DHARA
SINCE 1991

DESIGNED
FOR RELIABILITY,
BUILT
FOR PERFORMANCE.

CE

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ABOUT DHARA

Our Foundation & Growth

Founded in **1991** as Dhara Engineering Works, our journey began with a clear vision, delivering engineering excellence through precision manufacturing. From the very beginning, we focused on building reliable, high-quality components for the textile machinery industry.

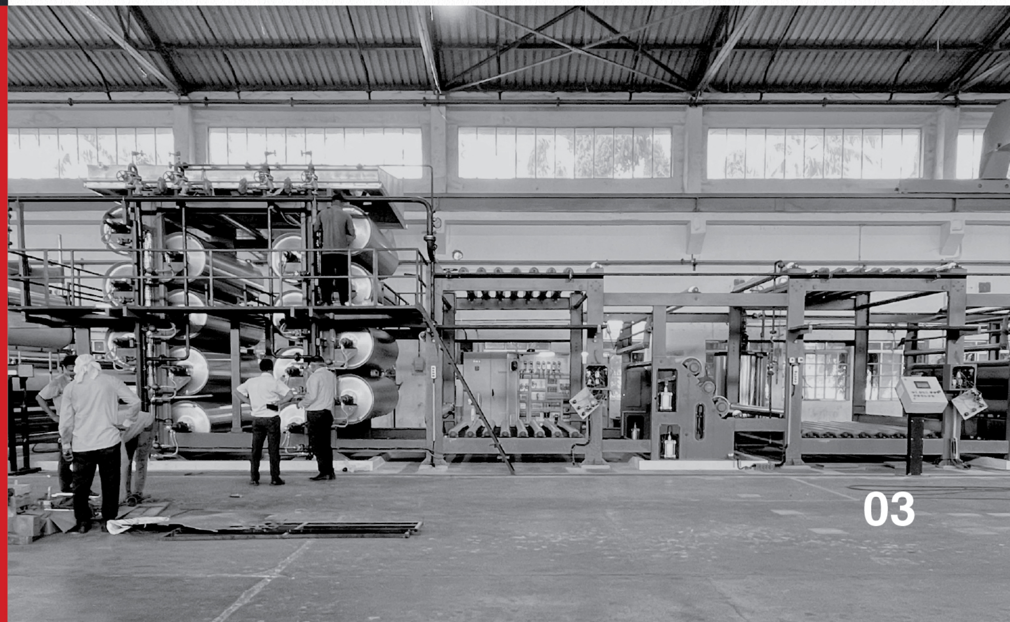
With decades of dedication, continuous improvement, and customer trust, we evolved into **Dhara Textile Machinery Private Limited**, a name that reflects our expanded capabilities and long-term vision.

Over the years, we have consistently broadened our product portfolio to meet the ever-changing demands of the textile sector. Our commitment to innovation, quality control, and advanced manufacturing practices has helped us establish a strong presence in the industry.

Today, we stand as a forward-looking organization, driven by innovation and guided by experience. We remain committed to delivering high-performance textile machinery and precision parts while continuously enhancing our processes to serve our customers better.

01

With over 35+ years of experience, we combine tradition, technology, and trust to shape the future of textile engineering.



VISION & PHILOSOPHY

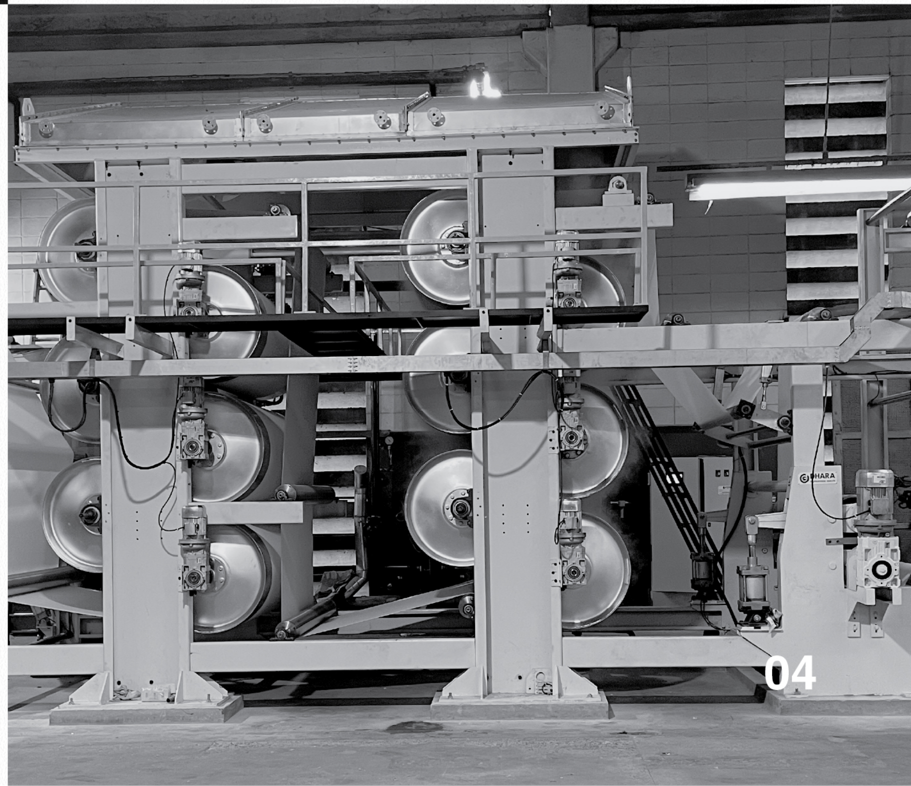
Our Vision

To be a trusted engineering partner for textile manufacturers by delivering precision equipment that enhances industrial performance.

Our Philosophy

At Dhara, we believe great engineering is built on precision, durability, and trust.

Every product we manufacture reflects our commitment to quality and long-term reliability.



02

03 WHY CHOOSE DHARA

35+ YEARS OF INDUSTRY EXPERIENCE

DEEP EXPERTISE IN
TEXTILE PROCESS EQUIPMENT.

Precision Manufacturing

Products are engineered with strict quality standards.

Reliable Performance

Designed for long-lasting industrial operations.

Quality Materials

Manufactured using high-grade stainless steel.

Custom Solutions

Equipment designed according to industry needs.

OUR FOCUS

What Drives **Dhara**

Engineering Precision

Delivering highly accurate machinery components.

Quality Manufacturing

Strict inspection and quality control.

Continuous Improvement

Upgrading manufacturing technologies and processes.

Customer Success

Helping textile manufacturers improve efficiency.

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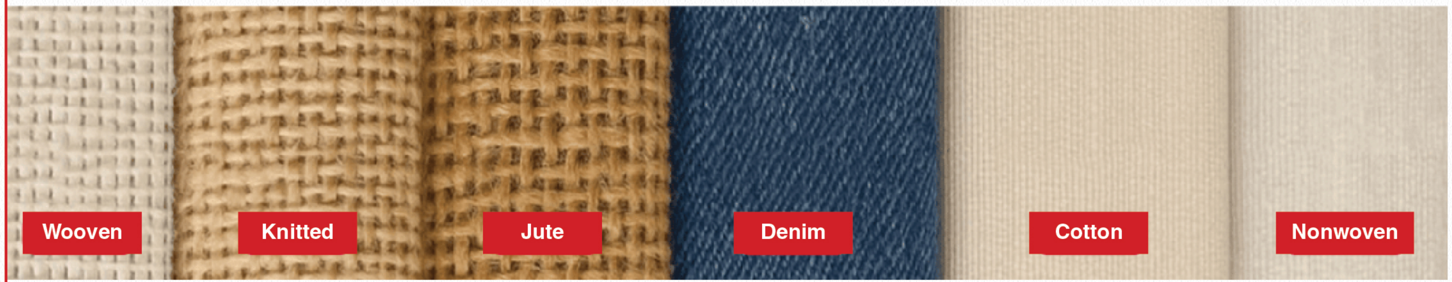


CERTIFICATIONS

Assurance of Global Excellence

Dhara stands distinguished as the only manufacturer in India offering drying technolgy certified under the rigorous TÜV Module B certification. This globally respected certification is a testament to superior design validation, stringent quality control, and full compliance with international safety standards.

The TÜV assessment involves an in-depth examination of the product's design, material integrity, and operational safety by an independent European authority. Achieving this certification reflects Dhara's unwavering commitment to precision engineering, reliability, and adherence to globally accepted manufacturing practices.

This recognition not only elevates the credibility of Dhara's drying technolgy but also assures customers of exceptional performance, enhanced durability, and uncompromised safety in critical industrial operations. It reinforces Dhara's leadership in innovation and quality, setting a benchmark that remains unmatched within the Indian market.

Certificate

EU–Type examination – production type
in accordance with Directive 2014/68/EU

Certificate no.:	01 202 644/B-23 0331
Name and address of the manufacturer:	**M/s Dhara engineering works** **Plot No. 4011** **Phase - 4** **GIDC, Vatva** **Ahmedabad** **382445 INDIA**
	It is herewith certified that the type specimen mentioned below meets the requirements of the Directive 2014/68/EU.
Tested acc. to Directive 2014/68/EU:	**Module B (P)** **EU-Type examination – production type**
Test report no.:	146703277-2 Rev.0
Description of type specimen:	Drying Cylinder D800 in design variants (variable length)
Drawing no.:	DRY-101-2022-2703 Rev. 0
Manufacturing plant/Supplier:	**M/s Dhara engineering works** **Plot No. 4011** **Phase - 4** **GIDC, Vatva** **Ahmedabad** **382445 INDIA**
Valid until:	03/2033 This certificate becomes invalid if the design is changed or modified in any way.

The CE marking must not be affixed and the Declaration of Conformity not be issued prior to completion of the corresponding conformity assessment procedure according to Directive 2014/68/EU.

Berlin, 23.03.2023

TÜV Rheinland 0035 Notified Body

i.A. Jens Eisenhaber

TÜV Rheinland Industrie Service GmbH
Notified Body for Pressure Equipment, ID-No. 0035
Am Grauen Stein, D-51105 Köln, GERMANY

www.tuv.com

T1.50 MS-0001602 Rev.6

TÜVRheinland®
Precisely Right.

GLOBAL
REACH

Over the years, Dhara has built strong relationships with textile manufacturers through consistent quality and dependable engineering.

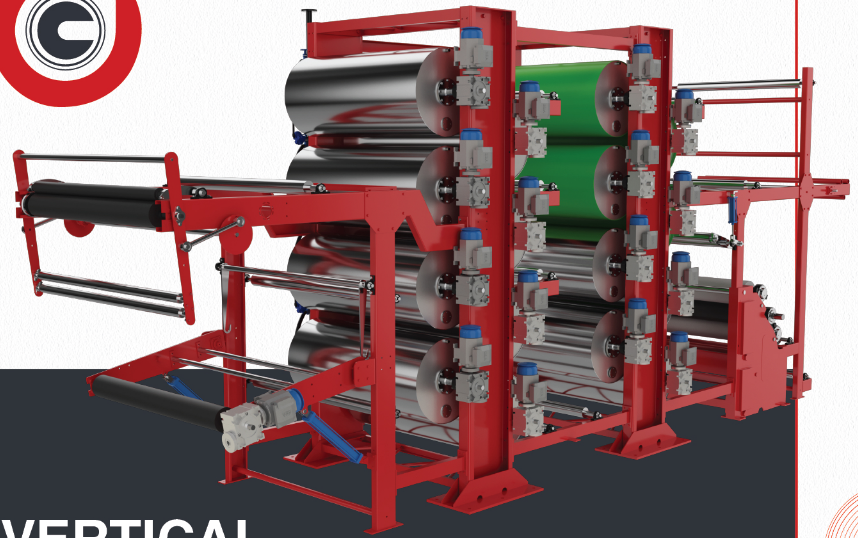
Our equipment supports textile processing operations across various industries and production environments.

PRODUCT
PORTFOLIO

Dhara manufactures a wide range of textile machinery components designed to support efficient textile processing.

Our product portfolio includes rollers, cylinders, and stainless steel vessels built for durability and performance.

1. Vertical Drying Range Machine
2. Horizontal Drying Range Machine
3. Washing Range
4. Special Purpose Process Line (Customise Solution)
5. Pre-Dryer for Stenter
6. Atmospheric Pad–Steam Chamber Steamer
7. Fully Automatic Hydraulic Jigger
8. Padder Unit
9. De-sizing Machine
10. J- Scray Unit
11. Rope Opener
12. Fabric Re-Rolling Machine
13. Chemical Preparation Vessel
14. Chemical Storage Tank (SS / MS)
15. Drying Cylinders (Can)
16. Jacketed Heating & Cooling
17. Textile Rollers & Guide Rollers
18. Automatic Cleaning & Filtration Circulation System
19. Hydraulic Batch Rotating System
20. A-Type Batching Trolley with Drive

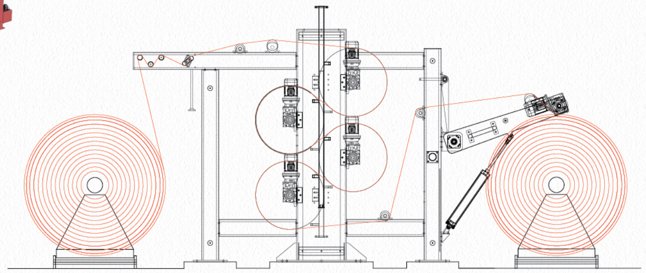


1 VERTICAL DRYING RANGE MACHINE

Precision Contact Drying
Technology for Advanced Textile Finishing

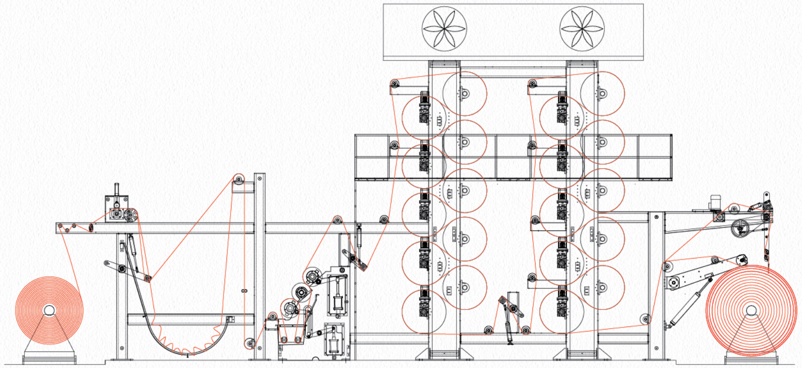
Energy-Saving Add-On (Optional)

Optional ceramic-coated drying cylinders and high-density insulation sheets are available to reduce heat and steam losses. These enhancements improve thermal efficiency, lower steam consumption, and support energy-efficient operation in line with EU sustainability and performance standards.



