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# ACCESORIES & UNITS GUIDE







## COMPANY PROFILE

### EFFE Endüstri Otomasyon A.Ş.

EFFE Endüstri Otomasyon A.Ş., has been offering sustainable innovative solutions since 2008 in order to provide high value-added goods and services for Textile Finishing Industry and to minimize production costs.

EFFE Endüstri Otomasyon A.Ş., with its technological and user-friendly solutions developed for end-user customers as well as other domestic and foreign machinery manufacturers, it has become an important OEM solution partner for Turkey's and the World's leading machinery manufacturers.

Each of the units and equipment that is the subject of production can be used as separate solutions, as well as as improvement, development and modification applications on different machines. Especially thanks to the modification applications of Stenter, Drying, Compacting and Traditional and Digital Printing machines; It is ensured that production and quality are increased and energy costs are reduced at the same time.

EFFE Endüstri Otomasyon A.Ş., In June 2016, it started its activities in its new and modern production factory in Esenyurt, Istanbul, with the aim of serializing the production of stenter machine and increasing the product variety.

In the 5 years following the presentation of the last generation Pasha series Stenter machine to the textile industry between 2016 and 2021, EFFE brand, one of the leading stenter machine suppliers in Turkey and in the World, added finishing machines such as Loop Steamer, Combi Relax Dryer and Compacting machines to its product range and offered to its customers. It has decided to continue its investments in order to offer finishing machines that also bear the EFFE signature.

In June 2022, EFFE completed its new investment in the second factory located in Velimeşe, Tekirdağ. EFFE, which will continue its production activities in both factories, continues to provide sustainable technology and service for textile industry with Loop Steamer, Relax Dryer, Compacting machines that have just added to its product range, as well as a double capacity increase in the production of Pasha series Stenter Machines.

## STENTER MACHINE UNITS 04-09

EF-RGU	Stenter Machine Accessories
EF-JBOX	J-Box Scray Unit
EF-MT	A-Frame Winder Center Driven
EF-BSD	Pre-Dryer Unit (Steam Heated Cylinders)
EF-WEFT	Manuel Weft Straightener
EF-ESF	Electrostatic Filter
EF-ECON	Heat Recovery Unit
EF-PSS	Fabric De-Pinning Protection Bar

## CENTERING UNITS 10-13

EF-FCU	Fabric Centering and Guiding Unit
EF-SDU	Spiral Expander Unit
EF-FCU/CT	Built-in Single Frame Centering Unit
EF-CGU	Cradle Type Centering Unit
EF-FCU/W	Fabric Centering Unit (Continue Washing Machines)
EF-FCU/B	Fabric Centering and Spreading Unit (Printing Machines)
EF-CLG	Fabric Cloth Guider and Centering Unit
EF-FCS	Fabric Centering Sensor
EF-FCS/W	Fabric Centering Sensor (Continue Washing Machines)
EF-FCU/A	Slat Type Spreader (Perforated Slats)
EF-FCU/I	Slat Type Spreader (Stainless Steel Slats)

## PADDER & WASHING UNITS 14-16

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EF-F3C	Integrated Padder Unit (Squeezing and Finishing)
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EF-SR1	Finishing Padder (Hydraulic Type)
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EF-MED/F	Pneumatic Edge Spreader (Single Plate Nozzle)
EF-FD4	Fabric Edge Uncurler
EF-MED/T	Mechanical Spreader (Tubular Fabric Sewing Machines)
EF-FS	Narrow Type Edge Spreader (Padder Inlet)

## FABRIC INFEEED UNITS 19-21

EF-PMT/K	Pinning Guider (Beltless System)
EF-PMT	Pinning Guider (Belt with Mini Decurler)
EF-PMTK/S	Pinning Guider (Special Beltless System)
EF-FEE	Pinning Wheel & Brush
EF-ECU	Infrared Edge Control Sensor
EF-ECU/C	Actuators (Rail Position Control)
EF-PC	Pipe Type Conveyor Unit
EF-DCB	Driven Fabric Conveyor Unit
EF-FBC	Fabric Conveyor Unit

## GUM APPLICATION UNITS 22-23

EF-GLU/T	Top Gum Application Unit (Stenter Machines)
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EF-GLU/V	Gum Application Unit (Vertical Chain Rails)
EF-GLU/H	Gum Application Unit (Horizontal Chain Rails)
EF-EDU/CI	Chamber Built-in Edge Drying Unit

## EDGE TRIMMING UNITS 24-25

EF-CTR	Fabric Edge Trimming Unit
EF-CTR/C	Edge Trimming Unit (Carpet & Technical Textiles)
EF-CTR/ULTR	Ultrasonic Edge Trimming Unit
EF-CTR/S	Edge Trimming Application (Compacting Machine Inlet)

## PRINTING MACHINE UNITS 26-29

EF-RBG	Printing Machines Inlet Applications
EF-FTE	Brushing Dust Collection Unit & Machine
EF-MED/SP	Pneumatic Edge Spreading Unit (Printing Machines)

## DIGITAL PRINTING UNITS 30-32

EF-DB	Batch Unwinder Unit (Center Driven & Centering Unit)
EF-DBG	Center Driven Unwinder & Centering Unit
EF-DB/SBU	Center Driven Unwinder / Roll Unwinder & Centering Unit
EF-DDC	Drying Chambers (Digital Printing Machine - 2 Chambers)
EF-DDC	Drying Chambers (Digital Printing Machine - 1 Chamber)
EF-ULTR/M	Ultrasonic Edge Trimming Machine
EF-PM	Fabric Preparation Line
EF-DGL	Fabric Preparation and Coating Line

## PIN CHAIN TENTER FRAMES 33

EF-EGD	Pin Chain Tenter Frame (Dryers)
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## OTHER MACHINES 34

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EF-HKM	Fabric Preparation Machine
EF-FTEM	Fabric Brushing & Dust Collection Machine

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STENTER MACHINE UNITS

01 EF-FCU  
Fabric Centering  
and Guiding Unit



02 EF-SDU  
Spiral Expander  
Unit



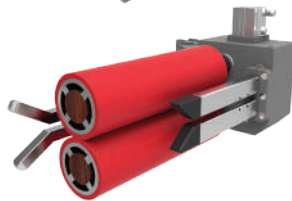
03 EF-FCS  
Fabric Centering  
Sensor



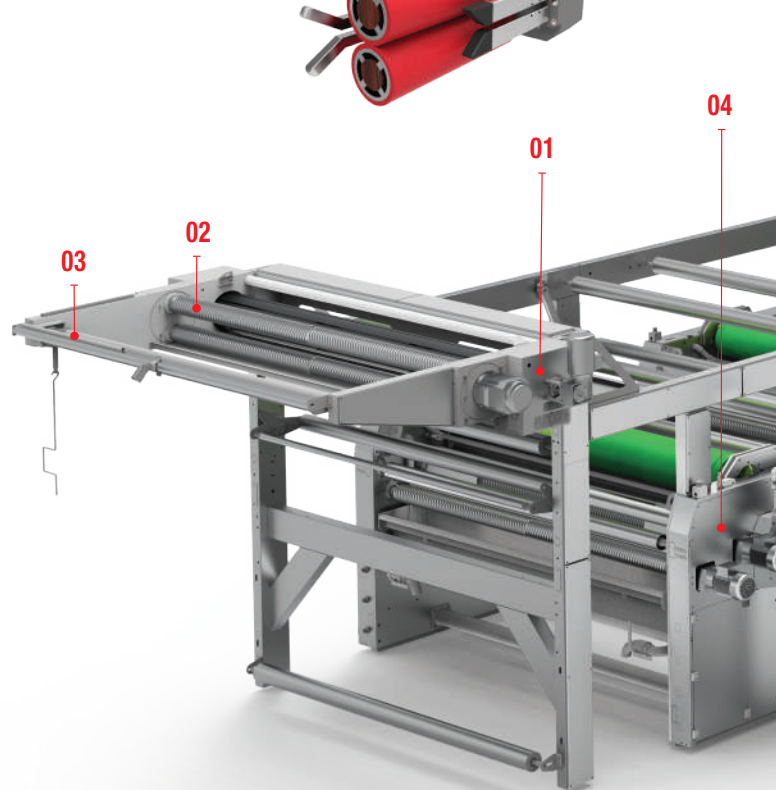
04 EF-SFU  
Squeezing and Finishing  
Padders



05 EF-FS  
Narrow Type Edge Spreader  
(Padder Inlet)



06 EF-CLG  
Fabric Cloth Guider and  
Centering Unit



07 EF-PMT/K  
Pinning Guider  
(Beltless System)



07 EF-PMTK/S  
Pinning Guider  
(Special Beltless System)



07 EF-FEE  
Pinning Wheel & Brush



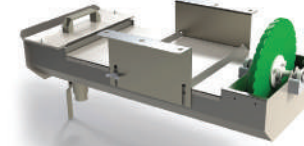
08 EF-MED & MED/F  
Mechanical & Pneumatic  
Edge Spreader



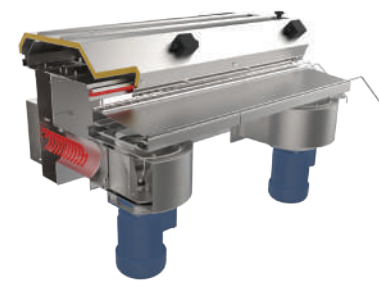
09 EF-GLU/T  
Top Gum Application Unit  
(Stenter Machines)



10 EF-GLU/H  
Gum Application Unit  
(Horizontal Chain Rails)



11 EF-EDU/IR  
Edge Drying Unit  
(With Infrared & Air Blowers)



08 EF-ECU/C  
Actuators (Rail Position Control)



08 EF-FD4  
Fabric Edge Uncurler



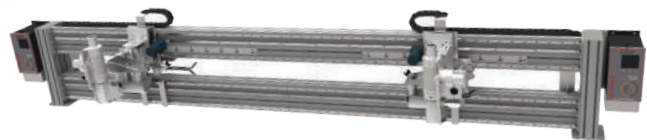
08 EF-ECU  
Infrared Edge  
Control Sensor



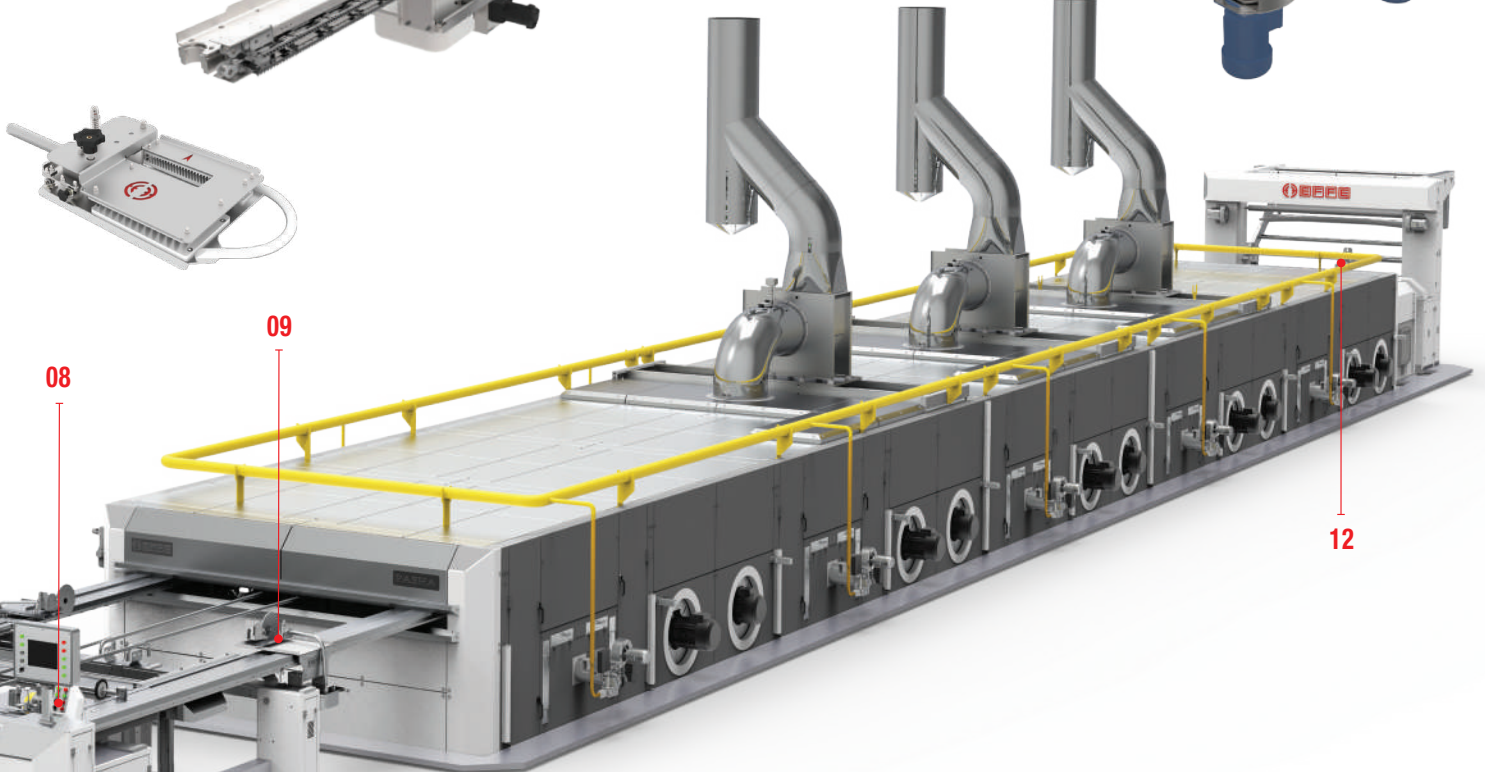
12 EF-CTR  
Fabric Edge Trimming  
Unit



12 EF-CTR/U  
Ultrasonic Edge Trimming Unit



13 EF-MT  
A-Frame Winder  
Center Driven





# STENTER MACHINE ACCESSORIES

EF-RGU

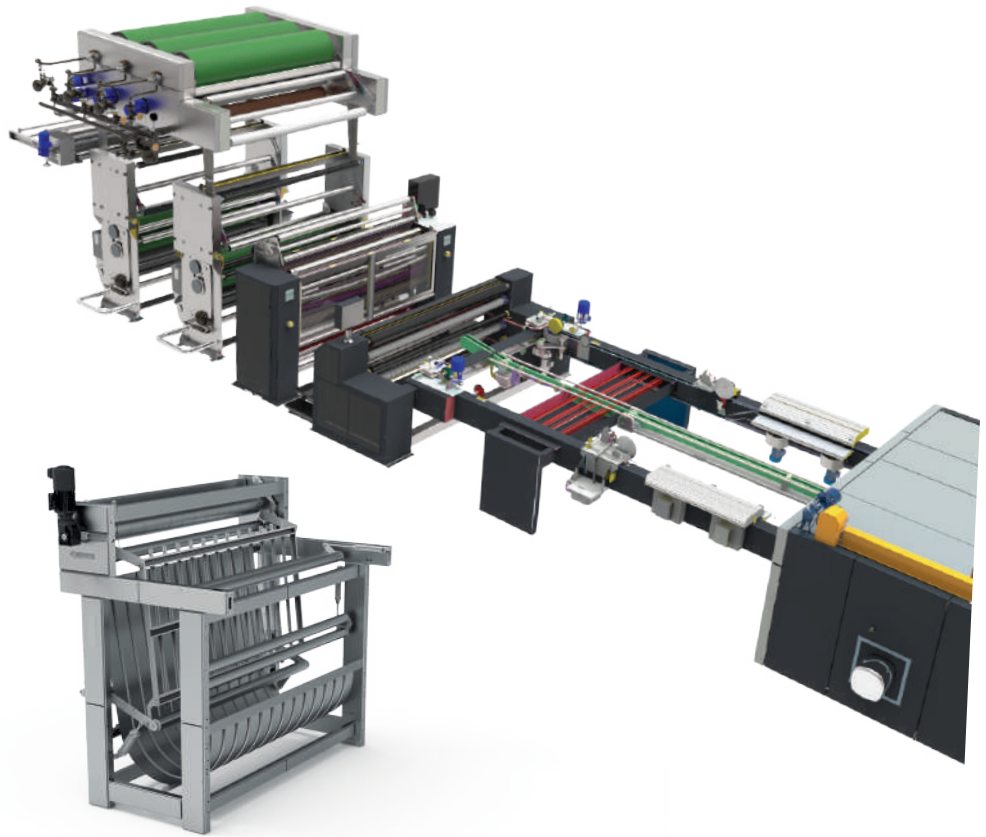
## Stenter Machine Accessories

Complete Stenter machine inlet and outlet accessories; Centering and guiding units, Padders, J-Box Scray Unit, Pre-Dryer Unit (Drying Cylinders), Pinning Groups, Steaming Units, Fabric Conveyor Units, Edge Gumming and Edge Trimming Units.

