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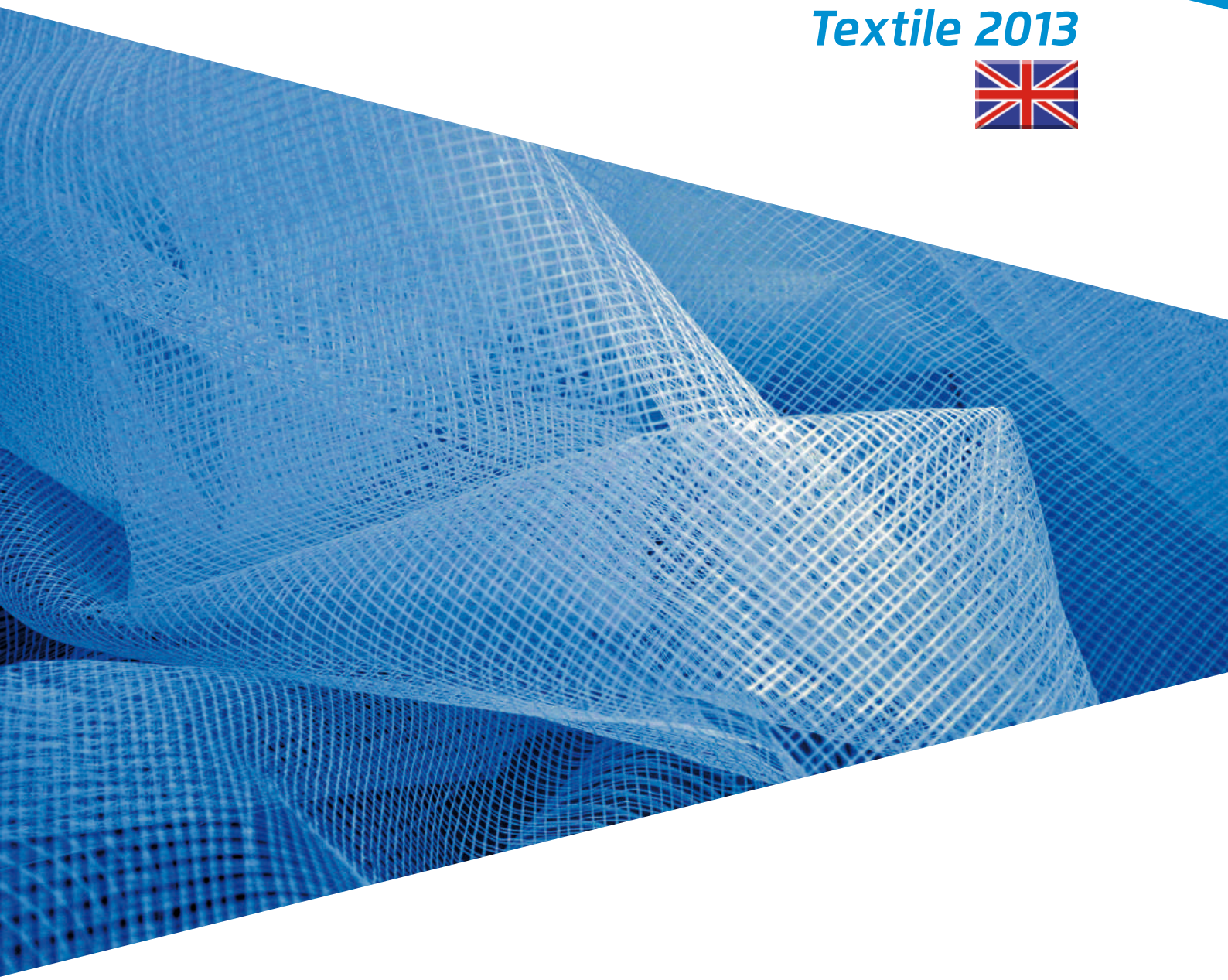
competence in automation

PRODUCT CATALOGUE

Textile 2013



VDMA

Made in Germany

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1. ontec | *The Company*

ontec *was founded by the two presidents Volker Rossner and Wilhelm Puchta. We and our team are pleased to give you advice!*

ontec develops the future:

ontec is building technically optimum, effective and innovative machines for the textile industry, especially in the field of technical textiles, for many years. With systems from ontec you are always at the latest state of the art. Highest quality is our standard. ontec is working ecologically and according to ISO 9001:2008.

ontec renders individual consultancy:

The ontec team will be pleased to answer all your questions. Together with you we will prepare an individual system configuration which exactly corresponds to your special requirements. In our showrooms you can use the machine types directly for your experiments. We will also be most happy to visit you on your premises in order to advise you on location. ontec offers you the most economic solutions for your projects.

ontec offers service around the clock:

ontec is available to you 24 hours, seven days a week. Our service team is at your disposal worldwide for the assembly, the service and the maintenance of systems. All our systems are supplied with remote maintenance systems. This provides an easy and quick fault diagnosis at any time and reduces down times. Of course we also train your own personnel. Operation manuals and corresponding documents in your respective national language are provided as well.

ontec operates worldwide:

ontec is a competent partner in the industrial goods industry. We are represented in almost every country. You can also find us at the biggest international textile machinery shows. We present our product portfolio at Techtextil Moscow, ITMA Shanghai, ITME Mumbai, Techtextil Mumbai and Techtextil Frankfurt.

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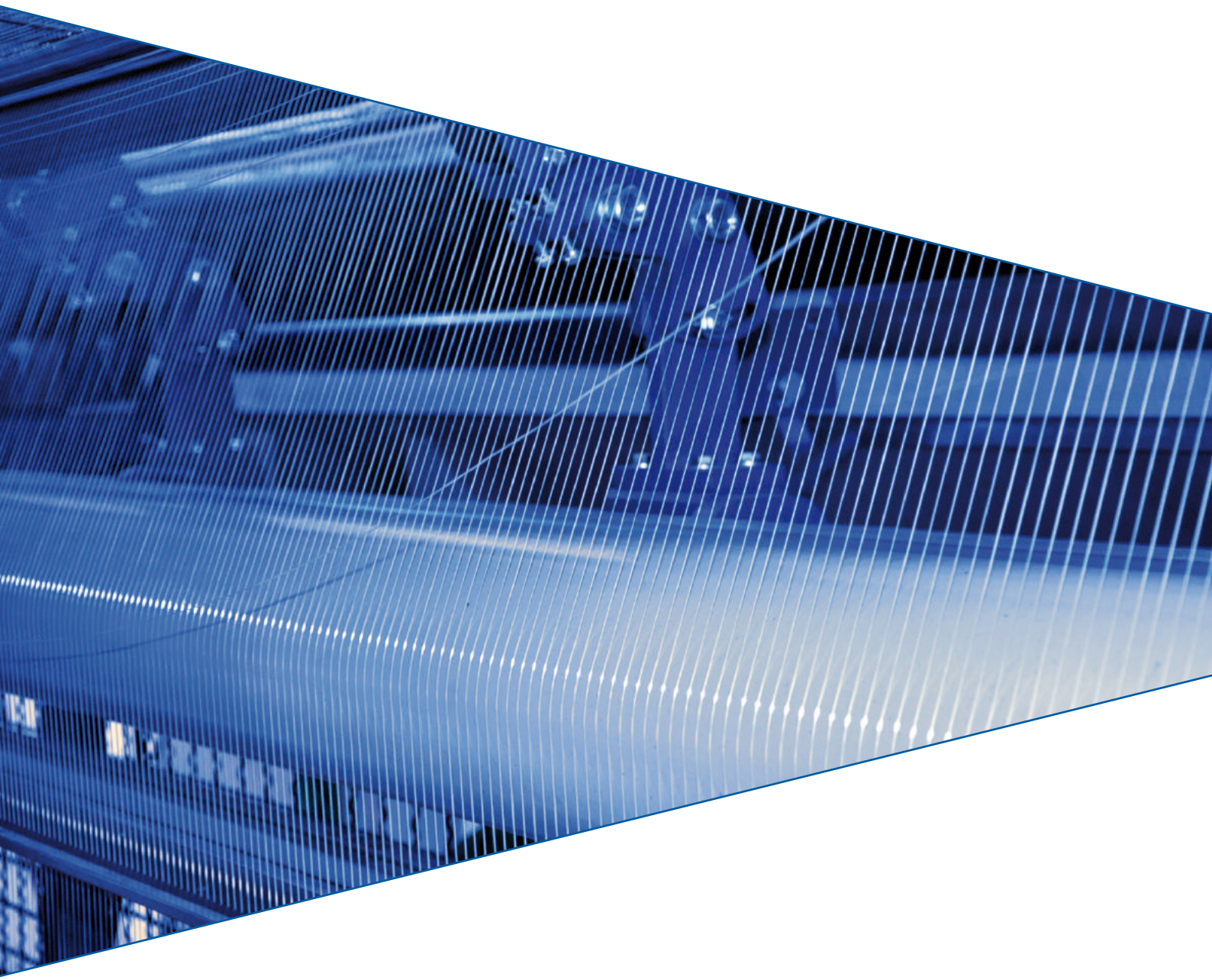
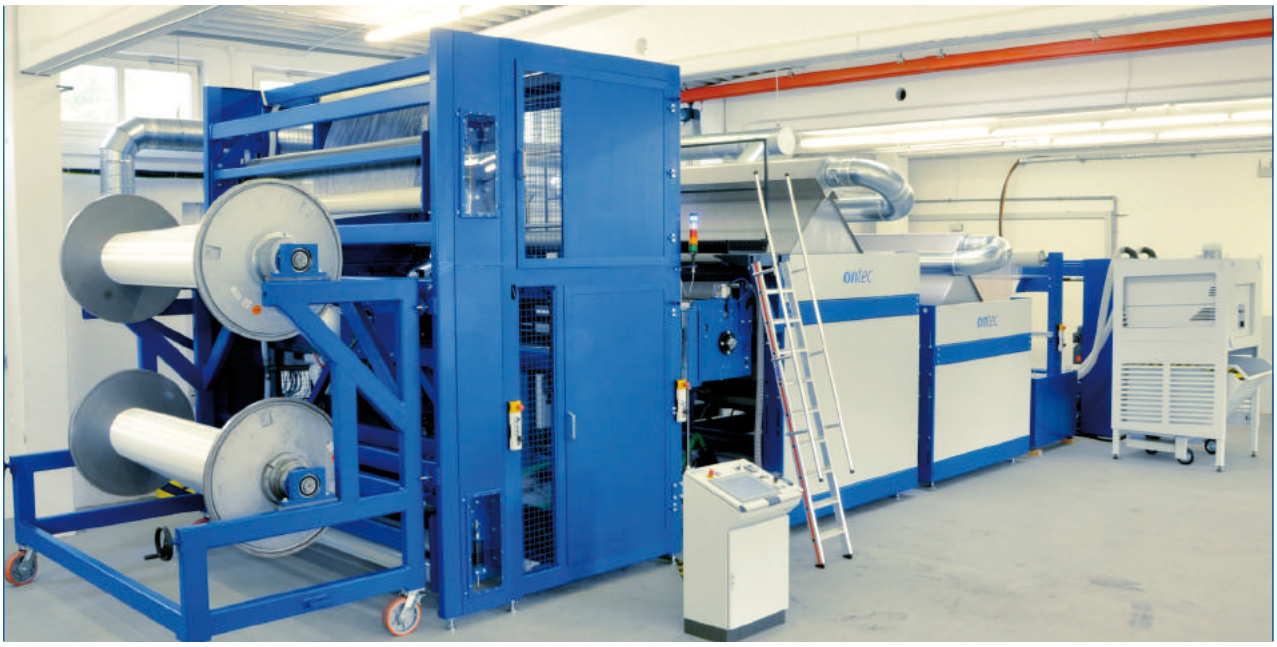
2. TURBOTEX

LS 2000



2. TURBOTEX



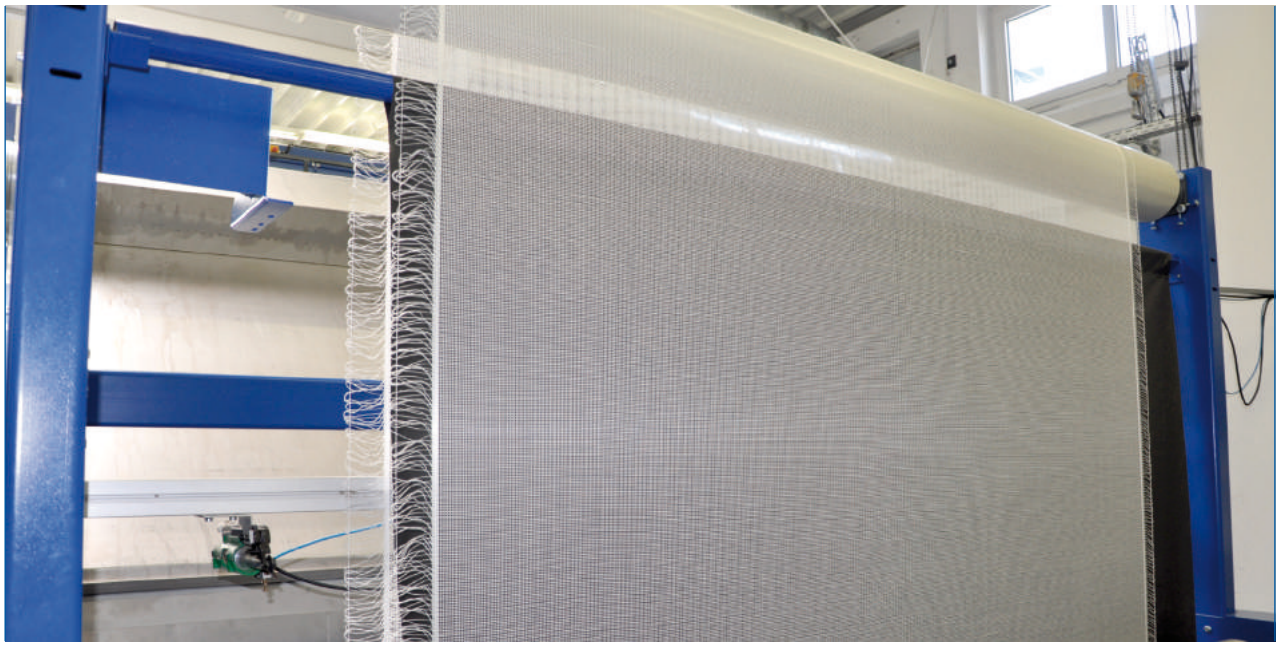
The Turbotex is a machine for the production of scrims. It is worldwide the first facility which can be purchased ready for production.

Scrims are used for reinforcing all different types of materials.
A scrim is produced of textile continuous filaments. Compared to woven fabrics the bonding of the threads is effected by chemical means.

ADVANTAGES OF TURBOTEX:

- *High production speed*
- *High operating safety*
- *Low down times*
- *Little space requirement*
- *Low energy consumption*
- *Combines all production steps from yarn up to coated scrim*

2. TURBOTEX | *Scrims*



ADVANTAGES OF SCRIMS:

- ***Thinner material:***
  Scrims can be up to half as thin as woven fabrics of the same yarn. With scrims thinner end products can be produced in a better quality.
- ***Lower strain values:***
  Based on straight yarn structures the scrims show lower strain values which result in a better effect of reinforcements in the end product.
- ***Smoother surface:***
  Scrims have a less distinctive grid structure. This results in a smoother and more even surface of the endproduct. Individual layers can be bonded with each other more easily and more permanently. The susceptibility for soiling is reduced.
- ***Material- and cost savings:***
  The use of scrim reinforced materials allows higher machine speeds in the production and results in higher material and cost savings.

FIELD OF APPLICATION OF SCRIMS:

- ***Plastic sheets:***
  Swimming pool and pond sheets, packing materials
- ***Construction products:***
  Roof sheeting, thermal insulation, fire- and sound protection, floor coverings, building boards of hard plaster and concrete, adhesive tapes, geotextiles
- ***Sports:*** *Canvas, swimming pool sheets*
- ***Fleece, glass fibre reinforced plastic products (GRP)***
  and many more

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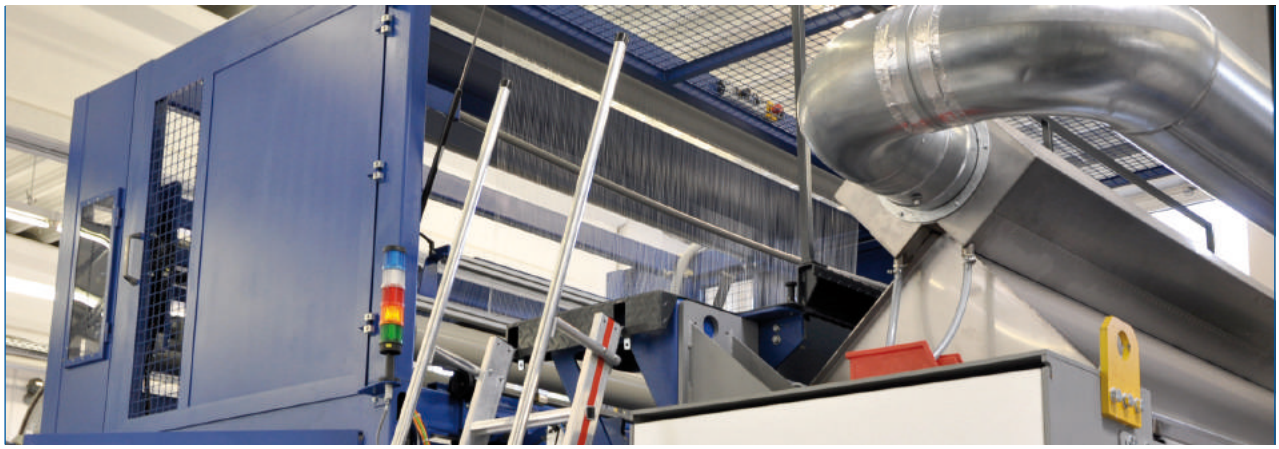

BASIC MATERIAL:

Polyester yarn, glass fibre yarn or carbon fibres.

- ***Yarn strengths:*** *Polyester and glass: 340 - 2200 dtex*
- ***Warp threads:*** *on sectional beams with up to 1250 mm flange diameter or as single threads from the creel with delivery unit*
- ***Weft threads:*** *as yarn bobbins max. 300 mm diameter, max. length 400 mm, max. weight 20 kg*
- ***Chemical bonding materials:*** *PVC-dispersion, styrene-butadiene rubber (SBR), acrylate, plastisol and others*

END PRODUCT:

Scrims of polyester yarn, glass fibre yarn or carbon fibre as well as their combinations. Simultaneous lamination of fleeces or films (of plastic material or aluminium) possible.