Key Performance Advantages

- Long-life, industrial-grade construction with minimal maintenance
- Extremely low energy and steam consumption
- Fast start-up with rapid heating response
- Operator-friendly PLC-based control interface
- Low-tension, fabric-safe drying throughout the process
- Wrinkle-free fabric movement across all drying zones
- Excellent temperature uniformity across the full fabric width
- Consistently high and reproducible product quality



Engineered Performance Specifications

- Working Width: 1200 mm to 4000 mm
- Cylinder Diameter Options: 400 MM | 570 mm | 600 mm | 760 mm | 800 mm
- Steam Operating Pressure: Up to 5 Bar
- Maximum Design Temperature: 165°C
- Production Speed: 10 m/min to 150 m/min
- Cylinder Arrangement per Stack: 4 / 6 / 8 / 10 / 12
- Stack Construction: Heavy-duty MS or SS fabricated structure
- Cooling Cylinder Designs:
  - Single-shell type
  - Double-shell jacketed type
  - Spiral-flow high-efficiency cooling cylinders

High-Precision Drying Cylinders

Dhara drying cylinders are engineered using thin-walled precision manufacturing technology to ensure optimal heat transfer, smooth fabric contact, and long operational life.

- Stainless steel cylinder shells with superior corrosion resistance
- Precision balancing for minimal radial run-out
- High-quality welding and surface finishing
- Surface-belt grinding for enhanced fabric contact
- Premium Teflon-coated surfaces for non-stick drying and easy cleaning

Applications & Process Benefits

The Dhara Vertical Drying Range Machine provides an energy-efficient and highly reliable contact-drying solution for textile finishing. It ensures gentle, low-tension, and reproducible drying conditions, making it ideal for both intermediate and final drying stages.

Suitable for:

- Woven and knitted fabrics
- Technical and industrial textiles
- Non-woven and filament materials
- High-quality finishing lines requiring precision and consistency

Advanced Drive & Tension Management Technology

The Dhara Vertical Drying Range is equipped with an advanced direct-drive system, ensuring precise synchronization between fabric behavior and cylinder rotation.

- Direct cylinder drive using frequency-controlled geared motors
- No intermediate belts or mechanical transmission elements
- Automatic speed compensation for fabric shrinkage during drying
- Preset fabric tension limits are never exceeded
- Smooth operation with extremely low maintenance requirements

Flexible Customization & Process Integration

- Selective cylinder or zone shut-off for energy optimization
- Temperature control per stack or per cylinder group
- Steam pressure reduction and safety control systems
- Compensators between stacks for smooth fabric transfer
- Choice of direct drive or alternative belt drive system
- Integrated or standalone cooling cylinders
- Feeding-in scaffold with batching, plaiting, or surface winder units
- Exhaust hood with axial fan or fully insulated enclosure
- Synchronization with finishing machines or independent operation
- Optional 2-bowl or 3-bowl padding mangle

Intelligent Steam & Moisture Control System

Segmented Steam Pressure Regulation

- Independent steam control for individual cylinder groups
- Fabric-specific thermal profiling
- Optimized drying balance and reduced energy usage

Centralized Steam Management

- Stable, uniform heat distribution across the entire drying range
- Ideal for high-speed continuous finishing lines

Real-Time Residual Moisture Control

- Inline moisture sensors monitor fabric wetness continuously
- Automatic steam adjustment prevents over-drying
- Preserves fabric softness, strength, and appearance

Closed-Loop Automation

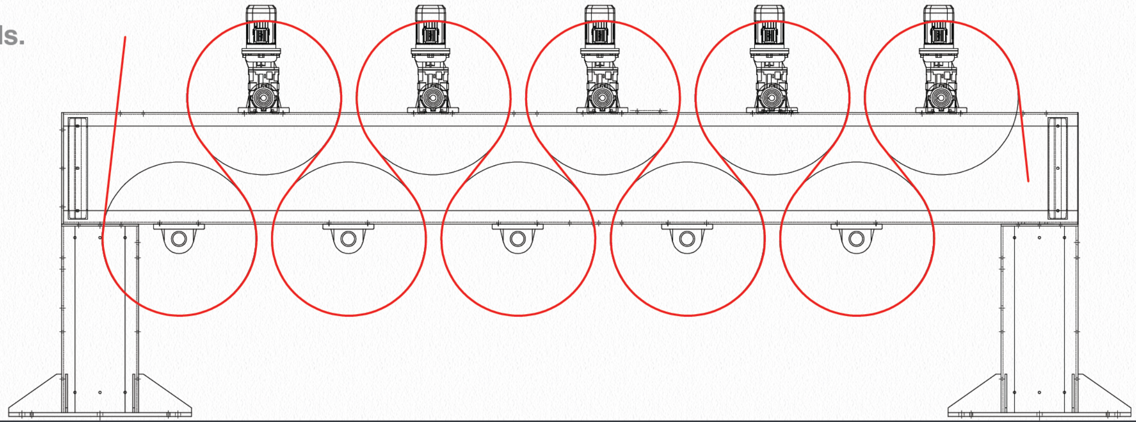
- Continuous feedback between sensors, controllers, and steam valves
- Self-regulating process control
- Enhanced productivity and consistent output quality

Modular Vertical Configuration

- Vertical layout with 1 to 6 stands
- 4 to 12 drying cylinders per stand
- Suitable for continuous production or standalone operation

The Dhara Horizontal Drying Range Machine is engineered for high-capacity, continuous textile drying, delivering uniform heat transfer, controlled moisture evaporation, and stable fabric handling across extended drying paths. Its horizontal configuration is ideal for large-volume production lines, offering exceptional process stability, energy efficiency, and repeatable finish quality.

Designed for woven, knitted, technical, and non-woven textiles, the system ensures low-tension fabric movement, wrinkle-free passage, rapid thermal response, and consistent drying results, even at high operating speeds.



2 HORIZONTAL DRYING RANGE MACHINE

High-Performance Contact Drying for Continuous Textile Finishing

Key Process Advantages

- Robust industrial construction for continuous operation
- Low steam and energy consumption
- Fast start-up and stable thermal equilibrium
- PLC-controlled operation with user-friendly HMI
- Low-tension, fabric-safe transport system
- Uniform temperature across full fabric width
- Consistent and reproducible drying quality

Technical Specifications

- Working Width: 1200 – 4000 mm
- Cylinder Diameters: 400.MM | 570 mm | 760 mm | 800 mm
- Steam Operating Pressure: Up to 6 bar (higher on request
- Max. Design Temperature: 165 °C
- Production Speed: 10 – 180 m/min
- Drying Configuration: Multi-bank horizontal cylinder arrangement
- Machine Frame: Heavy-duty MS / SS fabricated structure
- Cooling Cylinders:
  - Single-shell
  - Double-shell jacketed
  - Spiral-flow high-efficiency type

Drive & Fabric Control System

- Frequency-controlled geared motor drives
- Individual or group-driven cylinder configuration
- Precise speed synchronization across drying zones
- Automatic compensation for fabric shrinkage
- Controlled tension to prevent elongation and distortion
- Low-maintenance, high-reliability mechanical design

Precision Drying Cylinders

- Thin-walled stainless steel shells for efficient heat transfer
- Precision balanced for minimal radial run-out
- High-quality welding and surface finishing
- Optional surface belt grinding for enhanced fabric contact
- Optional Teflon coating for non-stick operation and easy cleaning

Applications

- Woven and knitted fabrics
- Technical and industrial textiles
- Non-wovens and filament materials
- High-throughput continuous finishing lines

Configuration & Integration

- Modular horizontal layout with configurable drying length
- Single-sided or double-sided contact drying
- Selective zone shut-off for energy optimization
- Integrated or standalone cooling sections
- Feeding units with batching, plaiting, or surface winding
- Exhaust hood with axial fan or insulated enclosure
- Seamless integration with padding mangles and finishing lines

Steam & Moisture Control

- Zoned steam pressure regulation for optimized drying profiles
- Centralized steam distribution for thermal stability
- Inline residual moisture sensors for real-time monitoring
- Automatic steam modulation to prevent over-drying
- Closed-loop PLC control for consistent fabric quality

The Dhara Advantage

A future-ready drying solution combining precision engineering, intelligent automation, and industrial durability, the Dhara Horizontal Drying Range Machine delivers maximum throughput, energy efficiency, and consistent finish quality for modern textile manufacturers.

Dhara — Engineering Precision. Delivering Performance.

3 WASHING RANGE

Engineered Precision for Open-Width Textile Washing

The Dhara Washing Solution is a refined open-width washing system developed for textile manufacturers who demand process stability, resource efficiency, and consistently high fabric quality. Designed with a modular architecture and intelligent control philosophy, the system delivers controlled washing, precise neutralization, and uniform rinsing across a wide spectrum of fabrics and finishing applications.

Every element of the Dhara Washing Solution is engineered to ensure repeatable results, reduced utility consumption, and long-term operational reliability, making it a preferred choice for modern finishing lines with high quality expectations.

Typical Applications

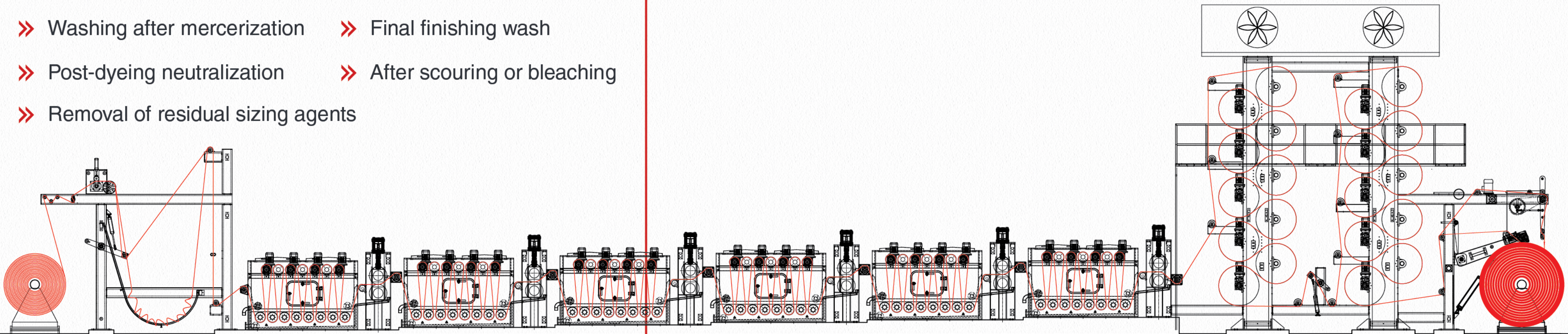
- Open-width washing
- Washing after mercerization
- Post-dyeing neutralization
- Removal of residual sizing agents
- Multi-stage rinsing
- Final finishing wash
- After scouring or bleaching

Advanced Process Intelligence

The system operates through a fully integrated automation platform that continuously monitors and regulates critical process parameters. This closed-loop control ensures stable conditions and consistent washing performance, independent of production speed or fabric variation.

- **Adaptive Water Regulation**
  Fresh water intake is continuously optimized according to fabric load and line speed through inverter-driven pumps and precision flow measurement.
- **Accurate Temperature Management**
  Liquor temperature is maintained with sensor-based steam control and PID logic, ensuring thermal stability throughout the washing sequence.
- **Automated Chemical Balancing**
  Inline dosing units work in combination with real-time pH monitoring to achieve precise neutralization and controlled chemical application.

- **Automated Chemical Balancing**
  Inline dosing units work in combination with real-time pH monitoring to achieve precise neutralization and controlled chemical application.
- **Continuous Liquor Filtration**
  Integrated filtration systems maintain bath cleanliness, reduce contamination, and extend liquor usability for improved efficiency.
- **Central PLC–HMI Control**
  A centralized touch interface enables recipe management, real-time diagnostics, alarm handling, and seamless integration with plant monitoring systems.
- **Water Recovery Strategy**
  Cascade rinsing and controlled liquor reuse are managed through conductivity-based quality evaluation, minimizing fresh water demand.



Technical Specifications: Washing Solution

General Configuration

Parameter	Specification
Machine Type	Open-width washing system
Fabric Path	Vertical
Line Concept	Modular
Operation Mode	Continuous
Fabric Handling	Low-tension, open-width
Control System	PLC with touch-screen HMI
Automation Leveltem	Fully automated with closed-loop control

Process & Control Systems

Water Control	VFD-controlled pumps with flow measurement
Steam Control	Sensor-based, PID-regulated
Chemical Dosing	Automated dosing with inline pH monitoring
Liquor Filtration	Integrated continuous filtration
Sensor Package	pH, temperature, flow, level, conductivity
Water Reuse	Cascade rinsing with quality monitoring
Connectivity	SCADA compatible

Mechanical & Fabric Transport

Drive System	Standard or optional independent twin drive
Tension Control	Load cell & pneumatic feedback system
Liquor Extraction	Optimized roller & compensator design
Fabric Stability	Wrinkle-free, distortion-free transport
Module Expansion	Wash, hot wash, neutralization, rinsing

Mechanical Design & Fabric Handling

Vertical Fabric Passage

The vertical fabric path promotes effective drainage and intensive liquor exchange, enabling deep and uniform penetration of washing or neutralizing media.

Modular Line Concept

The washing line can be configured precisely to process requirements by adding or removing modules. Hot wash, neutralization, chemical rinsing can be arranged as needed.

Low-Tension Transport (Optional)

Independent upper and lower drive systems allow exceptionally gentle fabric handling, particularly suitable for elastic, lightweight, or deformation-sensitive materials.

Efficient Liquor Expression

Optimized roller geometry combined with pneumatic compensators ensures effective liquor removal while maintaining smooth, crease-free fabric movement.

Active Tension Management

Real-time tension feedback via load cells and pneumatic control elements prevents fabric elongation and preserves dimensional stability at high operating speeds.