All equipments can be used for brand new machineries as well as can be applied for existing machines in your plant in order to increase performance of your machine and productivity.

### Stenter Machine Accessories

- Centering and Guiding Units
- J-Box Scray Unit
- Squeezing and Finishing Padders
- Pre-Dryer Unit (With Steam Cylinder)
- Selvage Spreading Units and Pinning Groups
- Fabric Conveyor Units
- Steaming Units
- Selvage Gum Application and Edge Drying Units
- Selvage Trimming Units (Disc Type or Ultrasonic Type)
- A-Frame un-winders and exit A-Frame Winder Units



EF-JBOX

## J-Box Scray Unit

According to the process conditions, j-box unit is preferred for non-stop operation at the inlet or exit of many finishing machines for woven or knitted fabrics.

### Technical Specifications

- Fabric tension adjustment mechanism
- AC controlled main traction roller, tape wound
- Pressure roller on driven roller in optional applications
- Idler roller with ring system for the transportation of fabric coming from driven cylinder
- Stainless j-box platform sheet with teflon sledges
- Fabric level control system
- Dancing roller system
- All type of centering and guiding units can be applied at the inlet or outlet of unit
- Stainless steel several idler rollers for fabric transportation
- Unit sides are coated hot galvanize and painted



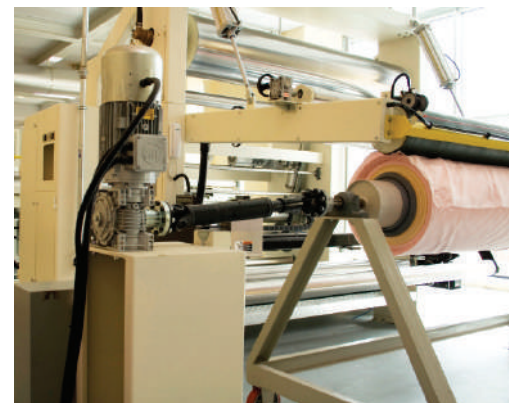
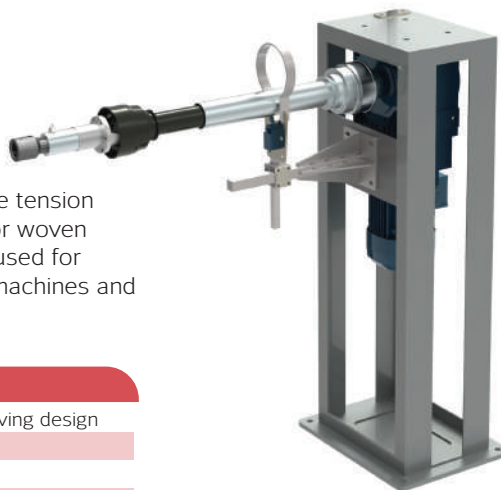
EF-MT

## A-Frame Winder Center Driven

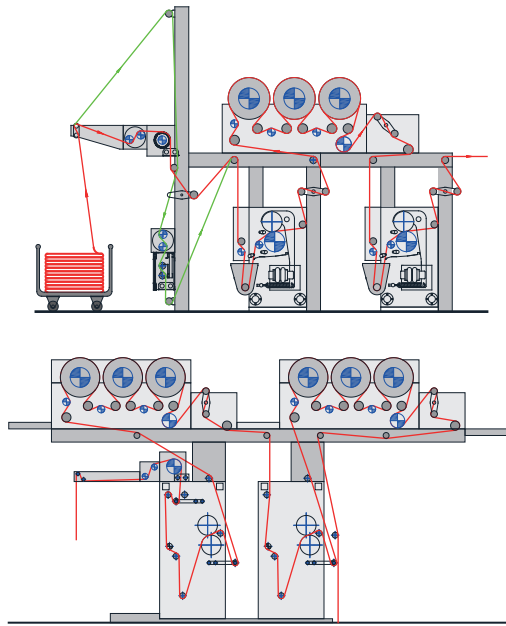
This unit is mainly used to keep stable tension while winding or un-winding knitted or woven fabrics. Center driven winding unit is used for stenter machines, continue washing machines and some other technical textile lines.

### Technical Specifications

- Steel construction frame with stable or moving design
- Sensor of setting distance
- 5.5 kW capacity motor-gearbox system
- Dial shaft with hinged application
- Min. - max. operating speed 10-100 m/min.
- Fabric tension control with compensating roller or loadcell



## STENTER MACHINE ACCESSORIES



**EF-BSD**

### Pre-Dryer Unit Steam Heated Cylinders

The unit is designed and produced for pre-drying process of knitted fabrics after single or double padder applications. Main advantages of pre-drying unit are increased production speed, better fabric surface touch and water evaporation process prior to drying chambers.

Unit space saving structure easily adapts all kinds of stenter machine and drying machine inlet. Production range is between 1800 – 2800 mm. Thermal oil heated cylinders can be produced upon request.

#### Technical Specifications

- Spiral expander group prior to steaming cylinders
- 3 pcs. 600 mm diameter teflon coated steam base cylinders
- Driven pull-in roller and dancing roller for tension free fabric transportation between pre-drying unit and weft straightener unit
- For 3 pcs steam roller: 1 pcs 4kW motor- gearbox driven system, AC inverter controlled, Teflon coated cylinders
- Driven controlled pull in roller and compensating group for fabric tension control
- Idler rollers for fabric maximum rolling on steam cylinders
- Driven roller unit between pre drying unit and weft straightener unit is AC controlled



#### Technical Specifications

- Manual correction of bow and skew
- Electrically driven motor-gearbox technology
- 3 skew and 2 bow rollers, electrically adjustable
- Fabric tension control unit & spreading unit at the inlet
- Equipped with safety panels and switches



**EF-WEFT**

### Manual Weft Straightener

The unit is designed and manufactured for where the scanning cameras are not required for skew and bow correction. Bow and skew correction completely controlled manually. In some cases, the weft straightener scanners do not properly scan the fabric structure like very light net curtain fabrics, silk or some non-woven fabrics.

The unit can be used as additional weft straightener in your machine line or as single manual controlled weft straightener. The manual weft straightener is completely equipped with same components of traditional weft straighteners except its reading scanners.





## STENTER MACHINE ACCESSORIES

EF-ESF

### Exhaust Air Cleaning System for Stenter Machines

By the exhaust fan at the exit of the unit, smoke and dirty air come to the rough filtering unit, then pass through cooling unit, then enter to multiple passed ESP filter. In this area particles that are smaller than micron got electrified and captured. At the end of the process clean air flows through the atmosphere. Particles that are bigger than drops, fall from filter by gravity and collected in ESP channels. It can be used as fuel mix afterwards or can be collected by licensed companies.

- ➔ %95-97 Effective working performance according to process circumstances and heat setting temperatures
- ➔ Long lasting use possibility thanks to the stainless filter cells and optional stainless heat exchangers
- ➔ Different electrostatic filter types with automatic or manual cleaning features
- ➔ Hot water recycling for factory by heat exchanger unit
- ➔ DOP oil recycling



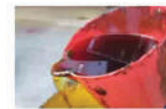
Stenter Machine



Filter Passive



Filter Active



DOP Oil



Field Service



Production Plant

- Local technician support on after sales, installation and spare parts



#### Technical Specifications

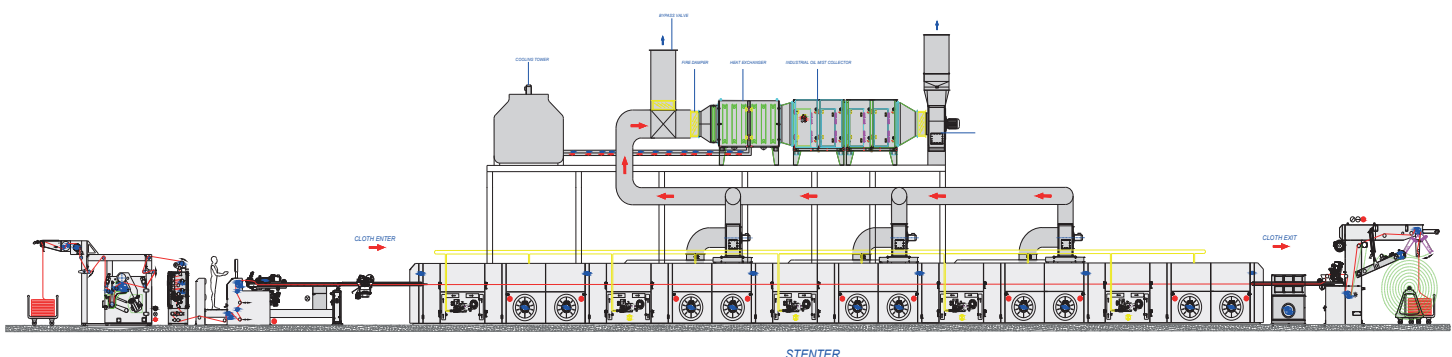
Digitized Circuitry and Power Pack

RTD(PT-100) Fire Sensor

Pneumatically Operated Fire Dampers

User-Friendly HMI Panel

High Frequency High Voltage Transformer





**EF-ECON**

### EF-ECON Heat Recovery Unit Air to Air

The main purpose of the system is to save energy: the process makes use of the energy potential of the contaminated exhaust air in order to heat up fresh air via heat exchanger systems. First step is air purification process. After filtering the used air via special design filters, this hot air can be used for heating the unit environment, then send away to atmosphere. Energy saving of up to 25 % (depending on the process). Thanks to the intelligent automation system, synchronization between the stenter machine and heat recovery unit is done successfully. Heat exchangers made of stainless steel pipes, endurance to the oxidation obtained via stainless steel pipes.

**EF-PSS**

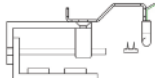
### Fabric De-Pinning Protection Bar

Pin safety bar system is mainly used on stenter frames in order to keep fabric in pinning position and prevent the fabric take offs due to the overfeed and high speed air circulation blower.



Well known problem of clip type protection is that springs of protection bar gets easily damaged in very short time due to the heavy working conditions. This unit can be mounted on chain rails manually and does not require maintenance.

Safety bar is installed on chain rails and do not give any strain on chain rails. This unit allows processing woven fabric with feeding on combi type chain.





## CENTERING UNITS

**EF-FCU**

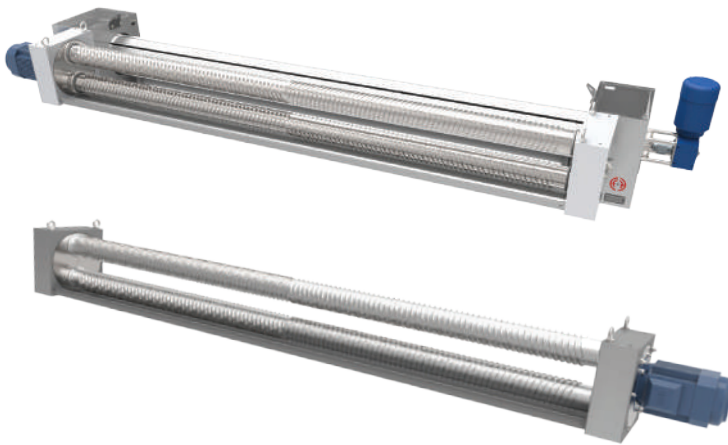


### Fabric Centering and Guiding Unit

While processing knitted fabrics in different machines, due to the effect of various processes, fabric loses its natural structure. Slat type of fabric centering unit eliminates possible tension on the fabric also guides and centers fabrics while transferring to the following units. Alternative fabric centering units are mainly used at the inlet of stenter, compacting, dryer and rotary printing machines inlet frames.

#### Technical Specifications

- Stainless steel main frame, driven rollers and connection frames
- 9 pcs reinforced aluminium base slats
- 230 mm diameter main drum, maximum fabric contact surface
- Silicon coated slats for wet fabric
- Moher coated slats for dry fabrics
- Double side (left-right) controlled pneumatic piston for correction of central defects
- 1.1 kW capacity AC motor-gearbox driven system
- Adjustable centering tolerance according to the process



Centering unit is equipped with full optical sensor band which is completely covered with transparent tube. The structure of sensor is durable in very heavy working conditions like steam, water and sun light. The sensor detects both side of fabric and send the reference signal to the PLC unit in order to activate slats of centering unit in correction way.

Unit does not require manual adjustment for different fabric types. Slat type of fabric centering units can be used successfully for non-woven fabrics, knitted and woven fabrics in order to guide, center and transfer of the fabric throughout the following units.

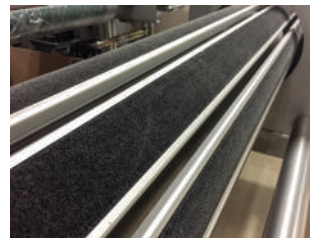
**EF-SDU**

### Spiral Expander Unit

The unit with individually driven 2 expander rollers or single drive and angle adjustment feature of unit eliminates all of the problems experienced with the belt and gearing systems. The surfaces of expander roller are wrapped with especially finished expander profiles. Expander profiles wrap and cover the stainless steel cylinder with high quality wrapping methods that welding at the ages only.

#### Alternative Slats

- Mohair
- Epdm

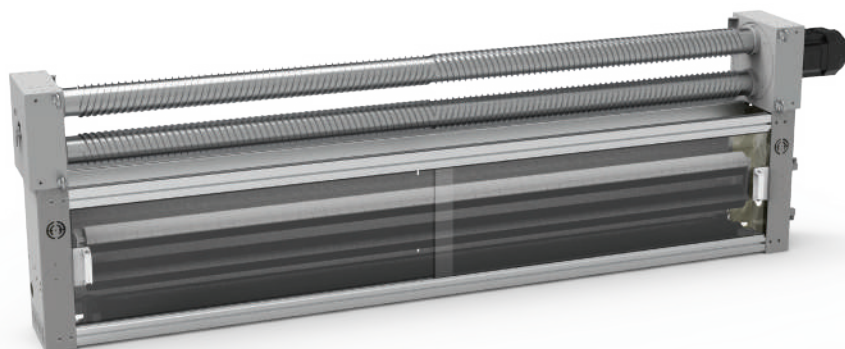


**EF-FCU-CT**

### Built-in Single Frame Centering Unit

Centering and guiding unit, spiral expander unit and fabric centering sensor are united in a single frame.



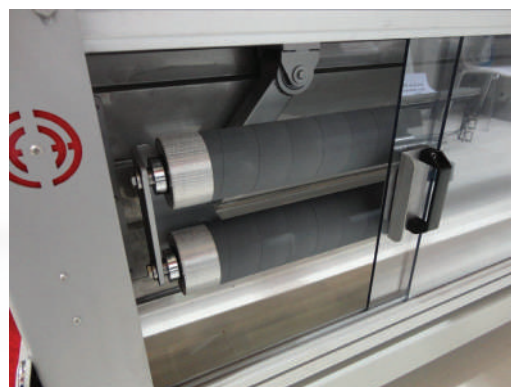


**EF-CGU**

### Cradle Type Centering Unit

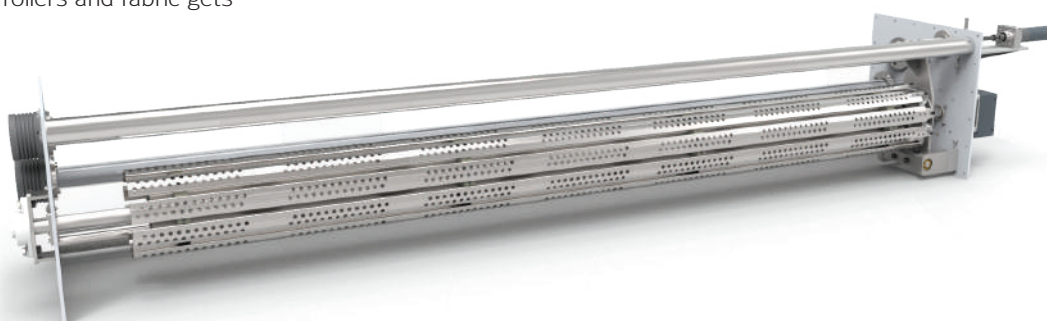
Fabric guiding and centering unit which is used mainly for woven and warp knitted wider width fabrics. The unit works by means of two pcs of coated or tape-wound cylinder that are not driven and allows the cradling movement with pneumatic piston located between the left and right frames. It does not require manual fabric width adjustment thanks to the optical sensor unit.