- ***Material thickness:*** *0,15 - 1 mm*
- ***Yarn density:*** *steplessly adjustable from closed fabric up to grid structures with 20 x 20 mm*
- ***Working width:*** *steplessly adjustable from 1200 - 2500 mm*
- ***Fabric winding diameter:*** *up to max. 1700 mm depending on product*

CAPACITY:

- ***Weft speed:*** *max. 2000 weft/min*
- ***Production speed:*** *max. 6 m/min at a weft thread density of 3 threads/cm*
- ***Size:*** *W x H x L: 4 m x 4 m x 12 m*
- ***Weight:*** *20 tons*
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz*
  Pressurized air: *6 bars*
  Exhaust air: *8000 m³/h*

OPTIONS:

- ***Warp thread feeding from the sectional beam or creel with the delivery unit***
- ***Fleece- or film feeding***
- ***Fabric inspection with error detection***
- ***Longitudinal cutting devices***

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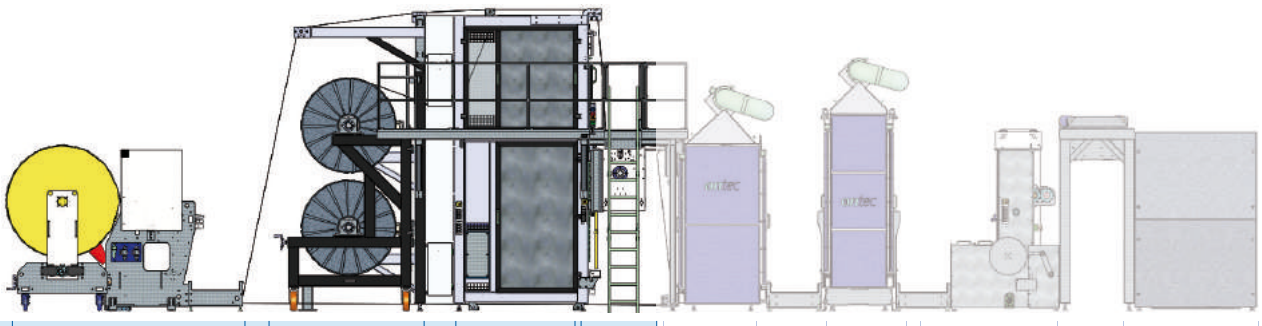
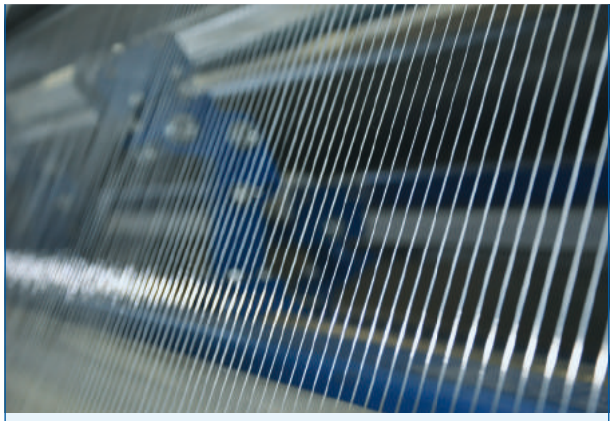
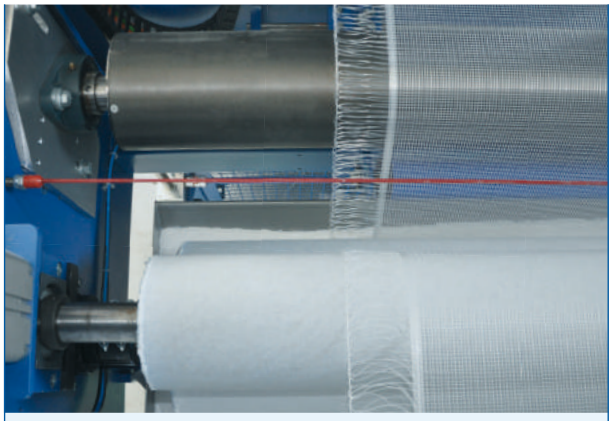
2. TURBOTEX | *Production Steps 1-2*





1. SCRIM PRODUCTION:

- *Weft thread number counts up to 4 bobbins on the rotation layer*
- *Weft thread distance steplessly adjustable*
- *Weft thread inspector*
- *Warp thread feeding through upper and lower sectional beam*
- *Weft thread tension steplessly adjustable*
- *Warp thread inspector*
- *Automatic balance lengths inspection*



2. SCRIM COATING:

- *Possible coating agents: dispersion and plastisols*
- *Coating in the foulard in the immersion process*
- *Automatic filling and automatic level control of the coating agent*

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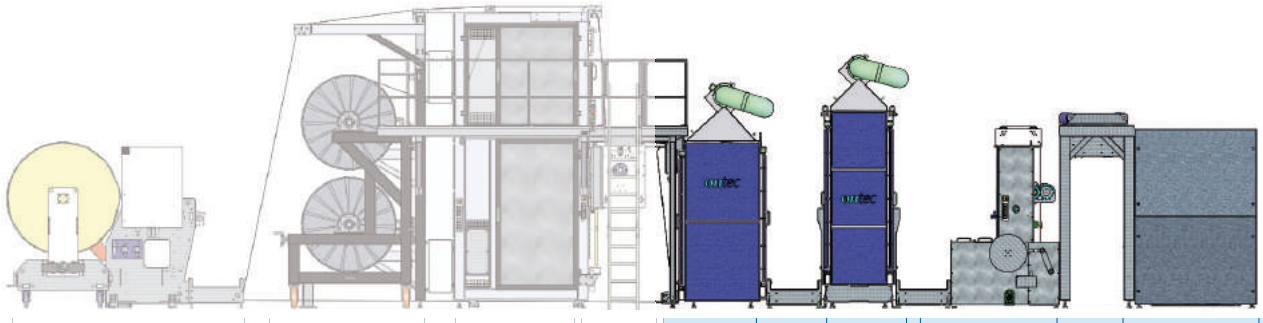
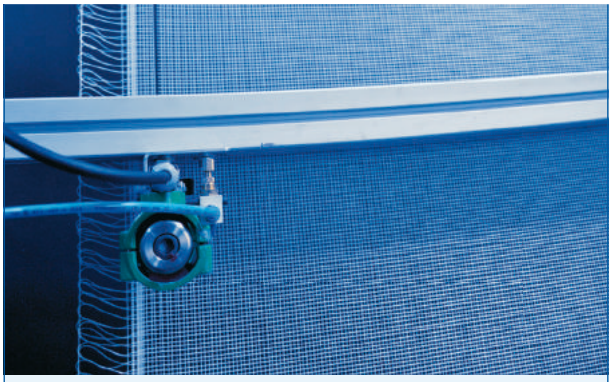
2. TURBOTEX | *Production Steps 3-5*



3. DRYING:

- *Drying by means of contact rollers and infrared heater*
- *Drying capacity up to max. 180 kW total*
- *Specially coated heating rollers*
- *Electrically heated*
- *High efficiency in the used wave length range around 3 µm*
- *Quick cooling down, therefore no fabric damages*



4. FABRIC INSPECTION:

- *Inspection area for quality control*
- *Ultrasonic cutting devices for edge and centre cuttings*
- *Different fabric tension possible*

5. WINDING:

- *Rising roll winder with central drive*
- *Integrated ejector device*
- *Transversal cutting device*
- *Fabric winding diameter max. 1700 mm*
- *Traverse motion device*

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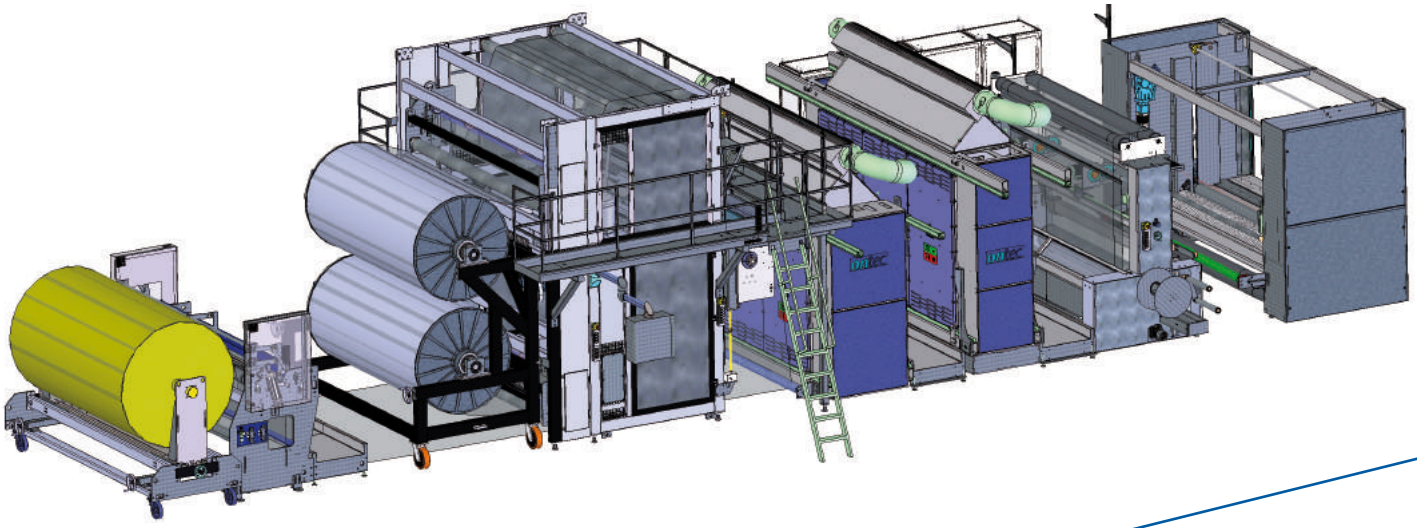
2. TURBOTEX



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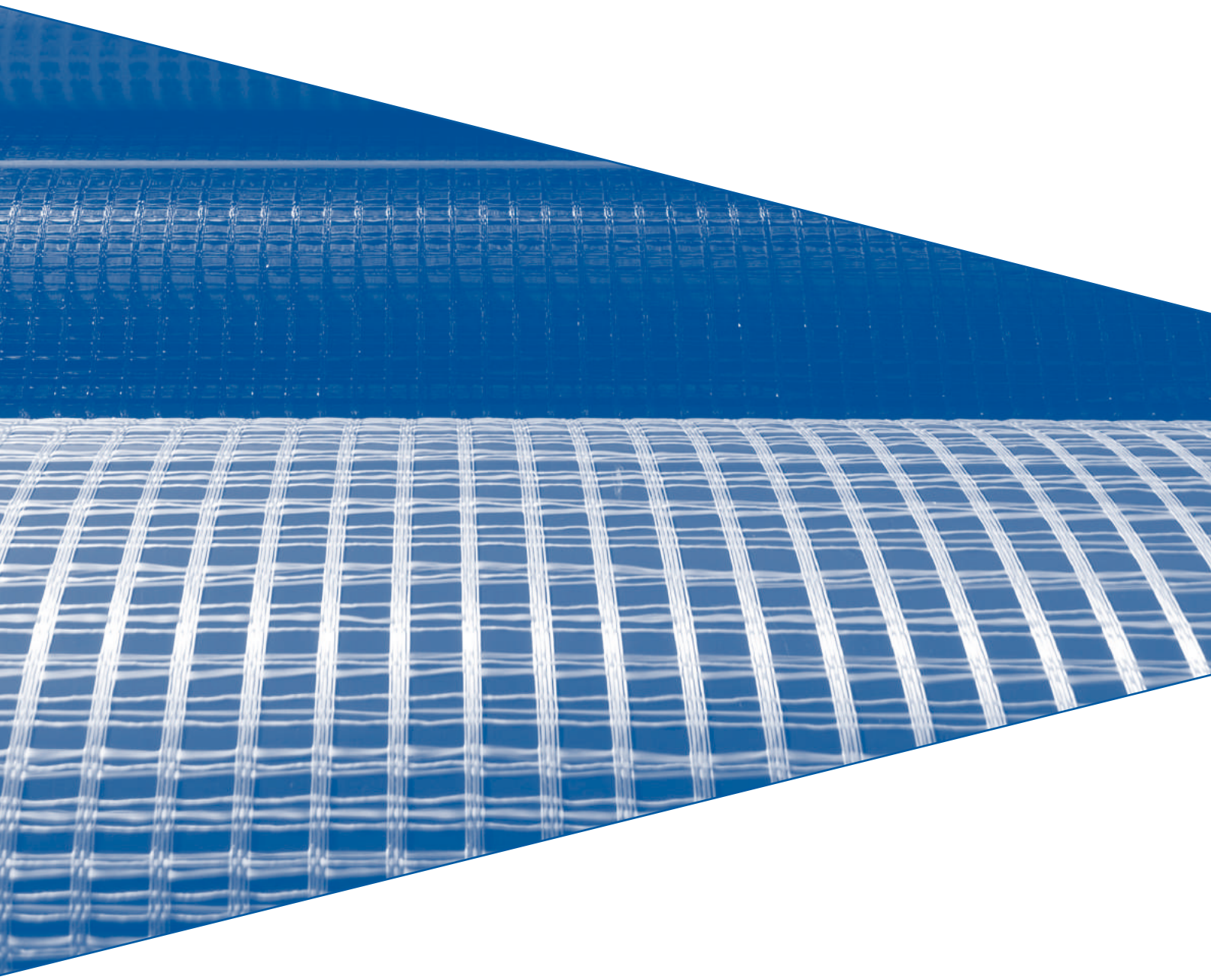
3. COATING SYSTEMS



ontec sells its coating systems worldwide with great success.

The ontec coating systems are suitable for the coating of woven or knitted fabrics, fleece and composites. The systems are universally applicable. A variety of products can be processed. ontec coating systems can be used for all technical textiles.

ontec coating systems feature the latest control- and heating technology.

This results in better controlling possibilities of the coating process.

The use of ontec coating systems guarantees the highest possible productivity together with reduced energy consumption and optimum quality of the fabric.

A further advantage is the userfriendly and simple visual design that enables you to operate the control panel intuitively after only a short introduction.

This way you can easily keep an eye on all relevant process variables.

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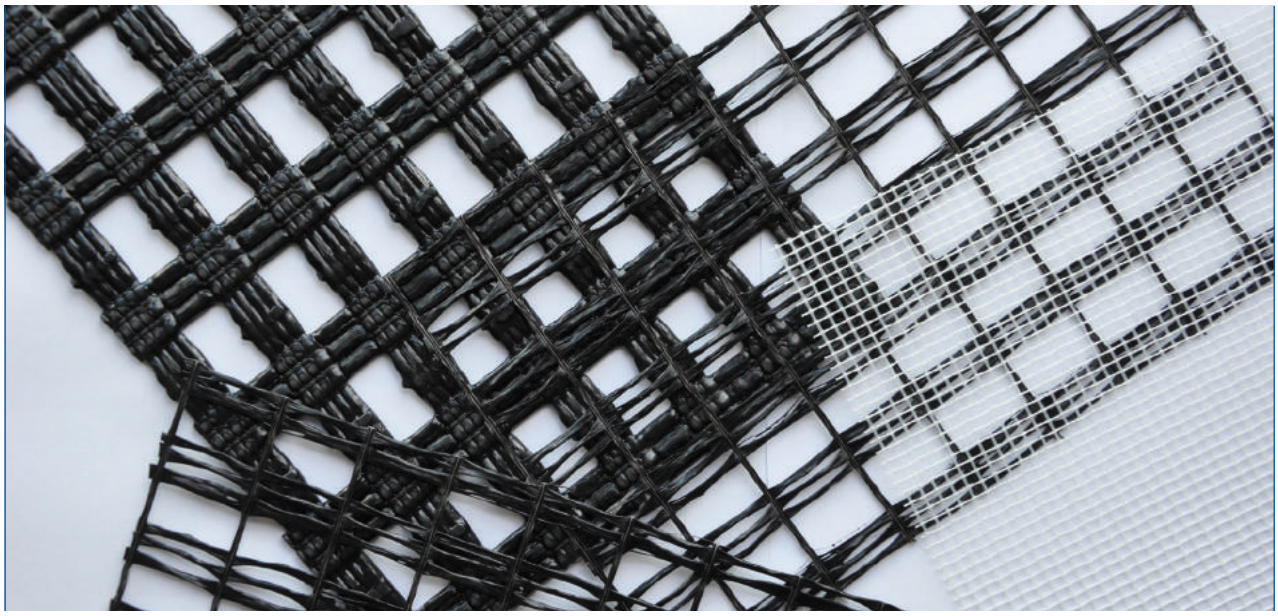
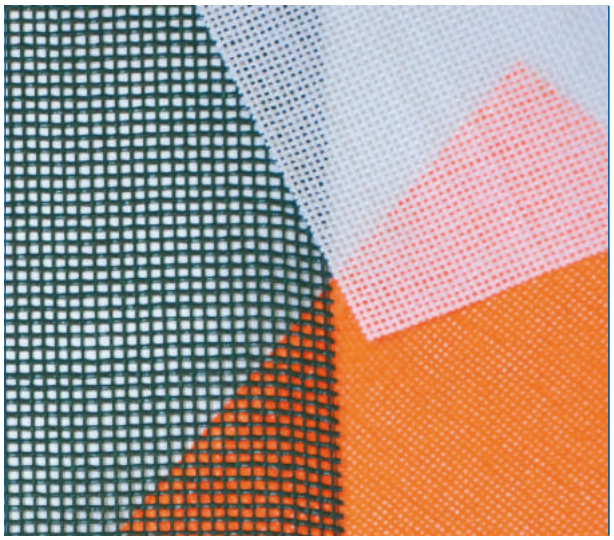
3. COATING SYSTEMS | *Geotextiles*



Most geotextiles are produced of coated glass-, basalt- or carbon fibres or synthetic materials such as polyester, polyethylene or polypropylene.

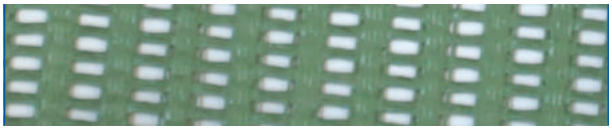
In 2010 the worldwide sales volume of technical textiles amounted to almost 100 billion Euros. The market should also continue to grow in the future, according to forecasts by up to five per cent per year. Based on their specific material characteristics, technical textiles constantly develop new fields of application. They are mainly used in vehicle and aircraft construction, in civil engineering and in the field of sports.



END PRODUCT:

Coated Textiles for various fields of application, e. g.:

- ***Civil engineering:*** *Erosion protection, securing dry stone walls and dumping sites, protection against landslides, stabilizing the subgrade in traffic route engineering and earth work, wind guards, concrete reinforcement, thermal insulation, roof sheeting, storefront, plastering fabric, painter fabric, reinforcement fabrics for floor coverings, cable insulation*
- ***Agriculture:*** *Nets, fences*
- ***Advertisement:*** *Banner advertisement*
- ***Sports and games:*** *Slope barriers, jumping mats*



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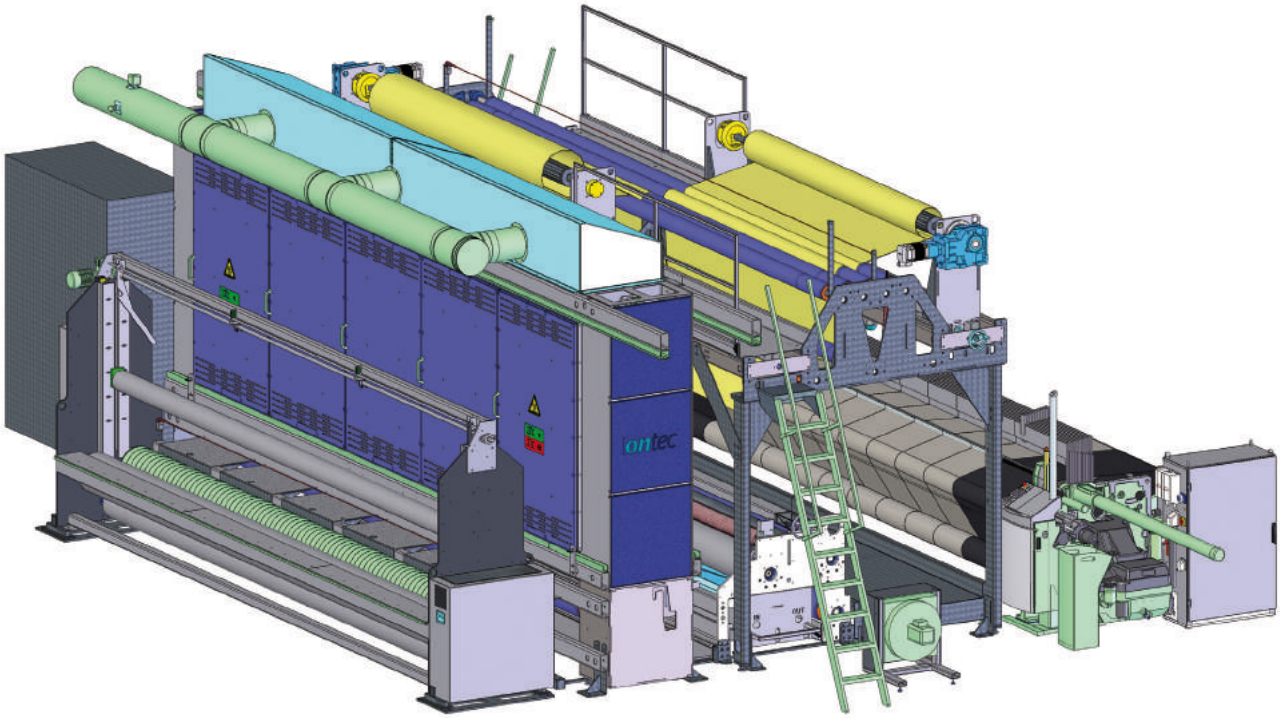

1. Assembly Possibility Online

The ontec coating system can be set up in combination with a weaving or knitting machine.

This brings the benefit that one single system will supply the complete end product. This leads to a higher product quality. The woven fabric structure remains in better condition, no fabric damages occur. The handling is simplified, the production times are shorter.

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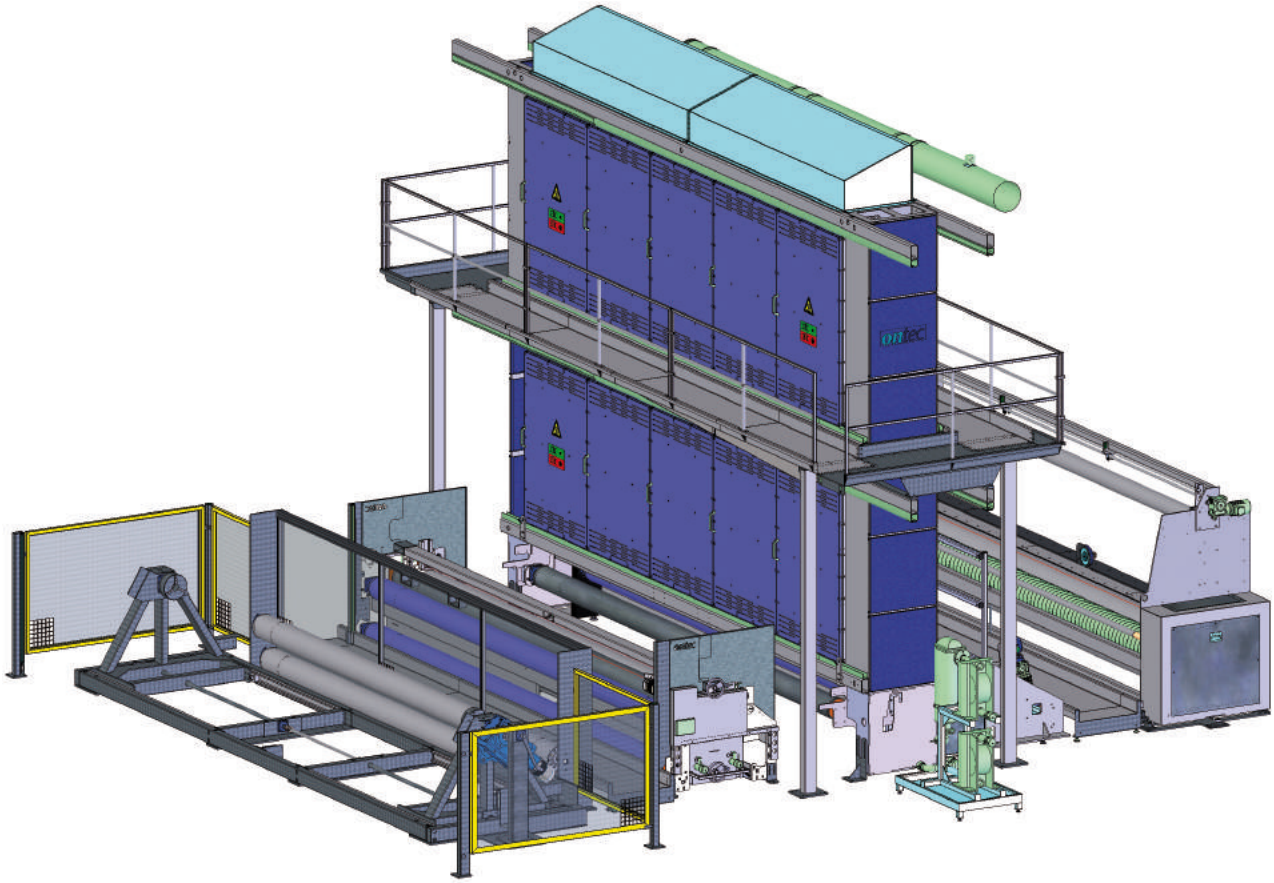
3. COATING SYSTEMS



2. Assembly Possibility Offline

Of course the ontec coating system can be operated as a stand alone system into which textile fabric is fed and coated.