Operational Advantages

- Stable and reproducible washing quality
- Reduced water, steam, and chemical consumption
- Compact modular layout adaptable to existing lines
- Gentle fabric handling for sensitive materials
- Lower operating costs with sustainable processing
- Long service life with industrial-grade construction

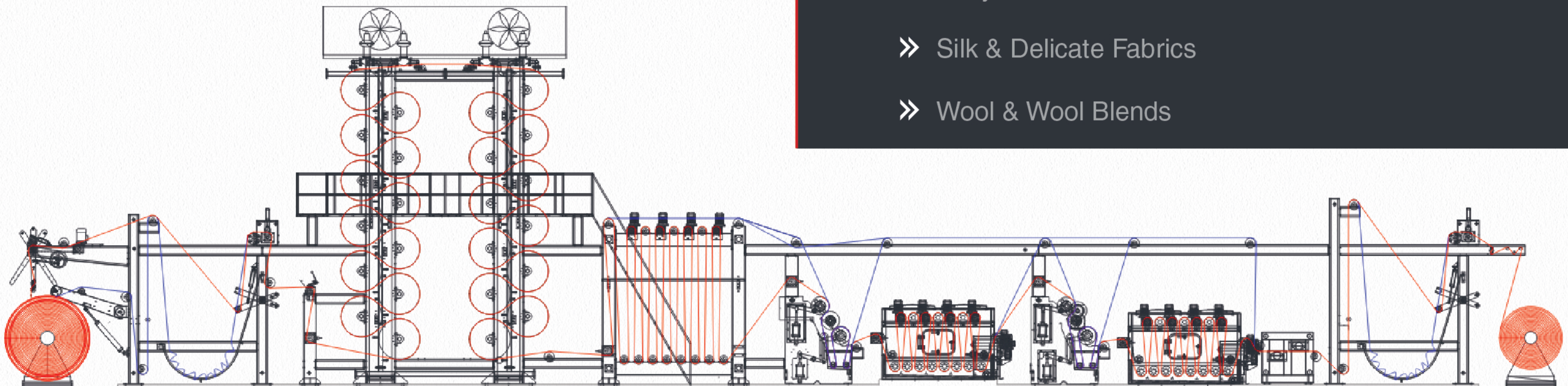
The Dhara Standard

The Dhara Washing Solution reflects a commitment to engineering discipline, process clarity, and long-term performance. Designed to meet the expectations of international textile markets, it delivers clean fabrics, controlled processing, and consistent results—day after day.

4 SPECIAL PURPOSE PROCESS LINE (CUSTOMISE SOLUTION)

Fully Customized Textile Processing Solutions for Advanced & Diverse Applications

The Dhara Special Purpose Process Line is a fully engineered, tailor-made processing system designed to meet the evolving demands of modern textile manufacturing. Developed with a modular and scalable architecture, this solution integrates multiple process stages into a unified, high-efficiency production line. From conventional fabrics to advanced technical materials, the system is engineered to deliver precision processing, consistent quality, and optimized resource utilization, ensuring superior performance across diverse industrial applications.



Integrated Process Capabilities

Each line is configured based on specific process requirements and can include:

- Padding / Impregnation Units
- Continuous Washing Modules
- Drying Systems (Vertical / Horizontal Contact Dryers)
- Steamers (Reaction Chambers) for fixation and chemical reaction
- Chemical Application & Dosing Systems
- Cooling Zones
- Fabric Opening & Guiding Systems
- Accumulation (J-Box / Scray Units)
- Inline Inspection & Batch Formation Systems

Customized Multi-Stage Lines
Designed as per process chemistry, dwell time, and production speed requirements

Material Compatibility & Industry Applications

The Dhara Special Purpose Process Line is designed to handle an extensive range of textile materials and industrial fabrics:

Textile Fabric Types

- Woven Fabrics (Cotton, Polyester, Blends)
- Knitted Fabrics (Single Jersey, Rib, Interlock)
- Denim & Heavy Cotton Fabrics
- Terry Towels & Home Textiles
- Silk & Delicate Fabrics
- Wool & Wool Blends

Technical & Industrial Textiles

- Nonwoven Fabrics (Spunbond, Meltblown, Needle-Punched)
- Geotextiles
- Filtration Media
- Medical & Hygiene Textiles
- Coated & Laminated Fabrics
- Automotive Fabrics
- Protective & Functional Textiles

Specialty Materials

- Jute & Natural Fiber Fabrics
- Viscose & Rayon
- Carbon Fiber & Glass Fiber Fabrics
- Aramid (Kevlar-type) Fabrics
- Elastic & Lycra-Based Fabrics
- High GSM Industrial Fabrics

Technical Specification (Indicative Range)

Parameter	Specification
Working Width	1400 mm – 4000 mm
Line Speed	5 – 150 m/min
Heating Medium	Steam / Thermal Oil / Electric
Automation Level	Semi / Fully Automatic (PLC + SCADA)
Configuration	Fully Modular
Fabric Handling	Open-width / Rope form
Operation Mode	Continuous

Engineering & Automation Features

- **Modular design for flexible process configuration**
- **PLC-controlled automation with HMI interface**
- **Recipe-based operation and process repeatability**
- **Closed-loop control for temperature, moisture, and chemical dosing**
- **Low-tension fabric handling across all stages**
- **Energy-efficient steam and water utilization**

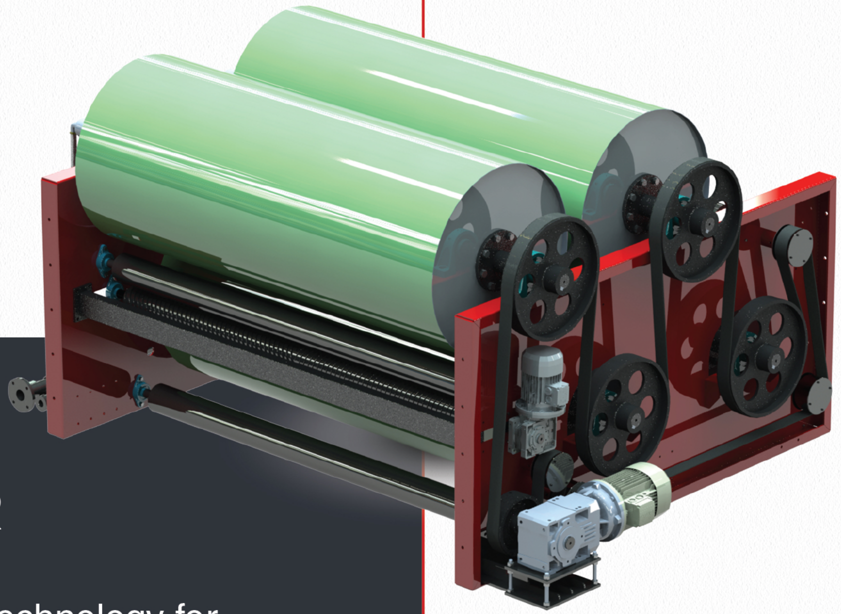
Key Advantages

- Fully customized to process requirements
- Compatible with a wide range of fabrics and industries
- High production efficiency with consistent output quality
- Reduced energy, water, and chemical consumption
- High production efficiency with consistent output quality
- Future-ready system for advanced textile processing

The Dhara Advantage

The Dhara Special Purpose Process Line represents a complete engineering approach—combining process expertise, mechanical precision, and intelligent automation to deliver high-performance, customized textile solutions for global manufacturing environments.

Dhara — Engineered for Every Fabric. Designed for Every Process.



5 PRE-DRYER FOR STENTER

Premium Pre-Drying Technology for High-Speed Fabric Processing

Key Process Advantages

- Increases overall production speed of stenter lines
- Improves fabric surface feel and softness
- Optimizes moisture evaporation prior to main drying chambers
- Reduces energy demand and heat stress on the stenter
- Ensures smooth, wrinkle-free fabric entry into weft straightener
- Maintains gentle, low-tension fabric handling

The Dhara Pre-Dryer for Stenter is a precision-engineered pre-drying developed for **fabrics after single or double padding applications.** By partially evaporating moisture before the fabric enters the stenter drying chambers, the system significantly improves **line efficiency, production speed, and final fabric quality.**

This advanced pre-drying process reduces the thermal load on the stenter, enabling **lower energy consumption, improved surface touch, and more stable drying conditions,** making it an ideal solution for modern, high-performance finishing lines.

Compact & Export-Ready Design

The Dhara Pre-Dryer features **a space-optimized, modular structure** designed to integrate seamlessly with **all types of stenter machines and drying machine inlets.** Its compact footprint makes it ideal for both **new installations and retrofit projects,** especially where space efficiency is critical.

- Suitable for continuous textile finishing lines
- Designed for stable, vibration-free operation
- Optional **thermal oil heated cylinders** available on request
- Built to meet international export standards

TECHNICAL SPECIFICATION

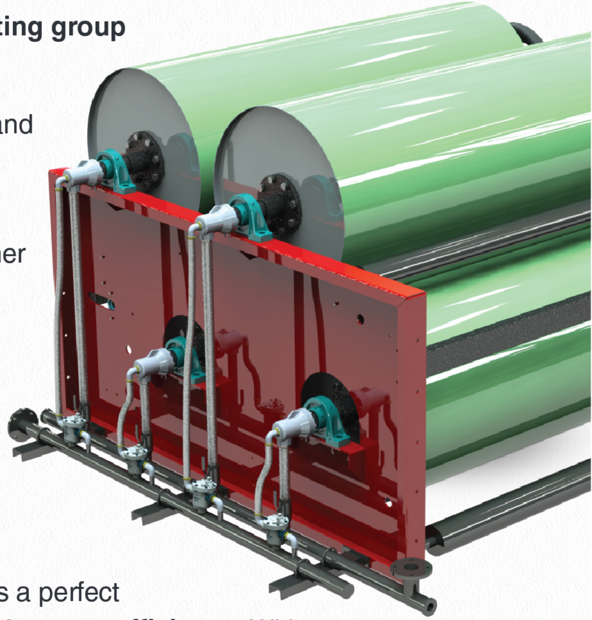
Parameter	Specification
Application	Pre-drying of knitted fabrics after padding
Working Width Range	1400 mm – 4000 mm
Heating Medium	Steam (Thermal oil optional)
Number of Steam Cylinders	3 / 4 / 5 / 6 / 8 / 10 / 12
Cylinder Diameter	400.MM / 600.MM / 800.MM
Cylinder Surface	Teflon coated
Drive System	AC inverter controlled
Fabric Transport	Driven pull-in roller & dancing roller
Tension Control	Compensating group with driven rollers
Fabric Expansion	Spiral expander group
Control Interface	Integrated with stenter line
Installation	Inlet of stenter / drying machine
Operation Mode	Continuous
Fabric Handling	Low-tension, wrinkle-free

Applications

- Continuous stenter finishing lines
- Energy-optimized textile processing plants
- Export-oriented textile production facilities

Mechanical Configuration & Fabric Handling

- **Spiral expander group** positioned before steaming cylinders to ensure fabric opening and wrinkle elimination
- **Steam-heated base cylinders,** Teflon-coated for non-stick drying and easy maintenance
- **Driven pull-in roller and dancing roller system** for tension-free fabric transfer between pre-dryer and weft straightener
- **AC inverter-controlled drive system** with **motor and gearbox** for precise cylinder speed regulation
- **Driven pull-in roller with compensating group** for accurate fabric tension control
- **Idler rollers** to maximize fabric wrap and heat contact on steam cylinders
- **AC-controlled driven roller unit** between pre-dryer and weft straightener for synchronized fabric flow



The Dhara Advantage

The **Dhara Pre-Dryer for Stenter** delivers a perfect balance of **performance, fabric care, and energy efficiency.** With its intelligent fabric handling, precise drive control, and compact design, it enhances stenter productivity while ensuring **superior fabric quality and long-term operational reliability.**

Dhara — Premium Drying Technology for Global Textile Excellence.

6 ATMOSPHERIC PAD–STEAM CHAMBER STEAMER

Advanced Steam Fixation System for Continuous Textile Processing

The Dhara Atmospheric Pad–Steam Chamber Steamer is a high-performance steaming system engineered for continuous textile wet processing lines, including desizing, bleaching, dye fixation, and chemical treatment processes.

Designed to operate under controlled saturated steam conditions, the system ensures uniform heat penetration, precise humidity control, and optimized dwell time, delivering consistent and reproducible processing results across a wide range of fabric types.

With its advanced chamber design, steam saturation technology, and intelligent sealing systems, the Dhara Steamer provides superior fixation efficiency, reduced chemical consumption, and enhanced fabric quality, making it an essential component for modern textile finishing plants.

Engineered Performance Specifications

- Working Width: 1400 mm to 4000 mm
- Chamber Configuration: Modular (2 / 3 / 4 Compartments)
- Operating Temperature: Up to 102°C
- Steam Condition: Saturated Steam (Atmospheric)
- Fabric Speed: 20 m/min to 100 m/min
- Dwell Time Range: 1 – 10 Minutes
- Machine Construction: SS 304 / SS 316 (Optional)
- Insulation: High-density thermal insulation with cladding
- Operation Mode: Continuous
- Fabric Form: Open Width / Rope Form

Operational Advantages

- Improved color fastness and fixation
- Optimized chemical utilization
- Reduced reprocessing and rejection rates
- Stable and reproducible process control

Key Performance Advantages

- Superior dye fixation and chemical reaction efficiency
- Uniform steaming across full fabric width
- Reduced steam, water, and chemical consumption
- Gentle, low-tension fabric handling
- Wrinkle-free fabric movement and loop formation
- High productivity with stable process control
- Long operational life with corrosion-resistant construction
- Consistent and repeatable fabric quality

Advanced Steam Saturation & Distribution

External Steam Saturator System

The Dhara Steamer is equipped with an external steam saturator unit, ensuring:

- Delivery of dry, saturated steam
- Elimination of wet steam and condensate carryover
- Stable and uniform steaming conditions

Uniform Steam Distribution Network

- Engineered steam header and nozzle system
- Balanced steam flow across all chambers
- Elimination of temperature variation and cold spots

Heated Roof Design

- Prevents condensation formation inside chamber
- Eliminates water droplet marks on fabric
- Ensures clean and uniform processing

Advanced Entry & Exit Sealing Technology

Steam Lock at Entry (Steam Lips System)

- Prevents air ingress into the chamber
- Maintains saturated steam environment
- Improves dye fixation efficiency

Energy Efficiency & Sustainability

- High-efficiency insulation system
- Optimized steam consumption design
- Heat recovery integration
- Reduced thermal losses
- Lower operating costs

Fabric Handling & Dwell System

The Dhara Steamer is designed to provide optimized dwell time and gentle fabric handling through a controlled internal fabric path.