Both sensors read fabric edges and send this information to the control panel. Accordingly, pneumatic piston gives cradling movement to the two rollers and fabric gets centered by this movement.



#### Technical Specifications

- Stainless and strong side frames and support profiles
- Both side pneumatic pistons controlled cradling movement
- Fabric centering unit controlled from one side or optical sensor
- Unit is equipped with EF-SDU type spiral expander unit
- Two pcs of stainless steel idler rollers, self driven, tape wound
- Transparent safety covers with sliding rail system, and safety switches for both side of unit



**EF-FCU/W**

### Fabric Centering and Guiding Unit Continue Washing Machines

The unit is designed and manufactured to center and guide fabrics inside continue washing and bleaching machines. Unit components are designed and manufactured as water resistant against to chemicals, water and steam.

#### Technical Specifications

- Stainless steel main frame, driven rollers and connection frames
- Working width range in between 1800-3400 mm
- Pin bolt connected structure to the washing chambers
- Driven roller made of stainless pipe
- Chemical, water and steam-resistant structure centering and guiding slats, perforated surface
- 300 mm dia. main drum, maximum fabric contact surface and centering
- Double side diameter controlled linear motor-gearbox system
- Left and right side movements uncurls the fabric to both side
- Inverter controlled, 1.1 kW capacity AC motor-gearbox driven system





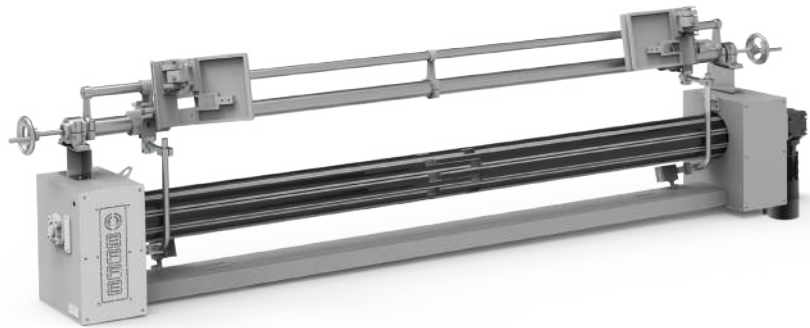
## CENTERING UNITS

EF-FCU/B

### Fabric Centering and Spreading Unit Printing Machines

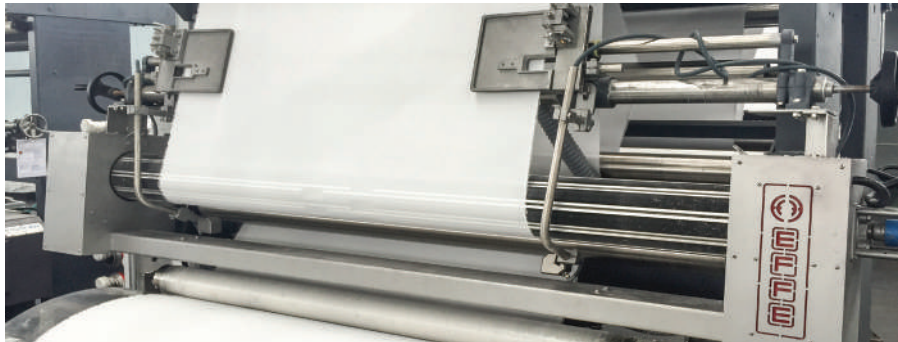
Mainly unit is designed and manufactured to transfer the fabric to printing machine's blanket tensionless, centered and both side edges uncured.

It is designed to work compatible with sensors and DC motor unit that is required to referral fabric from desired point to the printing blanket. In applications that will be worked with knitted fabrics, pneumatic type of edge decurler unit (EF-MED/F) is highly recommended in order to get maximum fabric edge uncurl success prior to the fabric centering and guiding unit. Driven roller application can be used as required prior to centering unit.



#### Technical Specifications

- Stainless steel main frame, connection frames
- DC motor-gearbox controlled lath movement system from one side or double side
- Working width range 1800-3400 mm
- 18 pieces of aluminium centering lathes, 9 right - 9 left side
- Moher coated slats for dry fabrics
- Skew distance of lathes 40 mm max.
- The unit can be used with or without EF-ECU type edge control sensor
- Control panel can be used on left side or right side
- 11 kW capacity AC motor-gearbox driven system
- High sensitive centering feature as 1-3 mm



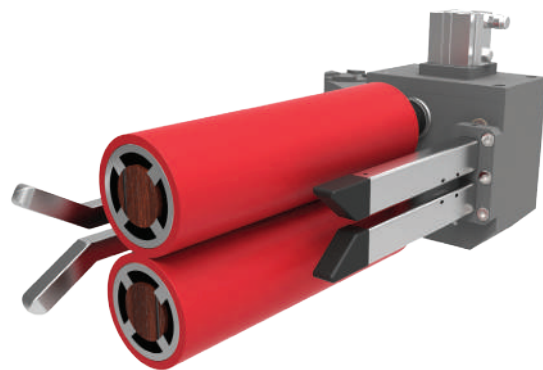
EF-CLG

### Fabric Cloth Guider and Centering Unit

Mainly used to center and transfer dry, damp and flat edged woven fabrics to the next unit. This unit is used with open width washing machines, rotation printing machines and j-box units which process woven fabrics.

#### Technical Specifications

- Suitable for woven fabrics
- Edge tracking sensor
- Pneumatic piston
- 300 mm cylinder length
- 80 mm cylinder diameter
- High fabric gripping, various roller coatings according to the implementation area
- Adjustable cylinder pressure for different weighted fabrics
- Air pressure 1 bar
- Optional width adjustment group, manual or motor driven



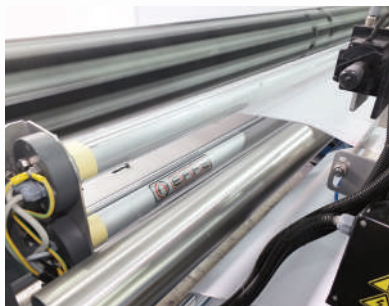
Consists of angled located, coated, short two rollers. One stable and the other moveable according to the information coming from edge control sensor. Unit consists of left and right edge guiders which are mounted on manually adjustable width adjustment mechanism. In order to operate efficiently, unit distance from prior idler cylinder must be 1.5 times of fabric width. Idler cylinder after this unit must be located as close as possible.

**EF-FCS**

### Fabric Centering Sensor

Most of the fabric centering units are equipped with full band fabric centering sensor. Optic fabric sensor reads reference signal from the both side of fabric and transfers this information to the control unit. Thanks to the reference signal reading by optic full band sensor the centering unit is activated in desired way to guide and center the fabric.

The sensor is placed in transparent pipe tube which can be used in wet and humid areas. Production range is 1000-3400 mm.



**EF-FCS/W**

### Fabric Centering Sensor Continue Washing Machines

Fabric centering unit which can be operated on very heavy working conditions like wet and humid areas. Sensor is used in continue washing and bleaching machine washing chambers.



#### Technical Specifications

- It's not necessary to make fabric width adjustment for each fabric
- Optic sensor is used in very heavy working conditions like wet and humid areas.
- Sensor placed in transparent tube and stainless frame
- Working width range is 1000 - 3400 mm

**EF-FCU/A**

### Slat Type Spreader Perforated Slats

The unit is mainly used for centering and spreading fabric edges before fabric roll-up or A-frame winder unit of stenter frame, compacting, quality control, inspection and roll-up machines. It can be used where the fabric surface and edges need to be stable.



**EF-FCU/I**

### Slat Type Spreader Stainless Steel Slats

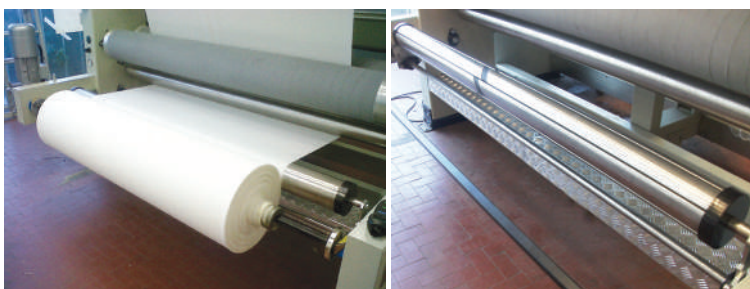
The unit is mainly used for centering and spreading of fabric edges before fabric roll-up or A-frame winder unit of stenter frame, compacting, quality control, inspection and roll-up machines.

#### Technical Specifications

- Special structure, eloxal coated spreading slats, movement from center toward to the edges
- Moher coated spreading slats, maximum surface hold
- Driven system with fabric movement
- Minimum friction surface assembled on an oxidizing-proof aluminium roller

#### Technical Specifications

- Special structure, eloxal coated spreading slats, movement from center toward to edges
- Moher taped slats, maximum surface hold
- Driven system with fabric movement
- Assembled on an oxidizing-proof aluminium roller
- Minimum friction surface lath sliding mechanism





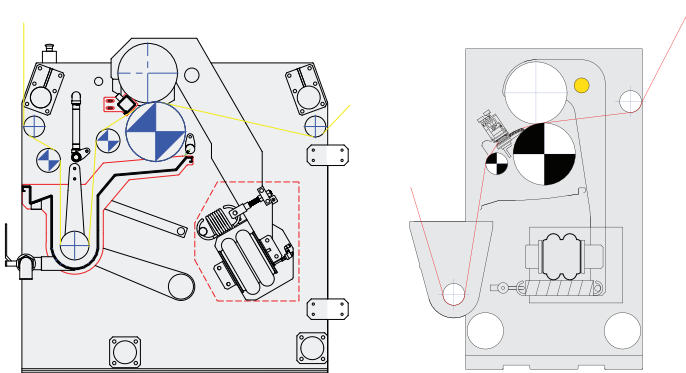
## PADDER UNITS



**EF-SFU**

### Squeezing and Finishing Padders

Universal padders with special coated vertically located rollers for high squeezing-water extraction and finishing-impregnation. Fabric working range is 1800 – 2800 mm.



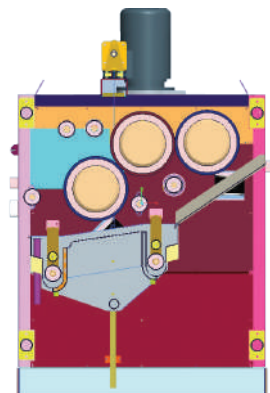
#### Liquid / Padder Tank

- Stainless steel liquid tank
- Steam base indirect heating system for liquid tank as optional
- Stainless guiding roller in liquid tank
- Pneumatic position adjustable liquid tank for easy cleaning and maintenance
- Overflow and water level control system and discharge valve system manually
- Liquid or water filling system

**EF-F3C/3**

### Integrated Padder Unit Squeezing and Finishing

It is designed for squeezing and finishing process of knitted and woven fabrics at a single padder unit. Mainly the padder is preferred due to less space requirement, low energy costs and easy to operate at inlet of stenter or dryer machines.



#### Main Features of Padder

- Stainless steel main frame, upper frame, safety panels and doors
- Pressure obtained via pneumatic bellows
- Stainless steel tie-bars and balanced pressure dispersal
- Direct gearbox connection to lower roller
- Rollers made of solid shaft extra-thick special steel
- 1 pc. driven scroll roller placed prior to padder tank
- 1 pc. driven scroll roller placed in prior to the squeezing rollers
- Functional control panel and control buttons
- Emergency stop feature, upper roller rises up in case of emergency stop
- Sliding safety covers to prevent splashes
- By-pass transfer rollers if required
- 75 kW 3000 c/min. motor power
- Pneumatic compensating tension control system, linear potentiometer group



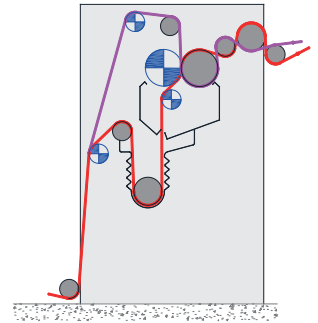
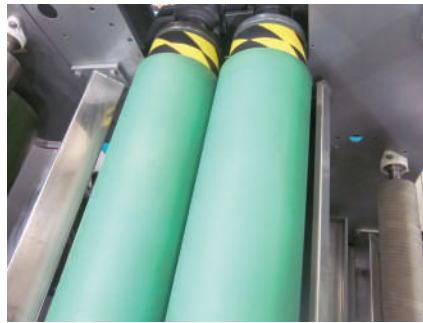
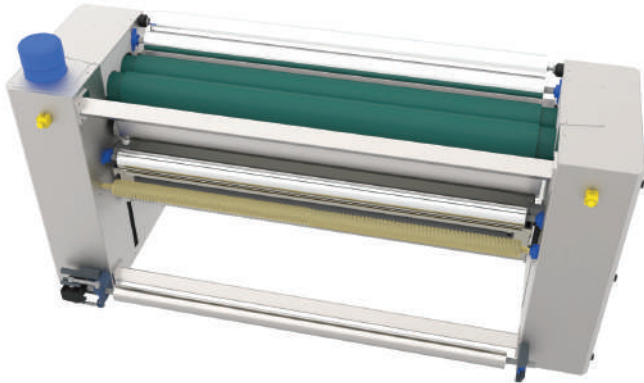
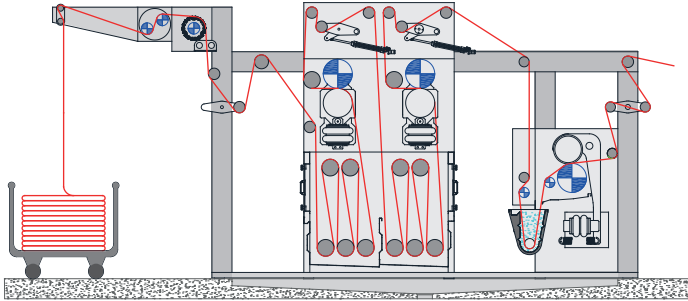
#### Technical Specifications

- Stainless body, chemical finishing tank and side casing sheets
- Spiral expander rollers prior to each nip rollers
- Separate overflow system for squeezing and finishing liquid tanks
- Finishing tank with pneumatic movement and indirect steam heating
- Overflow, level control, filling and discharging systems
- Spraying system prior to squeezing rollers
- Electrical panel and pneumatic system equipments mounted to main frame of padder
- The diameters of squeezing, finishing and support roller is 395 mm
- Squeezing roller is bow, rubber coated 92 – 95 Shore A
- Finishing padder rubber coated, bow squeezing rollers 85-88 Shore A
- Support driven roller is flat and ebonite coated
- Squeezing roller for finishing padder is bow and rubber coated 85 Shore A
- Linear squeezing pressure is 50 N/cm
- Terms of use with max. 6 bar air pressure by means of pneumatic bellows system
- The main drive group with direct coupling connection and flexible system
- Transparent, preservation and safety caps
- 11 kW 3000 rpm AC motor drive system
- Tension control dancing roller unit with pneumatic system, two idler rollers and linear potentiometer system
- Stainless idler transfer rollers
- Vertically located 2 pcs rollers, 290 mm diameter
- Hypalon – Rubber coated squeezing rollers
- Upper roller is bow, and lower roller is flat shape for homogenous squeezing effect
- Rubber cover hardness, 92° – 95° Shore for squeezing padder, 85° – 88° Shore for finishing padder
- Linear pressure, 500 N/cm
- Water spraying pipe to clean the fabric before entering squeezing rollers
- Water shut off system when machine stops

**EF-WU**

### Pre-Washing Unit

This unit is designed to be used prior to stenter machines especially in home textile manufacturing plants. Unit is used to make finishing processes by shrinking the knitted and woven fabrics in the heated pre-wash tank.



