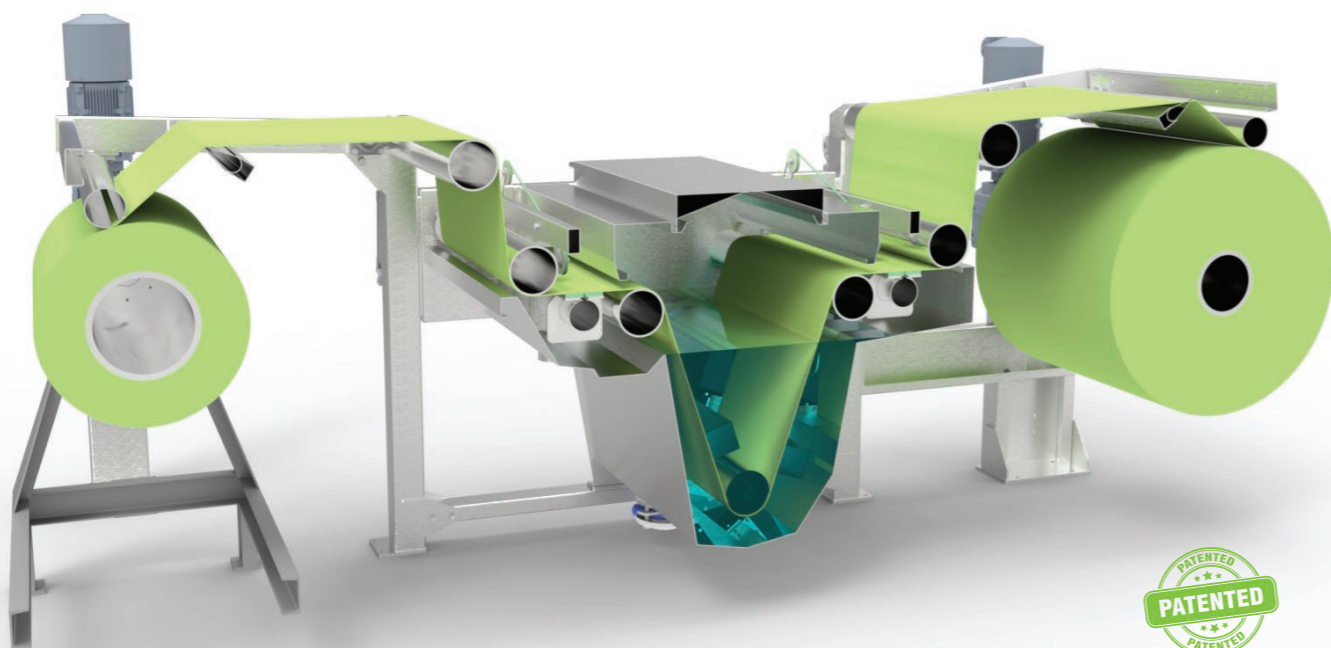
PROCESSES

- Desizing
- Scouring
- Bleaching impregnation
- All types of washing up to 80°C
- Washing reprocesses
- Neutralizing



Orion

Orion S / L



ORION	S	L
Driving unit for coupling to the A-frame.	✓	✓
Spray Vacuum Washer for pre-washing before entering the washing chamber.	—	✓
Single-compartment washing chamber.	✓	—
Double-compartment washing chamber.	—	✓
Counterflow in both directions.	—	✓
Submerged suction within the baths.	✓	✓
Driven large-diameter perforated drum.	—	✓
Showers around the perforated drum.	—	✓
Small squeezer at the bath outlet.	Optional	✓
Vacuum system with electronic control for reducing residual fabric moisture.	✓	✓
Winding with controlled tension.	✓	✓
Loading capacity for fabric rolls up to 1.6 meters in diameter.	✓	✓

Examples of Orion processes

POLYESTER DESIZING

- 1st Pass Desizing a 60°C
- 2nd Pass Desizing a 60°C
- 3rd Pass Washing a 60°C
- 4th Pass Washing a 40°C

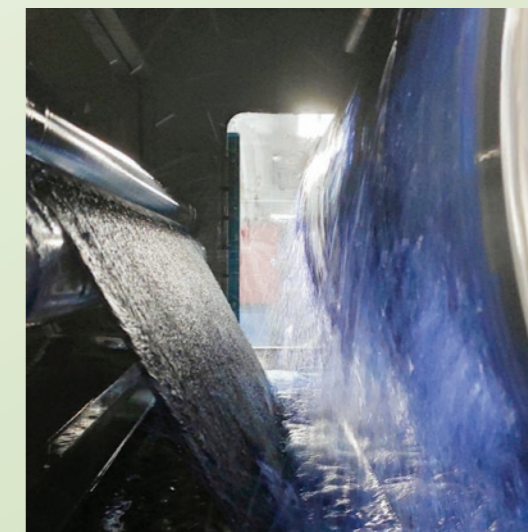
Productivity: 30.000 – 35.000 m/day
Water consumption: 2 – 3 l/kg
Power consumption: 0,034 – 0,038 kWh/kg