In this offline assembly the ontec coating system can be retrofitted faster. The coating capacity of the system can be utilized to 100 %. Within a few hours the conversion from the coating of light plastering reinforcements with 60 g/m², e. g. to heavy geotextiles with 4 000 g/m², is possible.

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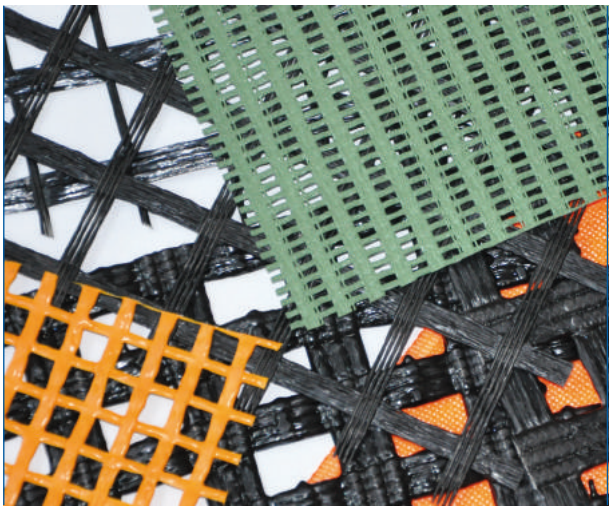

ADVANTAGES OF THE COATING SYSTEM:

- ***High productivity***
- ***Constant, very high, always reproducible quality of fabrics***
- ***Low energy consumption***
- ***Flexibly applicable for a wide spectrum of products***
- ***Modular assembly, therefore extensible***

Our systems for the production and the coating of geotextiles are assembled modularly and are therefore extensible. Numerous additional components are available in order to increase the variety of the products and the productivity. Also the coating chemicals can be exchanged without problems at any time.

TECHNICAL DATA:

BASE MATERIAL:

Textile grid structures of polyester yarn, glass fibres, basalt fibres or carbon fibres

COATING AGENTS:

PVC plastisols, acrylates, bitumen-emulsions as well as numerous further chemicals

END PRODUCTS:

Coated textiles for various fields of application, e. g.

- ***Civil Engineering:*** *Geotextiles for road construction and earth work, plastering reinforcements, reinforcement grids for concrete, wind guards, reinforcement fabrics for floor coverings, cable insulation, painter-fabrics*
- ***Agriculture:*** *Nets, fences*
- ***Advertisement:*** *Banner ad*
- ***Sports and games:*** *Slope barriers, jumping mats*

CAPACITY:

- ***Example geotextiles:*** *Stability 50 kN in both directions, coating with PVC plastisol, e. g. 4 m/min*
- ***Example geotextiles:*** *Stability 400 kN in both directions, coating with PVC-plastisol, e. g. 2,5 m/min*
- ***Example plastering reinforcement:*** *Coating with acrylate, e. g. 6 m/min*
- ***Working widths:*** *1250 - 6220 mm (50'' until 245'')*

OPTIONS:

For the production of grid structures above 150 kN tensile strength and a dead weight of more than 1200 g/m² reinforced rollers, gears and drives are necessary (heavy grid).

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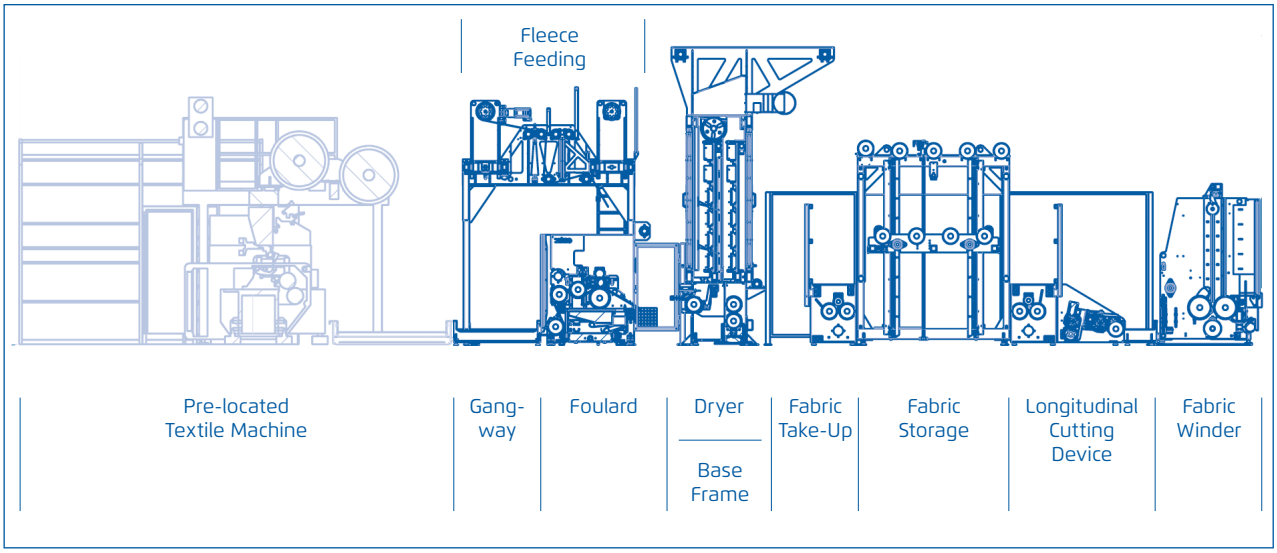
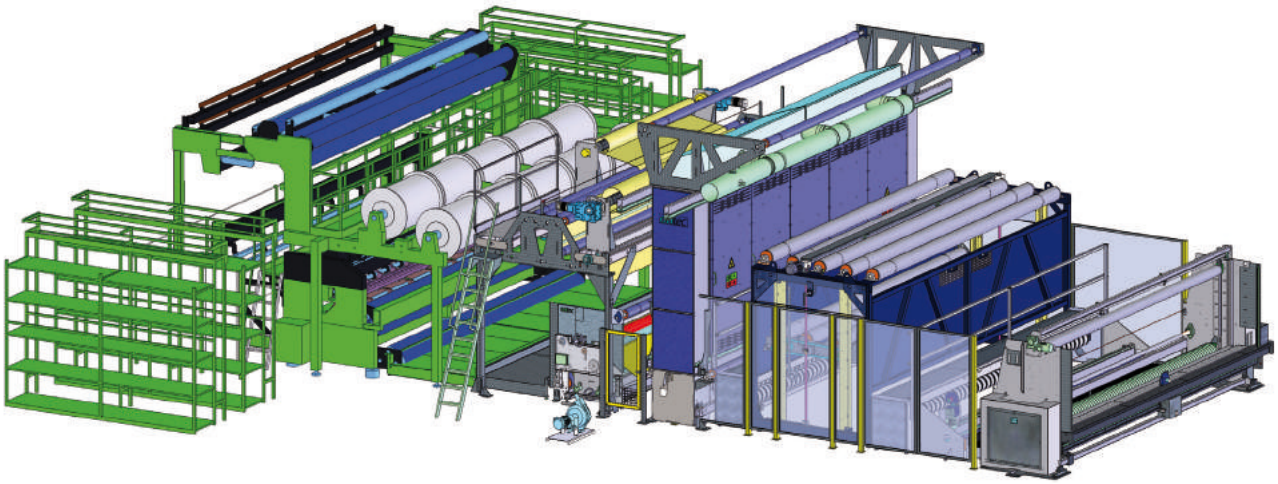
3.1. COATING SYSTEMS | *Online*



The coating system can be combined with a weaving or knitting machine.

One single system produces the end product in the best possible quality. The fabric structure remains in better condition, no fabric damages occur. The handling of the raw material between the production steps is not required any longer. System parts such as the winder and the unwinder are also unnecessary. The production times are minimized.



3.1.1. Pre-located Textile Machine

A textile machine is pre-located to the coating unit. In the example configuration a knitting machine is displayed that is producing textile grid structures of polyester yarn, glass fibres, basalt fibres or carbon fibres in various widths. The ontec online coating systems offer an interface in the control system for the connection of already existing textile machines. Knitting- as well as weaving machines of various manufacturers are compatible.

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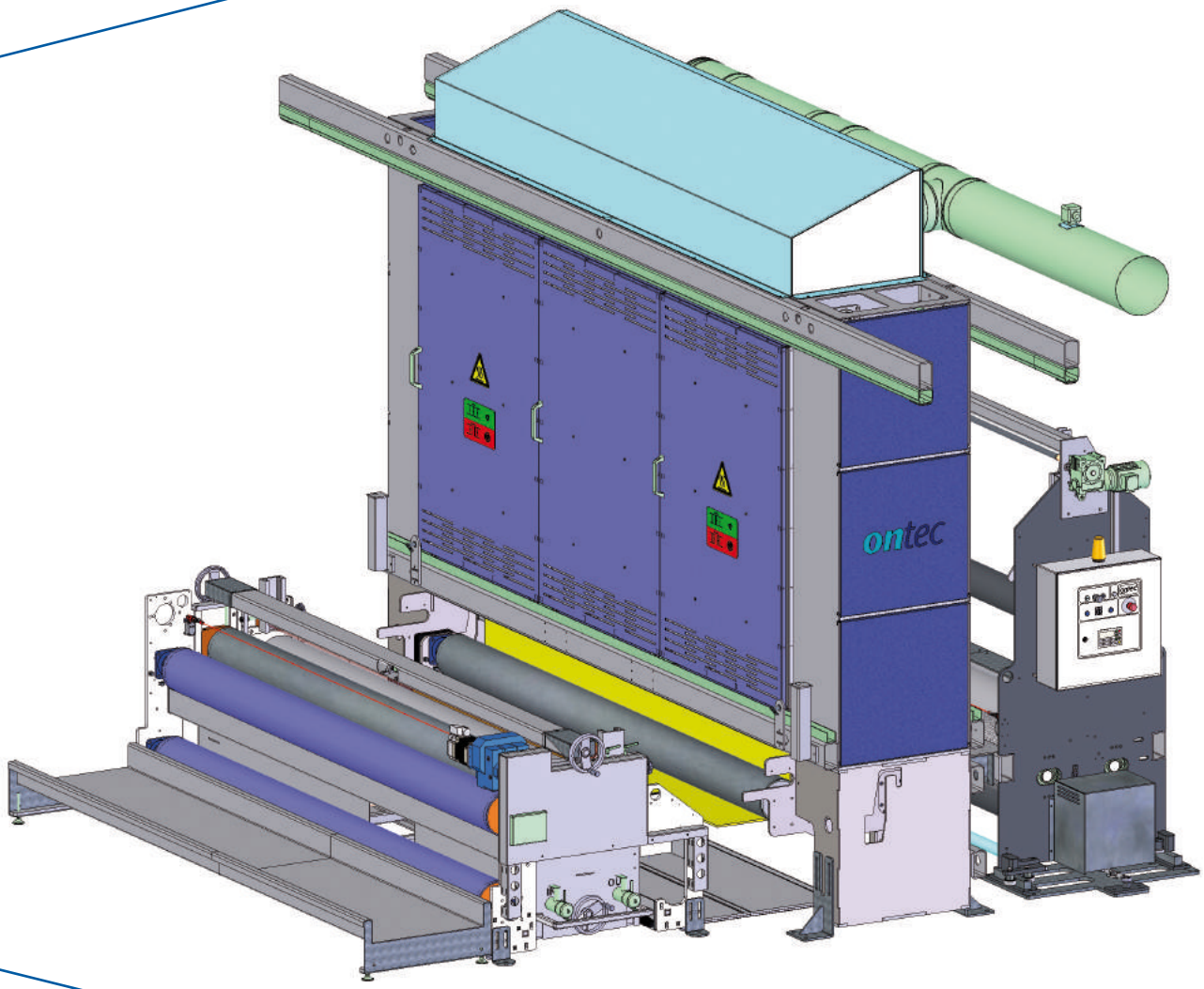

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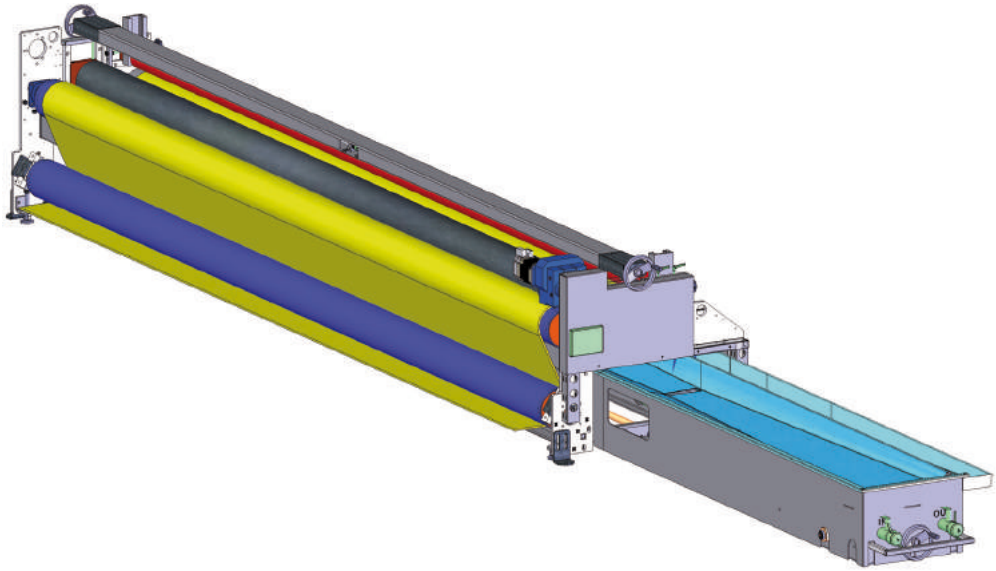
3.2. COATING SYSTEMS - BASIC UNIT | *3.2.1. Foulard*



3.2.1. Foulard

The foulard enables the coating of the fabric. The material application is effected through a dip- and / or squeeze roller system. PVC-plastisols, acrylate or bitumen emulsions as well as a variety of other chemicals can be processed.

The stainless steel paste trough is resistant to chemicals, easy to clean and easily exchangeable for a quick change of products. The overflow trough guarantees a constant filling level of the coating agent. This enables a constantly high coating quality. The driven coating roller operates synchronous to the pre-located system. Due to the hard chrome plating the rollers are resistant against chemicals as well as wear resistant. The feed- and dip rollers are easy to clean.

The fabric can be fed by various methods. The dip trough and the feed roller are adjustable in height and therefore can be positioned variably to the dip roller. This enables a number of different types of coatings which can be set up easily.

For example the fabric can be dipped with the feed roller into the coating material. Excess coating agent is removed by the dip roller. It is also possible to apply the coating agent indirectly by dipping the dip roller (foularding). The most ideal coating procedure can be selected according to the material.

The foulard is available in two different variations. The second variation offers the possibility to push the foulard under the dryer. This minimizes the distance between the coating application and drying and enables to feed the coated material to the dryer without touching a further roller.

ADVANTAGES OF THE FOULARD:

- ***Differently positionable rollers***
- ***Including overflow trough***
- ***Quick change of product***
- ***Mobile and exchangeable foulard trough***
- ***Easy cleaning***

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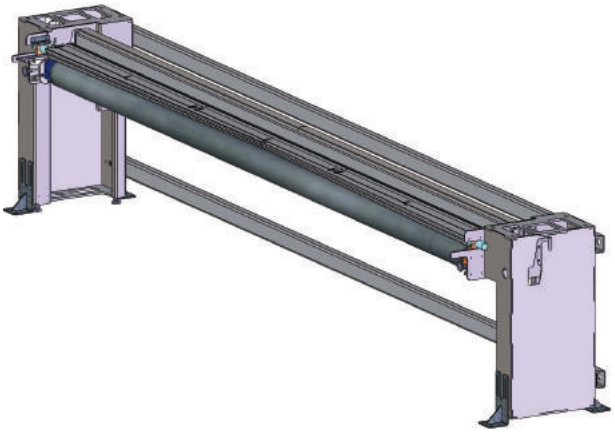
3.2.2. Base Frame



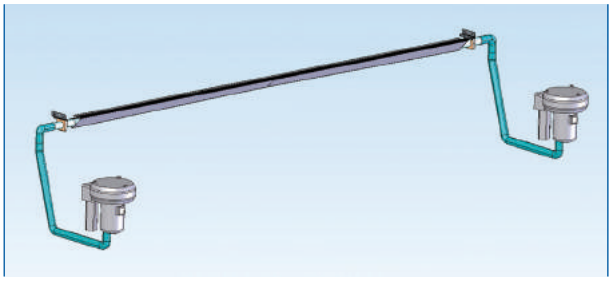
The base frame serves as a basis for the dryer, as the dryer does not have own deflection rollers for feeding the coated medium.

A blow out device can be integrated into the base frame, which prevents the skin formation when coating small meshed grids. This guarantees a constant high quality of the end product.

The base frame is available in two different variations. The alternative model allows enough space for pushing the foulard underneath the dryer. This minimizes the distance between the coating application and the drying and allows the coated material to be fed directly to the dryer.

OPTIONS:

- ***Blow out device:***
  Consisting of two (for 50" and 80" only) side channel blowers with an air capacity of 300 m^3/h each with hose system.
- ***Pressing device for fleece:***
  A pair of press rollers can be integrated into the base frame. They bond a fleece with the textile after the drying.



Optional blow out device

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3.2.3. Dryer

The highly efficient medium wave infrared drying system with integrated heating capacity improvement facilitates a maximum energy utilization. The heating zones are arranged vertically and have a total of 2600 mm heating segments available, divided into four (standard) up to six separately regulated temperature ranges. The water cooled, hard chromed deflection roller is installed at the top in the dryer, driven by a servo motor and synchronized with the rest of the system. The water cooling prevents the sticking of the not readily gelated fabric. The heating segments are easily accessible via slide doors.
Non-contact infrared thermometers control the separately adjustable temperatures of the individual heating zones. The flush air for the pyrometer is provided via a side channel blower.

The ontec suction hood offers a connecting tube with 300 mm diameter. The suction system and a waste gas cleaning unit corresponding to the local regulations are not included in the delivery scope and must be provided by the customer. The necessary suction capacity amounts between 3000 m³/h at 1270 mm and 12000 m³/h at 6220 mm working width.

ADVANTAGES:

- ***Fast reacting medium wave infrared radiation heating***
- ***Separately adjustable heating zones***
- ***Stepless regulation***
- ***Aimed radiation***
- ***No reflectors***
- ***Non-contact temperature measuring***
- ***Water cooled deflection roller***
- ***Good access via slide doors***
- ***Efficient and ecologically beneficial***

TECHNICAL DATA:

- ***Maximum product temperature:*** *240 °C*
- ***Installed heating capacity:***

For 4 zones:

50 kW	for	1270 mm	/ 50“
105 kW	for	2800 mm	/ 110“
135 kW	for	3600 mm	/ 142“
155 kW	for	4000 mm	/ 160“
200 kW	for	5400 mm	/ 213“
230 kW	for	6220 mm	/ 245“

For 6 zones:

70 kW	for	1270 mm	/ 50“
155 kW	for	2800 mm	/ 110“
200 kW	for	3600 mm	/ 142“
230 kW	for	4000 mm	/ 160“
300 kW	for	5400 mm	/ 213“
345 kW	for	6220 mm	/ 245“

For 8 zones:

100 kW	for	1270 mm	/ 50“
210 kW	for	2800 mm	/ 110“
270 kW	for	3600 mm	/ 142“
310 kW	for	4000 mm	/ 160“
400 kW	for	5400 mm	/ 213“
460 kW	for	6220 mm	/ 245“

For 12 zones:

140 kW	for	1270 mm	/ 50“
310 kW	for	2800 mm	/ 110“
400 kW	for	3600 mm	/ 142“
460 kW	for	4000 mm	/ 160“
600 kW	for	5400 mm	/ 213“
690 kW	for	6220 mm	/ 245“

OPTIONS:

- ***A diversion unit for fleece can be installed on the dryer***

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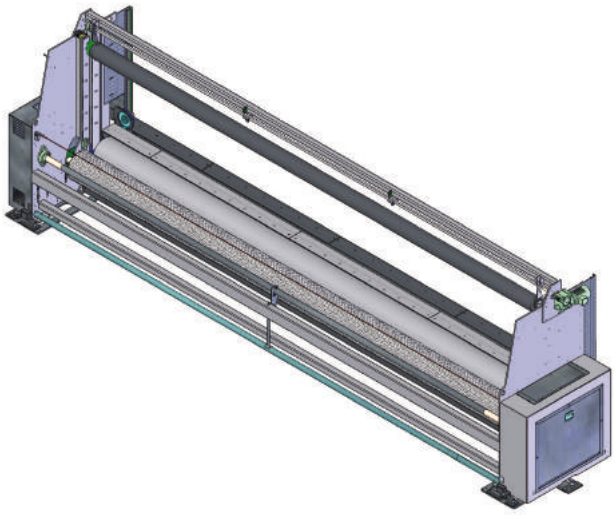
3.2.4. Fabric Winder



The fabric winder has a moment regulated roller drive (gear motor with brake). By means of the dead weight of the pressure roll and the traverse motion device with electric motor, adjustable motion stroke and adjustable speed a compact fabric roll structure is guaranteed.