#### Technical Specifications

- Stainless steel side mirrors, side covers and connection traverses
- 1 pc stable hydraulic dye roller and 1 pc with pneumatic bellow system moving.
- Stainless dye and finishing padder with pneumatic up and down movement
- Optional tank inner narrowing application
- Idler roller inside the tank with inner bearing, with diameter 160 mm
- Liquor Ratio distribution pipe that can be controlled from level control system
- Heat control system for dye and finishing tank
- Spreader roller or banana roller prior to tank
- Finishing and dyeing tank with double wall and increased cooling surface
- Uniform linear liquor application by two deflection controlled rollers throughout to entire batch.
- Separate control panel
- Dyeing rollers hydraulic station group: solenoid valve, pump group and plumbing

**EF-SR2**

### DyePad with Hydraulic Cylinders

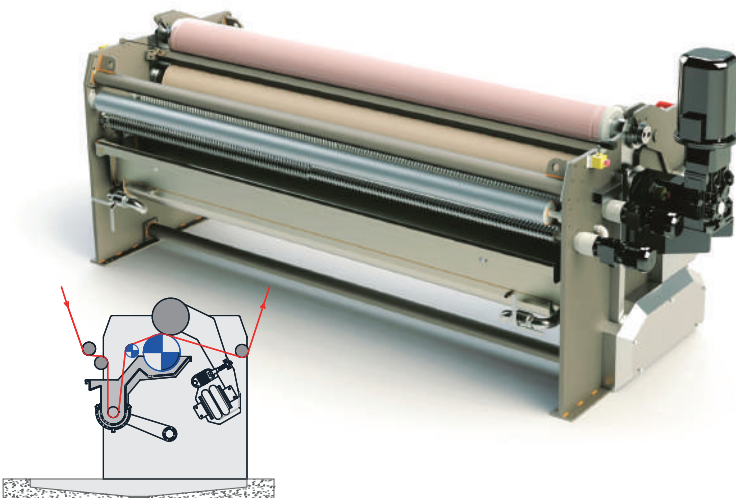
EFFE Dyepad unit with its state-art design and flexible Hydraulic Cylinder technology can dye knitted and woven cotton fabrics.

Homogeneous squeezing effect is gained by horizontally located 2 pcs squeezing rollers. Rollers are working with hydraulic oil pressure and edge-middle-edge pressure gradient can be removed entirely.

**EF-SR1**

### Finishing Padder Hydraulic Type

It is used for finishing and dyeing process of net curtains and similar fabrics. As used in the narrow width fabrics thanks to the upper roller with hydraulic system, it can be used with 3200-3400 mm fabrics in squeezing-finishing or dyeing operations. It is especially preferred due to edge-middle-edge pressure gradient can be completely removed. In standard applications, the bottom roller is manufactured as rubber, ebonite or chrome-plated, the upper pressure roller is manufactured as a floating roller with hydraulic system.





**EF-CWL**

### Optic Bleaching Machine

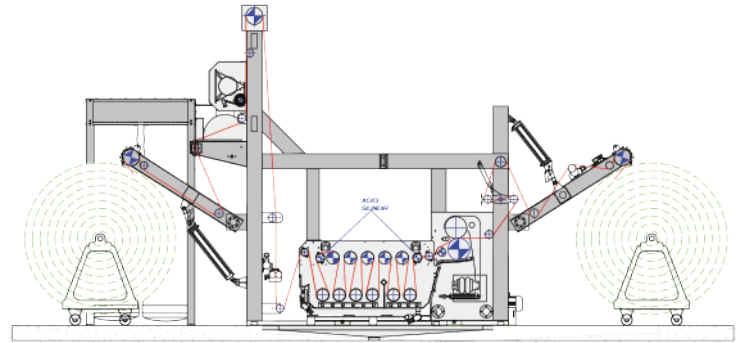
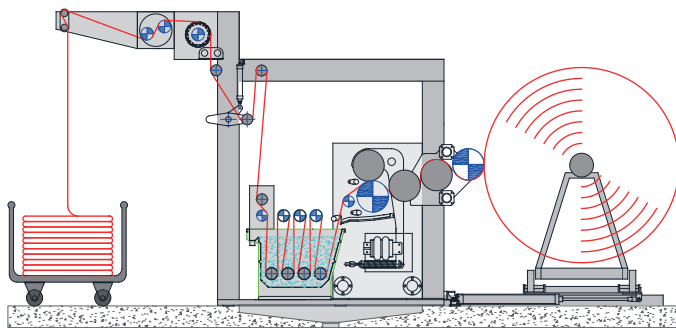
This machine can be used in cotton fabric washing process. Squeezing rollers and driven rollers are coated with durable material against chemicals and caustics.

In washing process, fabric goes through the long term passed finishing tank, gets squeezed and bathed in batch trolley.

Batched fabric gets plated with nylon to prevent contact with air and then rotates on batcher station during specific time period.

Chemical in tank gets all over the fabric while rotating in batcher station.

Washing process for fabric that washed in open width fabric washing machine is completed with minimum cost.

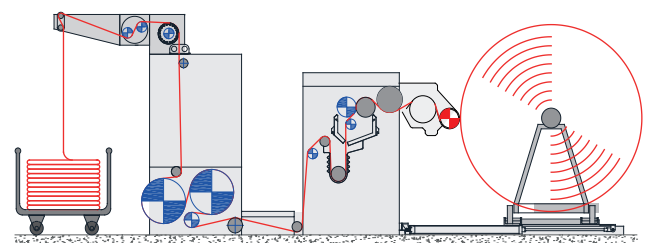


**EF-PBD**

### Cold Pad Batch

EFFE Dyepad unit is used on knitted and woven cotton fabrics for open width fabric dyeing or cold bleaching before dyeing. Operation speed range is 50 - 60 m/min. To gain desired dye quality, dye+chemical mix must be delivered to tank in proper condition like mix heat should be between 20-23 °C.

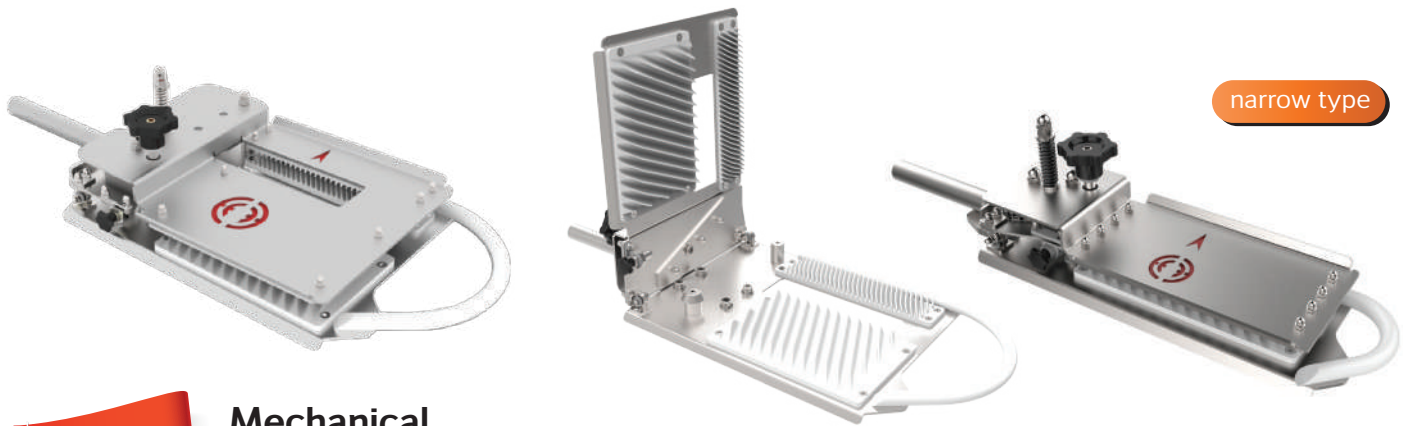
Squeezing rollers working with hydraulic pressure provides edge-middle-edge equality on dyeing. Equally dyed fabric must be rolled on batcher unit without tension and then must be rotated according to process without contacting to air. Finally fabric must be washed in open width fabric washing machines on proper technical conditions.



#### Design Of Line

- Fabric centering and guiding unit and fabric tension adjustment mechanism for knitted fabrics
- Batchier unwinder unit for woven fabrics
- Functional control panel mounted on inlet frame
- Double wall construction cooling roller at the inlet for cooling the fabric on both sides
- Constant fabric tension control by loadcell unit and roller
- Fabric edge changing system prior to padder can be by-passed when needed.
- Complete stainless steel dyepad
- Inverter controlled spiral expander rollers prior to finishing tank and squeezing rollers
- Double Wall construction chemical reservoir, pneumatic moveable up and down
- 65 Shore A coated hydraulic squeezing rollers working with hydraulic oil pressure ensures balanced dyeing effect, no side-center-side difference
- Teflon coated several idler rollers eliminate edge curls
- AC inverter controlled, rubber coated, main traction roller of A-Frame station
- Batchier winder unit provides fabric rolling with desired tension

## FABRIC EDGE SPREADING UNITS



**EF-MED**

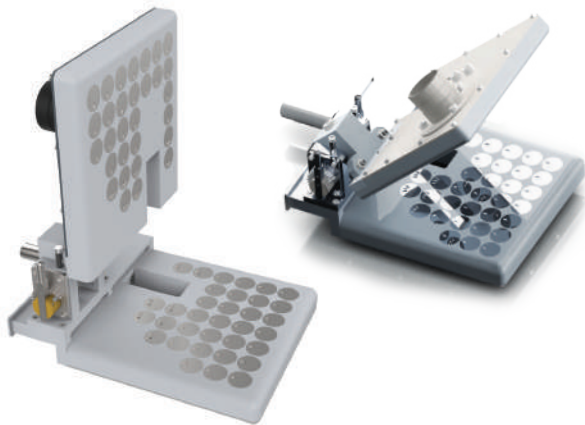
### Mechanical Edge Spreader

The unit is mainly used to uncurl knitted fabric edges. In order to have maximum pinning success on stenter machines, dryers, compacting machine etc. mechanical edge spreading unit is one of the best solution for uncured fabric edged before pinning.

According to the fabric type, weight and structure the gap between upper and lower plates can be adjusted. Operator friendly design does not required any energy and maintenance. Easy cleaning due to the special alloyed stainless plates.

#### Technical Specifications

- The upper and lower conveyor plates are made of stainless steel
- Can be adapted and synchronized to any brand fabric edge sensor
- Modular design that can be applied on horizontal and vertical chain rails
- Cross gradual spreading system
- The unit can be used for both wet and dry fabrics
- Protective system for sewings and looms
- Hinged system on upper plate for easy use and control
- Spreading materials are fixed with pin bolts for easy maintenance and change



**EF-MED/F**

### Pneumatic Edge Spreader Single Plate Nozzle

The pneumatic edge spreader is used to decurl fabric edges without any mechanical friction. Fabric edges can be decurled with compresses air which comes from nozzle structure on expander unit's surface. Mainly used in rotation and filmdruck printing machine inlet sections, stenter machine pinning groups, compacting and dryer machine with pin chain tenter frame. The unity is supplied with its own blower unit.

#### Technical Specifications

- Anodized coated, lightweight special aluminium structure
- Maximum fabric edge uncurl success without any mechanical friction
- Stable bottom plate is equipped with angled air blowing nozzle system
- Hinged system for openable upper nozzle plate group
- The unit can be used for delicate dry and damp fabrics

**EF-MED/F2**

### Pneumatic Edge Spreader Double Plate Nozzle

The unit is designed and produced in order to uncurl fabric edges of very sensitive and delicate textile fabrics. Stable bottom plate and moveable upper plate is equipped with nozzle system. The unit can be used for delicate dry and damp fabrics.





## FABRIC EDGE SPREADING UNITS

**EF-FD4**

### Fabric Edge Uncurler

This unit is used to decurl and transfer curled or folded, dry or lightly damped; woven, linen or some type of knitted fabrics on stenter machines and various pin chain tenter frame inlets.

#### Technical Specifications

- Maximum edge decurling performance on various types of fabric due to the angle adjusted decurlers
- Final decurling channels are manufactured narrower for efficient edge decurling success
- Can be used with any type of machine and brand
- Oxidation resistant, stainless decurler material
- 3 phase AC motor driven decurlers
- 18 kW, 1400 c/min. motor power, rotation speed 1000c/min.

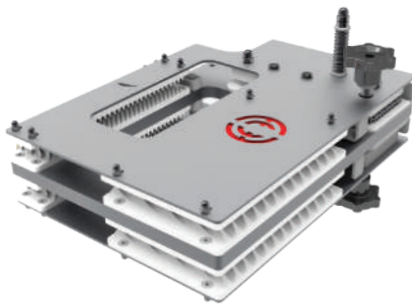


**EF-MED/T**

### Mechanical Spreader

#### Tubular Fabric Sewing Machines

The unit is designed and produced in order to uncurl fabric edges before fabric edge sewing process. Unit is placed prior to the sewing machine. Mechanical spreader unit consists of 3 pcs spreading plates in order to uncurl both sides of lycra fabrics before sewing machine.



**EF-FS**

### Narrow Type Edge Spreader Padder Inlet

Most of the knitted fabric edges are curling between padder liquid tank and scroll roller. In order to uncurl fabric edges, special designed mechanical edge spreader can be used as additional decurler. Homogenous squeezing effect is achieved thanks to the completely uncured fabric edges; besides padder squeezing rollers are being protected from negative effect of uncured fabric edges.

#### Technical Specifications

- Availability to install any brand/type of padder unit
- Manual working width adjustment
- Non-wear off synthetic spreading material
- Pressure adjustment can be done with upper spreading plate
- Upper spreading plate can be by-passed if not required to use





**EF-PMT/K**

### Pinning Guider Beltless System

The special pinning guider unit is designed to avoid problems arising from traditional belt type pinning guiders. Mainly used for stenter, pin chain tender frames of compacting machines and drying machines.

Thanks to the special feature of unit, fabric is guiding and passing without uncurling to the final pinning. The unit also prevents many problems caused by traditional belt systems.

**EF-PMT**

### Pinning Guider With Mechanical Decurler

This unit is designed to uncurl most twisty fabrics that are coming from mechanical edge spreading unit or finger type edge decurlers especially on edges before entering into pinning groups. The unit entirely decurls the edges of all sorts of knitted fabric, guarantees the pinning and totally eliminate all problems that may be experienced in similar systems. It is able to open all sorts of edge curls by means of the last curl opening with its mechanically opening channels and used preferably under necessary circumstances. Since it is made of synthetic material does not give any harm to chain needles even under circumstances arising from possible mechanical problems.



**EF-PMTK/S**

### Pinning Guider (Special Beltless System)

This unit is designed to spread upward curled edges of net, polyester and various knitted fabrics, spread edges of reverse entered fabrics (due to the process) on stenter machines, afterwards prevent the edges from being curled again prior to chain pins. Unit spreads any type cotton and synthetic fabrics' upward or downward curled edges and carries to chain pins. Unit is made of sliding special material that doesn't wear easily. It doesn't damage chain pins even in case of mechanical problems thanks to the synthetic structure. Unit allows making adjustment according to the position of upper feeding roller on combi type chain and rails systems.

#### Advantages:

- Thanks to this application belt is no longer needed, this will reduce operations costs.
- Possible adjustment problems and time wasting during belt changing is prevented.
- Unit eliminates the feeding belt marks and feeding wheel marks that occur on some fabrics.