CPB WASHING

- 1st Pass Washing a 20°C
- 2nd Pass Soaping at 70°C
- 3rd Pass Soaping at 70°C
- 4th Pass Neutralizing a 50°C

Productivity: 30.000 – 35.000 m/day
Water consumption: 4,5 – 6 l/kg
Power consumption: 0,041 – 0,044 kWh/kg



NEUTRALIZING WASHING

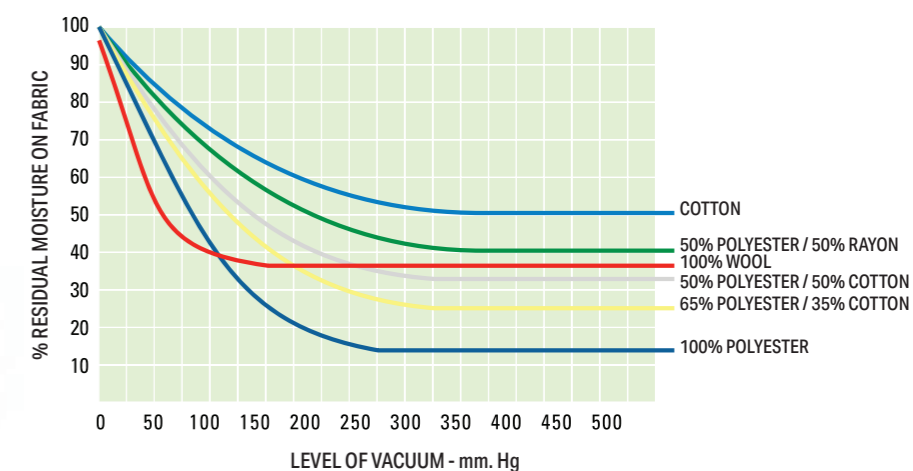
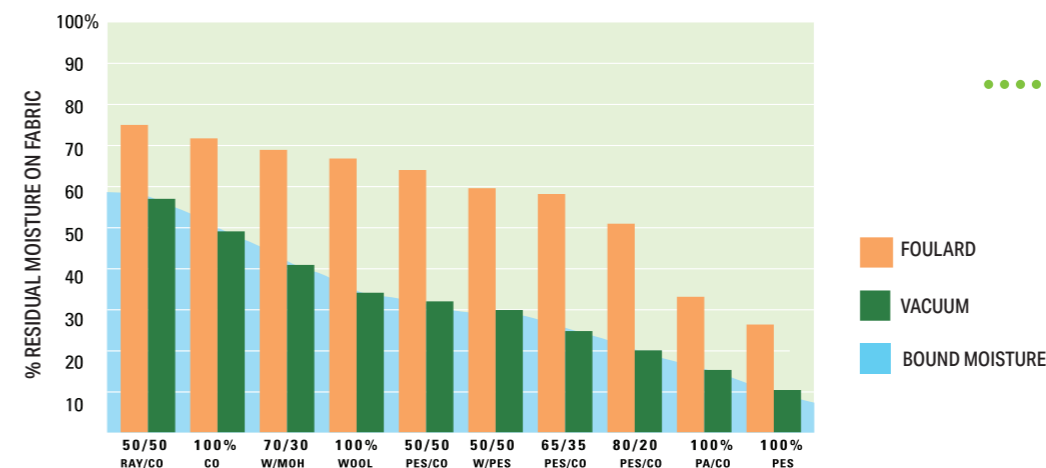
- 1st Pass Acid impregnation at 40°C
- 2nd Pass Washing at 40°C

Productivity: 60.000 – 65.000 m/day
Water consumption: 2 – 3 l/kg
Power consumption: 0,017 – 0,020 kWh/kg



Vacuum

Reduces fabric moisture, ensuring quick and efficient drying.



As world leaders and experts in vacuum technology, we develop our own equipment and solutions for all types of open-width fabrics.

Reliable construction

- Over 3.000 installed units.
- Equipment tailored to your needs.
- The highest level of vacuum in the textile industry.

Benefits

- Removal of unfixed moisture.
- Consistency and reproducibility across the entire width.
- Energy savings.

Applications

- Enhanced washing effect.
- Improved drying.
- Chemical recovery.