The optional ejector with electric motor automatically ejects the finished fabric roll.

With the transversal cutting device the fabric web can be separated easily, neatly and rectangular. For this reason the time of the fabric roll change and the personnel expenses are considerably reduced.

Likewise the system is well suited for light as well as very heavy products.

ADVANTAGES:

- ***Winding computer offers the programming of various tensile forces dependent on the winding diameter***
- ***Pressure roll allows a compact fabric roll structure***
- ***Suitable for light and heavy products***

TECHNICAL DATA:

- ***Maximum winding diameter:***
  1200 mm
- ***Speed of winding:***
  max. 8 m/min
- ***Maximum traction force at the fabric:***
  8000 N
- ***Pressure roll:***
  up to 150 kg
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 900 mm x 2200 mm x 1300 mm
- ***Weight:***
  800 - 5500 kg

OPTIONS:

- ***Traverse motion device***
- ***Transversal cutter***
- ***Ejector device***

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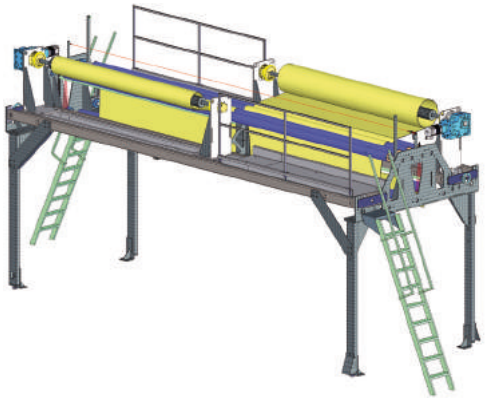
3.3. COATING SYSTEMS | *Options*

3.3.1. Fleece Feeding in front of the Heating Channel



The module for the fleece feeding works with a non-contact loop control and an integrated diameter compensation. After the coating application and in front of the heating channel a fleece is fed unidirectionally to the grid.
During hardening of the coating material in the heating channel the fleece bonds to the base fabric.

The coating material, the fleece and the quantity of the coating material application must be adjusted to each other. For large widths it is possible to feed two fleece rolls in order to cover the complete fabric width.

One tension shaft, respective two tension shafts for cardboard tubes with an inner diameter of 6" (152 mm) are necessary. Other diameters are available on request.
The tension shaft(s) necessary for operation are not included in the standard delivery scope.

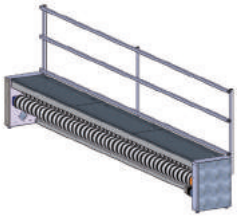
TECHNICAL DATA:

- ***Diameter fleece fabric roll***
  max. 1200 mm

OPTION:

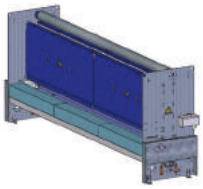
- ***Tension shaft(s)***

3.3.2. Fabric Take-Up



The fabric take-up guarantees a constant fabric tension assured in the system. The fabric is lead through the take-up roller in the shape of an omega. For simplified feeding of the fabric the centre roller can be lifted. The fold-out covering is designed as a gangway including handrails. This allows an optimum access.

3.3.3. Glueing Application



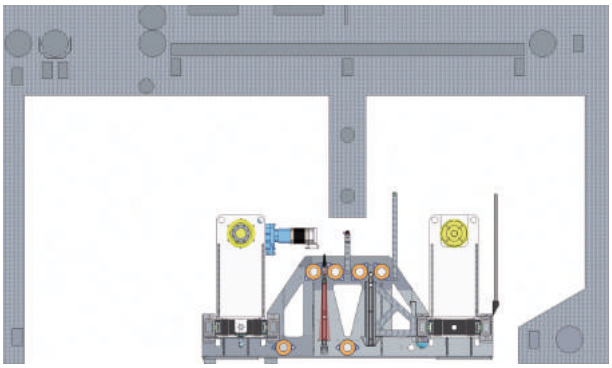
In this module after the finished drying process an adhesive is applied to one side of the fabric. By means of a setting process it is possible to alter the adjustment in such a manner that either the upper or the lower side can be coated with the adhesive. The fabric coated with the adhesive is dried up to a desired degree in a subsequent drying chamber. The dosage of the glueing application is effected via the steplessly adjustable speed of the glueing application roller. Also the dipping depth of the adhesive is adjustable. For cleaning the stainless steel trough can be removed laterally from the system. The glueing application roller has a hard chrome coating for easy cleaning.

Via ultrasonic sensor the filling level in the glueing application trough is controlled. Should the level be too low, a warning is indicated at the panel. The operator can then fill the trough manually by means of a filling device. In the drying chamber the drying temperature is controlled via a non-contact infrared thermometer. As standard the drying chamber is equipped with a heating zone. However, it can be extended by a further heating zone.

OPTION:

- ***Second heating zone***

3.3.4. Fleece Feeding after the Heating Channel



The module for the fleece feeding works with a non-contact loop control and integrated diameter compensation. After the dryer an adhesive is applied to the coated textile and onto the grid a fleece is fed unidirectionally. The adhesive is dried in a separate heating section.
The coating material, the fleece, the adhesive and the quantity of the glueing application must be adjusted to each other.

For large widths it is possible to feed two fleece rolls in order to cover the complete fabric width.

One tension shaft, respective two extension shafts for cardboard husks with an inner diameter of 6" (152 mm) are necessary. Other diameters are available on request.
The tension shaft(s) are necessary for operation and are not included in the standard delivery scope.

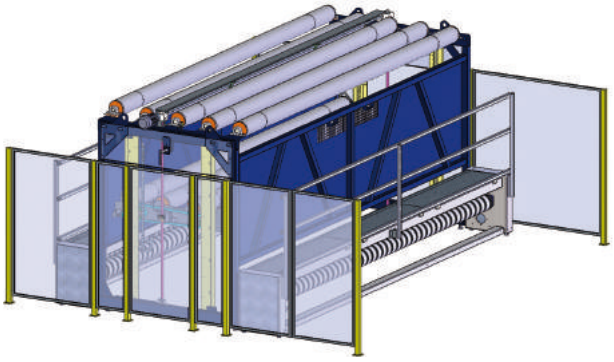
TECHNICAL DATA:

- ***Diameter fleece fabric roll:***
  max. 1200 mm

OPTIONS:

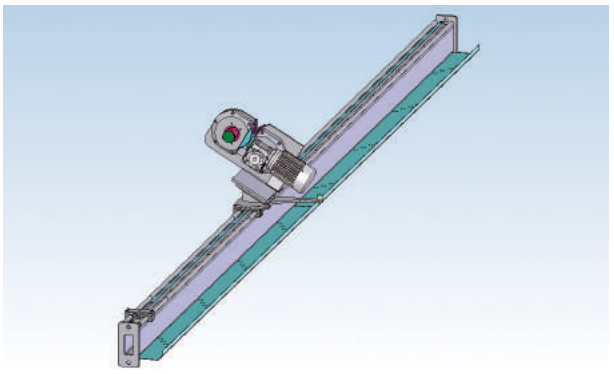
- ***Tension shaft(s)***

3.3.5. Fabric Storage BSS



The fabric storage device serves for the increase of the production capacity. It allows a fabric roll change without stopping the complete system. The storage volume of 18 (optional 30) metres provides sufficient time to exchange the fabric roll at the fabric winder. The stored material is released again during the next fabric roll. The filling level of the storage is automatically supervised in the control unit.

3.3.6. Longitudinal Cutting Device



The longitudinal cutting device consists of a base carrier for knife units and a knife driven by a motor. The number of knife units can be extended to a maximum of eight.
The position of the various knife units can be adjusted steplessly and can be read off an integrated ruler.

OPTION:

- ***Additional knife units***

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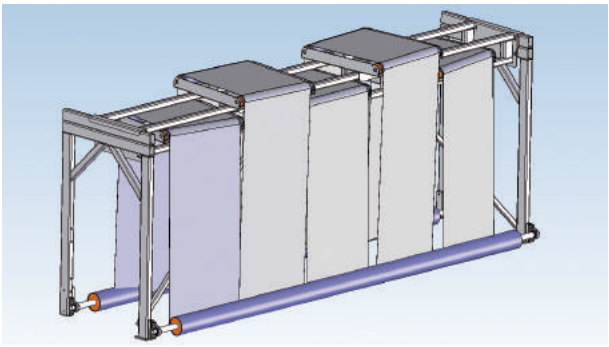
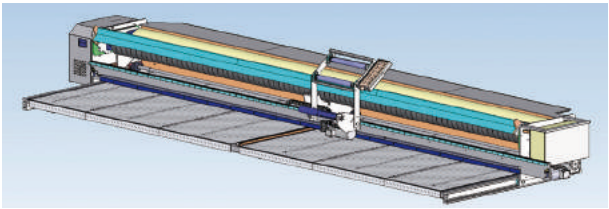
3.3. COATING SYSTEMS | *Options*

3.3.7. Wide Guidance Unit



The fabric web width depends on the working width. The value amounts to between two and seven fabric webs (not adjustable). The cut fabric webs are lead via adjustable rotating frame units. The deflection angle of the rotating frames and therefore the distance of the fabric bales are steplessly adjustable. A gangway is installed underneath the rotating frame unit. From there the longitudinal cutting devices are accessible. Two further deflection rollers also allow a production without a wide guidance unit for cut and uncut fabric.

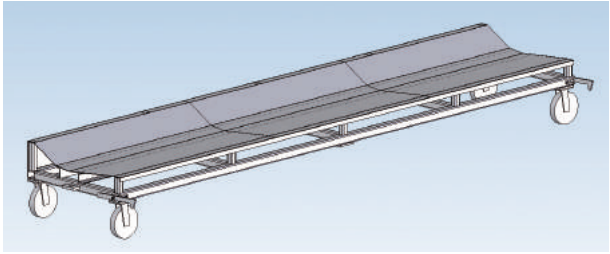
3.3.8. Fabric Table with Stretch Film Packing Unit and Ejector



The fabric roll is ejected from the fabric winder onto the fabric table and cut off. By means of an ejector the fabric roll is wound from the fabric winder to the packing unit so that a new fabric roll can be applied immediately. In addition the fabric roll is wrapped on the fabric table with an iridescent stretch film and subsequently ejected onto the trolley by means of an ejector.

- ***Winding diameter:***
  max. 200 - 1200 mm

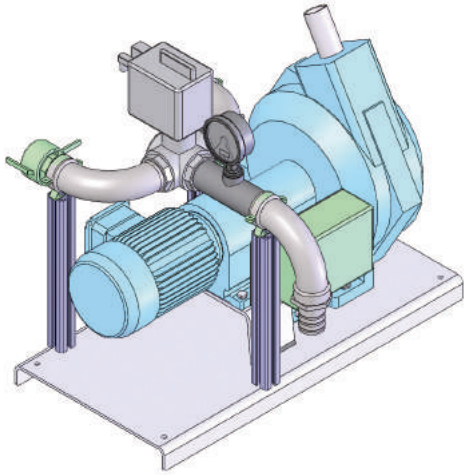
3.3.9. Trolley



The trolley for the fabric roll has four guide rollers. Based on the comfortable roller size (300 mm diameter) an easy transport of the fabric roll is possible. The trolley has a fixing possibility to the fabric winder or to the fabric table with the stretch film packing unit.

- ***Loading capacity:***
  2 tons for working widths above 100"
  4 tons for working widths above 100"

3.3.10. Pump Station



The electronically controlled pump unit is mounted on a separate frame. It includes a switch valve for filling, circulating and emptying the coating mass in the paste trough. High-quality connecting tubes allow a fast coupling with the system. The system takes over the control whereby a constant feeding of the paste trough is effected and an overflow is prevented.

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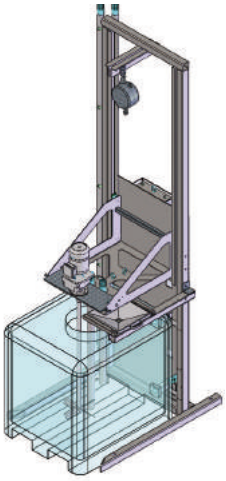
3.3.11. Docking Station



The docking station is designed for the docking of standard IPC containers on euro-pallets or the ontec transport container. The supplied containers are positioned in guides. At a vertical guide a unit with a suction- and return tube is manually lowered into the storage container. For easy handling the unit is provided with weight compensation. The second reflection is collected in a collection tank. Thus the docking area is kept clean.

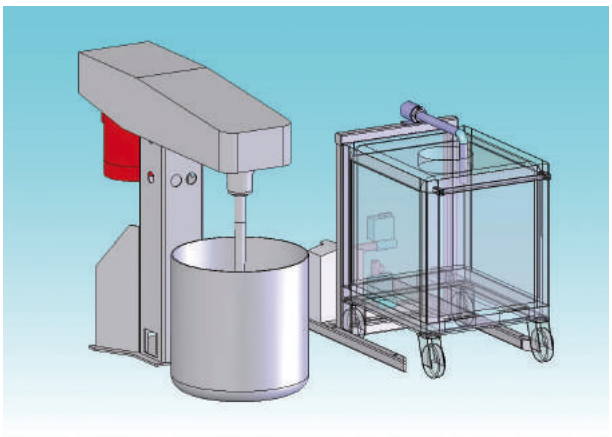
The filling level of the container is permanently supervised by two sensors and passed on to the control system of the plant.

OPTIONS:

- ***Stirring unit:***
  In order to adjust the viscosity of the coating medium correctly and to mix deposits a stirring unit can be integrated.
- ***Transport container:***
  Container for the coating agents or the transport of the coating material between dissolver and coating unit. Volume 1000 litres.

  Sturdy chassis with lockable guide rolls and fixed rolls.

3.3.12. Processing Unit for Coating Material



The dissolver mixer is equipped with a column stand, a hydraulic adjustment in height as well as an electric stirring drive. The regulation is effected via a frequency transformer whereby the colours and viscosities of the pastes or emulsions can be adjusted. For this purpose the mix recipes are freely programmable and can be stored in the control unit. A temperature sensor in the mix container guarantees an optimum consistency of the coating mass. The stainless steel container has a volume of 1000 litres and carries a connecting nozzle with quick fasteners for easy coupling to the filling station. Here the transport containers, that are available separately, can be filled and subsequently brought to the docking station.

OPTION:

- ***Transport container***

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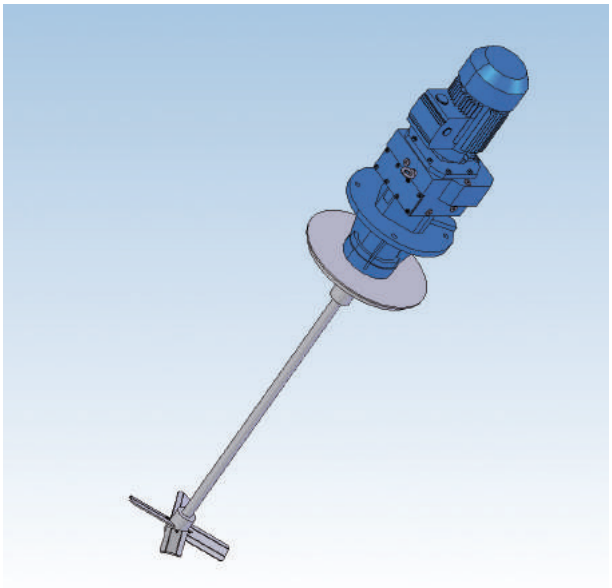
3.3. COATING SYSTEMS | *Options*

3.3.13. Container Stirring Unit



The container stirring unit is a mixing unit for homogenizing the coating material. It is suitable for IBC standard containers with a 400 mm opening. It will be supplied including a cable connection with a length of 10 metres, CEE connector and attached weight unloading (balancer) for ceiling mounting (max. 8 metres height).

3.3.14. Squeeze Rollers

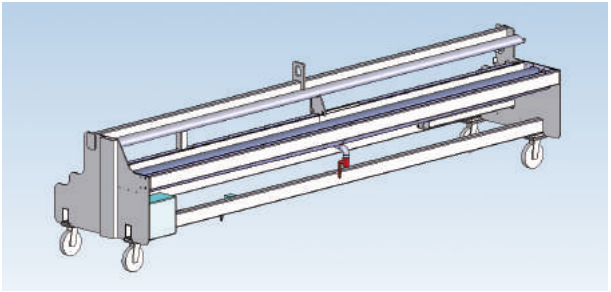
VARIATIONS:

- ***Squeeze roller steel smooth:***
  Turned steel roller with hard chromium plating
- ***Squeeze roller with rubber coating:***
  Shore hardness 40 up to 70 according to fabric
- ***Squeeze roller with shrink felt covering:***
  Felt tube

OPTION:

- ***Spare felt covering shrink felt***

3.3.15. Trolley for Squeeze Rollers



The trolley offers space for the deposit and temporary storage of up to four squeeze rollers. The heated water bath with temperature control and water circulation allows the shrink coating of felt coverings. The system with stainless steel trough can also be used for cleaning soiled squeeze rollers. The water bath has a temperature regulation and a fill level inspection. Includes mandrel for shrink felt coverings and lifting beam for damage-free and quick change of the squeeze rollers.

3.3.16. Spare Parts Packages

For a high operational availability of the unit we offer corresponding spare parts packages suitable for every configuration.

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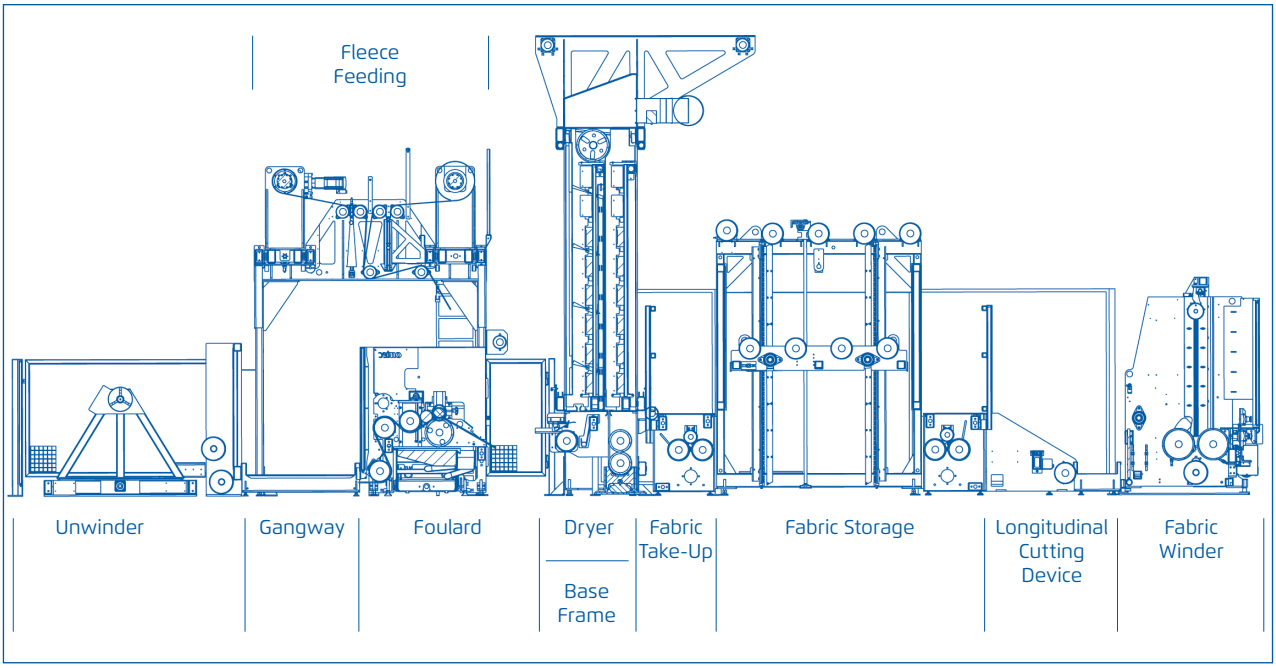

In the offline variation of the coating system the unwinder replaces the pre-located textile machine. Of course all options from the online coating system are also available for the offline system.