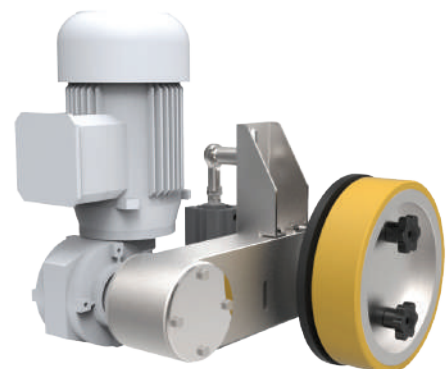
**EF-FEE**

### Pinning Wheel & Brush

This system is designed for pinning the fabric into the pins at the chain inlets of the stenter and pin chain tender frames for compacting or dryers.

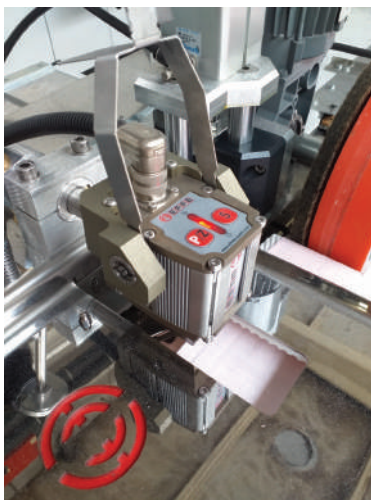
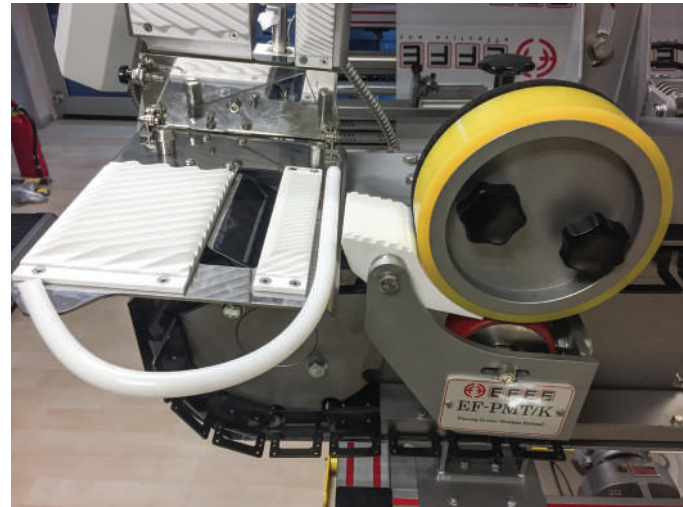
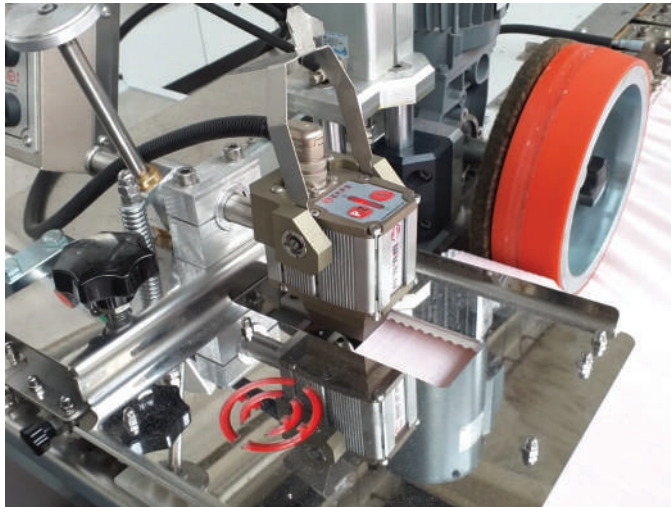
#### Technical Specifications

- Pneumatic lifting and lowering system
- AC inverter controlled electric motor and gearbox group 1.1 kW
- Adaptable with EF-PMT and EF-PMT-K type pneumatic and mechanic trigger unit
- Required feeding providing feature
- Right and left units to provide separate feedings when necessary with AC inverter controlled
- Upper side of the feeding roll is hypalon coated and can be replaced easily





## FABRIC INFEED UNITS



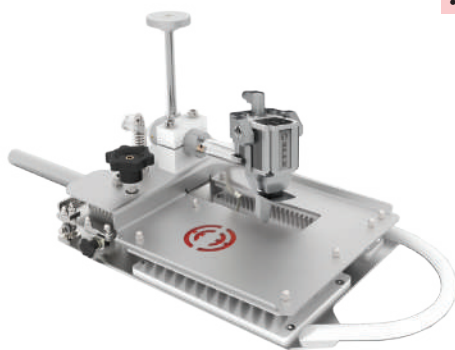
**EF-ECU**

### Infrared Edge Control Sensor

In order to gain desired pinning success at the inlet of stenter machines or any pin chain tenter frames IR edge control sensor is used as a state of art technology. The EF-ECU model sensor permits infrared scanning of the fabric edges in accordance of the reflection principle the fabric is used as a reflector. The correct distance to the fabric, 35 mm is always ensured by EFFE mechanical spreading unit adjustment. Chain rails activation speed can be adjusted by PLC according to the desired level.

#### Technical Specifications

- Infrared scanning of the fabric edges in accordance of the reflection principle
- Suitable for servo-drive or AC controlled real activation systems
- The sensor is equipped with infrared reader Leds
- 0 - 10 Volt output
- Can be work very heavy working conditions and all alternative colors
- Can be apply for all brand stenter frame and compacting machines



**EF-ECU/C**

### Chain Rail Actuators

The tenter edge control and complete guider systems set new standards for best and precision fabric pinning at high speed operations. Fine-tuning gearbox actuators with AC motor system provides to stable and quick respond/activation on chain rails. The signals are transmitted through the optical reader and activate the system with AC motors. The actuator corrects the position of chain rail and in this way ensures correct the fabric acquisition with rack gears. Chain rail speed can be adjusted with PLC according to the desired level.



**EF-PLC**





**EF-PC**

### Pipe Type Conveyor Unit

The pipe type conveyor unit ensures the transfer of fabrics from overfeeding roller to the inlet of chambers without any tension and stable form. The unit is made of two line custom polished stainless steel pipe. Mainly used at the inlet of stenter frames, pin chain tender frame of compacting machines and dryers.



**EF-DCB**

### Driven Fabric Conveyor Unit

The unit is designed and produced for fabric transportation from feeding roller to next unit without any mechanical friction and less tension. Generally used on stenter machine inlets and pin chain tender frames of dryers and compacting machines. Flat type belt or rope type conveyor pipes driven by motor-gearbox independently and prevent the fabric without any tension and mechanical friction.

#### Technical Specifications

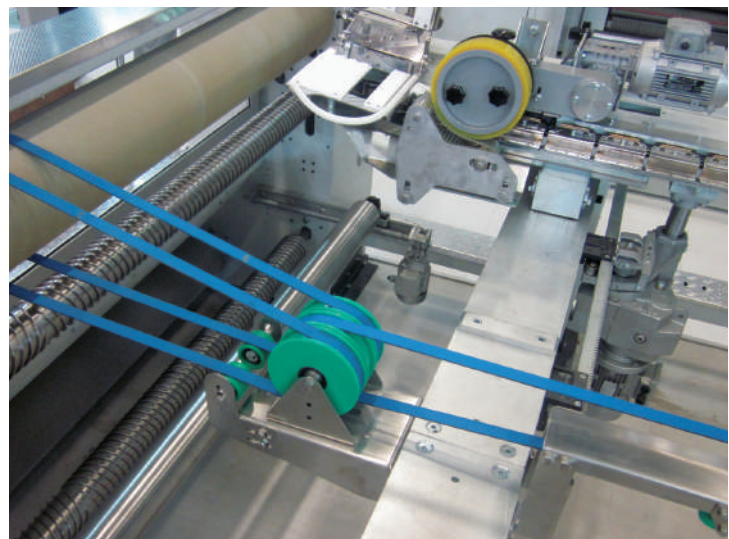
- Synthetic material and stainless against oxidation
- Synchronized with machine speed.
- Driven by 1.1 kW motor gearbox.



**EF-FBC**

### Fabric Conveyor Unit

The unit provides fabric transfer from feeding roller to the pinning brushes without any tension and stable position. The unit keeps fabric in center position after fabric leaves feeding roller and helps the performance of pinning groups like edge control sensor, mechanical edge spreader and pinning wheels. Machine can be operated non-stop due to the stable pinning success.





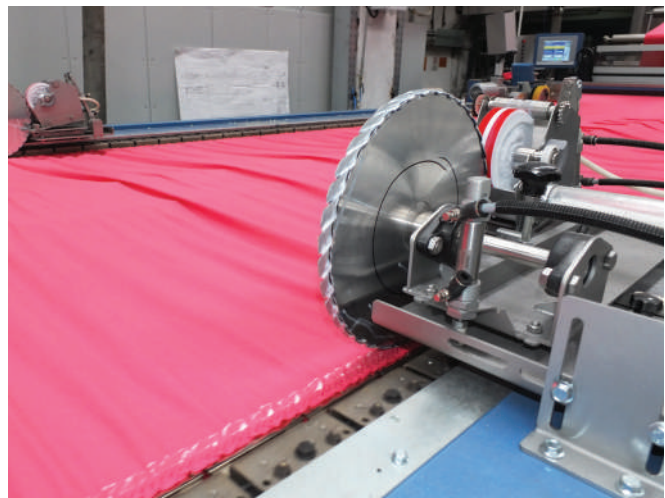
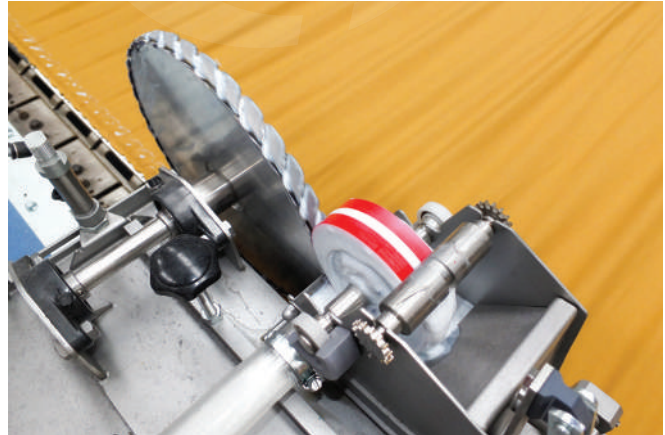
## GUM APPLICATION UNITS



### Top Gum Application Unit Stenter Machines

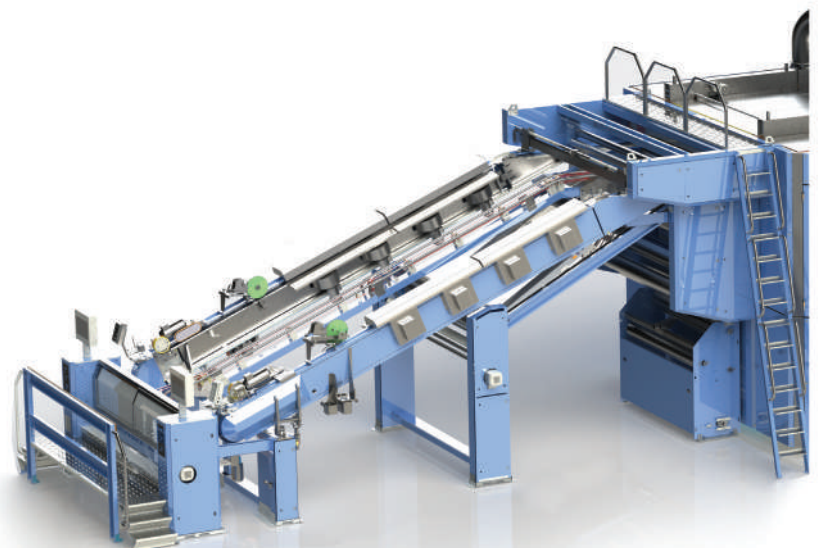
Most of the traditional systems apply gum to underside of fabric nearly 8-10 mm away from the stenter pin levels. In typical gum application units, glue application wheel is placed under the fabric and chain rails, support wheel of glue unit is placed on the fabric. EF-GLU/T model top gum application unit applies gum to upper surface of fabrics 6-7 mm away from the pin level.

Thanks to the closer trimming at the exit with 10-12 mm or more total reduction in selvage waste is gained. Gum applies upper surface of fabric and thanks to this feature machine requires less cleaning and gum is getting dryer more faster. The unit can be applied on both horizontal and vertical chain rails.



### Top Gum Application Unit Dryer Tenter Frames

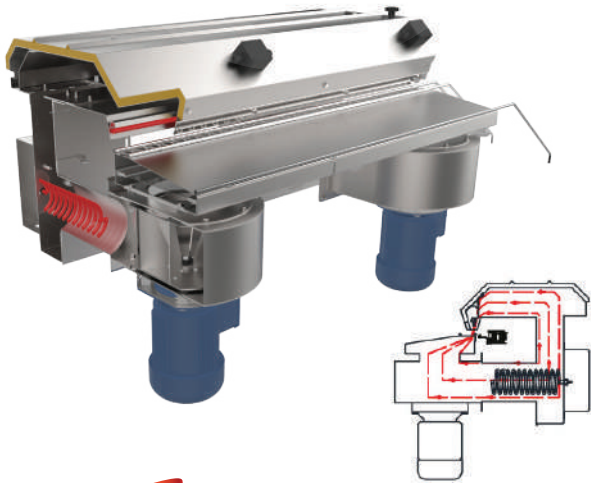
- #### Technical Specifications
- Manual adjustable amount of gum
  - Easy cleaning gum storage tank and circulation parts
  - In order to keep gum in certain viscosity gum circulation pump and storage tank system
  - Made of stainless steel and synthetic materials against to corrosion
  - Cross-cut gear gum wheels for minimum gum consumption
  - Easy to install and dismantle



#### Technical Specifications

- Manual adjustable amount of gum
- Easy cleaning gum storage tank and circulation parts
- In order to keep gum in certain viscosity gum circulation pump and storage tank system
- Made of stainless and synthetic materials against to corrosion
- Cross-cut gear gum wheels for minimum gum consumption
- Easy to install and dismantle
- Can be applied for all stenter machines

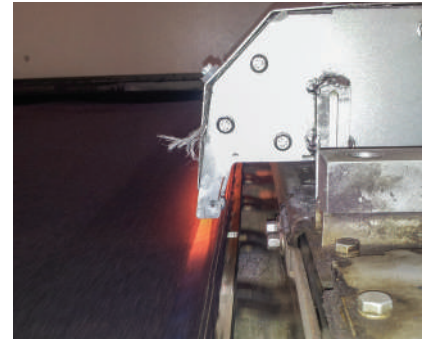
## GUM APPLICATION UNITS & EDGE DRYING UNITS



**EF-EDU/IR**

### Edge Drying Unit With Infrared & Air Blowers

The unit is preferred where the gum application process is done for stenter, dryer and pin chain tenter frames. The hot air is supplied by IR Infrared elements and heating resistant, hot air continuously circulates on fabric edges with fan blowers. The machine speed is increasing with the effect of edge drying unit positively and fabric dries homogenous while processing in chambers without selvage-center difference.



The unit is preferred to dry fabric edges if fabric edges are curling too much prior to the drying chambers. Fabric is drying homogenous while processing in chambers without selvage-center difference. Fabric edge drying unit can be used either on inlet chain rails or exit chain rails in order to get maximum drying effect while gum application process is being done.

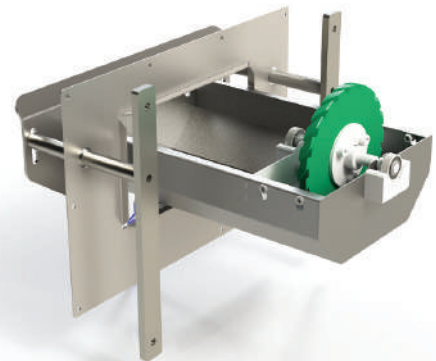
#### Technical Specification

- Oxidation resistant structure for steamy and humid environments
- Inverter controlled fan blower speed
- IR Infrared elements and heating resistants' capacity is adjustable
- Different dimensions of edge drying units are available

**EF-GLU/V**

### Gum Application Unit Vertical Chain Rails

The unit is mainly used in stenter machines with vertical chain rail system. Fabric edge gum application processing with fabric driven gumming wheel. Suitable for all type of vertical chain rails.