- **Extended dwell path inside chambers**
- **Loop / guided fabric movement system**
- **Low-tension transport to prevent distortion**
- **Suitable for both lightweight and heavy fabrics**

Condensate & Moisture Management System

- **Efficient bottom drainage system**
- **High-performance steam traps**
- **Continuous condensate removal**
- **Prevents water accumulation and fabric marking**

Drive & Synchronization System

- **Fully synchronized with padding mangle and washing range**
- **VFD-controlled fabric speed**
- **Smooth entry and exit fabric control**
- **Stable operation across varying production speeds**

Process Integration

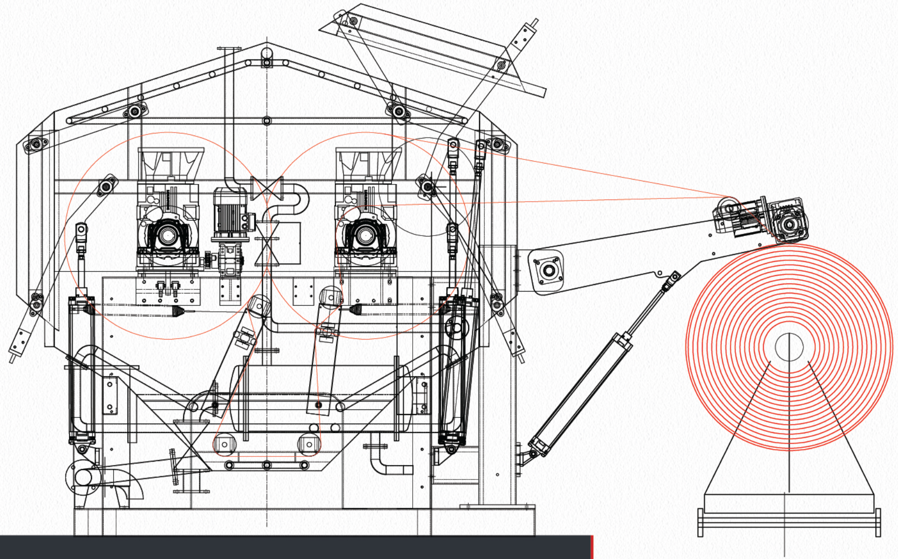
Padder → Steamer → Washing Range → Dryer

The Dhara Advantage

The Dhara Atmospheric Pad–Steam Chamber Steamer represents the next generation of textile steaming technology—combining precision engineering, advanced steam control, and intelligent process design.

Engineered to outperform conventional systems, it delivers superior fabric quality, higher efficiency, and long-term reliability, making it a preferred choice for modern textile manufacturers targeting global quality standards.

Dhara — Precision Steaming. Superior Fixation. Global Performance



7 FULLY AUTOMATIC HYDRAULIC JIGGER

Advanced Tensionless Wet Processing for Precision Textile Dyeing

The Dhara Hydraulic Jigger is a high-performance batch dyeing and wet-processing machine engineered for scouring, bleaching, dyeing, washing, and rinsing of woven and knitted fabrics. Designed for true tensionless fabric handling, the system ensures uniform shade development, zero center-selvedge variation, and complete elimination of tailing effects, even on delicate or high-value textiles.

Supporting reactive, vat, sulphur, and specialty dyes, the Dhara Hydraulic Jigger combines energy-efficient hydraulic drives, advanced liquor management, and PLC-based automation to deliver consistent, reproducible results for modern textile finishing plants.

Machine Construction & Design

- Closed-type stainless steel body construction for durability and hygiene
- Pneumatically operated doors for safe and ergonomic operation
- Manual door opening with gas spring assistance on compact models
- Heavy-duty frame designed for continuous industrial use

Working Range & Capacity

- Available Working Widths: 1600 mm to 3400 mm
- Batch Capacities: 100 kg to 2000 kg
- Fabric Handling: Tensionless batch processing
- Suitable Processes:
  - Desizing
  - Bleaching
  - Washing & Rinsing
  - Scouring
  - Dyeing

Model Configuration & Technical Capabilities

Model	D-500	D-800	D-1100	D-1400
Batch Capacity	100 kg	250 kg	500 kg	1000 kg
Fabric Tension Range	3–20 kg	3–30 kg	5–50 kg	5–50 kg
Hydraulic Power Pack	2.2 kW	3.75 kW	5.6 kW	11.25 kW
Direct Heating	Standard	Standard	Standard	Standard
Indirect Heating	Available	Available	Available	Available
Selvedge Shifting System	—	Standard	Standard	Standard
Pressurized Vapour Exhaust	—	—	Standard	Standard
Independent Batching Motor	—	Standard	Standard	Standard

Semi-Automatic Configuration

- Automatic fabric reversal
- Automatic speed & temperature regulation
- Electronic tension control
- Automatic water filling and draining
- Pendulum mode operation

Process Enhancement Features

- Heated hood to prevent condensation
- High-efficiency Scray nozzles for effective rinsing
- Automatic pendulum oscillation system to avoid batch imbalance
- Electronic fabric tension control for uniform processing

Digital Integration & Plant Connectivity (Optional)

- Centralized control for multiple jigger installations
- Remote monitoring and data acquisition
- Direct integration with central color kitchen systems
- Utility consumption tracking and MIS reporting

Technical Specification (Process Parameters)

Parameter	Specification
Maximum Process Temperature	Up to 98 °C
Process Speed Range	10 – 150 m/min
Fabric Drive System	Servo-controlled
Fabric Tension Control	Electronic
Heating System	Direct & Indirect
Cooling System	Integrated
Auto Swing System	Yes

Fully Automatic PLC-Controlled Configuration

- **Volumetric fresh water inlet for precise liquor ratio control**
- **Programmable linear or flexible dosing of dyes and chemicals**
- **Automatic control of: 1. Reversal 2. Speed 3. Temperature 4. Filling and draining dr**
- **Operator-guided sampling**
- **Complete recipe management system**
- **Process programming from loading to unloading**

Energy-Efficient Hydraulic Drive System

- **VFD-controlled hydraulic power pack**
- **Optimized power consumption with up to 40% energy savings**
- **Smooth, vibration-free fabric movement for stable batch control**

Key Advantages

- True tensionless fabric processing
- Uniform dye penetration with no shade variation
- Reduced energy, water, and chemical consumption
- High repeatability and process stability
- Scalable automation for future expansion
- Suitable for standard and technical textiles

The Dhara Advantage

The Dhara Hydraulic Jigger combines precision hydraulic engineering, intelligent automation, and advanced liquor management to deliver consistent quality, operational efficiency, and long-term reliability—making it a future-ready solution for modern textile wet-processing operations.

8 PADDER UNIT

Intelligent Padding & Dewatering System

The Dhara Padder Unit is an advanced padding solution designed for precise chemical application, controlled dewatering, and consistent finishing quality. Built with heavy-duty mechanical construction and intelligent process control, it ensures uniform liquor pick-up, stable fabric handling, and repeatable results across a wide range of textile applications.

Now enhanced with an integrated high-efficiency chemical filtration system, the Dhara Padder Unit delivers cleaner operation, reduced chemical wastage, and improved process stability, making it ideal for modern, export-oriented textile finishing plants.

Advanced Chemical Filtration System

- Closed-type stainless steel body construction for durability and hygiene
- Maintains chemical purity and bath consistency
- Reduces re-dosing and chemical wastage
- Extends bath life and lowers operating costs
- Ensures stable processing temperatures
- Improves fabric-to-fabric consistency

Padder Configurations

Dhara Two Bowl Padder

Compact and efficient design for standard finishing operations. Ideal for light to medium squeezing applications, offering precise chemical application with gentle fabric handling.

Dhara Three Bowl Padder

Designed for high-throughput and multi-stage finishing lines. Provides enhanced pressure uniformity and improved liquor penetration for demanding processes.

Squeezing Configuration Comparison
LOW vs HIGH SQUEEZING OPTIONS

Model	Model	Model
Fabric Type	Delicate / Lightweight	Medium to Heavy Fabrics
Mechanical Stress	Very Low	High & Controlled
Chemical Application	Precision pick-up	Maximum dewatering
Squeezing System	Standard nip control	Swimming rolls + nip control
Drying Load	Moderate	Significantly reduced
Energy Efficiency	Standard	High
Typical Use	Fine knits, sensitive fabrics	High-speed finishing lines

Technical Specifications

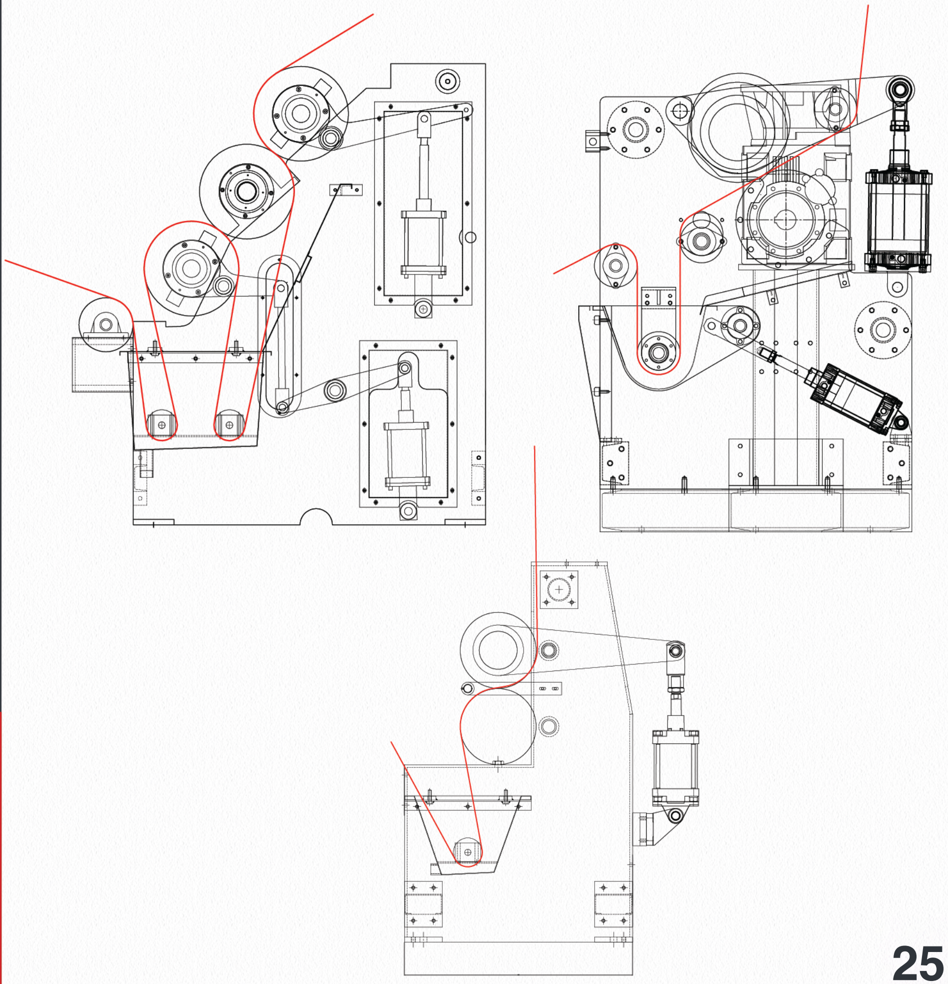
Parameter	Specificaton(Two)	Specification (Three)
Application	Dewatering & chemical finishing	As per fabric & application
Number of Bowls	2	3
Max. Squeezing Pressure	Up to 12 Tons	Up to 15 Tons
Nip Pressure	Up to 50 N/mm	Up to 50 N/mm
Roller Design	Crowned & counter-pressure rollers	Crowned & counter-pressure rollers
Rubber Hardness	As per fabric & application	As per fabric & application
Fabric Expansion	Bow roller (curved bar expander)	Bow roller (curved bar expander)
Curl Control	Driven scroll rollers	Lifting & Lowering
Trough Types	Sliding / Tilting / Lowering	Pneumatic compensator / Load cell
Immersion Path	Standard / Long	Standard / Long
Trough Construction	Standard / Jacketed	Optional level & pH control
Temperature Control	Optional	Optional tank with stirrer & pump
Control System	PLC with Touch Screen	PLC with Touch Screen
Frame Material	MS / Optional SS 304	MS / Optional SS 304 / SS 316
Working Width	1400 – 3600 mm	1400 – 3800 mm

Applications

- Dyeing pre-treatment
- Chemical finishing
- Resin & softener application
- Moisture control and dewatering
- Continuous textile finishing lines

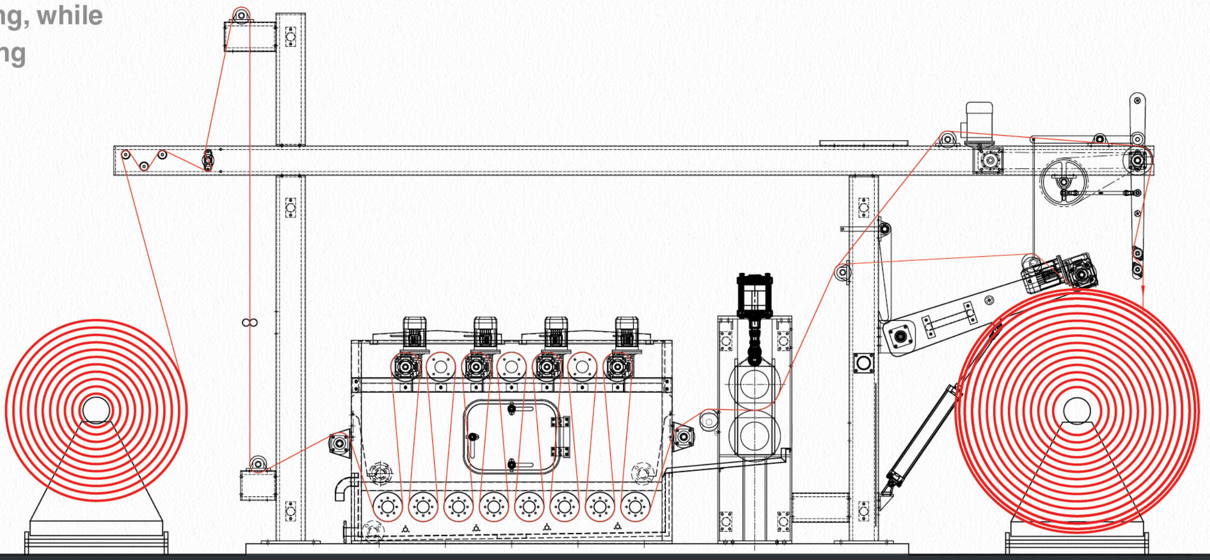
Key Engineering Features

- Integrated Filtration Unit – cleaner bath, lower chemical consumption
- Thermal Stability System – consistent bath temperature
- Adjustable Nip Pressure – up to 50 N/mm
- PLC-Controlled Operation – accurate and repeatable process control
- Available Working Widths – 1400 mm to 3600 mm
- Durable Roller Surfaces – special coatings for long service life



The Dhara Desizing Machine is engineered for the efficient and uniform removal of sizing materials applied during weaving, such as starch, gums, PVA, and synthetic size compounds. Designed to support modern wet-processing lines, the system ensures thorough size removal, consistent liquor penetration, and fabric-safe handling across a wide range of fabric constructions.