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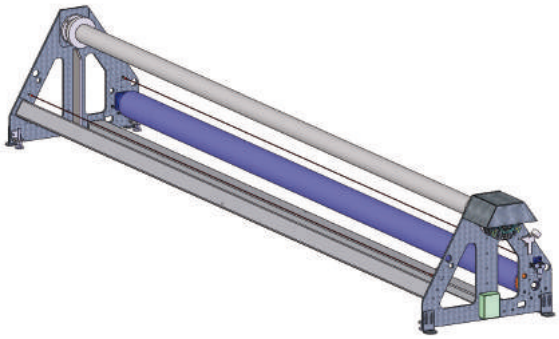
3.4. COATING SYSTEMS | *Offline*

3.4.1. Unwinder Pneumatically Braked

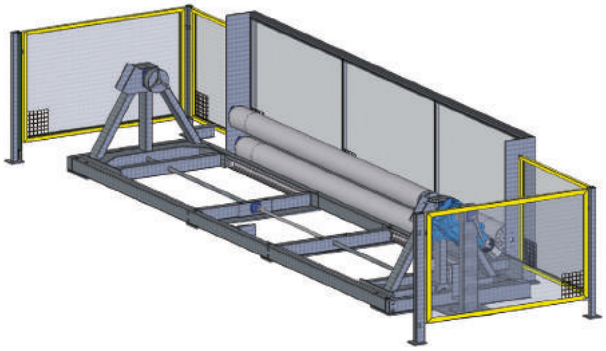


The raw material must be wound up on a cardboard tube. In the pneumatically braked unwinder the tension shaft with the cardboard tube is taken up via two bearing caps. A proportional pressure regulating valve controls the brake power via the diameter recording of an ultrasonic sensor. The tension shaft is necessary for operation and is not included in the standard delivery scope.

OPTION:

- ***Tension shaft with square take-up for unwinder pneumatically braked***

3.4.2. Unwinder with Centre Drive



The unwinder with the centre drive has a chuck for the take-up of fabric rolls which are wound up on steel tubes. The distances between the take-ups are centrically steplessly adjustable. An ultrasonic sensor comprises the diameter of the fabric roll. The control of the system is taken over by the speed and tension control of the centre drive.

The unwinder also has a deflection roller for fabric web guiding. A safety fence on three sides and the light grid on the operator's side of the unwinder guarantee safe operations.

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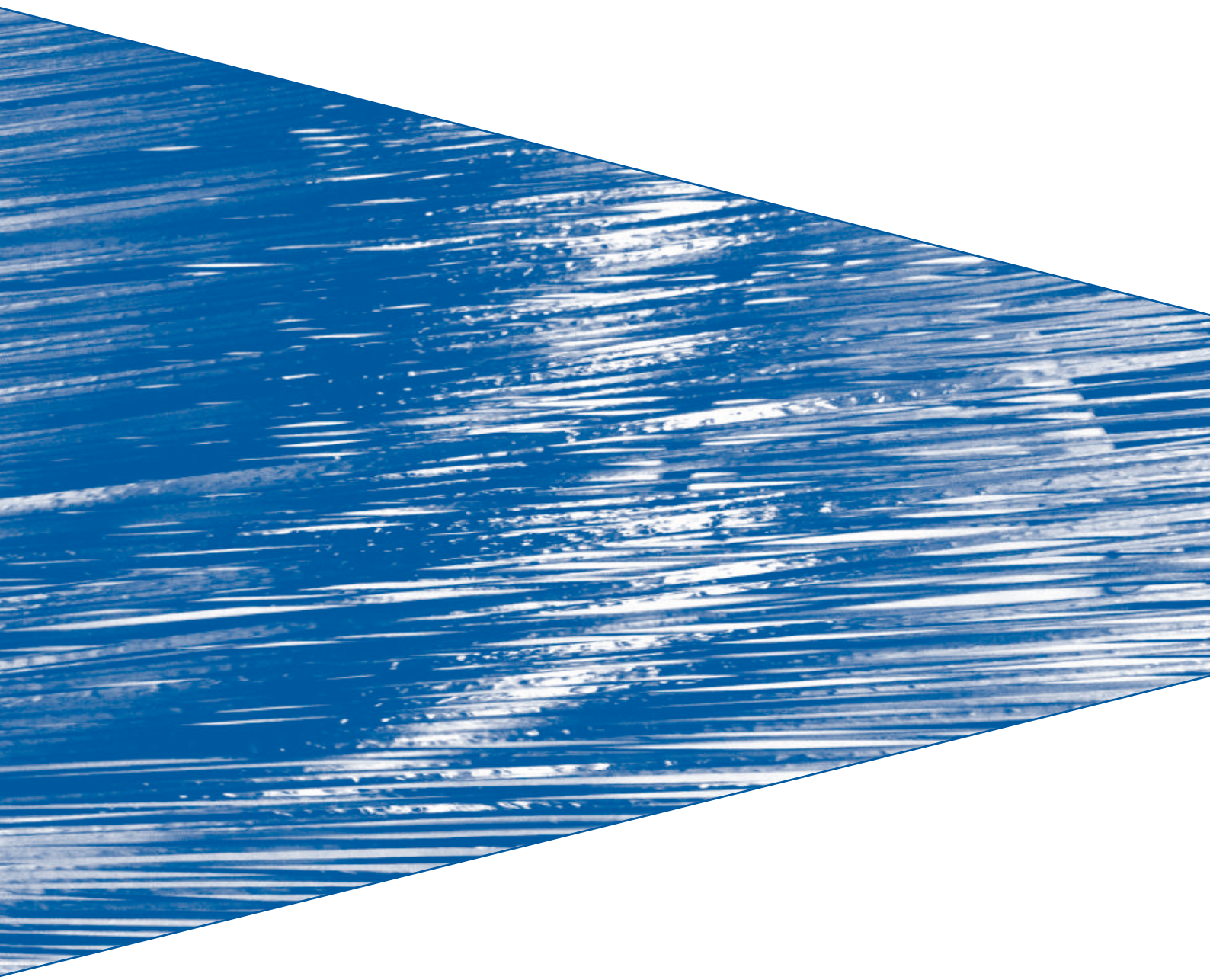
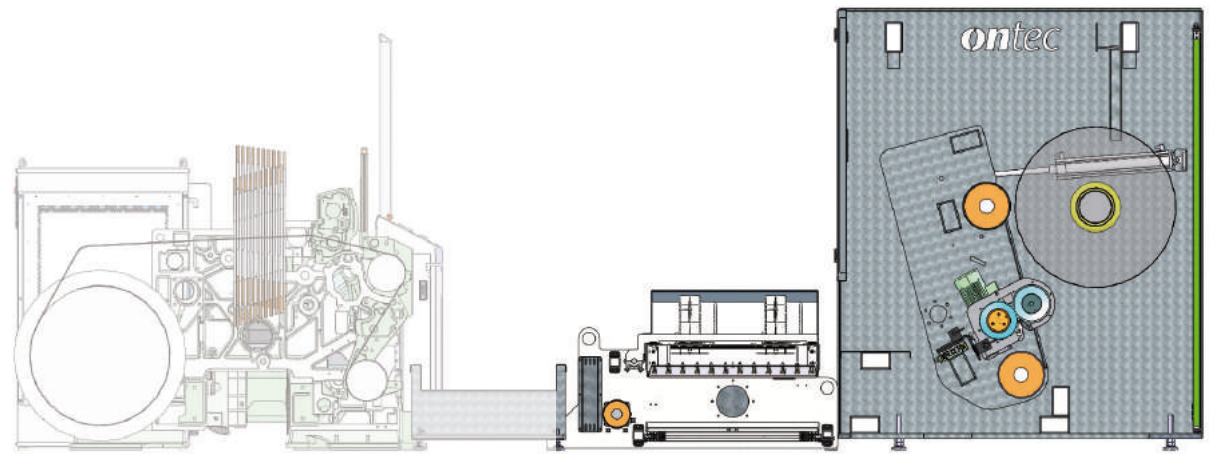
4. FIXING SYSTEM FOR UD CARBON FABRIC



4. FIXING SYSTEM FOR UNIDIRECTIONAL CARBON FABRIC



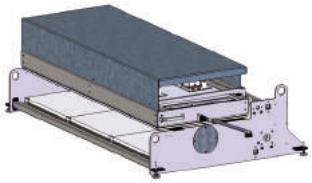
1. WEAVING MACHINE | 2. FIXING SYSTEM | 3. CENTRE WINDER Z1 WITH LONGITUDINAL CUTTING DEVICE

Our fixing system was especially developed for fixing, cutting and winding up unidirectional carbon fabric with a hotmelt thread in the weft in one single production line.

1. WEAVING MACHINE

Our system offers an interface for the pre-located weaving machine.

2. FIXING SYSTEM



The highly efficient medium wave infrared drying system with integrated heating capacity improvement offers a maximum energy utilization. Two heating zones are arranged horizontally and have a total of 800 mm heating capacity. They can be regulated separately. The accessibility of the fabric web is guaranteed by the heating being able to be folded up.
Non-contact infrared thermometers control the individually adjustable temperatures of both heating zones. A circulation of the heated air in the heating range is guaranteed via the heating elements in the integrated fans.

The control of the fixing system as well as of the winder is effected via a separate control desk with an integrated touch panel. The user-friendly interface enables easy operability.

3. CENTRE WINDER Z1 WITH LONGITUDINAL CUTTING DEVICE

The fabric winder Z1 is a centre winder with servo drive and prelocated brake roller for the winding of woven fabrics, knitted fabrics and scrims made of glass or carbon fibres.

The speed can be synchronized to the pre-located production machine. A lane traction sensor assures a constant tension between the production machine and the fabric winder. The brake roller rests with steplessly adjustable pressure power on the fabric roll.
Based on the removable tension shaft with bearing caps an easy handling of the fabric rolls is possible. Depending on the winding length the traction force and torque values can be programmed as well as the pressing force values.

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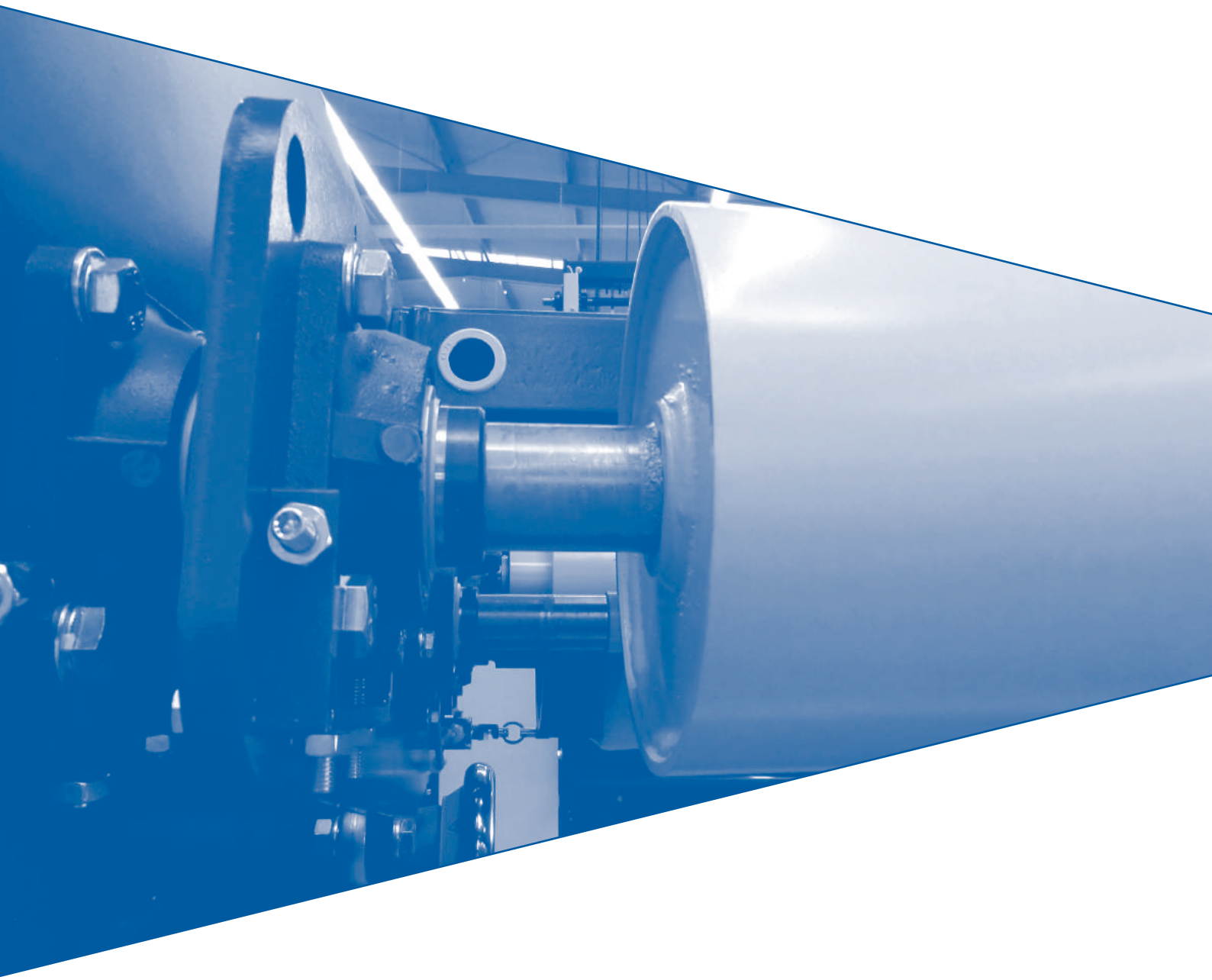
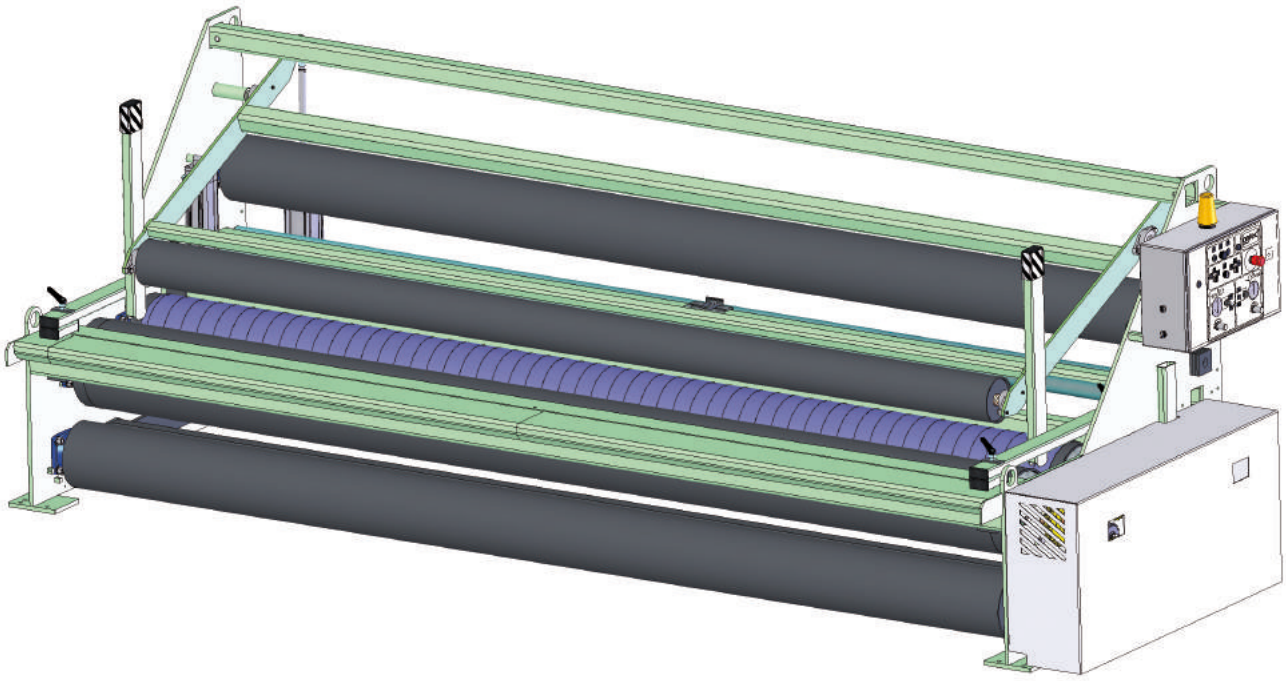
5. FABRIC WINDERS



5.1. FABRIC WINDER A



The ontec fabric winder type A is a winding system for multiaxial scrims of glass-, carbon- or aramide fibres. Also scrims, woven fabrics and knitted fabrics of various materials can be processed.
The fabric winder A works in rising roll operation with an adjustable force of the pressure roller. It provides a central drive on both winding rollers.

The ontec fabric winder type A can be used for various modes of operation:

- ***1. Moment operation:***
  The drive moment can be adjusted steplessly via a potentiometer.
- ***2. Dancer operation:***
  In the dancer operation the winding speed can be regulated dependent on the dancer setting.

OPTION:

- ***Dancer operation with synchronization to the production machine:***
  The winding speed is regulated dependent on the production machine. The dancer only takes over the fine regulation so that always a constant fabric tension is wound.

ADVANTAGES:

- ***Universally applicable for different fabrics***
- ***Easy operation***
- ***Very high, always reproducible winding quality***
- ***Big winding hardness***
- ***High selvedge accuracy***

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5.1. FABRIC WINDER A | *Technology*

TECHNICAL DATA:

- ***Working width:***
  50" - 280" (1270 - 7200 mm)
- ***Winding speed:***
  max. 10 m/min
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Fabric winding weight:***
  max. 7500 kg
- ***Tensile force at the fabric:***
  max. 8000 N
- ***Drive capacity:***
  2 kW
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 1100 mm x 1500 mm x 1600 mm
- ***Weight:***
  800 - 5000 kg
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60 Hz*
  Air pressure: *6 bar*

OPTIONS:

1. Ejector:

At the push of a button the ejector, driven by an electric motor, rolls out fabric rolls of all sizes and weights from the fabric winder to the front by swinging up the back deposit roller. This makes the take-out of the fabric easy even if it weighs tons.

ADVANTAGES:

- **Suitable for all winding directions (face out and face in)**
- **Safe operation**
- **Operable by one single person**

2. Transversal cutter:

Transversal cutting unit driven by an electric motor for quick separation of the fabric. Suitable only for the winding direction face in!

ADVANTAGES:

- **For very light up to very heavy fabric (glass up to 2,5 kg/m²)**
- **Clean, rectangular cut**
- **Reduction of the time required for changing the fabric roll**

3. Traverse motion device:

For lateral placing of the fabric with distinct longitudinal structure. This produces especially tight and compact fabric rolls.

ADVANTAGES:

- **Traverse motion speed steplessly electrically adjustable**
- **Traverse motion stroke steplessly adjustable from 0 - 200 mm**
- **Suitable for all materials**

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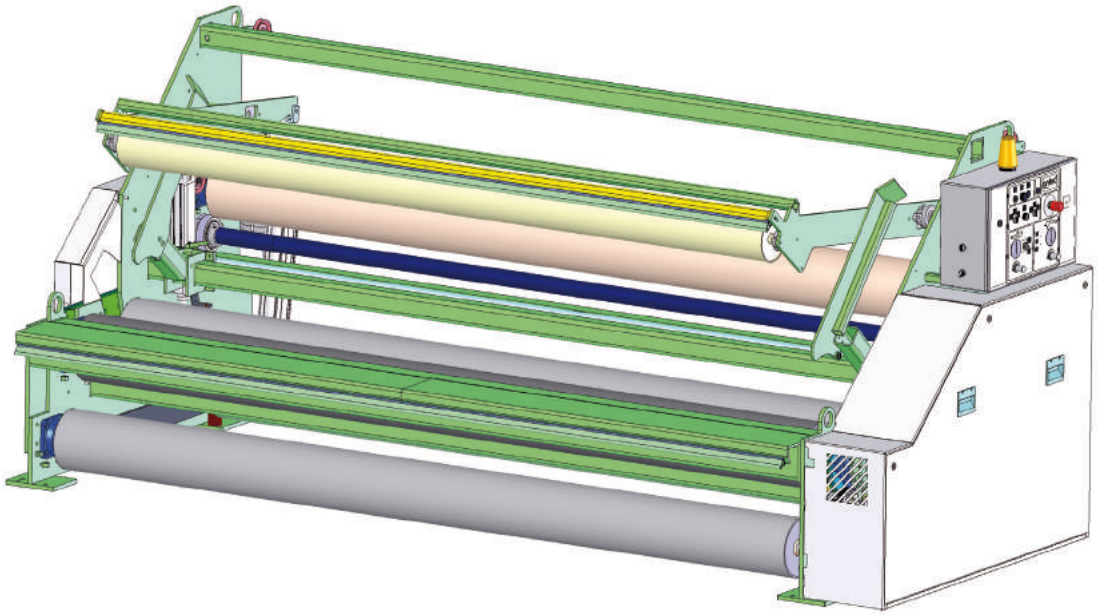
5.2. FABRIC WINDER D



The ontec fabric winder type D is a winding system for multiaxial scrims of glass-, carbon- or aramide fibres. Also scrims, woven fabrics and knitted fabrics of various materials can be processed. The fabric winder type D is suitable especially for tensile sensitive materials since the dancer can be set precisely and finely by means of a weight balance.

The fabric winder type D works in rising roll operation with an adjustable force of the pressure roller. It provides a central drive on both winding rollers.

The fabric winder type D can be used in two operation modes:

- ***1. Moment operation:***
  The drive moment can be adjusted steplessly via a potentiometer.
- ***2. Dancer operation:***
  In the dancer operation the winding speed can be regulated dependent on the dancer setting.

OPTION:

- ***Dancer operation with synchronization to the production machine:***
  The winding speed is regulated dependent on the production machine. The dancer only takes over the fine regulation so that always a constant fabric tension is wound.