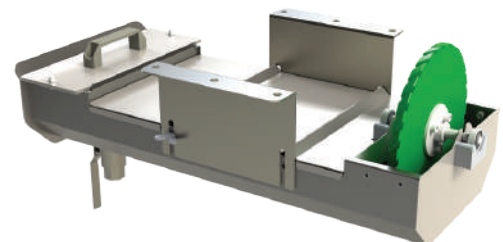
#### Technical Specification

- Gum levelling system and filling pipe
- Edge gumming pressing roller pneumatic or mechanical system
- Gum application wheel and bearing system is mounted outside of gum reservoir
- 13 mm width gum application wheel for minimum gum usage
- Alternative width gum application wheels are available
- Stainless steel gum reservoir which is suitable for all type of horizontal chain rails
- Oxidation resistant gum application and pressing wheels
- Easy maintenance and cleaning feature

**EF-GLU/H**

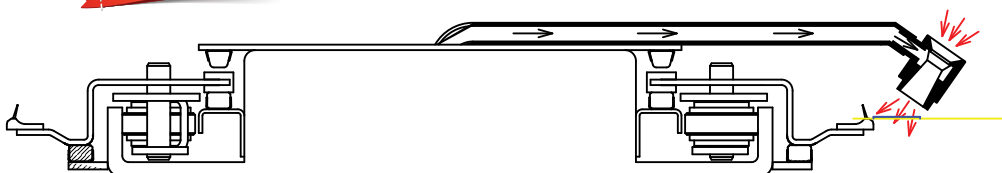
### Gum Application Unit Horizontal Chain Rails

The unit is mainly used in stenter machines with horizontal chain rail system. Fabric edge gum applies on fabric with fabric driven gumming wheel. Suitable for all type of horizontal chain rails.



**EF-EDU/CI**

### Chamber Built -In Edge Drying Unit



At the last chamber, current hot air pressure in the chamber gets increased by the unit mounted on right and left sides of the rails. Pressure increased hot air is used as close system and gets blown to gummed fabric edges. Hot air that dries fabric edges stays in the chamber so no extra costs occur. Thanks to this unit, machine production speed stays stable on edge gumming process. Gained energy saving and increased production capacity make the user competitive.



## EDGE TRIMMING UNITS

**EF-CTR**

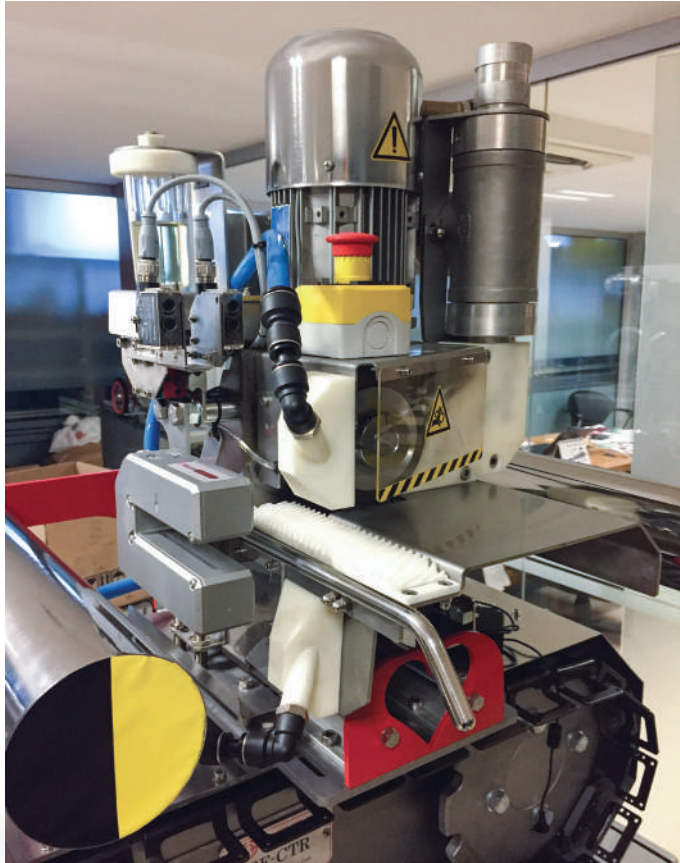
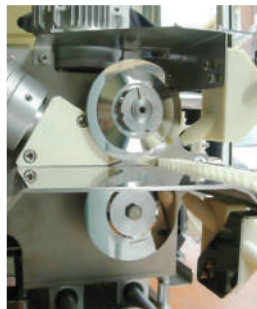
### Fabric Edge Trimming Unit

The unit is designed and produced to enable trimming fabric edges as desired on exit chain rails of stenter, compactor and dryer machines.

Whether gum application done or not, trimming unit follows the fabric edge with photocell sensor and edge trimming is done according to the pinning level. The unit works with synchronization of chain speed or independently.



Edge trimming process is being done while fabric left the chain rails in order to have smooth trimming fabric surface and to avoid any damage cause by fabric wastage. Edge trimming wastage success up to 6-8 mm (without edge gum application), 10-12 mm fabric edge wastage (with gum application).



#### Technical Specifications

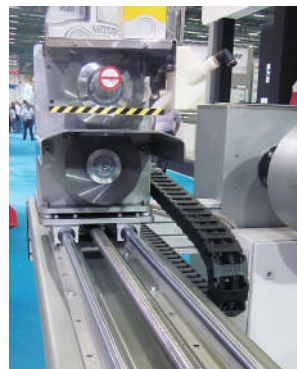
- Complete stainless steel frame
- Left and right total 230 mm stroke, fabric edge follow-up with photocell
- Upgraded trimming unit blades (diamond base), no grinding when using appropriately according to technical terms.
- Automatic blade lubrication system
- Final decurler group prior to the blades
- Blade cooling unit
- Adjustable fabric edge trimming amount
- PLC controlled control panel, AC inverter controlled blade driven system
- Fabric wastage suction unit (optional)

**EF-CTR/C**

### Edge Trimming Unit Carpet & Technical Textiles

The unit is preferred for edge trimming purpose of carpets, similar raw fabrics and coated fabrics while processing on stenter frames or prior to the fabric roll-up in order to get required edge trimming.

Trimming unit speed can be synchronized with machine speed or controlled separately. Edge trimming process for carpet is done when the carpet take off the chain rails. Left and right trimming units can move and work separately. Edge trimming operation for both sides of fabric can be adjusted by independently controlled units.



#### Technical Specifications

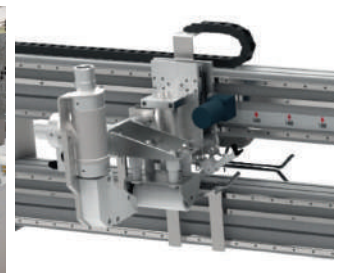
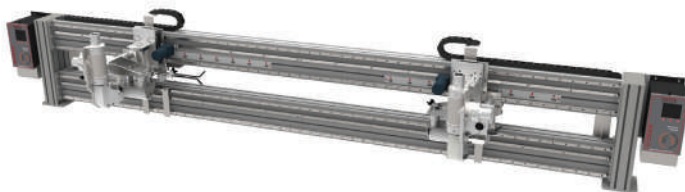
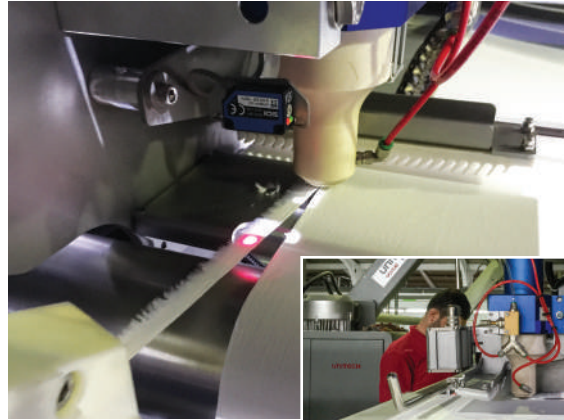
- Stainless steel construction
- DC motor controlled linear system
- Specially alloyed, long lasting and coated blade wheels
- Automatic lubrication for trimming blades
- Blade cooling unit
- PLC controlled control panel, inverter controlled a-synchronized motor

**EF-CTR/ULTR**

### Ultrasonic Edge Trimming Unit

The unit is specially designed and preferred for edge trimming process of polyester fabrics on stenter frame and compacting machines. Edge fibres of polyester fabrics are strengthened and prevented edge fibrillation thanks to the ultrasonic edge trimming technology.

The unit can be installed for any types of pin chain tenter frames or stenter machines. According to the desired speed and production capacity, alternative ultrasonic heads and transformers can be provided.



#### Technical Specifications

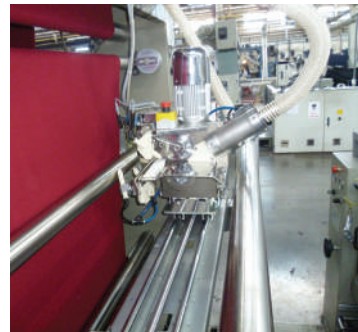
- The unit is moveable with photocell controlled linear system
- Fabric final edge spreading unit before ultrasonic trimming head
- PLC controlled, functional control panel
- Fabric selvage waste suction unit

**EF-CTR/S**

### Edge Trimming Application Compacting Machine Inlet

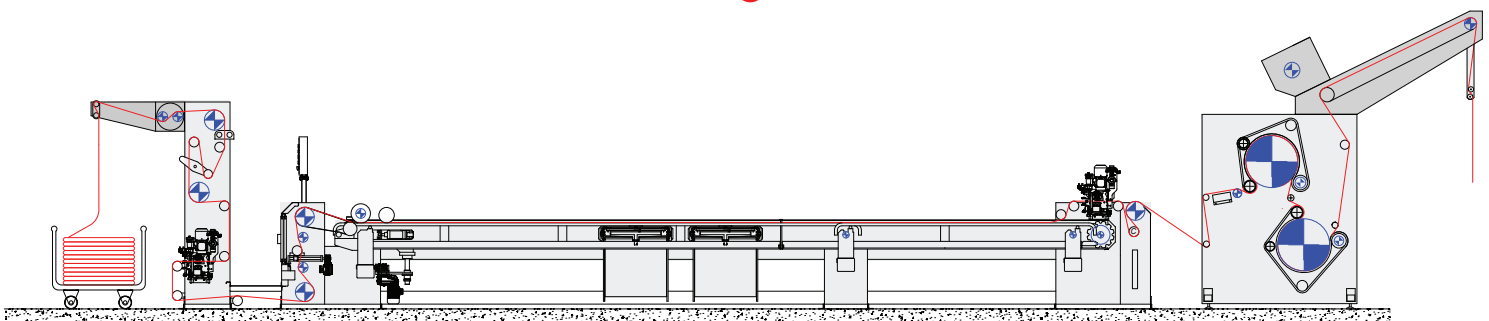
The unit designed and used to complete fabric edge trimming process before pin chain tenter frame of compacting machines. If both application edge gumming and drying is completed, fabric edge trimming application can be done at the inlet of pin chain tenter frame of compacting machines.

There are several advantages of this application such as drying machine can be operated in high speeds and compacting machine felt is protected by negative effect of gum application.



#### Equipments For Application;

- 1 **EF-FCU** Fabric Centering Unit (Pneumatic System)
- 2 **EF-FCU/B** Fabric Centering and Guiding Unit (Servo Motor Controlled)
- 3 **EF-CTR** Fabric Edge Trimming Unit (Sensor Controlled)



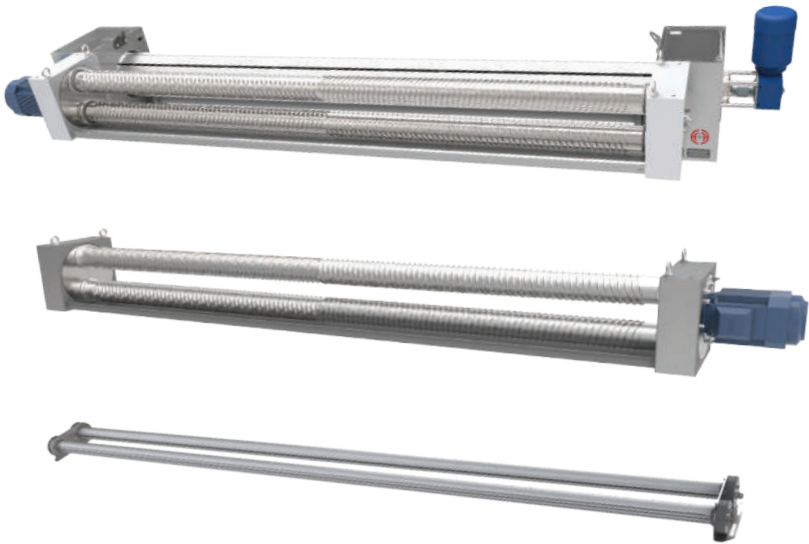


PRINTING MACHINE ACCESSORIES

**01 EF-FCU**  
Fabric Centering and Guiding Unit

**02 EF-SDU**  
Spreading Rollers

**02 EF-FCS**  
Fabric Centering Sensor



**03 EF-FTE**  
Brushing & Dust Collection Unit

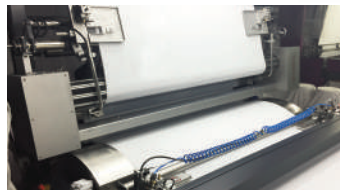
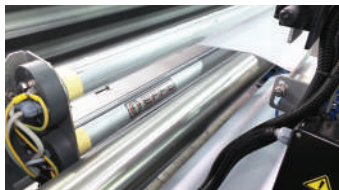
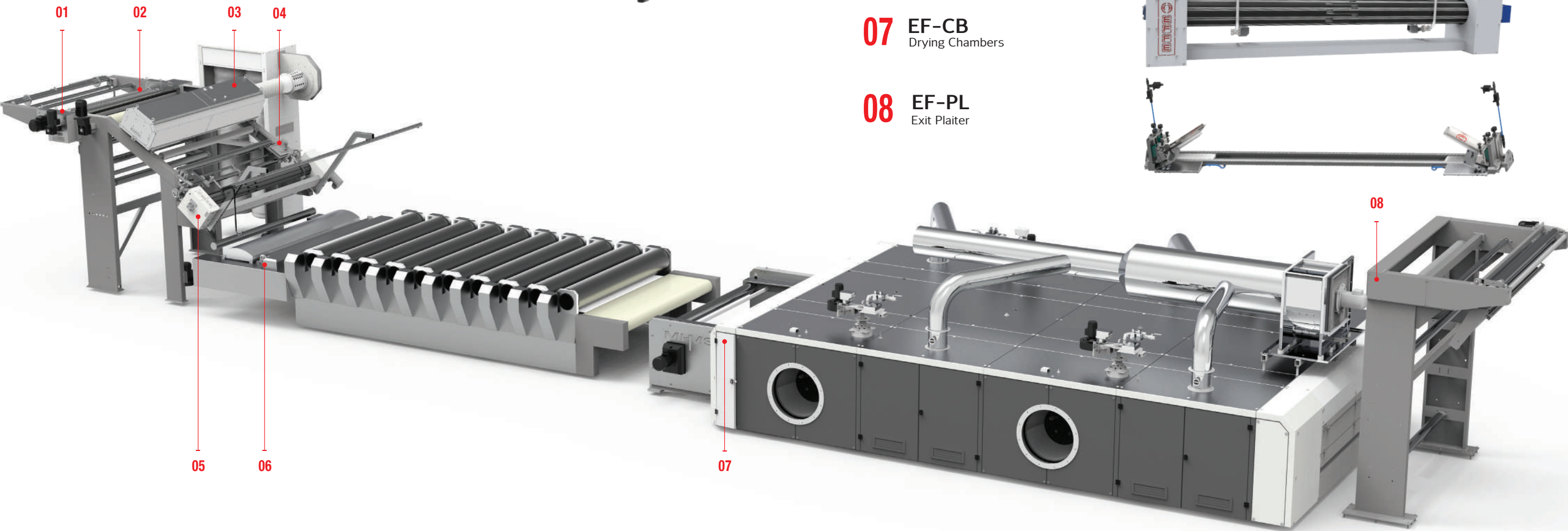
**04 EF-MED/F**  
Pneumatic Edge Spreader