FEATURES

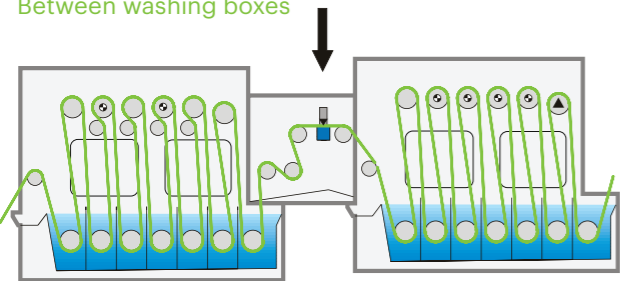
- Herringbone slot for delicate fabrics.
- Slot design for proper Venturi effect.
- Slot made with HDPE.
- Automatic sealing system.
- Maximum efficiency water/air separator.
- Noise level < 80 dB.



Vacuum MRS

Moisture removal system

Between washing boxes



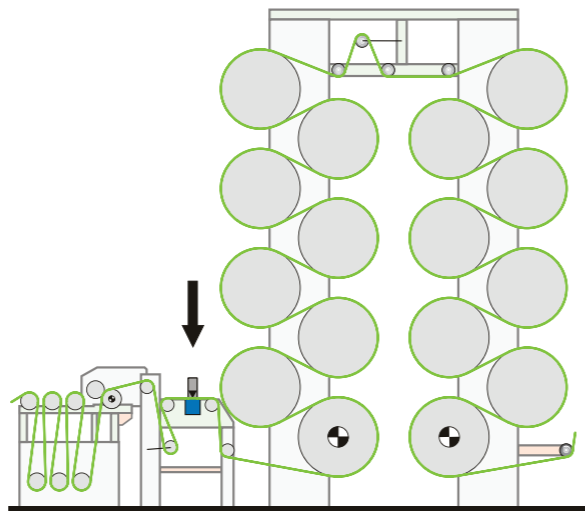
ADVANTAGES:

- More effective bath separation.
- Improved overall washing performance.
- Reduction of water consumption.
- Increased productivity.
- Reduction of fabric lint.

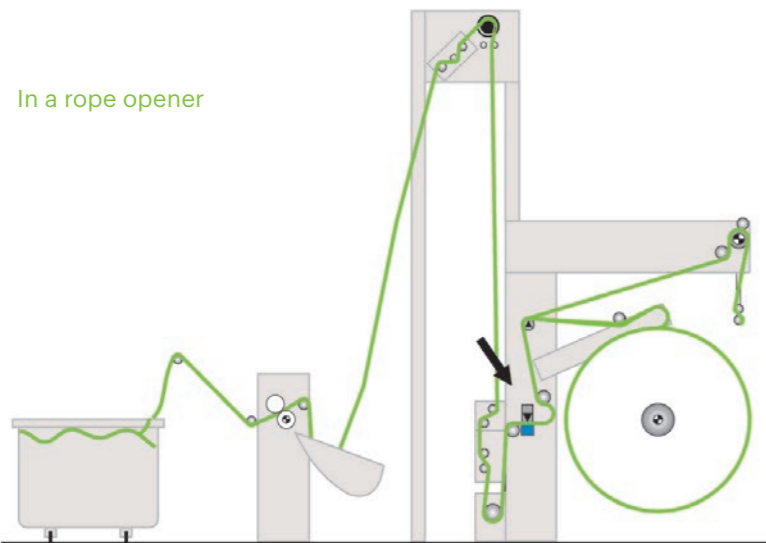
In front of a drum dryer

ADVANTAGES:

- Energy savings in the drying process.
- Reduced steam consumption.
- Increased installation speed.
- Reduction of fabric lint.



In a rope opener



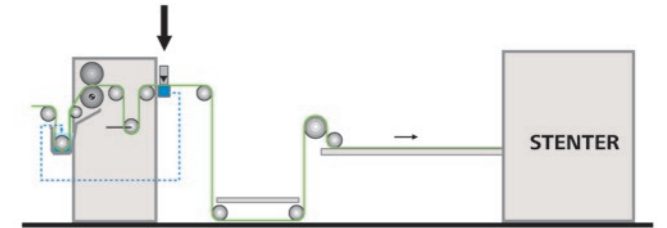
ADVANTAGES:

- Reduced moisture in the roll.
- Reduction of the A-frame's weight.
- Energy savings in the drying process.

CRS

Chemical recovery system

After an impregnation padder



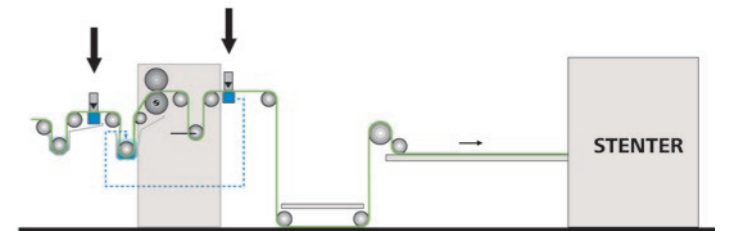
ADVANTAGES:

- All the advantages of the MRS.
- Chemical savings.
- Reduction of migration effects of certain chemicals.
- Improved finishing quality as fiber interstices are cleaner.