By enabling controlled enzymatic hydrolysis, the Dhara Desizing Machine prepares fabric for downstream processes such as scouring, bleaching, dyeing, and finishing, while minimizing chemical consumption and processing variability.



9 DESIZING MACHINE

Controlled Enzymatic Desizing for Clean, Process-Ready Fabrics

Process Principle

- Desizing is achieved by enzymatic hydrolysis, where starch-based sizes are converted into water-soluble fragments under precisely controlled temperature, concentration, and dwell time.

  The Dhara system allows desizing operations to be carried out from ambient temperature up to boiling temperature, depending on enzyme formulation and fabric requirements.

Machine Construction & Design

- Stainless Steel Desizing Tank (SS 304 / SS 316)
- Available in open-type or fully enclosed construction
- Optimized roller arrangement inside the tank to ensure:
  - Uniform liquor pick-up
  - Effective wetting for all fabric types
- Corrosion-resistant design for long service life
- Hygienic construction suitable for enzyme-based processing

Automation & Optional Systems

- Automatic or Manual Chemical Dosing System (optional)
- Chemical Preparation Tanks for enzyme & auxiliary preparation (optional)
- Temperature regulation suitable for enzyme-specific processing
- Integration-ready for upstream and downstream wet-processing equipment

Fabric Handling & Speed Control

- Variable machine speed for precise control of liquor absorption and dwell time
- Speed adjustment to suit:
  - Light-weight fabrics
  - Heavy woven fabrics
  - High-size-content textiles
- Gentle, controlled fabric transport to prevent creasing or distortion

Applications

- Removal of starch-based and synthetic sizing agents
- Preparation of woven fabrics prior to:
  - Scouring
  - Bleaching
  - Dyeing
  - Finishing
- Suitable for cotton, blended fabrics, and technical woven textiles

Key Operating Features

- Operational Speed Range: 5 – 60 m/min
- Fabric Working Widths: 1600 mm to 3400 mm
- Auto Steam Control for stable bath temperature
- Simple, operator-friendly operation
- Designed for continuous and consistent processing

Process Benefits

- Uniform and complete size removal
- Improved absorbency for downstream wet processes
- Reduced chemical and water consumption
- Enhanced fabric appearance and hand feel
- Consistent processing results with minimal operator intervention

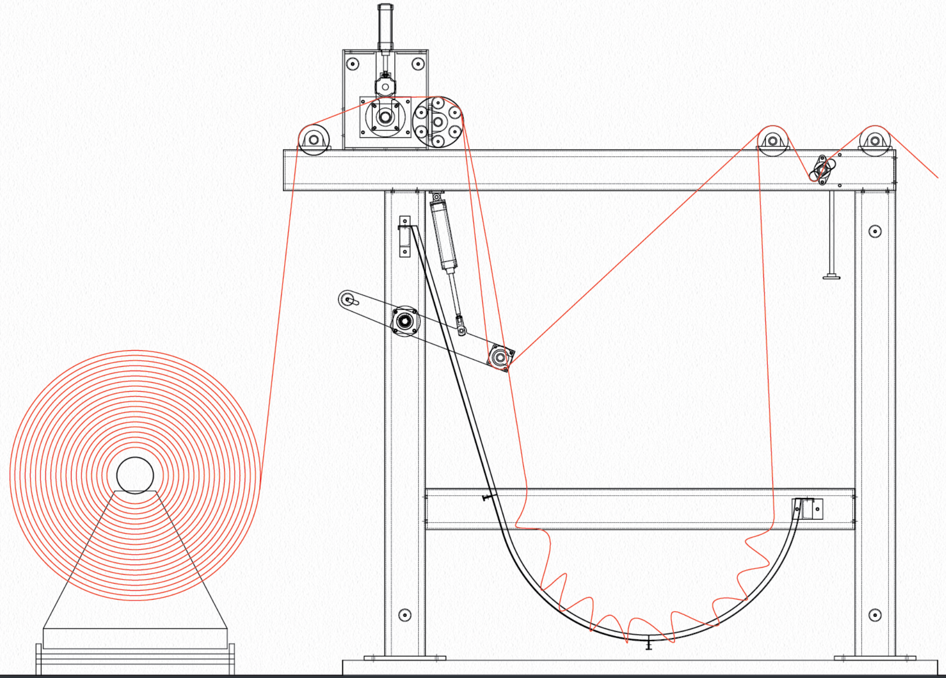
The Dhara Advantage

The Dhara Desizing Machine combines robust stainless steel construction, precise temperature control, and flexible process settings to deliver reliable, reproducible desizing performance. It is an ideal solution for textile processors seeking clean fabric preparation, process efficiency, and long-term operational reliability.

Dhara — Engineering Precision. Delivering Consistency.

The Dhara J-Box Scray Unit is designed for continuous, non-stop fabric processing, serving as a controlled buffer at the inlet or outlet of textile finishing machines. Suitable for both woven and knitted fabrics, the unit enables smooth fabric accumulation, precise tension regulation, and uninterrupted machine operation—essential for modern, high-efficiency finishing plants.

Engineered for reliability and fabric safety, the Dhara J-Box Scray Unit ensures stable fabric flow, controlled dwell time, and consistent fabric presentation, even during speed variations between connected machines.



10 J-BOX SCRAY UNIT

Continuous Fabric Buffering & Tension Control for Non-Stop Finishing Lines

Process Function & Application

- Acts as a fabric storage and buffer system for continuous processing
- Allows upstream and downstream machines to operate independently
- Prevents fabric tension shocks during speed changes or stoppages
- Suitable for integration with washing ranges, dyeing lines, dryers, compactors, and finishing machines

Mechanical Design & Fabric Handling

- Fabric tension adjustment mechanism for controlled fabric accumulation
- AC inverter-controlled main traction roller, tape-wound for high grip and gentle fabric contact
- Optional pressure roller on driven roller for specific fabric applications
- Idler roller with ring system to guide fabric smoothly from driven cylinders
- Multiple stainless steel idler rollers ensuring stable and crease-free fabric transport

J-Box Platform & Accumulation System

- Stainless steel J-box platform sheet for corrosion resistance and long service life
- Low-friction Teflon sledges to minimize fabric drag and surface damage
- Optimized fabric stacking geometry to prevent creasing and rope marks

Control & Stability Systems

- Fabric level control system for automatic regulation of fabric accumulation
- Dancing roller system to absorb speed fluctuations and maintain constant tension
- Compatible with all types of centering and guiding units.

Applications

- Inlet or outlet buffering for:
  - Washing ranges
  - Dyeing ranges
  - Drying ranges
  - Compacting and finishing machines

Key Advantages

- **Enables non-stop, continuous production**
- **Maintains low and stable fabric tension**
- **Prevents fabric distortion during process transitions**
- **Improves overall line efficiency and machine utilization**
- **Robust construction with minimal maintenance requirements**

Construction & Finish

- Side frames hot-dip galvanized for corrosion protection
- Finished with industrial-grade paint for long-term durability
- Designed for operation in wet, humid, and chemically aggressive environments

The Dhara Advantage

The Dhara Desizing Machine combines robust stainless steel construction, precise temperature control, and flexible process settings to deliver reliable, reproducible desizing performance. It is an ideal solution for textile processors seeking clean fabric preparation, process efficiency, and long-term operational reliability.

11 ROPE OPENER

Precision Tube Opening for Uniform, Open-Width Fabric Processing

The Dhara Rope Opener, also known as a Tube Opening Machine, is engineered to convert tubular knitted and circular fabrics into a perfectly flat, open-width form with maximum control and fabric safety. As a critical component in textile finishing lines, the machine eliminates edge curling, rope marks, and residual stresses, ensuring smooth fabric presentation for downstream processes such as dyeing, printing, finishing, shaping, and cutting.

Designed for high productivity and consistent quality, the Dhara Rope Opener enhances process efficiency, dye uniformity, and dimensional accuracy, even when handling delicate or elastic fabrics.

Process Concept & Working Principle

- Tubular fabric is guided into the machine through a controlled feeding and tensioning system
- A combination of mechanical expanding elements (spiral rollers, bowed rollers, or olive-shaped expanders) progressively opens the fabric
- Air-assisted expansion (optional) introduces controlled airflow inside the fabric tube to improve opening uniformity and wrinkle removal
- Edge alignment systems (EPC) continuously monitor fabric edges and automatically correct deviations
- Fabric exits the machine in a fully opened, flat, and aligned state, ready for further processing

Core Functions

- Controlled conversion of tubular fabric to open-width form
- Removal of curling stress and rope formation
- Wrinkle-free and distortion-free fabric handling
- Stable fabric tension and speed synchronization

Machine Configuration Options

By Opening Technology

- Mechanical Rope Opener
  Uses spiral, bowed, or expanding rollers for robust and consistent opening

By Automation Level

- Fully Automatic Version
  PLC-controlled speed, tension, and edge alignment
- Semi-Automatic Version
  Manual parameter adjustment with stable mechanical operation

Specialized Variants (Optional)

- Anti-static configuration for synthetic fabrics
- High-temperature compatible designs
- Custom layouts for sterile or controlled environments

Key Components

Mechanical System

- Fabric feeding unit with tension control
- Spiral / bowed / olive-shaped expanding rollers
- Fabric guiding and spreading assemblies
- Output section with batching, plaiting, or flat stacking

Control & Drive System

- Variable frequency drive (VFD) motors
- Electronic tension monitoring and feedback
- Photoelectric Edge Position Control (EPC) system

Auxiliary & Safety Devices

- Edge suction and dust removal units (optional)
- Emergency stop switches
- Full safety guarding as per industrial standards

Performance Benefits

- Uniform fabric opening without overstretching
- Improved dyeing and finishing consistency
- Accurate edge alignment for precise cutting and printing
- Reduced fabric damage and process losses
- Smooth integration with continuous finishing lines

Selection Criteria

- Fabric type (cotton, viscose, synthetics, blends)
- Fabric elasticity and delicacy
- Compatibility with upstream and downstream machines (dyeing units, stenters, cutters)
- Required production speed

Operational Recommendations

- Ensure fabric is untwisted before feeding
- Adjust expander pressure or airflow according to fabric weight
- Periodically calibrate EPC systems for optimal alignment

Typical Applications

- Knitted fabric finishing lines
- Dyeing and washing preparation
- Hosiery and tubular garment processing
- Apparel cutting and panel preparation
- Home textiles and industrial textile processing

The Dhara Advantage

The Dhara Rope Opener combines precision mechanical engineering, intelligent control systems, and fabric-friendly design to deliver consistent, high-quality tube opening across a wide range of textiles. Built for reliability and adaptability, it is an essential solution for manufacturers seeking process stability, improved fabric quality, and operational efficiency.

Dhara — Engineering Precision. Delivering Consistency.

12

FABRIC RE-ROLLING MACHINE

Precision Roll Formation
& Controlled Rewinding System

ENGINEERING ADVANTAGES

- Consistent and compact roll formation
- Controlled winding tension prevents fabric distortion
- Smooth forward and reverse operation
- Reduced operator dependency
- Suitable for lightweight to heavy GSM fabrics
- Low maintenance and long service life

INDUSTRIES SERVED

- Textile Processing Units
- Dyeing & Finishing Plants
- Garment Manufacturers
- Fabric Exporters
- Technical Textile Producers

The Fabric Re-Rolling Machine is engineered for accurate, tension-controlled rewinding of textile rolls, ensuring uniform roll build, smooth edge alignment, and consistent fabric presentation. Designed for modern textile mills, dyeing units, inspection departments, and export houses, the system delivers stable performance across a wide range of woven, knitted, and processed fabrics.

Built with a rigid industrial structure and intelligent drive control, the machine guarantees wrinkle-free handling, controlled winding density, and repeatable roll quality for downstream processing or dispatch.

TECHNICAL PARAMETERS

- Working Width: 1600 – 3200 mm (customizable)
- Machine Speed: 0 – 90 m/min (variable)
- Operation Mode: Continuous, Bidirectional
- Input Roll Diameter: Customizable as per requirement
- Output Roll Diameter: Up to 1500 mm (or higher on request)
- Fabric Type: Woven, Knitted, Processed, Technical Textiles

Designed for Precision. Built for Performance. Engineered for Reliability.