**05 EF-FCU/B**  
Fabric Centering and Spreading Unit

**06 EF-MED/SP**  
Pneumatic Edge Spreading Unit

**07 EF-CB**  
Drying Chambers

**08 EF-PL**  
Exit Plaiter





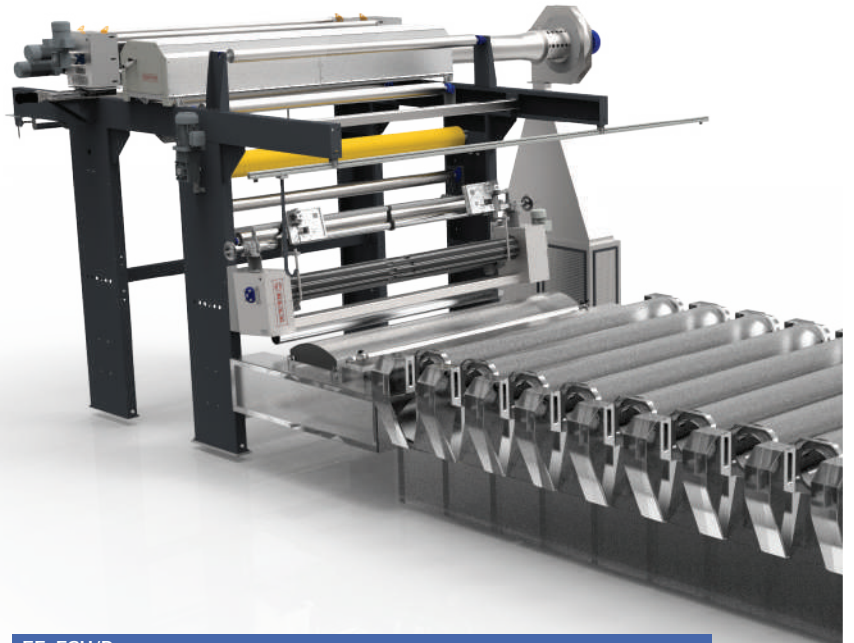
## PRINTING MACHINE ACCESSORIES

EF-RBG

### Printing Machines Inlet Applications

Applications which are made for rotary and filmdruck printing machine's fabric inlet provides better fabric position, better fabric width and better fabric tension uncurled and stable fabric tension knitted and woven fabrics.

The main purpose of complete application units are to provide stable fabric inlet, less tension on the fabric and uncurl the fabric edges prior to the printing blanket.



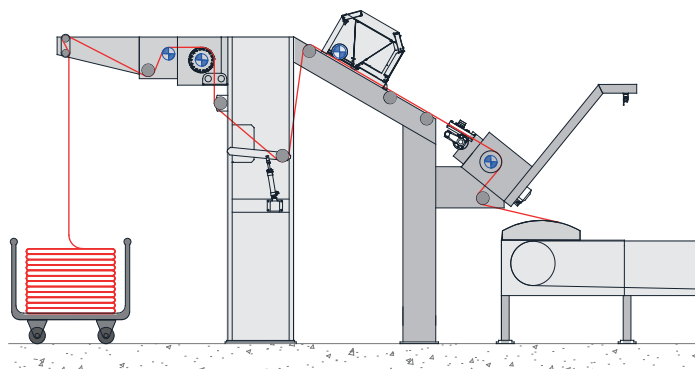
#### FABRIC INLET APPLICATIONS

##### EF-FCU Fabric Centering Unit (Pneumatic System)

The fabric centering unit ( EF-FCU ) is guiding and centering of fabric from fabric carrier to second fabric centering unit ( EF-FCU/B ) which is servo drive controlled.

Most of the fabrics come from fabric carrier un-stable conditions due to the stenter machine plaiting process.

The unit can be fixed and make correction to mis-alignments of fabric and increase the performance of servo-drive controlled fabric centering unit (EF-FCU/B).

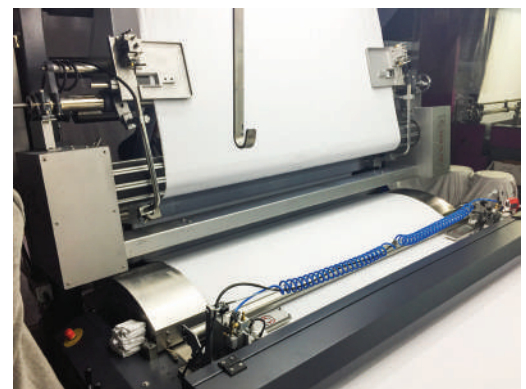


##### EF-FCU/B Fabric Centering and Spreading Unit (Printing Machines)

Mainly unit is designed and manufactured to transfer fabric to printing machine's blanket without any tension, centered, both side of fabric edge uncurled. It is designated to work compatible with sensors and DC motor roller unit that is required for referral of fabric from desired point to the printing blanket.

##### EF-BLR Pneumatic Compensation Roller

Desired fabric tension is controlled by EF-BLR model pneumatic compensating roller. According to the fabric type and desired tension fabric tension is controlled pneumaticall with linear potantiometer.



##### EF-FTE Brushing and Dust Collection Unit

The unit can be used for final cleaning of fabric surface before printing process. First fabric surface brush / clean up afterwards, wastage dusts is collecting by suction unit. Thanks to the brushing and dust collection unit, fabric surface ensure optimal clean surface for printing as well as prevent the machine's screens against the harmful effects of dust

##### EF-MED/SP Pneumatic Edge Spreading Unit

Fabric edge curls adversely effects printing quality and cause incese of fabric wastage. Thanks to the pneumatic edge spreading unit which is placed prior to the pressure roller where the fabric completely fix on machine's blanket, both edge of fabric can be uncurled with success. Pneumatic edge spreading unit is equipped with special nozzle system that provide compressed air enable to open fabric edges. The unit use plant compressed air. If compressed air is not required, the unit can be used without compressed air.

Spreading units where placed on sides of stainless profiles can be adjusted according to the fabric width seperately.



**EF-FTE**

### Brushing & Dust Collection Unit

This unit is designed for brushing and cleaning fabric surface on printing machines, raising machines, shearing machines and singeing machines.

The unit is mainly preferred for printing machine where the fabric surface is brushed and cleaned-up before printing operation, the unit is also preferred for singeing machine and continue washing machines where the both side of fabrics require brushing and dust collection.



#### Technical Specifications

- Manual adjustment of unit according to fabric width to close up the parts without fabric pass.
- AC inverter controlled brushing roller for east suction of dust and fiber
- Suction entrance that contacts with fabric, made of stainless material
- Flexible suction pipes between suction unit and dust collection storage on standard applications
- Out chamber sheets made of decorative stainless material
- Strong and modular steel frame

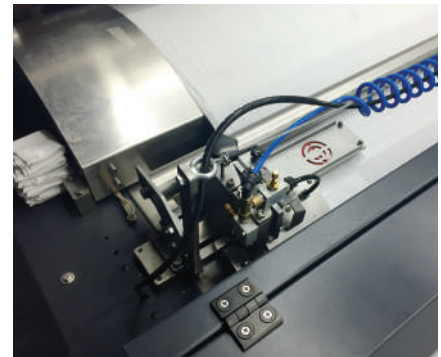
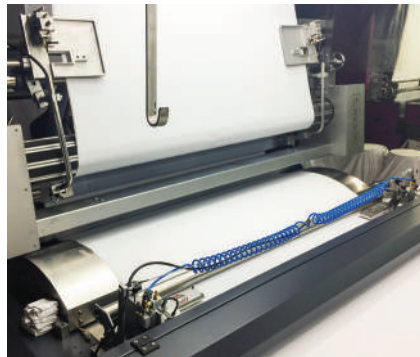


**EF-MED/SP**

### Pneumatic Edge Spreading Unit Printing Machines

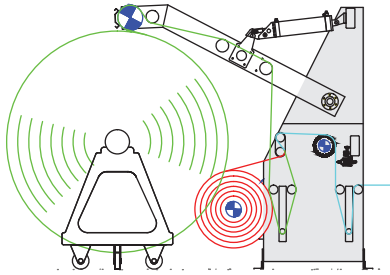
Fabric edge curls adversely effects printing quality and cause increase of fabric wastage. Thanks to the pneumatic spreader unit which is placed prior to the pressure roller where the fabric completely fixes on machine's blanket, both edge of fabric can be un-curl with success.

Pneumatic edge spreader unit is equipped with special nozzle system that provides compressed air to decurl fabric edges. The unit uses plant compressed air. If compressed air is not required, the unit can be used without compressed air. Spreader units that placed on sides of stainless profiles can be adjusted according to the fabric width separately.



EF-DB

### Batch Unwinder Unit, Center Driven A-Frame Unwinder Unit & Centering Unit



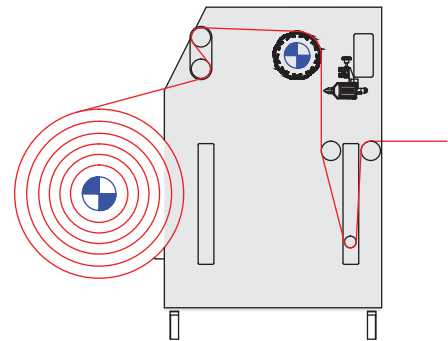
It is used for conveying the fabrics that maximum 2000 mm diameter wrapped in batcher unit to digital printing machine.

The dancing roller system at the unit outlet allows the synchronous operation for batch unwinder unit & centering unit with digital printing machine.



EF-DBG

### Center Driven A-Frame Unwinder Unit & Centering Unit

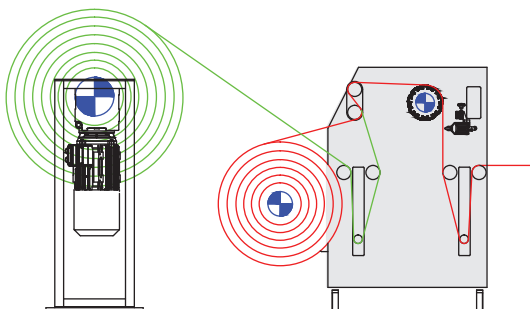


It is used for conveying the fabrics that prepared for the plating roller or 500 mm diameter roll to digital printing machine as centered and with tension requested.

The dancing roller system at the unit outlet allows the previous units to operate at the production speed while printing process is running on digital printing machine.

EF-DB/SBU

### Center Driven A-Frame Unwinder Unit /Roll Unwinder & Centering Unit



It is used for conveying the fabrics that 500-2000 mm diameter wrapped in batcher unit to digital printing machine as centered and with tension requested.

The dancing roller system at the unit outlet allows the previous units to operate at the production speed while printing process is running on digital printing machine.



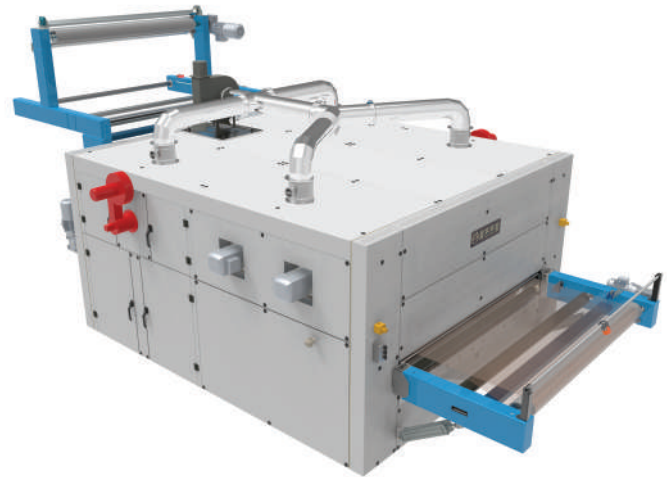


EF-DDC

## Drying Chambers

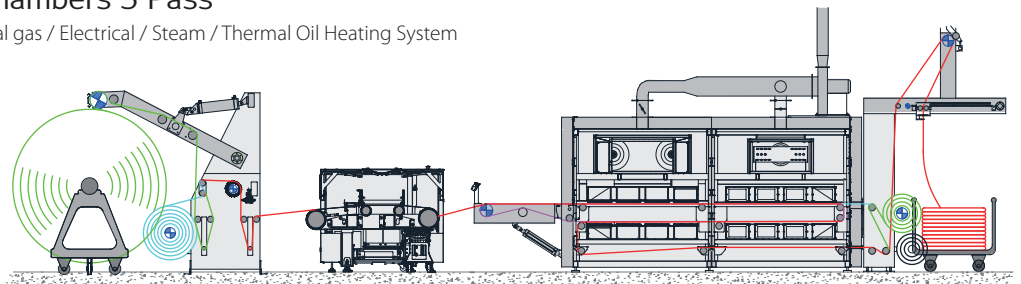
### Technical Specifications

- 1850-2450 mm fabric working width
- 3-pass application, the ability to be used as a single pass if necessary
- 2 chambers, 1800 mm length for each chamber
- Natural gas heating system ( the ability to be convert as electrical, steam or thermal oil heated system if necessary )
- 2 pcs inverter controlled chamber air circulation fans at each chamber, total 4 pcs
- Cross positioned chamber fans to avoid difference between edge -middle-edge of fabric
- 1 pce natural gas burner at each chamber, total 2 pcs.
- 1 pce inverter controlled exhaust fan
- Height adjustable conveyor system
- Movable plaiter unit
- Can be used at 100-180 degree temperatures



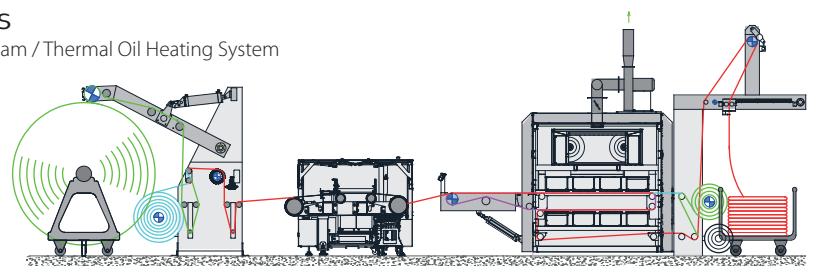
### 2 Chambers 3 Pass

Natural gas / Electrical / Steam / Thermal Oil Heating System



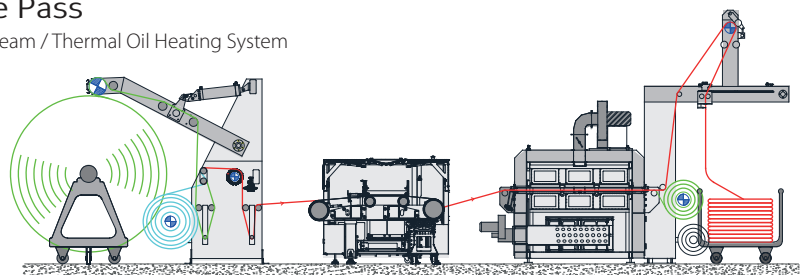
### 1 Chamber 3 Pass

Natural gas / Electrical / Steam / Thermal Oil Heating System



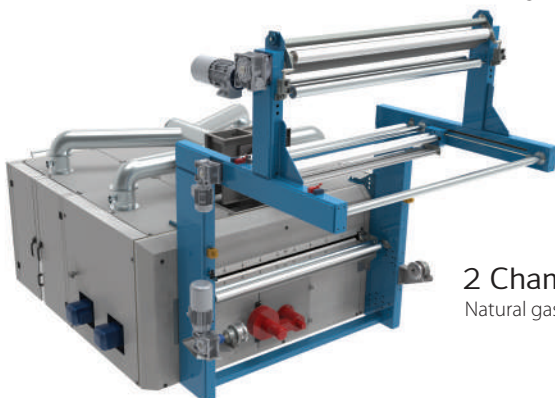
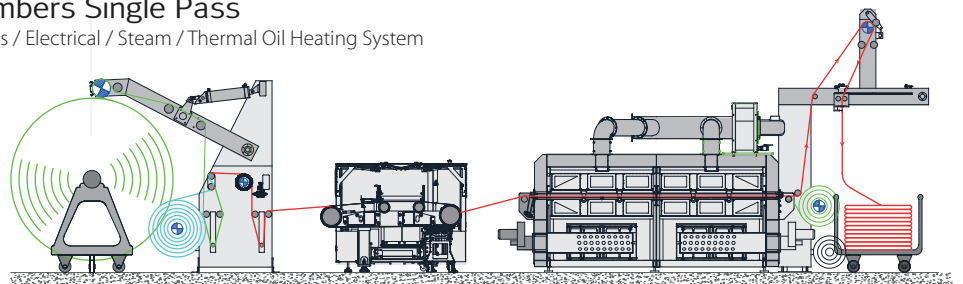
### 1 Chamber Single Pass