Wet-on-Wet

Moisture removal at the inlet and chemical recovery at the outlet

At the inlet of a stenter



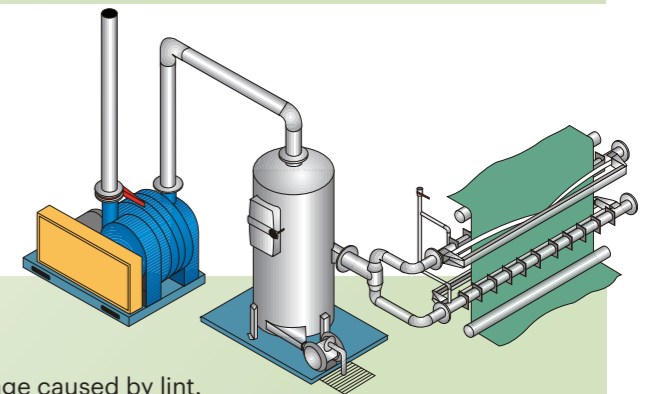
ADVANTAGES:

- All the advantages of a CRS.
- Uniform moisture throughout the fabric width.
- Improved impregnation process.
- Provides an extra washing effect.

DLR

Dry lint removal system

Equipment for removing lint from dry fabric



ADVANTAGES:

- Reduction of the cylinder and screen blockage caused by lint.
- Reduction of the lint over the passage cylinders and padders.
- Elimination of lint and dust generated in the grinding process.
- Removal of the residues from flocking and allows for their recovery.

Engineering



We have established a dedicated department to provide responses and offer all kinds of solutions to our customers' problems.

We offer solutions to issues that may arise in production processes, as well as opportunities for process improvement.

All of this is made possible by the professionalism and experience we have gained over the years in the field of textile finishing.

Reliable partners

- Manufacturers of our own machinery.
- Over 35 years of experience.
- Specialists in providing solutions for our clients.

Adaptability

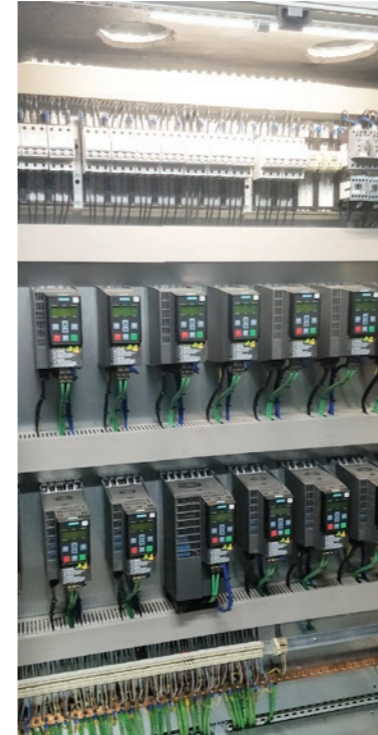
- Customized projects for our customers.
- Flexibility and availability of our team.
- Collaborations with third-party companies

Positive results

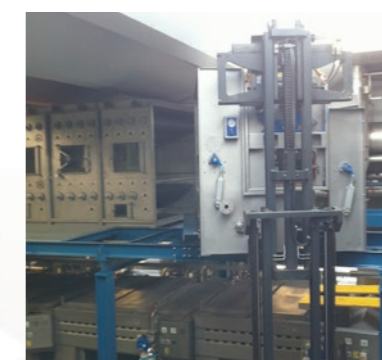
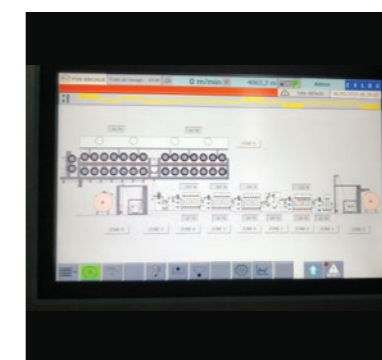
- Increased productivity of the facilities.
- Extended lifespan of machines.
- Improved reliability of production lines.

SERVICES

- Extension of existing continuous lines.
- Electrical upgrades for all types of continuous installations.
- All kinds of modifications and adaptations for continuous installations.
- Conversion of hydraulic jiggers to electric.
- Customized solutions for specific problems.



Providing solutions





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