MACHINE CONFIGURATION

Heavy-Duty Structural Frame

- Robust fabricated steel construction
- Precision-machined side supports
- Vibration-free operation at higher speeds
- Industrial epoxy surface coating

Fabric Transport & Guiding

- Smooth guide roller arrangement
- Adjustable traction system
- Controlled fabric path for wrinkle-free movement
- Optional fabric spreading device

Drive & Control System

- AC inverter-controlled drive
- Forward and reverse synchronized operation
- Adjustable speed control
- Stable torque management for uniform roll density
- Soft start / stop functionality

Applications

- Roll-to-roll rewinding
- Batch correction after processing
- Fabric inspection before dispatch
- Length verification and counting
- Edge alignment and roll rebuilding

WINDING SECTION

- Strong A-frame roll support structure
- Adjustable core holder system
- Optional expandable air shaft
- Controlled roll build formation
- Uniform edge winding for export-quality rolls

CONTROL & MONITORING

- Industrial electrical control panel
- Digital length counter
- Emergency stop system
- Overload protection
- PLC with touchscreen HMI (optional upgrade)

OPTIONAL FEATURES

- Integrated fabric inspection table with LED illumination
- Automatic edge alignment system (EPC)
- Pneumatic tension control system
- Defect marking system
- Roll weighing system
- Batch data recording
- Barcode label integration

13 CHEMICAL PREPARATION VESSEL

Precision Sizing. Consistent Performance. Industrial Control.

Stage 1 — Pre-Mixing & Dispersion Vessel
Controlled Slurry Formation and Thermal Conditioning

This vessel ensures accurate dispersion of sizing chemicals & pre-heating prior to cooking.

Design & Process Features

- Vertical cylindrical vessel with dished ends for optimized internal flow
- High-efficiency, top-mounted anchor agitator with VFD control
- Steam-jacketed or electric pre-heating system
- Load-cell-based weight measurement for precise ingredient dosing
- Prevents agglomeration and ensures uniform pre-cook viscosity

Stage 2 — Pressure Cooking Vessel
Controlled Gelatinization Under Defined Pressure Conditions

The pressure cooking vessel performs complete gelatinization of sizing components under precisely controlled pressure and temperature. Design & Process Features

- Pressure-rated SS 304 / SS 316L construction for continuous operation
- Bottom-entry propeller agitator for uniform heat distribution
- High-efficiency steam jacket or direct steam injection
- Optional vacuum degassing to remove entrapped air
- Integrated CIP system for hygienic cleaning

Stage 3 — Storage & Feeding Vessel
Homogenized Holding and Consistent Supply

This vessel maintains cooked size under controlled temperature and agitation until application. Design & Process Features

- Stainless steel with mirror-polished interior
- Conical bottom design for complete drainage
- Low-shear agitation to prevent sedimentation
- Jacketed temperature maintenance with sensor-controlled steam valves
- Multiple outlet connections with flow control

Centralized Control & Automation

The entire system is governed by a centralized PLC + SCADA architecture, ensuring precise control, safety, and traceability.

- Integrated PLC with real-time feedback loops
- HMI touchscreen interface for recipe management and process visualization
- Batch memory and data logging for audit and quality compliance
- IoT-ready remote diagnostics for proactive maintenance
- Safety interlocks and alarms for pressure, temperature, and overfill protection

Integrated Process Archiecture

The Dhara Chemical Preparation Vessel operates on a three-stage process concept, with each vessel optimized for a specific function and synchronized through a centralized PLC-based control system. This architecture ensures controlled material flow, precise parameter regulation, and full process traceability.

Applications

Ideal for preparation of sizing slurries used for:

- Cotton
- Viscose
- Polyester
- Blended yarns

End-Use Segments

- Apparel weaving
- Technical textiles
- Industrial fabric production

The system supports high-speed weaving lines as well as demanding technical fabric applications, ensuring stable performance under continuous operation.

Key Technical Advantages

- **Repeatable Batch Quality**
  Controlled gelatinization and precise viscosity development ensure consistent sizing results.
- **Energy Optimization**
  Intelligent pre-heating logic and regulated steam usage reduce energy consumption.
- **Minimal Operator Dependency**
  Fully automated sequencing with alerts minimizes manual intervention.
- **Modular Scalability**
  Configurable from single-vessel installations to large-scale chemical kitchens.
- **Clean & Safe Operation**
  Hygienic, pressure-certified, CIP-enabled vessels ensure contamination-free processing.

Construction & Capacity Range

- Material of Construction: SS 304 / SS 316L
- Insulation: Double-layer construction with industrial thermal cladding
- Capacity Options (Litres): 750 / 1000 / 1500 / 2000 / 3000 / 5000 Litres
- Sanitation: Fully CIP-compatible design

14 CHEMICAL STORAGE TANK (SS / MS)

Engineered Storage Solutions for Textile Processing Chemicals

Our Chemical Storage Tanks are precision-engineered for the safe, reliable, and contamination-free storage of textile processing chemicals used across wet processing, dyeing, finishing, and coating applications.

Designed to withstand corrosive environments, temperature fluctuations, and continuous industrial usage, these tanks are manufactured in Stainless Steel (SS 304 / SS 316 / SS 316L) or Mild Steel (MS) with internal epoxy coating, depending on chemical compatibility requirements.

These tanks are widely deployed in desizing, scouring, bleaching, dyeing, washing, finishing, and coating

APPLICATIONS IN TEXTILE

Our tanks are specifically designed to store:

- Caustic Soda (NaOH)
- Softeners (Cationic / Silicone Based)
- Reactive, Vat & Disperse Dyes (Liquid Form)
- Pigment Pastes
- Resin & Finishing Chemicals
- Optical Brightening Agents (OBA)
- Starch & PVA Solutions
- Enzymes (Amylase, Cellulase, Catalase)
- Textile Auxiliaries & Surfactants
- Soda Ash
- Hydrogen Peroxide
- Acetic Acid
- Formic Acid
- Hydrochloric Acid (Diluted)
- Sulphuric Acid (Diluted)
- Wetting Agents
- Sequestering Agents

DESIGN CONFIGURATIONS

Tank Orientation

- Vertical Mounted
- Horizontal Mounted

Bottom Construction Options

- Flat Bottom
- Conical Bottom
- Dish End Bottom
- Sloped Bottom (for complete drainability)

Top Construction Options

- Open Top with Lid
- Dished Top
- Conical Top
- Flanged & Bolted Top

TECHNICAL SPECIFICATIONS

Storage Capacity

- 50 Liters to 20,000 Liters (Custom sizes available)

Material of Construction

- SS 304
- SS 316 / 316L (Recommended for acidic & peroxide chemicals)
- Mild Steel with Chemical Resistant Coating
- SA 516 Gr. 60 / 70 (for pressure-rated applications)

Thickness (Designed as per)

- Chemical compatibility
- Load conditions
- Operating temperature
- Structural requirements

FinishingDesigned as per:

- Matt Finish
- Painted (MS Tanks)
- Mirror Finish (High Purity)
- Pickled & Passivated (SS Tanks)

Insulation (Optional)

- Hot Insulation (Mineral Wool / Rockwool)
- Cold Insulation (PUF / Foam)
- Cladded with Aluminum / SS Sheet

SAFETY & COMPLIANCE

- Leak-Proof Welded Construction
- Hydrostatic Tested
- Corrosion-Resistant Internal Surface
- Chemical Compatibility Verified
- Earthing Provision for Static Discharge
- Designed as per Industrial Safety Norms
- Compliant with ISO Manufacturing Standards
- CE-Ready Fabrication (On Request)

ADVANCED OPTIONS

- Limpet Coil for Heating
- Dosing Pump Integration
- Steam Jacketed Construction
- Manhole with Safety Cover
- Electrical Heating Coil
- Vent with Flame Arrestor
- Agitator with Gearbox & Motor
- Pressure & Vacuum Relief Valve
- Level Indicators (Analog / Digital)
- Spray Ball for CIP Cleaning
- Load Cell Based Level Monitoring
- Sight Glass with Illumination
- Bottom Discharge Valve (Butterfly / Ball / Flush Bottom Valve)

STRUCTURAL ADVANTAGES

- High mechanical strength
- Low maintenance
- Anti-corrosive and anti-abrasive material
- Complete drainability to prevent chemical residue buildup
- Long service life
- Designed for aggressive textile chemicals

TYPICAL INSTALLATION AREAS

- Continuous Desizing & Washing Range
- Bleaching & Mercerizing Plants
- Padder Feeding Lines
- Finishing & Coating Lines
- Chemical Dosing Systems
- Effluent Treatment Plants (ETP)

TYPICAL INSTALLATION AREAS

Our Chemical Storage Tanks are not generic vessels — they are process-engineered textile chemical management systems designed to ensure: Chemical purity, Operator safety, Process consistency, Reduced contamination Long-term durability Built for modern textile plants demanding reliability, efficiency, and compliance.

15
DRYING CYLINDERS (CAN)

CE-Compliant Precision
Cylinders for Industrial Textile Drying

Dhara Drying Cylinders are engineered to deliver highly efficient, stable, and uniform drying performance in modern textile and technical fabric processing lines. Manufactured using advanced thin-wall construction techniques and stringent quality controls, these cylinders ensure excellent thermal efficiency, dimensional accuracy, and long operational life under continuous industrial duty.

Dhara stands among the select manufacturers in India capable of supplying CE-compliant drying cylinders, designed, manufactured, and tested in accordance with applicable European safety and pressure equipment requirements. This capability reflects Dhara's commitment to international standards, process safety, and global market readiness.

ENGINEERING ADVANTAGES

- Precision thin-walled shell construction for optimized heat transfer
- Uniform surface temperature across the full working width
- Extremely low radial run-out for vibration-free operation
- High-integrity welding executed under controlled procedures
- Compatible with steam, thermal oil, and electric heating systems
- Designed for continuous, high-speed industrial operation

TECHNICAL PARAMETERS

- Working Width: 1600 – 3200 mm (customizable)
- Machine Speed: 0 – 90 m/min (variable)
- Operation Mode: Continuous, Bidirectional
- Input Roll Diameter: Customizable as per requirement
- Output Roll Diameter: Up to 1500 mm (or higher on request)
- Fabric Type: Woven, Knitted, Processed, Technical Textiles

Designed for Precision. Built for Performance. Engineered for Reliability.

Technical Specifications — Drying Cylinders

Parameter	Specification
Annual Manufacturing Capacity	Up to 2000 cylinders
Cylinder Diameter Range	400 mm – 800 mm
Working Width Range	1000 mm – 4000 mm
Hydraulic Test Pressure	3 Bar – 12 Bar
Shell Thickness	2 mm – 4 mm
Surface Finish	SS 304 / SS 316, Polished or Teflon Coated
Compliance	CE-compliant design and testing (as applicable)

Typical Applications

- Textile drying ranges
- Sizing and coating machines
- Nonwoven production systems
- Technical and industrial fabric processing lines

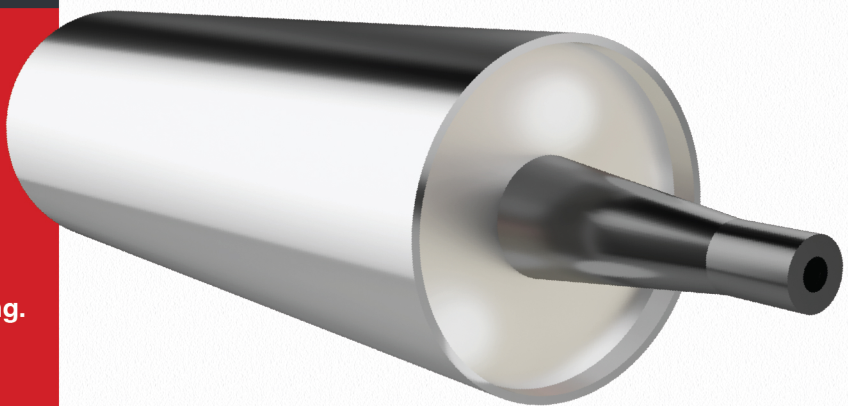
Quality Assurance

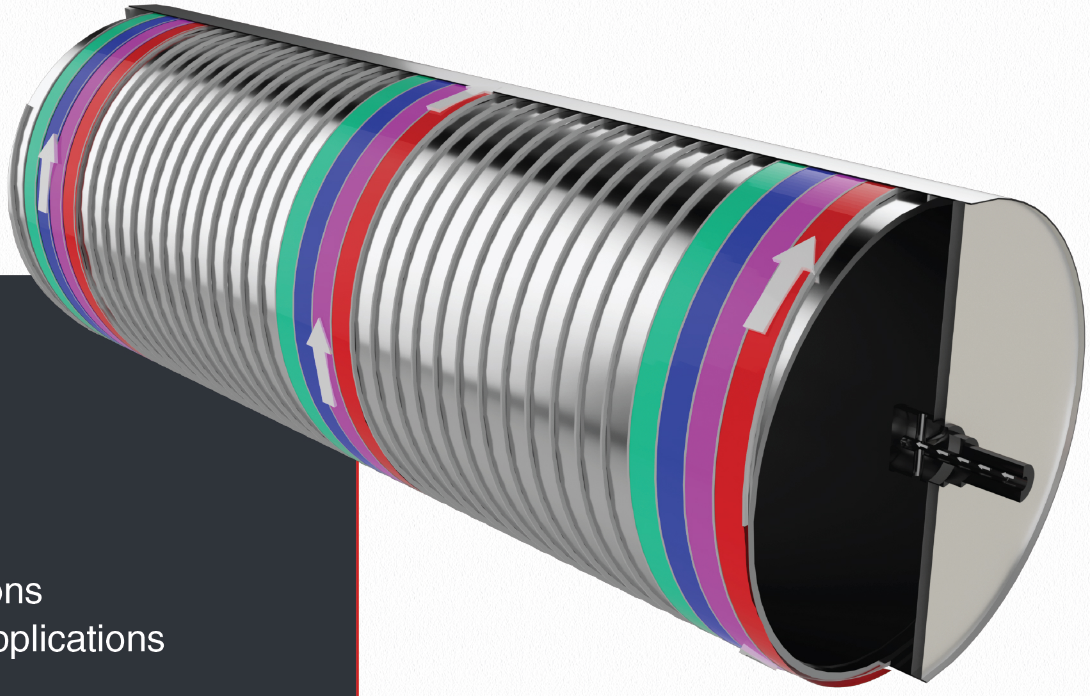
Each Dhara Drying Cylinder undergoes controlled fabrication, pressure testing, and dimensional inspection to ensure mechanical integrity, operational safety, and long-term reliability.

Dhara — Precision-Engineered Cylinders for Global Textile Manufacturing.