ADVANTAGES:

- ***Universally applicable for different fabrics***
- ***Easy operation***
- ***Very high, always reproducible winding quality***
- ***Big winding hardness***
- ***High selvedge accuracy***

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5.2. FABRIC WINDER D | *Technology*

TECHNICAL DATA:

- ***Working width:***
  50" - 280" (1270 - 7200 mm)
- ***Winding speed:***
  max. 10 m/min
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Fabric winding weight:***
  max. 7500 kg
- ***Tensile force at the fabric:***
  max. 8000 N
- ***Drive capacity:***
  2 kW
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 1100 mm x 1500 mm x 1600 mm
- ***Weight:***
  800 - 5000 kg
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60 Hz*
  Air pressure: *6 bar*

OPTIONS:

1. Ejector:

At the push of a button the ejector, driven by an electric motor, rolls out fabric rolls of all sizes and weights from the fabric winder to the front by swinging up the back deposit roller. This makes the take-out of the fabric easy even if it weighs tons.

ADVANTAGES:

- **Suitable for all winding directions (face out and face in)**
- **Safe operation**
- **Operable by one single person**

2. Transversal cutter:

Transversal cutting unit driven by an electric motor for quick separation of the fabric.
Suitable only for winding direction face in!

ADVANTAGES:

- **For very light up to very heavy fabric (glass up to 2,5 kg/m²)**
- **Clean, rectangular cut**
- **Reduction of the time required for changing the fabric roll**

3. Traverse motion device:

For lateral placing of the fabric with distinct longitudinal structure. This permits an especially tight and compact fabric roll construction.

ADVANTAGES:

- **Traverse motion speed steplessly electrically adjustable**
- **Traverse motion stroke steplessly adjustable from 0 - 200 mm**
- **Suitable for all materials**

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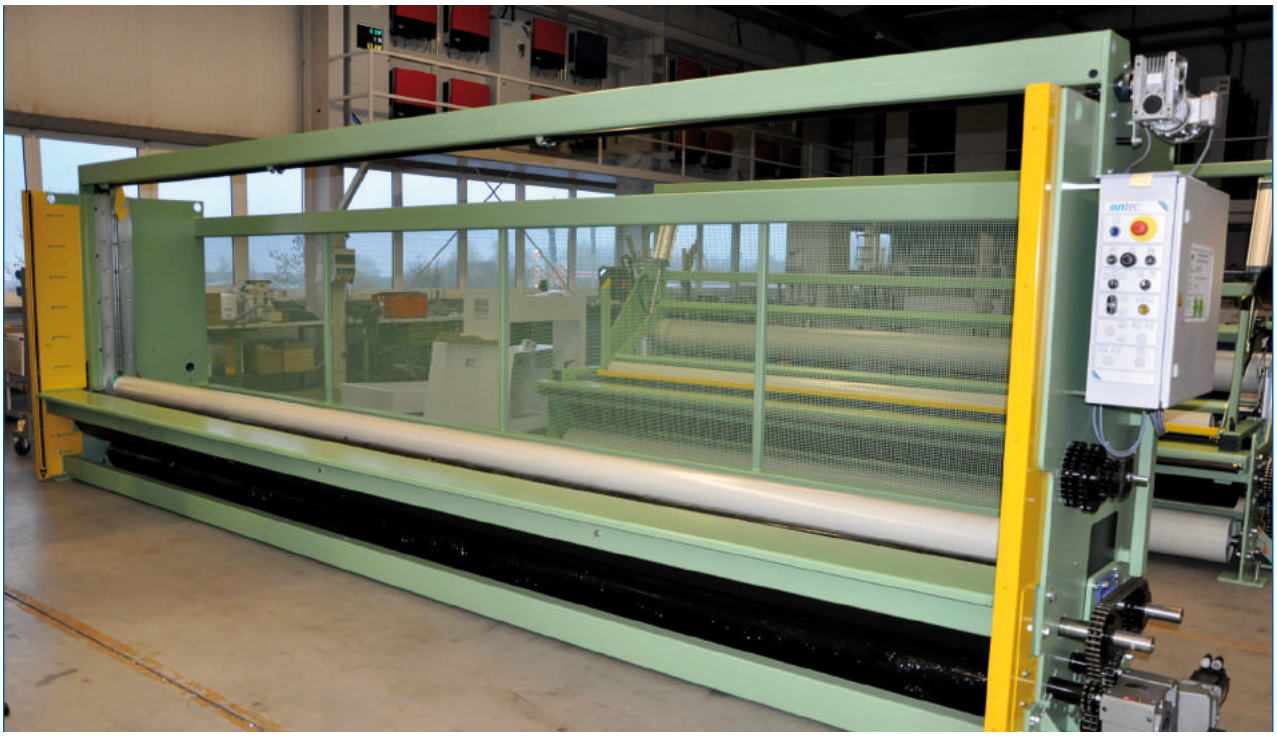
5.3. FABRIC WINDER E



The ontec fabric winder type E is a winding system for tensile strong knitted fabrics, scrims and woven fabrics.

Various materials can be processed. This type of fabric winder has a central torque drive on both winding rollers. The driving moment can be programmed dependent on the run length of the fabric roll. The drive concept is suitable for tensile insensitive fabrics.
The fabric winder type E works in a rising roll operation with a pressure roller.

TECHNICAL DATA:

- ***Winding speed:*** *max. 8 m/min*
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Drive capacity:*** *2,2 kW*
- ***Working width:***
  50" - 280" (1270 - 7200 mm)
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 900 mm x 2200 mm x 1300 mm
- ***Weight:*** *800 - 5500 kg*
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60 Hz*

ADVANTAGES:

- ***Easy operation via userfriendly touch screen and graphic display***
- ***Economical and efficient solution for standard fabric***
- ***Very high, always reproducible winding quality***
- ***Big winding hardness***
- ***High selvedge accuracy***
- ***No air pressure connection necessary***

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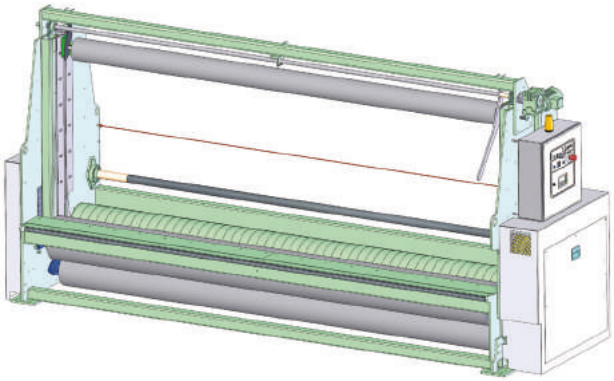
5.3. FABRIC WINDER E | *Options*



OPTIONS:

1. Ejector:

At the push of a button the ejector, driven by an electric motor, rolls out fabric rolls of all sizes and weights from the fabric winder to the front by swinging up the back deposit roller. This makes the take-out of the fabric easy even if it weighs tons.

ADVANTAGES:

- **Suitable for all winding directions (face out and face in)**
- **Safe operation**
- **Operable by one single person**

2. Transversal cutter:

Transversal cutting unit driven by an electric motor for quick separation of the fabric.
Suitable only for winding direction face in!

ADVANTAGES:

- **For very light up to very heavy fabric (glass up to 2,5 kg/m²)**
- **Clean, rectangular cut**
- **Reduction of the time required for changing the fabric roll**

3. Traverse motion device:

For lateral placing of the fabric with distinct longitudinal structure. This permits an especially tight and compact fabric roll construction.

ADVANTAGES:

- **Traverse motion speed steplessly electrically adjustable**
- **Traverse motion stroke steplessly adjustable from 0 - 200 mm**
- **Suitable for all materials**

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The ontec fabric winders type G are winder systems for multiaxial scrims of glass-, carbon- or aramide fibres. Also scrims, woven fabrics and knitted fabrics of various materials can be processed.

Depending on the model type G1 to G3, fabrics from either very light and distortion-sensitive up to very heavy fabrics can be wound (e. g. up to several kg/m² basis weights).

Depending on the application three different types of fabric winders are available:

- ***G1:*** *With torque drive on the winding rollers*
- ***G2:*** *Additionally with dancer regulated drive and synchronization to the production machine*
- ***G3:*** *Additionally with dancer regulated drive and synchronization to the production machine as well as with centre auxiliary drive*

- *In the variations G1 and G2 the fabric winder has a pneumatically activated pressure roller*
- *In the variation G3 the pressure roller is replaced by a tension shaft. The fabric roll can be loaded or unloaded via the centre shaft*

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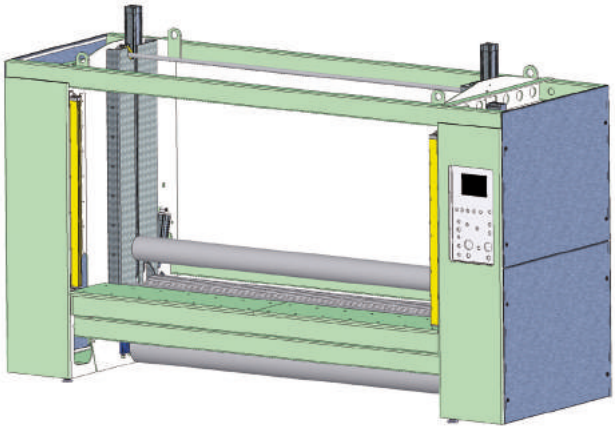
5.4.1. FABRIC WINDER G1



The ontec fabric winder type G1 is a winding system for multiaxial scrims of glass-, carbon- or aramide fibres. Also scrims, woven fabrics and knitted fabrics of various materials can be processed.

The fabric winder type G1 has a central torque drive on both winding rollers. The drive moment can be programmed dependent on the run length of the fabric roll. This drive concept is suitable for tensile sensitive fabrics.

The fabric winder G1 works in rising roll operation with an adjustable force of the pressure roller.

ADVANTAGES:

- ***Easy operation via userfriendly touch screen and graphic display***
- ***Economical and efficient solution for standard fabric***
- ***Very high, always reproducible winding quality***
- ***Big winding hardness***
- ***High selvedge accuracy***

TECHNICAL DATA:

- ***Standard working width:***
  50", 102" and 152"
  (1270 mm, 2590 mm and 3900 mm)
  further widths on request
- ***Winding speed:***
  max. 10 m/min
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Fabric winding weight:***
  max. 7500 kg
- ***Tensile force at the fabric:***
  max. 8000 N
- ***Drive capacity:***
  3 kW
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 1640 mm x 2370 mm x 1630 mm
- ***Weight:*** *FW = fabric width*
  4300 kg for 102" FW
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60 Hz*
  Air pressure: *6 bar*

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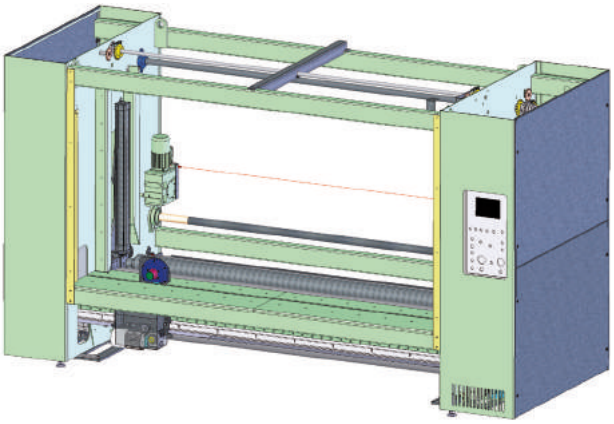
5.4.2. FABRIC WINDER G2



The ontec fabric winder type G2 is a winding system for multiaxial scrims of glass-, carbon- or aramide fibres.

Also scrims, woven fabrics and knitted fabrics of various materials can be processed. The fabric winder G2 is a rising roll winder. The force of the pressure roller is adjustable.

The fabric winder type G2 has a centre drive on both winding rollers. It can be used in three operation modes:

- ***1. Moment drive:***
  The drive moment can be adjusted steplessly via a potentiometer.
- ***2. Dancer operation:***
  In the dancer drive the winding speed is regulated dependent on the dancer setting.
- ***3. Dancer operation with synchronization to the production machine:***
  The winding speed is regulated dependent on the production machine.

The dancer only takes over the fine regulation and thus enables winding with a constant fabric tension.

ADVANTAGES:

- ***Universally applicable for various fabrics***
- ***Easy operation via userfriendly touch screen and graphic display***
- ***Very high, always reproducible winding quality***
- ***Big winding hardness***
- ***High selvedge accuracy***

TECHNICAL DATA:

- ***Standard working width:***
  50", 102" and 152"
  (1270 mm, 2590 mm and 3900 mm)
  further widths on request
- ***Winding speed:***
  max. 10 m/min
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Fabric winding weight:***
  max. 7500 kg
- ***Tensile force at the fabric:***
  max. 8000 N
- ***Drive capacity:***
  3 kW
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 1640 mm x 2370 mm x 1630 mm
- ***Weight:*** *FW = fabric width*
  4300 kg for 102" FW
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60Hz*
  Air pressure: *6 bar*

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5.4.3. FABRIC WINDER G3

The ontec fabric winder type G3 is a winding system for multiaxial scrims of glass-, carbon- or aramide fibres. *Also scrims, woven fabrics and knitted fabrics of various materials can be processed. The fabric winder G3 has a centre auxiliary drive. This results in an especially compact fabric roll structure. With the pneumatic cylinders the fabric roll can be loaded or relieved via the centre shaft with a force of up to 9 000 Newton.*

The fabric winder type G3 has a centre drive on both winding rollers as well as an addition-al centre drive and can be used in three operation modes:

- ***1. Moment drive:***
  The drive moment can be programmed dependent on the run length of the fabric roll.
- ***2. Dancer operation:***
  In the dancer drive the winding speed is regulated dependent on the dancer setting.
- ***3. Dancer operation with synchronization to the production machine:***
  The winding speed is regulated dependent on the production machine.

The dancer only takes over the fine regulation and thus enables winding with a constant fabric tension.

ADVANTAGES:

- ***Universally applicable for various fabrics***
- ***Reduction of the fulling in the fabric roll by possibility of unloading***
- ***Very high, always reproducible winding quality***
- ***Big winding hardness***
- ***High selvedge accuracy***
- ***Easy operation via userfriendly touch screen and graphic display***

TECHNICAL DATA:

- ***Standard working width:***
  50", 102" and 152"
  (1270 mm, 2590 mm and 3900 mm)
  further widths on request
- ***Winding speed:***
  max. 10 m/min
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Fabric winding weight:***
  max. 7500 kg
- ***Tensile force at the fabric:***
  max. 8000 N
- ***Drive capacity:***
  4 kW
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 1640 mm x 2370 mm x 1780 mm
- ***Weight:*** *FW = fabric width*
  4300 kg for 102" FW
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60 Hz*
  Air pressure: *6 bar*

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5.4.4. OPTIONS FOR G1, G2 AND G3

FOR ALL WINDERS OF TYPE G THE FOLLOWING OPTIONS ARE POSSIBLE:

1. Ejector:

At the push of a button the ejector, driven by an electric motor, rolls out fabric rolls of all sizes and weights from the fabric winder to the front by swinging up the back deposit roller. This makes the take-out of the fabric easy even if it weighs tons.

ADVANTAGES:

- **Suitable for all winding directions (face out und face in)**
- **Safe operation**
- **Operable by one person**

2. Transversal cutter:

Transversal cutting device with electric motor for quick separation of the fabric. Suitable only for fabric roll direction face in!

ADVANTAGES:

- **For all types of fabrics, from very light up to very heavy fabric (glass up to 2,5 kg/m²)**
- **Clean, rectangular cut**
- **Reduction of the time required for the fabric roll change**

3. Traverse motion device:

For lateral placing of the fabric with distinct longitudinal structure. This permits an especially tight and compact fabric roll.

ADVANTAGES:

- **Traverse motion speed steplessly electrically adjustable**
- **Traverse motion stroke steplessly adjustable from 0 - 200 mm**
- **Suitable for all materials**

4. Additional deflection rollers:

The two additional deflection rollers are required when the winder is not positioned directly at the production unit. The fabric is lead to the winder underneath a gangway. The deflection of the fabric to the top enables the vertical fabric running necessary for the dancer operation.

5. Light grid at the fabric run-in:

The light grid on the side of the fabric run-in is required for safety reasons when the fabric winder is not located immediately at the production machine and the back side of the winder is accessible, e. g. through a gangway.

6. Air conditioning for switch cabinet:

The air conditioning for the switch cabinet is required when the surrounding temperature exceeds 30 °C. Also when the fabric winder is located in a room in which carbon is processed or the fabric winder is used for processing carbon, an air conditioning must be installed.

7. Carbon protection:

The carbon protection prevents the ingress of carbon fibres and dust. The system guarantees an especially high protection for the electronics. The control device is integrated directly in the switch cabinet.

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5.4.4. OPTIONS FOR G1, G2 AND G3

8. Fabric tables in different variations:

8.1. Fabric table moveable:

The moveable fabric table makes the area in front of the fabric winder accessible. Thus it enables the quick removal of the ready fabric roll from the fabric winder and the quick feeding of the next fabric roll. This increases the productivity immensely. A combination with the transversal cutter is advisable.

8.2. Fabric table moveable with driven rollers for packing the fabric roll:

The moveable fabric table makes the area in front of the fabric winder accessible. Thus it enables the quick removal of the ready fabric roll from the fabric winder and the quick feeding of the next fabric roll. This increases the productivity immensely. Based on the driven rollers the fabric roll can be turned. A flat film roll integrated below in the frame delivers the film for packing the fabric roll. A combination with the transversal cutter is advisable.

9. Take-up frame for tension shaft (only for execution G3):

The take-up frame for the tension shaft simplifies the horizontal removal of the tension shaft from the ready fabric roll. The dead weight of the tension shaft rests on the take-frame that is adjustable in height. For this reason an easier removal of the tension shaft is possible.

10. Tension shafts (only for model G3):

- *Pneumatic tension shaft 3", steel execution*
- *Pneumatic tension shaft 3", carbon execution*
- *Pneumatic tension shaft 6", steel execution*
- *Pneumatic tension shaft 6", carbon execution*

Further dimensions on request.

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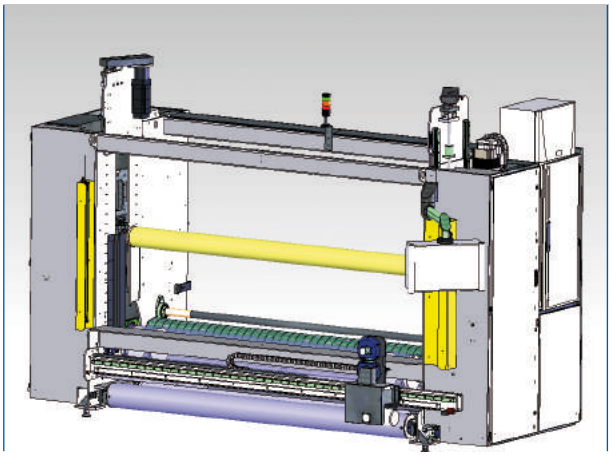
5.5. FABRIC WINDER M



The ontec fabric winder type M is a multi-functional winder system for multiaxial scrims of glass-, carbon- or aramide fibres. *Also scrims, woven fabrics and knitted fabrics of various other materials can be processed. Very light and distortion-sensitive fabrics from (e. g. +/-45° construction with pillar thread portion) can be wound as well as extremely heavy pillar thread fabrics (e. g. up to several kg/m² basis weight). The basis for this universal applicability are individual drives on all winding rollers as well as a centre drive with the possibility of loading and unloading.*

All drive axes can be freely switched. The couplings of the axes can be effected dependent on the revolution moment or on the turning moment.

Operation modes from pure rising roll operation up to pure centre drive as well as the combination of both are possible.

Based on the possibility of loading and unloading of the winding axis or pressure roller the following operation modes are possible:

1. *Rising roll operation with controlled pressure roller*
2. *Centre operation with controlled pressing force via centre shaft*
3. *Combination of the rising roll- and centre winder*

ADVANTAGES:

- ***Individual drive of all rollers with servo motor***
- ***Programmable functional connections of the drive axes***
- ***All winding parameters programmable dependent on the fabric length***
- ***Processing of very light, (e. g. +/-45° construction without pillar thread portion) as well as heavy pillar thread fabric (up to several kg/m² basis weight) possible***
- ***Very high, always reproducible winding quality***
- ***Big winding hardness***
- ***High selvedge accuracy***
- ***Userfriendly touch screen***
- ***Recipe management for precise repetition of the winding quality***

TECHNICAL DATA:

- ***Standard working width:***
  50" - 152"
  (1270 mm - 3900 mm)
  further widths on request
- ***Winding speed:***
  max. 8 m/min
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Fabric winding weight:***
  max. 5000 kg
- ***Tensile force at the fabric:***
  max. 6000 N
- ***Drive capacity:***
  4 kW
- ***Weight:***
  5 tons (for 102")
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60 Hz*
  Air pressure: *6 bar*

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5.5. FABRIC WINDER M | *Options*

OPTIONS:

1. Ejector:

At the push of a button the ejector, driven by an electric motor, rolls out fabric rolls of all sizes and weights from the fabric winder to the front by swinging up the back deposit roller. This makes the take-out of the fabric easy even if it weighs tons.

ADVANTAGES:

- **Suitable for all winding directions (face out und face in)**
- **Safe operation**
- **Operable by one person**

2. Transversal cutter:

Transversal cutting device with electric motor for quick separation of the fabric. Suitable only for fabric roll direction face in!

ADVANTAGES:

- **For all types of fabrics, from very light up to very heavy fabric (glass up to 2,5 kg/m²)**
- **Clean, rectangular cut**
- **Reduction of the time required for the fabric roll change**

3. Traverse motion device:

For lateral placing of the fabric with distinct longitudinal structure. This permits an especially tight and compact fabric roll.