Natural gas / Electrical / Steam / Thermal Oil Heating System



### 2 Chambers Single Pass

Natural gas / Electrical / Steam / Thermal Oil Heating System

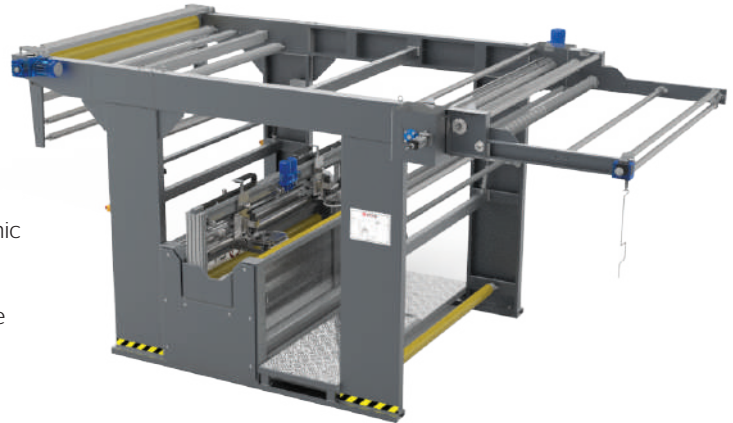
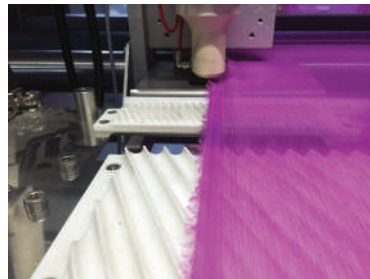
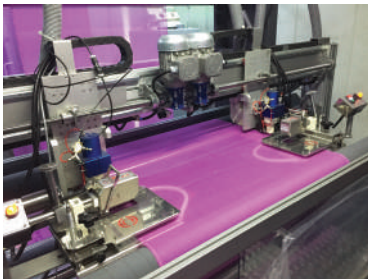
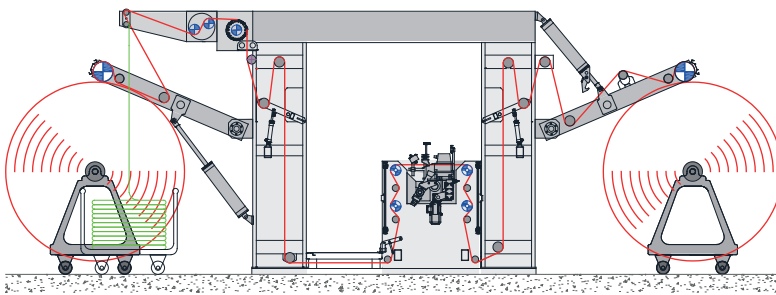


## EF-ULTR/M

### Ultrasonic Edge Trimming Machine

The unit is specially designed and preferred for edge trimming processes of polyester fabrics. Edge fibers of polyester fabrics are strengthened and edge fibrillation is prevented thanks to the ultrasonic edge trimming technology.

According to the desired speed and production capacity, alternative ultrasonic heads and transformers can be provided.



#### Line Design

- Inlet from fabric carrier or A-Frame
- Operator platform
- EF-FCU/A model fabric spreading unit
- Ultrasonic edge trimming units ( left-right )
- 2 pcs tracking roller before trimming unit, AC interter controlled
- Mechanical edge spreading unit EF-MED Model prior to the trimming unit
- 2 pcs driven controlled tracking rollers after trimming unit, AC interter controlled
- EF-ECU Model Infrared Edge Control sensor
- Suction unit for trimming wastage
- Set of suction blower left-right

#### Technical Specifications

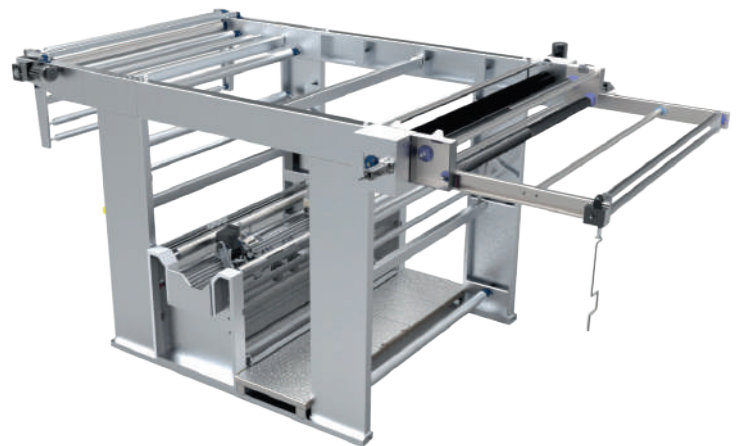
- Driven tracking rollers and compensation system for tension free operating
- Plaiter or A-Frame inlet and exit combinations
- PLC Controlled Panel

## EF-PM

### Fabric Preparation Line

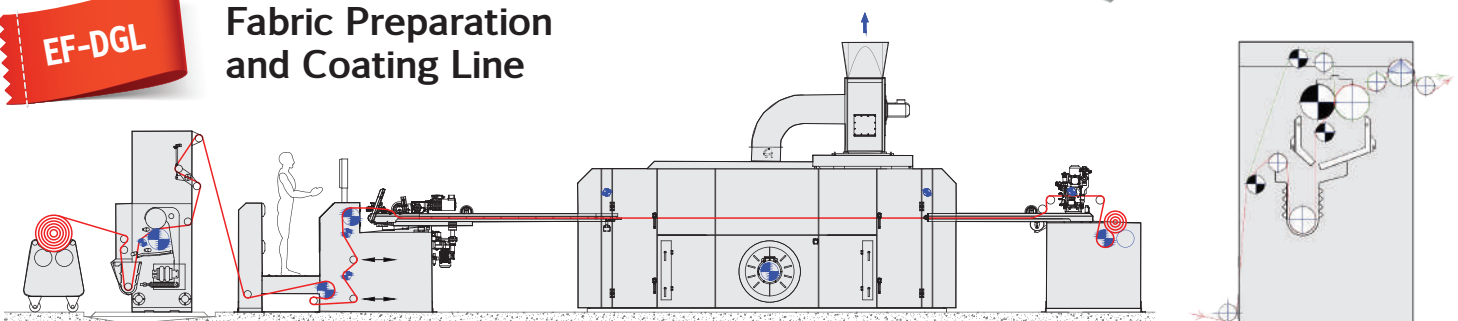
While processing digital printing, the edge of woven fabrics is tufting and causing quality problem on final printing. Tuft Edge Sewing Machine is designed and manufactured to solve classical problems on preparation of woven fabrics for printing process.

First fabric edges gets trimmed with edge trimming unit and sewing with special over lock sewing machine in order to prevent tufting again before printing process. Machine inlet and outlet combination can be designed as from fabric carrier to carrier, un-winder to winder or fabric carrier.



## EF-DGL

### Fabric Preparation and Coating Line





**EF-EGD**

## Pin Chain Tenter Frame Dryers

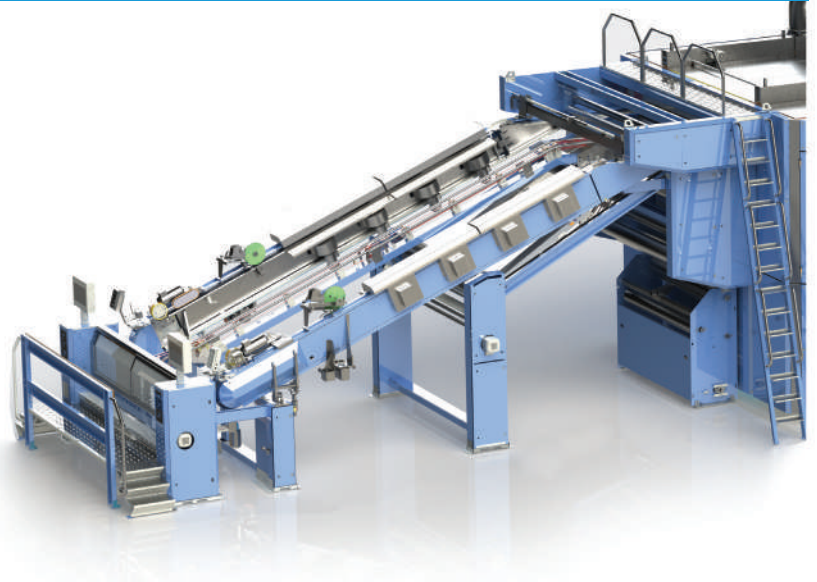
The unit is mainly preferred where the open width fabrics are processing on drying machines for width adjustment, gum application and edge drying before drying chambers.

### Inlet Section and Operator Platform

- Steel construction, painted and reinforced main frame
- Main traction roller, AC inverter controlled, Ø 220 diameter
- 11 kW capacity, 1400 rpm motor-gearbox driven system
- 2 pcs spiral expander rollers uncurl fabric edges before pinning on chain links
- Manuel skew correction roller, 500 mm stroke
- Functional control panel and PLC system
- Driven fabric conveyor unit, synchronized with machine speed or can be adjusted separately

### Chain Inlet Groups

- Pneumatic controlled, rubber coated, left-right pinning wheels and brushes
- Fabric edge spreading unit EF-MED and infrared edge control sensor EF-ECU
- Actuators EF-ECU/C, inverter controlled chain rail position adjustment
- Pneumatic chain tension adjustment group



### Chain Rails

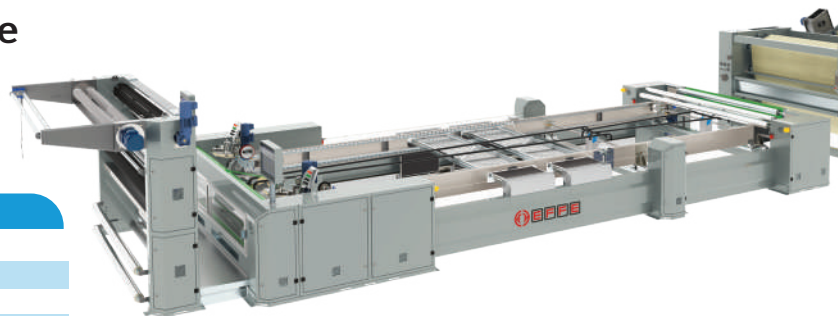
- 5+1 long chain rails, vertical rail arrangement
- Chain tension control sensors
- Stainless steel chain rails and chain links
- Independent chain rail motor-gearbox system, encoder and inverter controlled

**EF-EGS**

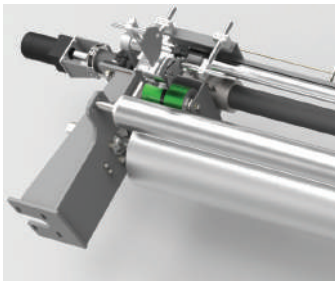
## Pin Chain Tenter Frame Compacting Machines

### Technical Specification

- Fabric centering and guiding unit ( EF-FCU)
- Total length of chain rails 8180 mm ( pin top pin )
- Pinning success with special design pinning groups ( EF-HKS)
- Pneumatic controlled, rubber coated, left-right pinning wheels and brushes
- Fabric edge spreading unit EF-MED and Infrared edge control sensor EF-ECU
- Actuators EF-ECU/C, Inverter controlled chain rail position adjustment
- Pneumatic chain tension adjustment group
- Driven fabric center transport ropes for tension-free and relax transportation of fabric ( EF-DCB )
- 2 pcs encoder controlled width adjustment spindle on chain rails
- PLC controlled, working period adjustable chain lubrication system
- Complete stainless steel frame chain rails and chain links
- Indirect steam base chain rail heating system to prevent condensation
- Conic "V" type steaming unit
- Air curtain system enable to prevent the inlet electronic equipments at the inlet section against effect of steam
- Inverter and encoder controlled, left - right separate motor - gearbox, direct connection to chain rails
- Functional control panel and PLC system



## OTHER MACHINES



**EF-SME**

### Edge Flame Extinguisher for Singeing Unit

Tufted edges of woven fabrics continue to burn at the exit of singeing machines. Edge extinguisher unit is implemented to transfer fabric with extinguishing the fabric edges. Fabric exits from singeing machine with tufted edges and passes through double sided cooling rollers within this unit.

While passing, edge control sensor, pneumatic system, conveyor belted mechanism pressures the flamed fabric edges on cooling roller. Air contact of the flamed tufts is being cut off and thus flame is being extinguished.

**EF-HKM**

### Fabric Preparation Machine

The unit is designed and produced to prepare the rolls of tubular and open width fabrics before dying process.

#### Technical Specification

- 100 m/min mechanical speed of machine
- Stainless steel U-box cylinders
- Availability to work 2-3 tubular rolls at the same time



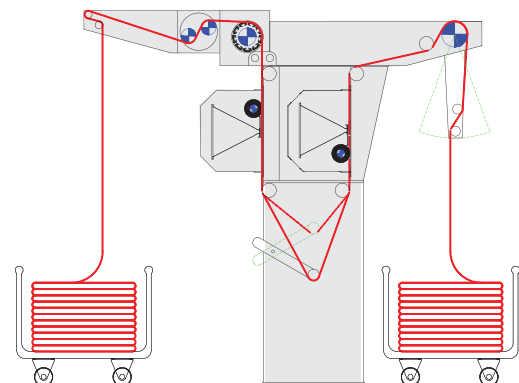
**EF-FTEM**

### Fabric Brushing & Dust Collection Machine



#### Technical Specification

- Brushing on both side of the fabric.
- Stainless brush group 304 AISI
- Special alloy, heat resistant, high friction endurance features on polyester brush
- Brush driven system with 0,75kW motor capacity
- Entire aspiration group, 4 pcs plastic bag and connection cuffs included
- Aspiration motor with 5,5kW capacity
- Flexible aspiration hoses
- Independent control panel, inverters, salt materials, inverters





## STENTER, DRYER AND COMPACTING MACHINE CHAINS, CLIPS & ACCESSORIES



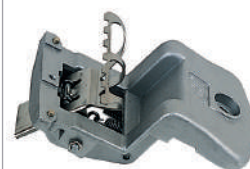
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ARTOS**



**EFFE - 20/2  
ARTOS**



**EFFE - 20/3  
ARTOS**



**EFFE - 20/4  
ARTOS**



**EFFE - 20/17  
ARTOS**



**EFFE - 30/2A  
MONFORTS**



**EFFE - 30/8  
MONFORTS**



**EFFE - 30/9  
MONFORTS**



**EFFE - 30/10  
MONFORTS**



**EFFE - 530  
MONFORTS**



**EFFE - 40/2  
BRUCKNER**



**EFFE - 40/4  
BRUCKNER**



**EFFE - 40/7  
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**EFFE - 40/9  
BRUCKNER**



**EFFE - 511/2  
BRUCKNER**



**EFFE - 60/1  
EHWHA**



**EFFE - 60/2  
EHWHA**



**EFFE - 40/5  
EHWHA**



**EFFE - 60/7  
EHWHA**



**EFFE - 60/11  
EHWHA**



**EFFE - 510/2  
BRUCKNER**



**EFFE - 570/3  
SANTEX**



**EFFE - 58  
FERRARO**



**EFFE - 10/2  
BABCOCK**



**EFFE - 10/5  
BABCOCK**

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