Energy Efficiency Add-Ons (Optional)

- **Provision for advanced ceramic surface coating on drying cylinders to reduce radiant heat loss and improve effective heat transfer efficiency.**
- **Option to supply high-density thermal insulation sheets for non-contact surfaces and cylinder end zones to minimize heat dissipation to the ambient environment.**
- **Designed to reduce overall steam consumption by improving thermal retention and stabilizing surface temperature during continuous operation.**
- **Supports energy optimization objectives in accordance with EU best-practice guidelines for industrial thermal processes.**
- **Contributes to lower specific energy consumption (SEC) per unit of production, particularly in high-speed and long-duration drying applications.**
- **Enhances process stability by maintaining uniform thermal conditions across the drying surface.**
- **Reduces condensate losses and improves overall thermal system efficiency.**
- **Supports compliance with energy-efficiency and sustainability requirements commonly referenced in European textile processing standards.**





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JACKETED HEATING & COOLING

Controlled Thermal Solutions
for Heating and Cooling Applications

Dhara Jacketed Heating & Cooling Cylinders are designed for processes requiring accurate temperature regulation, uniform heat distribution, and controlled cooling performance. The jacketed construction allows efficient circulation of heating or cooling media, ensuring stable surface temperatures and consistent process conditions.

Manufactured with robust inner and outer shell configurations, these cylinders provide safe pressure operation, efficient thermal exchange, and reliable long-term performance, making them suitable for continuous industrial environments.

Engineering Features

- Jacketed construction for uniform heating or cooling
- Optimized internal flow design for efficient thermal transfer
- Stable pressure performance during continuous operation
- Polished or Teflon-coated surfaces for easy maintenance
- Compatible with steam, hot water, or cooling media
- Designed for seamless integration into continuous processing lines

Technical Specifications — Jacketed Heating / Cooling Cylinders

Parameter	Specification
Cylinder Diameter Range	400 mm – 800 mm
Working Width Range	1000 mm – 4000 mm
Hydraulic Test Pressure	3 Bar – 5 Bar
Operating Pressure	1 Bar – 3 Bar
Inner Shell Thickness	5 mm – 12 mm (SS / MS)
Outer Shell Thickness	2 mm – 4 mm
Surface Finish	Polished or Teflon Coated

Typical Applications

- Cooling zones in drying ranges
- Heat stabilization and conditioning sections
- Post-drying temperature control
- Technical textile and industrial fabric processing

Quality Assurance

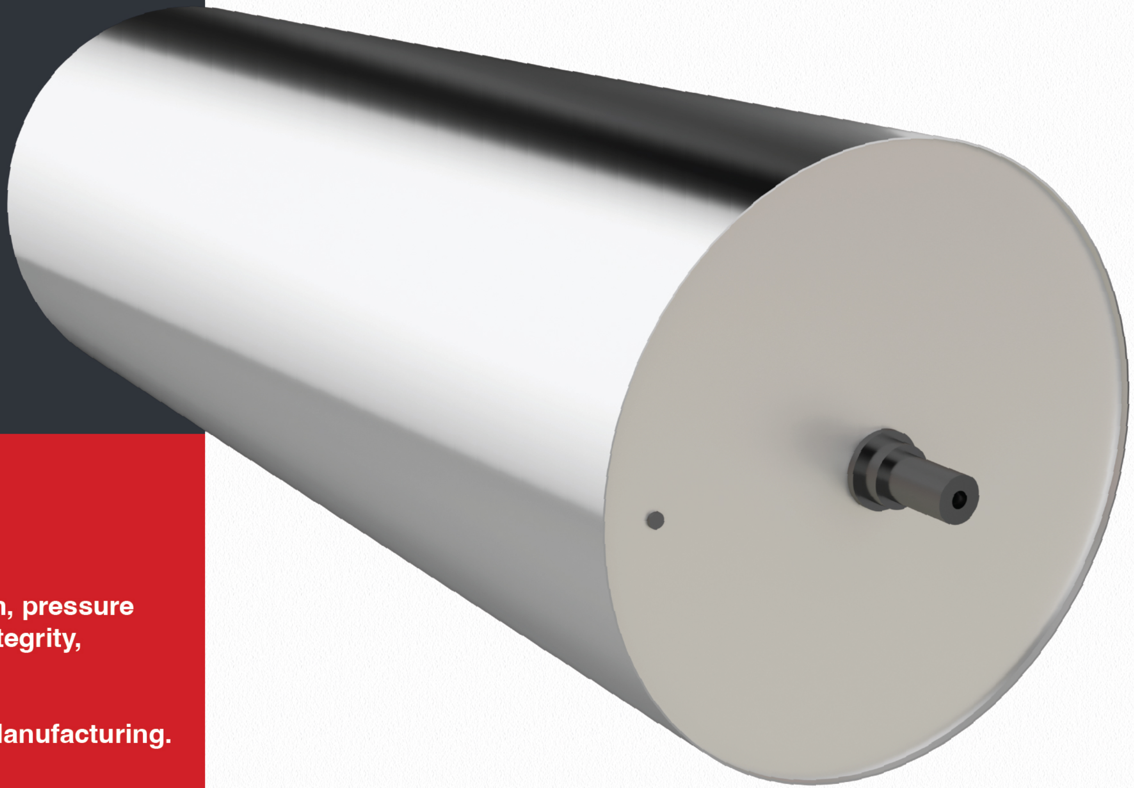
Each Dhara Drying Cylinder undergoes controlled fabrication, pressure testing, and dimensional inspection to ensure mechanical integrity, operational safety, and long-term reliability.

Dhara — Precision-Engineered Cylinders for Global Textile Manufacturing.

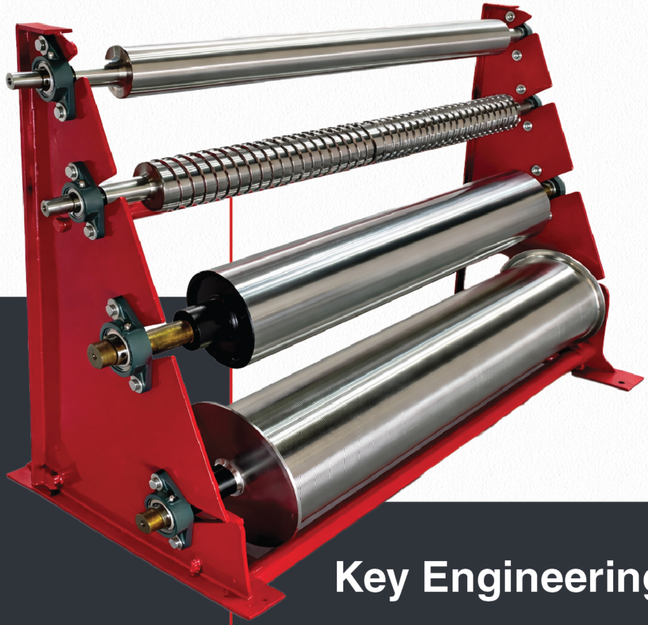
Quality Assurance

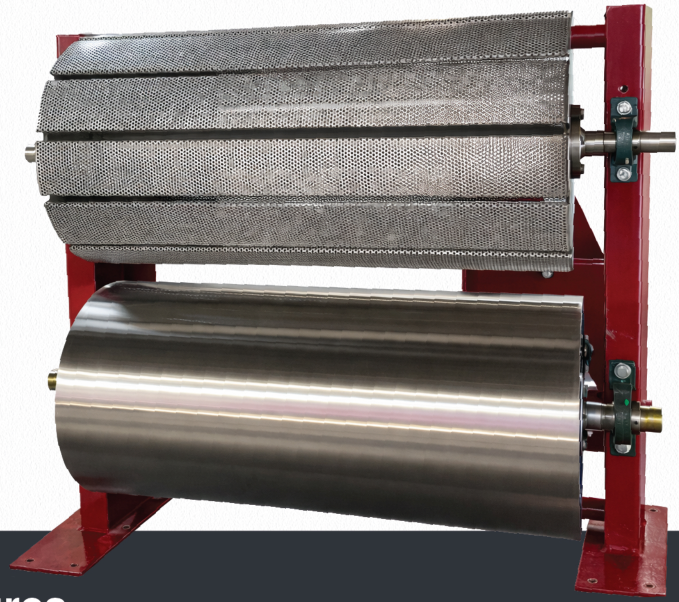
Dhara Jacketed Cylinders are manufactured using certified raw materials, qualified welding procedures, and controlled inspection processes. Each unit is pressure tested and verified to ensure safe operation, dimensional accuracy, and process reliability.

Dhara — Advanced Thermal Engineering for Precision Textile Processing.



17 TEXTILE ROLLERS & GUIDE ROLLERS





Precision Guidance Solutions
for Textile Processing

Dhara manufactures a compclrehensive range of Textile Rollers and Guide Rollers engineered to ensure smooth fabric transport, accurate alignment, and controlled tension across textile processing lines. Designed for durability and precision, these rollers support consistent fabric flow while minimizing creasing, distortion, and surface damage.

The Dhara roller range includes plain guide rollers, fluted rollers, stainless steel guide rollers, sanforizing drums, and SS-cladded rollers, suitable for both conventional textile finishing and advanced technical fabric applications.

Key Engineering Features

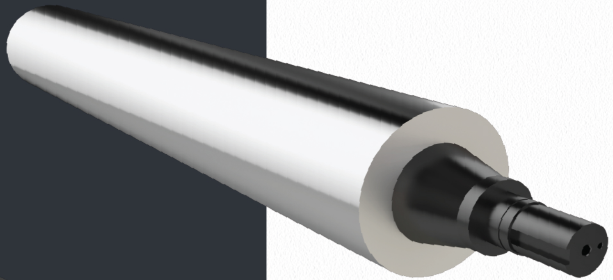
- Premium Stainless Steel Construction
  Manufactured from high-grade SS 304 / SS 316, offering excellent corrosion resistance and long service life in wet, chemical, or high-temperature environments.
- Precision Machined Surfaces
  Polished or Teflon-coated finishes provide gentle fabric contact, reducing friction, snagging, and surface marking.
- Optimized Roller Dimensions
  Wide diameter and width options enable handling of delicate knitted fabrics to heavy technical textiles.
- Robust Bearing Arrangement
  Heavy-duty, high-quality bearings ensure smooth rotation, low vibration, and minimal maintenance.
- Fabric-Safe Operation
  Designed to maintain consistent tension and alignment, ensuring wrinkle-free and damage-free fabric movement.
- Versatile Integration
  Suitable for installation in drying ranges, finishing machines, washing lines, sanforizing units, and coating systems.

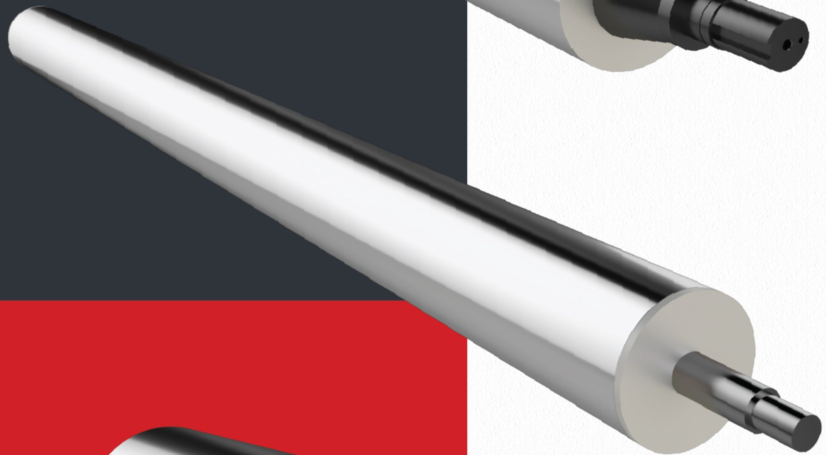
Technical Specifications — Guide Rollers

Parameter	Specification
Roller Diameter	100 mm – 400 mm
Working Width	1000 mm – 4000 mm
Roller Type	Plain / Fluted
Surface Finish	SS 304 / SS 316, Polished or Teflon Coated

Roller Types Offered

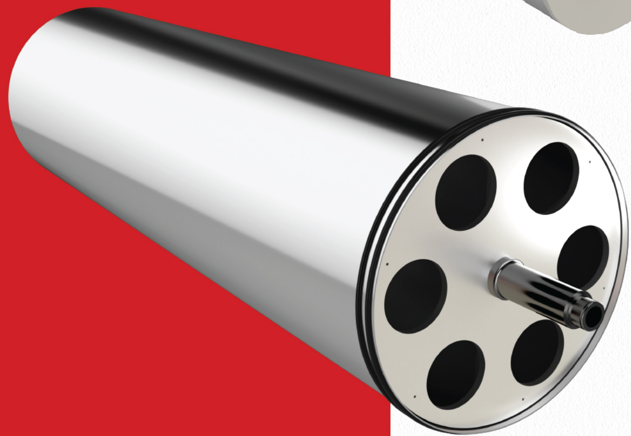
- Fluted Guide Rollers
- Stainless Steel Guide Rollers
- Sanforizing Drums
- Stainless Steel Cladded Rollers
- Steam Rollers (for heated applications)





Typical Applications

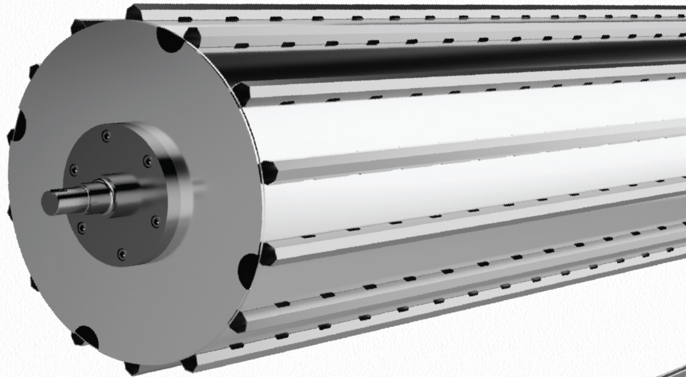
- Textile drying ranges
- Washing and finishing machines
- Sanforizing and compacting units
- Coating and laminating lines
- Technical and industrial fabric processing

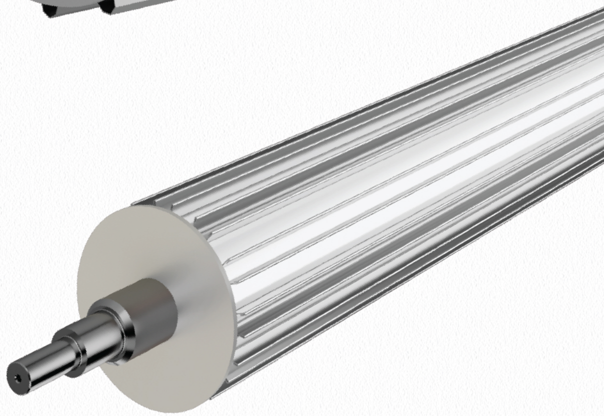


Why Dhara Textile Rollers

Dhara Textile Rollers are engineered to deliver precision guidance, mechanical stability, and long-term reliability. Whether processing lightweight fabrics or high-strength technical textiles, Dhara rollers ensure consistent fabric quality, smooth machine operation, and improved process efficiency.