ADVANTAGES:

- **Traverse motion speed steplessly electrically adjustable**
- **Traverse motion stroke steplessly adjustable from 0 - 200 mm**
- **Suitable for all materials**

4. Additional deflection rollers:

The two additional deflection rollers are required when the winder is not positioned directly at the production unit. The fabric is lead to the winder underneath a gangway. The deflection of the fabric to the top enables the vertical fabric running necessary for the dancer operation.

5. Light grid at the fabric run-in:

The light grid on the side of the fabric run-in is required for safety reasons when the fabric winder is not located immediately at the production machine and the back side of the winder is accessible, e. g. through a gangway.

6. Air conditioning for switch cabinet:

The air conditioning for the switch cabinet is required when the surrounding temperature exceeds 30 °C. Also when the fabric winder is located in a room, in which carbon is processed or the fabric winder is used for processing carbon, an air conditioning must be installed.

7. Carbon protection:

The carbon protection prevents the ingress of carbon fibres and dust. The system guarantees an especially high protection for the electronics. The control device is integrated directly in the switch cabinet.

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8. Fabric tables in different variations:

8.1. Fabric table moveable:

The moveable fabric table makes the area in front of the fabric winder accessible. Thus it enables the quick removal of the ready fabric roll from the fabric winder and the quick feeding of the next fabric roll. This increases the productivity immensely. A combination with the transversal cutter is advisable.

8.2. Fabric table moveable with driven rollers for packing the fabric roll:

The moveable fabric table makes the area in front of the fabric winder accessible. Thus it enables the quick removal of the ready fabric roll from the fabric winder and the quick feeding of the next fabric roll. This increases the productivity immensely. Based on the driven rollers the fabric roll can be turned. A flat film roll integrated below in the frame delivers the film for packing the fabric roll. A combination with the transversal cutter is advisable.

8.3. Fabric table fixed:

The fixed fabric table serves as fabric lane support when using the transversal cutter. It is necessary when a moveable fabric table is not requested.

9. Take-up frame for tension shaft:

The take-up frame for the tension shaft simplifies the horizontal removal of the tension shaft from the ready fabric roll. The dead weight of the tension shaft rests on the take-frame that is adjustable in height. For this reason an easier removal of the tension shaft is possible.

10. Tension shafts:

- *Pneumatic tension shaft 3", steel execution*
- *Pneumatic tension shaft 3", carbon execution*
- *Pneumatic tension shaft 6", steel execution*
- *Pneumatic tension shaft 6", carbon execution*

Further dimensions on request.

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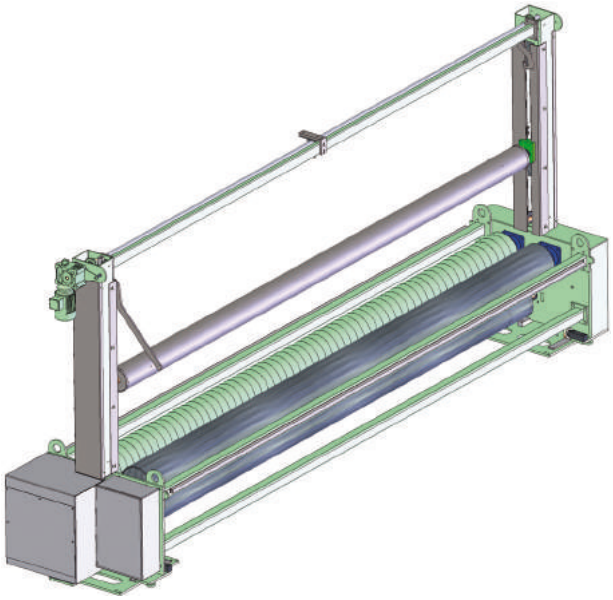
5.6. FABRIC WINDER W



The ontec fabric winder type W is a winding system for knitted and woven fabrics.

Various materials can be processed. This type of fabric winder has a central drive on both winding rollers. This enables an always constant traction, supervised by an integrated sensor that constantly measures the traction values.

ADVANTAGES:

- ***Easy operation***
- ***Economical and efficient solution for standard fabric***
- ***Very high, always reproducible winding quality***
- ***High selvedge accuracy***
- ***No air pressure connection necessary***

TECHNICAL DATA:

- ***Drive capacity:***
  0,75 kW
- ***Working width:***
  50'' – 170'' (1250 - 4300 mm)
- ***Size:*** *FW = fabric width*
  W x H x L:
  FW + 900 mm x 2730 mm x 1030 mm
- ***Weight fabric roll:*** *up to 3000 kg*
- ***Diameter fabric roll:*** *1200 mm*
- ***Winding Speed:*** *max. 3,5 m/min*
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz/60 Hz*

OPTION:

Traverse motion device:

For lateral placing of the fabric with distinct longitudinal structure. This permits an especially tight and compact fabric roll construction.

ADVANTAGES:

- **Traverse motion speed steplessly electrically adjustable**
- **Traverse motion stroke steplessly adjustable from 0 - 200 mm**
- **Suitable for all materials**

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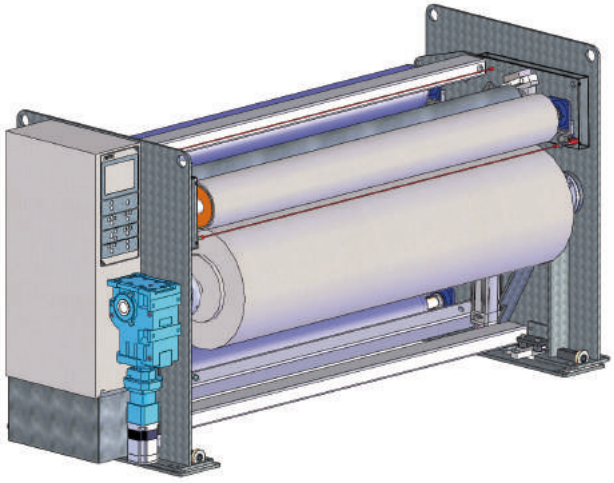
5.7. FABRIC WINDER Z



The fabric winder Z is a centre winder with servo drive and prelocated brake roller for the winding of woven fabrics, knitted fabrics and scrims made of glass or carbon fibres.

The speed can be synchronized to the pre-located production machine. A lane traction sensor assures a constant tension between the production machine and the fabric winder. The brake roller rests with steplessly adjustable pressure power on the fabric roll. Based on the removable tension shaft with bearing caps an easy handling of the fabric rolls is possible. Depending on the winding length the traction force and torque values can be programmed as well as the pressing force values.

OPTIONS:

- ***Traverse motion device with electric motor***
- ***Forklift for removing the fabric roll***
- ***Pneumatic tension shaft 6“***

ADVANTAGES:

- ***No wear and abrasion due to electromotive brake***
- ***Individual programming of the contact pressure of the brake roller as well as the brake moments depending on the winding length***
- ***Material protecting fabric run with little deflection and large dimensioned rollers***
- ***Easy handling due to automatic adaption of the winding speed to the pre-located textile machine***
- ***Continuous low fabric tension due to integrated power sensor***
- ***Very tight fabric roll due to the brake roller which is pneumatically pressed to the fabric roll***
- ***Operation possible also without brake roller***

TECHNICAL DATA:

- ***Working width:***
  50“ - 160“
  (1270 - 4 070 mm)
- ***Winding speed:***
  max. 5 m/min
- ***Fabric winding diameter:***
  max. 1200 mm
- ***Fabric winding weight:***
  max. 3 000 kg
- ***Torque at the tension shaft:***
  max. 2 050 Nm
- ***Cardboard husk inner diameter:*** *6“*

Other executions on request.

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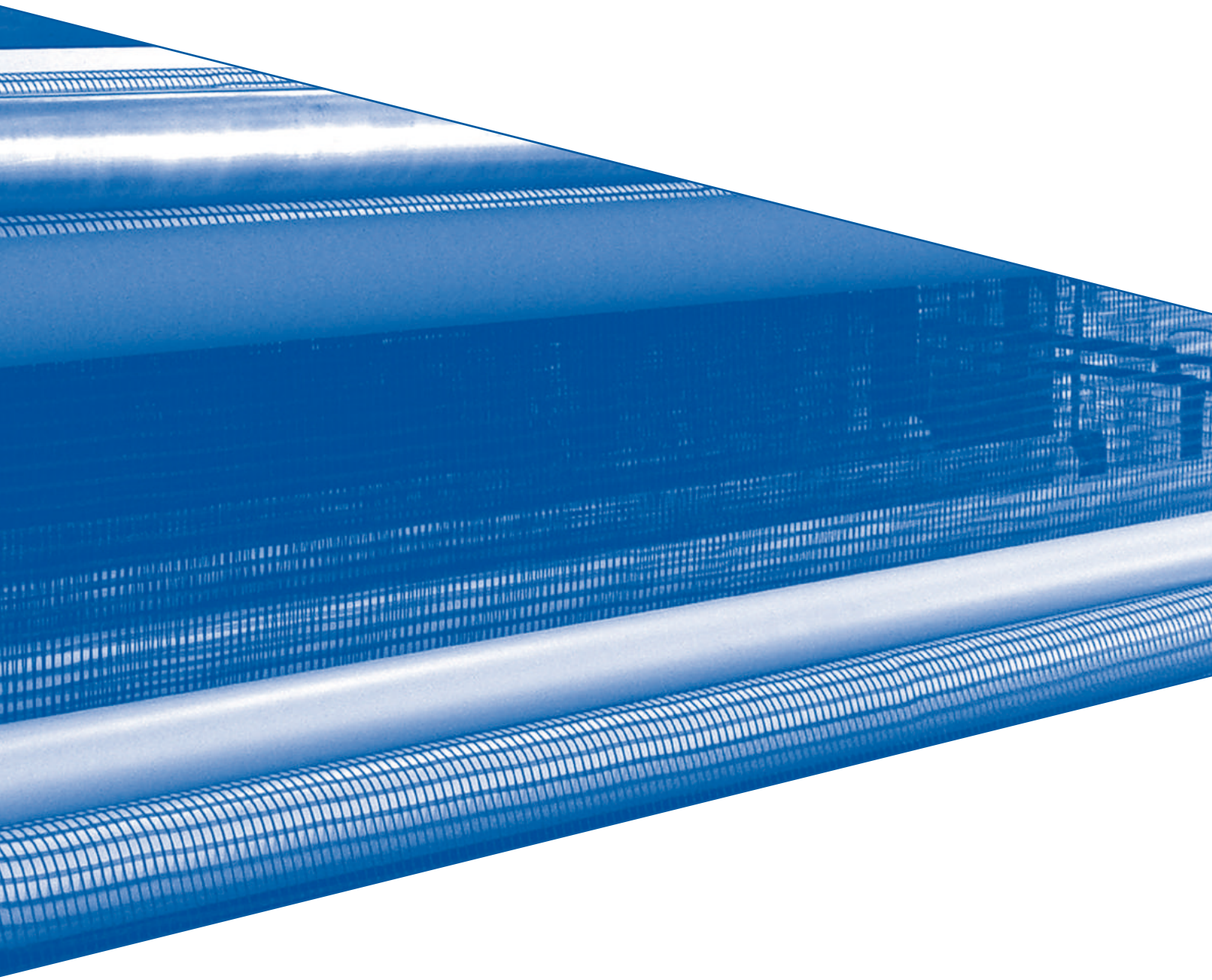
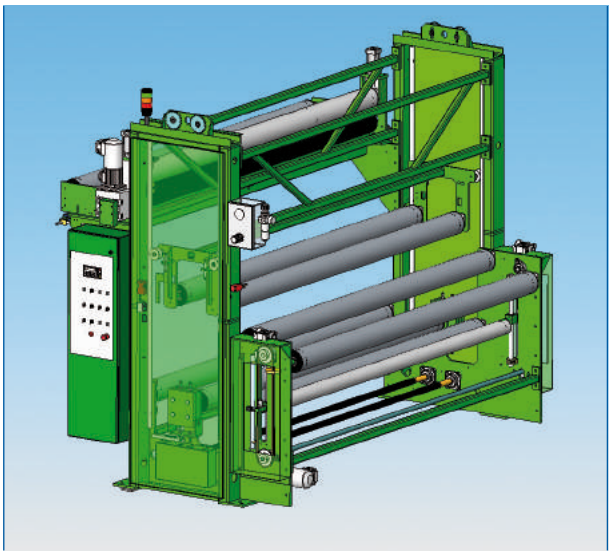
6. FABRIC STORAGE



6. FABRIC STORAGE



The fabric storage works automatically between the production machine and the fabric winder.

It prevents a production stop during short-term stops of the fabric winder, e. g. during the unloading and locating of a new fabric roll. Under regulated tension the fabric storage takes up the produced fabric temporarily and releases it again when the fabric winder is started.

It assures that the production machine can run continuously and therefore increases the production capacity and quality of the fabric.

ADVANTAGES:

- ***Enables stop of the fabric winder for changing the fabric roll without production stop***
- ***Up to 25 percent more production time per year (with 3-shift operation)***
- ***Optimum fabric quality due to continuous production run***
- ***Fabric inspection possible at vertical fabric storage exit***
- ***Storage slide and fabric take-up with dancer regulated frequency transformer drives***
- ***Selvedge control (optically determined) with electro mechanic linear guiding***
- ***Pneumatic squeeze roller with metre counter at the pull-out-device***

TECHNICAL DATA:

- ***Standard width:***
  50", 101" or according to request
- ***Fabric lane storage:***
  max. 12 m length
- ***Run-in speed:***
  max. 360 m/h = 6 m/min
- ***Storage emptying speed:***
  max. 9 m/min

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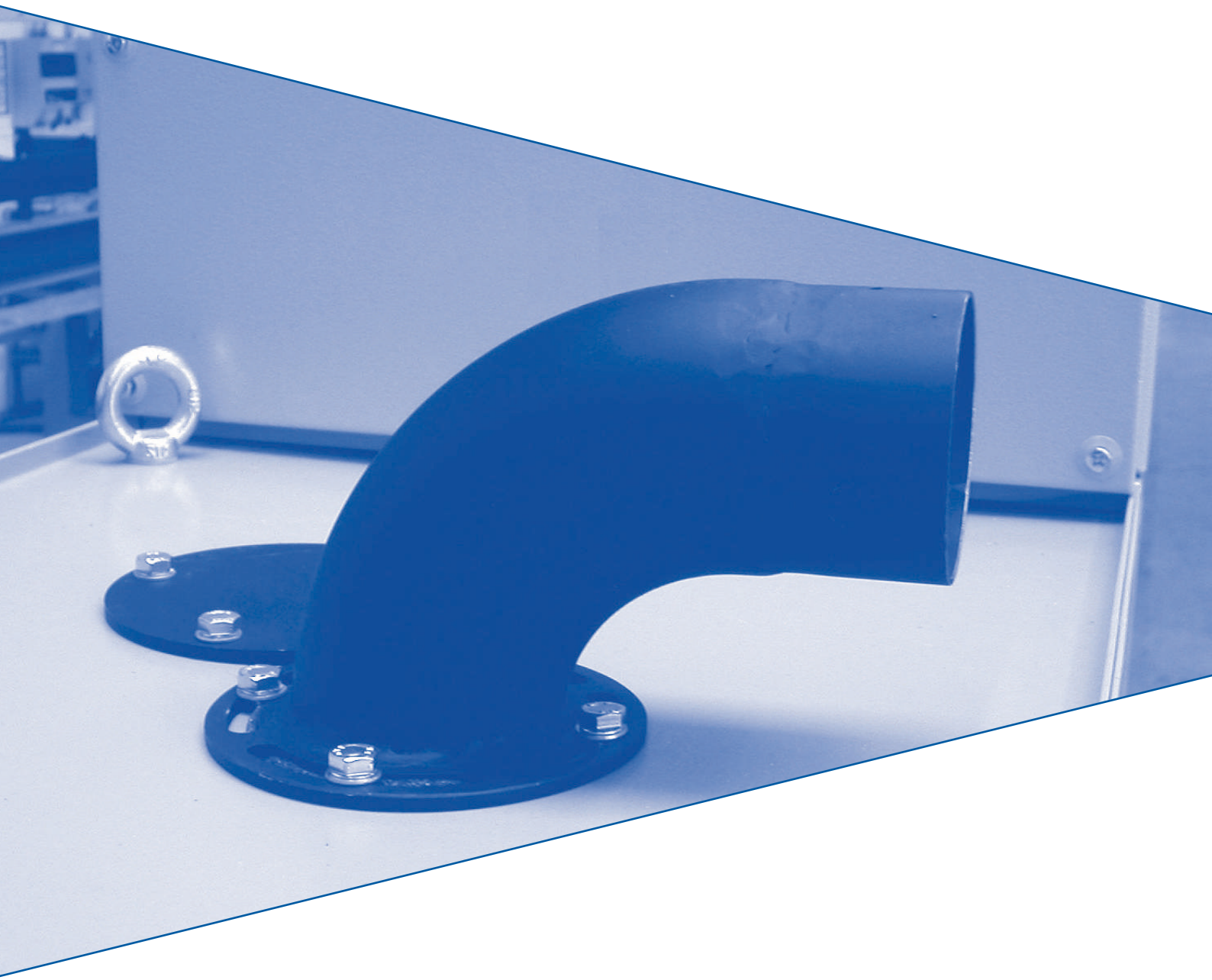
7. SUCTION DEVICES



7.1. SUCTION DEVICE ASK 1 MONO

The suction device ASK 1 MONO sucks off the weft thread remains from the transport chain at the warp knitting machines with weft insertion systems.

ADVANTAGES OF THE ASK 1 MONO:

- **Superior suction capacity**
- **Low energy consumption, low operating costs**
- **High operational availability**
- **Hardly any maintenance required**
- **Easy handling at the front side**
- **Extra large collecting tank**
- **Automatic stop when tank is full**
- **Fill level of the collection tank visible on the outside**

TECHNICAL DATA:

- ***Volume of the collecting tank:***
  200 litres
- ***High negative pressure:***
  up to 260 mbar
- ***Suction volume:***
  300 m³/h for 50 Hz
- ***Standard suction adapter:***
  1 x 80 mm
- ***Exhaust air emission:*** *to the bottom*
- ***Capacity:***
  3 kW / 50 Hz, 3,6 kW / 60 Hz
- ***Size:***
  W x H x L: 500 mm x 1900 mm x 850 m
- ***Weight:*** *160 kg*
- ***Airflow:***
  300 m³ / h for 50 Hz
  360 m³ / h for 60 Hz
- ***Low-pressure:***
  max. 260 mbar for 50 Hz
  210 mbar for 60 Hz
- ***Connection values:***
  3 kW for 50 Hz
  3,6 kW for 60 Hz
- ***Voltage:***
  346 - 440 V for 50 Hz
  346 - 480 V for 60 Hz

OPTIONS:

- **Second collection tank to reduce the changing times**
- **Adapter: 1 x 50 mm, 2 x 50 mm, 2 x 80 mm**
- **Suction hoses and nozzles made of metal or plastic material**

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7.2. SUCTION DEVICE ZA 600

The suction device ZA 600 sucks off the weft thread remains from the transport chain at the warp knitting machine with weft insertion systems. Only one central suction device ZA 600 per knitting machine is necessary. It has an extra large volume and empties itself independently.