Dhara — Precision Rolling Solutions for Modern Textile Processing.





18 AUTOMATIC CLEANING FILTER & CIRCULATION SYSTEM

Intelligent Liquor Management for Consistent Textile Processing

Core Functions

- Continuous liquor filtration and circulation
- Automatic filter cleaning without production stoppage
- Precise chemical dosing and concentration control
- Closed-loop operation to minimize waste and losses
- Stable liquor temperature management

The Dhara Automatic Cleaning Filter & Circulation System is a PLC-controlled rotary filtration and liquor circulation solution designed to ensure uniform chemical application, stable process conditions, and optimized resource utilization in textile finishing operations.

Engineered for padding mangles, dye tanks, and technical textile processes, the system maintains continuous liquor cleanliness through automatic filtration and self-cleaning cycles, eliminating manual intervention and process variability.

Key Features

PLC-Controlled Automation

- Pre-set operation and cleaning sequences
- Fully automatic backflushing and filter regeneration
- Operator-independent, repeatable performance

Precision Chemical Dosing

- Integrated dosing system for accurate chemical application
- Maintains consistent liquor composition
- Reduces over-dosing and chemical consumption

Efficient Circulation Design

- Continuous recirculation prevents sedimentation
- Uniform liquor concentration at the point of application
- Improved fabric-to-fabric consistency

Industrial-Grade Construction

- Chemical-resistant circulation pumps
- SS 316L piping and all wetted components
- Fine mesh rotary filters for effective impurity removal
- Optional heat exchanger for temperature stabilization

Integration & Retrofit Capability

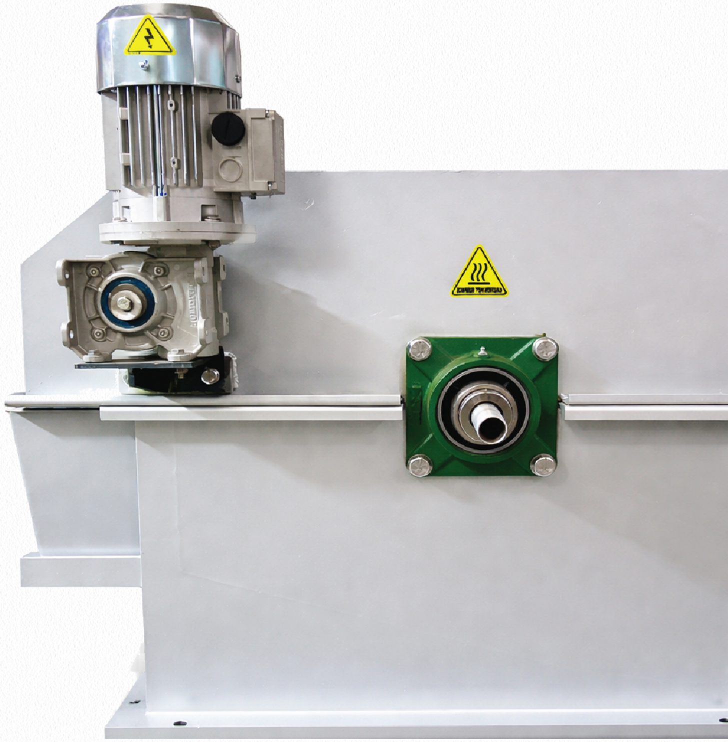
- Can be supplied as a standalone unit or retrofitted to existing machines
- Compatible with existing padding mangles, dye tanks, and application systems
- Custom mechanical and control interfaces for seamless integration
- Upgrade efficiency and sustainability without replacing installed equipment

Applications

- Padding mangles, Dry Tanks
- Continuous finishing and coating lines
- Chemical application systems
- Technical textile processing equipment

Process & Sustainability Benefits

- Reduced chemical wastage and liquor spillage
- Lower effluent generation
- Improved energy efficiency through stable thermal control
- Reduced downtime and maintenance effort
- Lower overall operating costs



Quality Assurance

The Dhara Automatic Cleaning Filter & Circulation System combines automation intelligence, chemical precision, and industrial reliability to deliver consistent process control and measurable cost savings.

Dhara — Intelligent Filtration. Controlled Circulation. Consistent Results.

19 HYDRAULIC BATCH ROTATING SYSTEM

Controlled Fabric Reaction & Batch Rotation Station

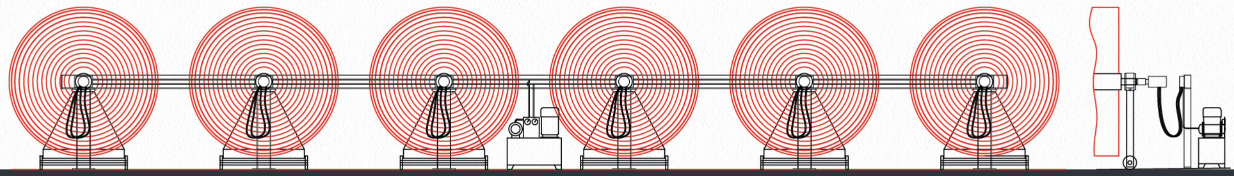
The Hydraulic Batch Rotating System is designed to provide controlled slow rotation of textile fabric batches during reaction or dwelling periods in wet processing operations such as desizing, dyeing, and washing.

During these processes, fabrics require a reaction time of approximately 6–8 hours to allow proper chemical interaction and dissolution of sizing materials such as starch, gums, and PVA. Controlled batch rotation ensures uniform chemical penetration throughout the fabric roll, preventing compression or uneven treatment.

The system utilizes a hydraulic drive mechanism capable of delivering high torque at low rotational speeds, enabling smooth and continuous rotation of wet fabric rolls without damaging the fabric structure.

The equipment consists of a central hydraulic power pack connected to multiple drive stations, allowing simultaneous rotation of several batches during the reaction period.

This system is widely used in continuous textile wet processing plants to improve chemical efficiency, fabric quality, and operational reliability.



SYSTEM CONFIGURATION

The Hydraulic Batch Rotating System consists of:

- Central Hydraulic Power Pack Unit
- 6 to 8 Hydraulic Drive Stations
- Individual drive control for each station
- Hydraulic motors mounted on batch trolleys
- High-pressure hydraulic hoses and fittings
- Structural support frame for drive stations

Each drive station rotates the fabric batch slowly and continuously, ensuring proper reaction during the chemical dwell period.

Technical Specifications — Jacketed Heating / Cooling Cylinders

Parameter	Specification
Machine Type	Hydraulic Batch Rotating System
Application	Fabric Reaction & Batch Rotation
Reaction Time Supported	6 – 8 Hours
Drive Type	Hydraulic Motor Driven
Hydraulic Motors	High Torque Orbital Motors
Drive Stations	6 – 8 Stations
Power Supply	380V / 3 Phase / 50–60 Hz
Hydraulic Pump Type	Dual Gear Pump
Oil Tank Capacity	Approx. 40 Liters
Hydraulic Hose Size	3/8" High Pressure Hose
Frame Construction	Heavy Duty Mild Steel Fabricated
Surface Finish	Industrial Powder Coated
Operation	Continuous Duty

Typical Applications

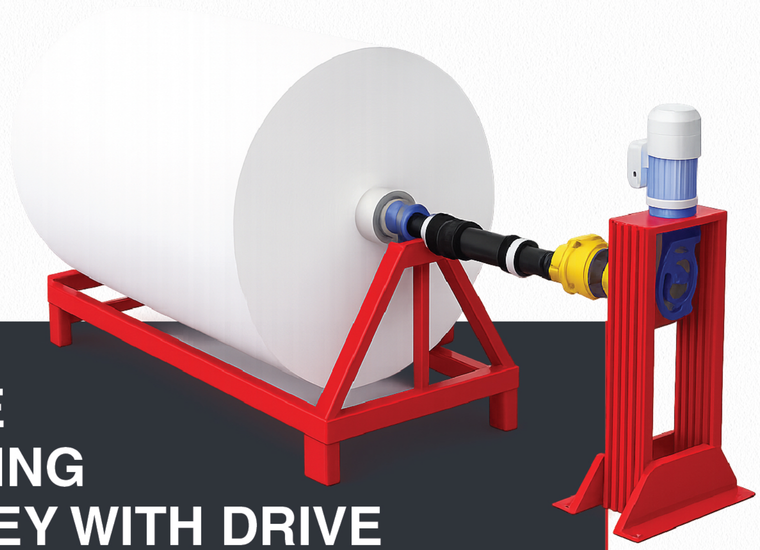
- Textile Wet Processing Plants
- Continuous Desizing Lines
- Fabric Dyeing Operations
- Fabric Washing Systems
- Chemical Reaction Storage

KEY FEATURES

- Hydraulic Drive Rotation
  Economical hydraulic system designed for slow and controlled rotation of wet fabric batches.
- Uniform Chemical Reaction
  Ensures proper penetration of chemicals during desizing and dyeing processes.
- Fabric Protection
  Prevents fabric compaction, creasing, or uneven chemical treatment during reaction periods.
- Industrial Duty Construction
  Heavy-duty fabricated steel structure designed for continuous textile processing environments.
- Low Maintenance Design
  Hydraulic motors and drive systems ensure reliable and maintenance-friendly operation.
- Energy Efficient Operation
  Optimized hydraulic power system for reduced energy consumption.

OPERATIONAL BENEFITS

- Uniform chemical reaction across fabric batches
- Improved desizing and washing efficiency
- Reduced fabric damage during reaction period
- Stable batch handling in wet processing lines
- Suitable for large-scale textile production plants



20 A-TYPE BATCHING TROLLEY WITH DRIVE

Heavy Duty Fabric Roll Batching
& Motorized Rotation System

The Fabric Batching & Vertical Drive System is designed for controlled batching, rotation, and handling of large fabric rolls in textile processing environments. The system integrates a Heavy Duty A-Frame Fabric Batching Trolley with SS-316 Cladded Roll and a Motorized Vertical Drive Column Assembly, enabling smooth roll rotation and stable fabric winding operations.

Engineered for textile dyeing units, finishing plants, inspection departments, and safe handling of large batches, and reliable torque transmission during fabric batching and re-rolling processes.

The equipment is constructed with heavy fabricated steel structures, precision shaft alignment, and industrial-grade drive components, providing stable operation, long service life, and minimal maintenance requirements in demanding industrial environments.

APPLICATIONS

- Fabric batching during textile processing
- Fabric roll handling in dyeing and finishing plants
- Batch rotation for inspection and reprocessing
- Fabric roll preparation for downstream processes
- Controlled roll winding and unwinding operations
- Textile production and inspection departments

MACHINE CONFIGURATION

Heavy Duty A-Frame Batching Trolley

The batching trolley is designed with a robust A-frame structure capable of supporting large diameter fabric rolls while maintaining stability during rotation and movement.

Structural Frame

- Heavy duty fabricated Mild Steel A-Frame construction
- Structural members made from 100 mm × 50 mm MS channels
- Reinforced support channels at critical load points
- Rigid base frame for stability during operation
- Industrial protective coating for corrosion resistance

Roll Assembly

- Roll Diameter: 200.MM / 220.MM
- Face Length: 1400.MM TO 3800.MM
- Roll Surface Cladding: SS-316 Stainless Steel Sheet 2.0.MM / 2.5.MM THICKNNSS
- Precision-machined roll surface for smooth fabric contact

Bearing Arrangement

- Bearing Type: UCP 210 Pillow Block Bearings
- Heavy duty bearing housing with grease lubrication

Wheel & Mobility System

- Wheel Size: 12” × 3” Heavy Duty Industrial Wheels
- Wheel Type: UHMW Bearing Type Wheels
- Load Capacity: Suitable for heavy fabric rolls
- Two fixed heavy channel support legs for stationary stability

Handling Features

- One side push handle for manual manoeuvring
- One side pull handle for positioning
- Rotating couple adapter for connection with drive column
- Smooth roll rotation during batching operation

VERTICAL DRIVE COLUMN ASSEMBLY

Drive System

- Motor Power: 5 HP
- Motor Type: Industrial Duty Induction Motor
- Power Supply: 3 Phase, 380 Volt, 60 Hz
- Motor Duty: Continuous operation

Gearbox

- Heavy duty industrial reduction gearbox
- Designed for continuous torque transmission
- Low noise and high efficiency gear system

Transmission Mechanism

- Precision Universal Joint Coupling
- Flexible torque transmission between drive and roll shaft
- Compensation for minor misalignment

Structural Column

- Heavy fabricated Mild Steel vertical support column
- Precision machined shaft alignment system
- Rigid construction to eliminate vibration

Mounting System

- Heavy duty floor mounted base frame
- Rigid mounting plate for motor and gearbox
- Designed for vibration-free operation

TECHNICAL PARAMETERS

- Maximum Fabric Roll Width: Up to 3600.MM
- Roll Diameter Capacity: Customizable as per process requirement
- Roll Support Shaft Diameter: 60 mm
- Roll Surface Material: SS-316 Stainless Steel Cladding
- Drive Power: 5 HP
- Power Supply: 3 Phase / 380 V / 60 Hz
- Bearing Type: UCP 210 Pillow Block Bearings
- Wheel Size: 12” × 3” Industrial Wheels
- Frame Material: Heavy Fabricated Mild Steel
- Surface Finish: Industrial Grey Protective Coating

INDUSTRIES SERVED

- Textile Dyeing & Finishing Plants
- Fabric Processing Units
- Textile Inspection Departments
- Garment Manufacturing Facilities
- Fabric Export Houses
- Technical Textile Manufacturers

Designed for Precision. Built for Industrial Reliability.

DHARA
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