ADVANTAGES OF THE ZA 600:

- **No down time of the textile machine because of automatic emptying**
- **One central suction device per machine**
- **Very high suction capacity**
- **Low energy consumption**
- **High operational availability**
- **Large internal collection tank**
- **Trolley with wheels, transportable by fork lift truck and tiltable for emptying**

TECHNICAL DATA:

- ***Volume of the collecting tank:***
  600 litres
- ***Volume of the trolley:***
  900 litres
- ***Suction volume:***
  1580 m³/h for 50 Hz
- ***Standard suction adapter:***
  2 x 80 mm
- ***Exhaust air emission:***
  to the top
- ***Capacity:***
  6,5 kW / 50 Hz
- ***Size:*** *W x H x L:*
  1100 mm x 2400 mm x 1300 mm
- ***Weight:***
  550 kg
- ***Airflow:***
  1580 m³/h for 50 Hz
- ***Low-pressure:***
  90 mbar for 50 Hz
- ***Connection values:***
  6,5 kW for 50 Hz
- ***Voltage:***
  346 - 440 V for 50 Hz
  346 - 480 V for 60 Hz

OPTIONS:

- **Second trolley to reduce the changing times**
- **Suction hoses and noozles made of metal or plastic material**

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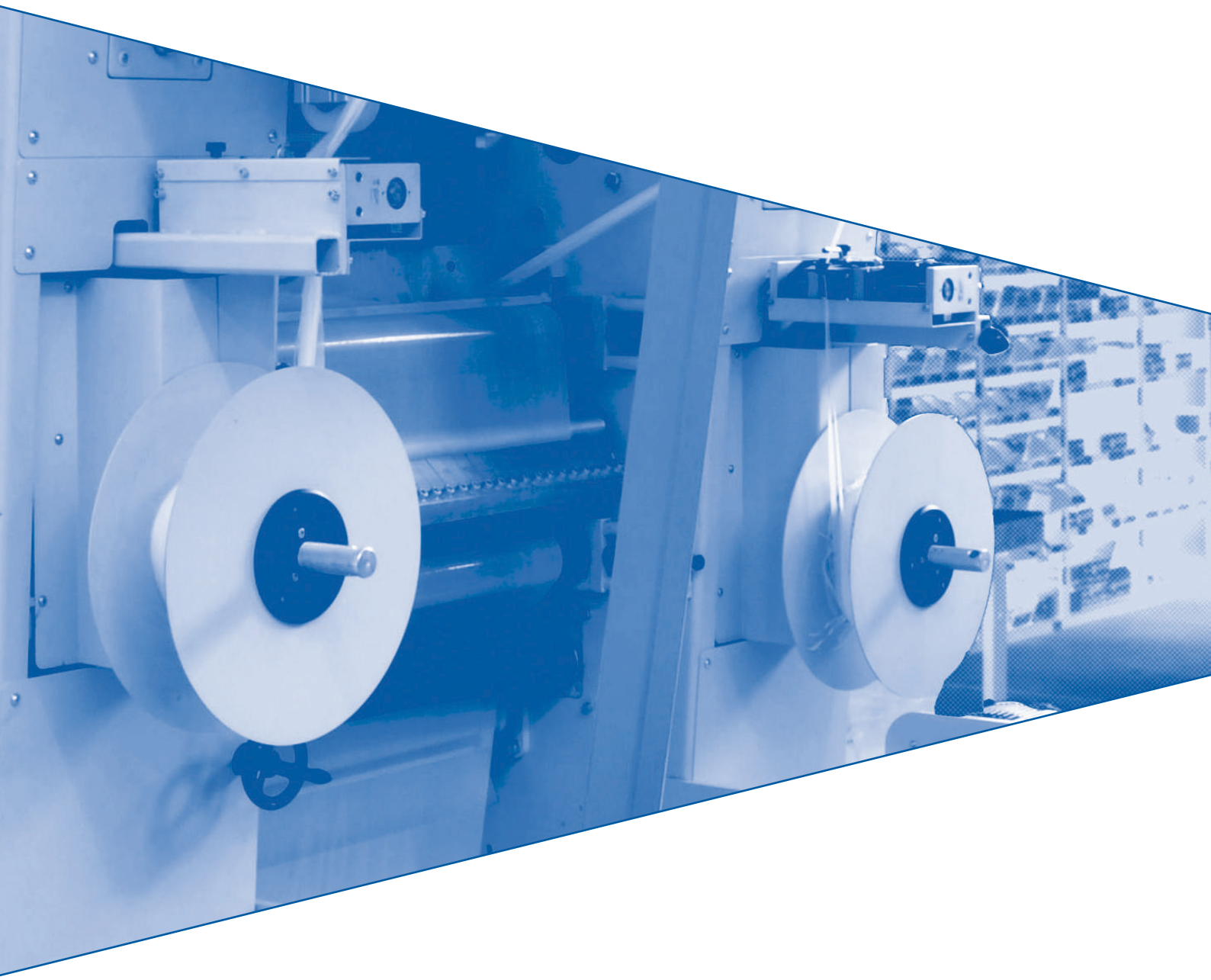
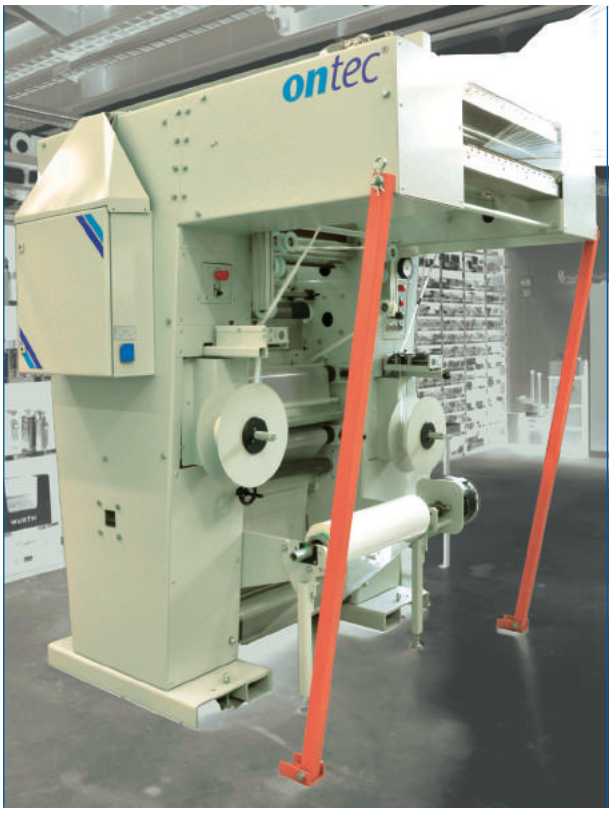
8. TAPER

D 635 S



8. TAPER D 635 S



The Taper D 635 S cuts unstretched thermo plastic films of polyolefins, such as polyethylene (PE) and polypropylene (PP) to synthetic tapes. The subsequent warm stretching increases the specific stability of the film flat threads with monoaxial material structure. These are woven or knitted in the further production process and are processed to technical textiles.

For process optimization the online integration of the Taper D 635 S offers the most economical solution with optimum tape quality at the same time.

ADVANTAGES TAPER D 635 S:

The ontec Taper D 635 S guarantees a significant higher productivity as well as constant high quality of the fabric compared to the conventional systems. The unique integrated LIDRA® heating system is an in-house development of ontec. As compared to conventional heating comb systems it allows a faster feeding of the films as well as the steady heating of the tapes. This leads to a homogeneous stretching. The end product posesses a higher and constant stability and for this reason is more strainable. The input of material is low since there are hardly any filament ruptures.

FURTHER ADVANTAGES:

- **Processing of single or double films possible**
- **Various tape widths, adjustable for individual requirements**
- **Electronically regulated tape tension**
- **Colour display with touch screen, userfriendly interface**

FIELD OF APPLICATION OF TAPER D 635 S:

Production of woven or knitted net fabrics for various applications, e. g.

- ***Trade:** packing nets for fruits and vegetables*
- ***Construction industry:** shade nets, e. g. for the use in car ports, green houses etc.*
- ***Agriculture:** packing nets for hay bales etc.*

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8. TAPER D 635 S | *Technology*

TECHNICAL DATA:

- ***Capacity:***
  Constant production speed up to 60 m/min
- ***Size:*** *W x H x L: approx. 2800 mm x 2200 mm x 2700 mm*
- ***Weight:*** *approx. 3 tons*
- ***Connection values:***
  Current: *400 V, 3 Phases, 50 Hz*
  Air pressure: *6 bar dried and filtered air*

CONDITIONS:

- *Closed and air draught free production room with +17 up to +24 °C*
- *Tolerable temperature fluctuation within 24 hours +/- 3 °C*
- *Tolerable relative humidity 60 up to 70 %*

If conditions should differ, please consult us accordingly.

BASE MATERIAL:

Thermo plastic films of polyolefins, such as polyethylene (PE) and polypropylene (PP):

- *Film thickness: 40 µm - 150 µm*
- *Film width: max. 650 mm*
- *Film weight: max. 500 kg*
- *Film roll diameter: max. 1000 mm*

END PRODUCTS:

Tapes of polyolefins, such as polyethylene (PE) or polypropylene (PP):

- *Tape width prior to stretching: 1 - 8 mm*
- *Tape width after stretching: 0,4 - 3,5 mm*
- *Adjustable stretch ratio from 1:2,5 - 1:12*

COMPONENTS:

The ontec Taper D 635 S can be integrated into all already existing production systems.

Through a combined control and electronic coupling of all relevant drives a fully synchronized operation with the subsequent located production machine, that is also supplied by ontec, is obtained for technical textiles. Also in critical situations, for example during power failure, the two units stop synchronous and prevent yarn breakages. The Taper and the knitting or weaving machine are operated via combined touch panel.

The ontec Taper D 635 S essentially consists of the following components:

- *Two unwinding units with pneumatic brake*
- *Double feed roller system with two feed rollers each*
- *Wide stretch roller*
- *Protechna sensors with fan for tape breakage detection*
- *Yarn reeds in the corresponding yarn counts for yarn feeding in the unit*
- *Dancer control with fine adjustment*
- *Oiling device for fringe, optionally also a second oiling device for the weft*
- *Central greasing system*
- *Selvedge section winder with laying device*

OPTIONS:

- ***Detector for holes in the plastic film***
- ***Film run inspection***

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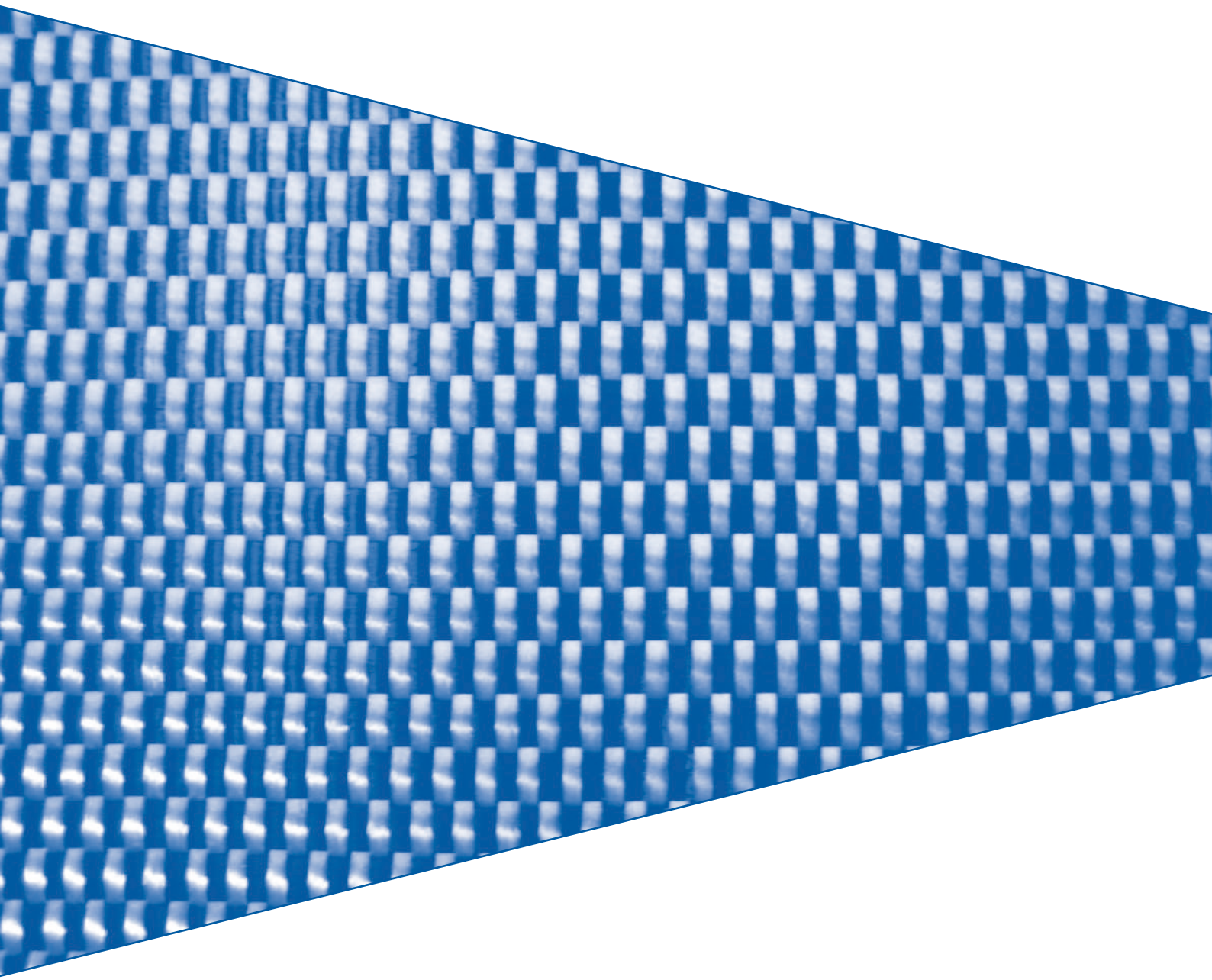
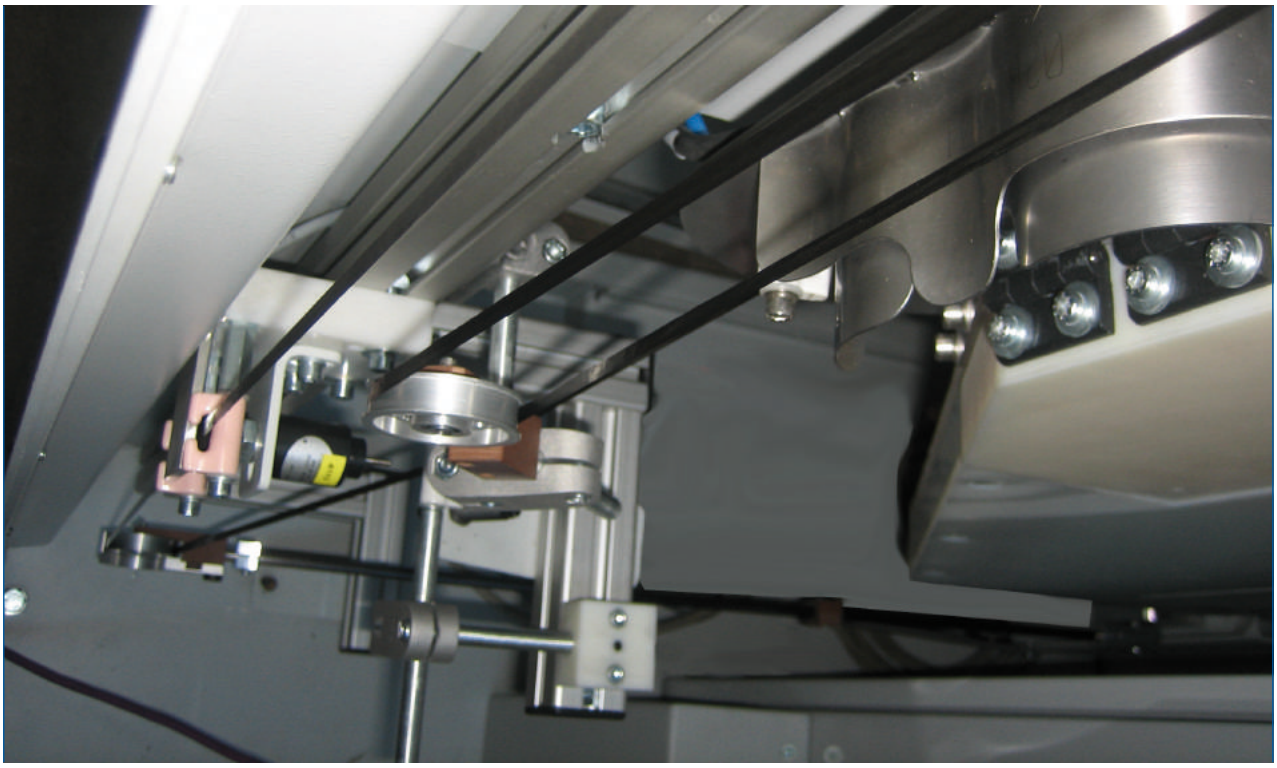
9. ZERO TWIST





The Zero Twist assures twist free feeding of weft threads of carbon, wire or monofilaments in weaving processes.

For the development of the Zero Twist C ontec has received the Bavarian State Award.

Bayerischer Staatspreis

64. Internationale Handwerksmesse München 2012

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9.1. Zero Twist C

The zero Twist C from ontec allows a twist free weft insertion for carbon fibres during the production of carbon fibre fabrics.

From this fabric various composite materials are produced.

Significance of composite materials:

The market for the usage of composite materials based on glass- or carbon fibre fabrics is an enormous growth market, due to the favourable characteristics of composite materials. Typical applications are, for example, motorcycle helmets, hulls of boats made from carbon fibre reinforced plastics, wings of windmill powered plants or wings and body parts in the aviation and space flight industry. In the next few years a high growth rate is anticipated especially for the aviation industry and the automotive engineering sector. Because of the aimed weight reduction mainly carbon fibre reinforced plastics materials are implemented, i. e. carbon fibre reinforced synthetic materials. For example in the airbus A380 approximately 20 % of all integrated materials is carbon fibre reinforced plastics. In the airbus A350 there will already be 40 % of carbon fibre reinforced plastics included. Especially in this high end field the quality requirements for the implemented materials are very high. Only with a high quality of the component parts the quantity of the implemented material and therefore the weight of the endproduct can be further reduced.

For the constant high quality of the composite materials the steady and gentle processing of the carbon fibre material is of primary significance.

Problems with processing carbon fibres:

Most textile carrier fabrics are produced by weaving. However, the weaving brings high stress to the carbon fibre material. Depending on the processing conditions individual filaments break during the processing of the carbon fibres fed in tapes. This reduces the stability of the subsequent component parts.
A special shortcoming is the feeding of the weft thread into the weaving machine which is shot through the open shed transversal to the warp thread with high speeds and acceleration. In this process the thread is accelerated e. g. on a length of 2 metres within 0,1 seconds to speeds of up to 50 m/s and then slowed down again to 0 m/s. Since these weft threads must not be twisted when inserted into the shed, which would lead to stability losses, the so-called overhead drawing of the yarn bobbin and feeding via feedwheel units is prohibited as usually done with other textiles.
The twist of the thread can only be prevented by the tangential unwinding of the thread bobbin. However, for this purpose the yarn bobbin would have to be accelerated with high dynamics. This can not be realized, even not with high dynamic servo drives.

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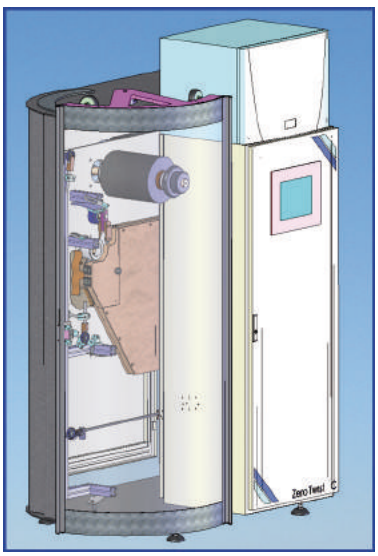
9.1. Zero Twist C

Today this problem is solved by integrating a storage device between the motor-driven yarn bobbin and the weaving machine, which provides the balance of the immensely varying yarn consumption of the weaving machine.
Such storage devices form the necessary yarn supply in form of one or several loops. The loop forming is either produced by a force loaded dancer roller or by an airflow in which the thread is deflected.
Both systems have significant disadvantages. The inevitably massive dancer roller can follow the high dynamic movement of the weft thread only limitedly so that only low production speeds are possible. The solution with the airflow in which the thread is swept away leads to the defibration of the fibre bundle and thus to a significant damage of the thread.

ZERO TWIST C offers a twist free weft insertion for carbon fibres.

At the international textile machinery show ITMA in September 2011 in Barcelona we have introduced this unit to the worldwide market for the first time. ontec's Zero Twist C is provided for a weaving machine. For this reason the usual bushing frame is omitted. The with high dynamics driven bobbin winds the weft thread tangentially and therefore distortion-free. The thread guide is effected via ceramic guiding elements.



ADVANTAGES:

- ***Weft insertion without distortion of the carbon thread***
- ***Low fabric tension***
- ***High homogeneity of the surface***
- ***Fully automatical adaption to the draw off speed of the storage***
- ***Integrated control with interface to the weaving machine***
- ***Retrofittable without any difficulties***
- ***Suitable for all gripper weaving machines***
- ***Immediate quality improvement***

TECHNICAL DATA:

- ***Number of bobbin positions:*** *1*
- ***Bobbin diameter:***
  max. 350 mm
- ***Bobbin length:***
  max. 370 mm
- ***Bobbin weight:***
  max. 25 kg/bobbin
- ***Working speed:***
  up to 200 weft/min
  for 2 000 mm working width
- ***Delivery speed:***
  max. 540 m/min yarn delivery
- ***Size:***
  1300 mm x 1000 mm x 2150 mm
- ***Weight:*** *440 kg*
- ***Connection values:***
  Connection voltage:
  400 VAC / 3-Phase
  Max. back-up fuse: *32 A*
  Electric frequency: *50/60 Hz*

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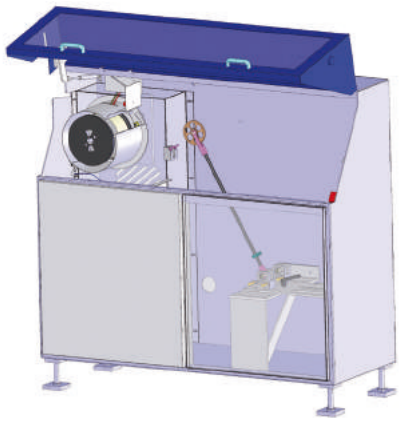
9.2. Zero Twist D



The Zero Twist D was especially developed by ontec to allow a twist free weft insertion of wire into the shed of a wire weaving machine even during high production speeds.

The usual „overhead drawing" of the weft wire makes an automatic production of wire fabrics in the usual way almost impossible. This applies especially for the use of stronger materials and profile wire.

For conventional constructions in which the insertion of a weft wire is effected by tangential drawing from a bobbin, the bobbin is braked over and over and the insertion of the weft wire is only effected with very low speed.

The Zero Twist D is provided for a wire weaving machine. The high dynamic driven wire bobbin allows the tangential and twist free unwinding of the weft wire. The path of the weft leads from the bobbin position via ceramic eyelets, the integrated dancer and after a deflection and the exit from the unwinder directly to the feed section of the weaving machine. The dancer controls the bobbin drive depending on the wire quantity drawn by the gripper.

As standard the Zero Twist D is operated self-sufficiently. If required a further capacity increase can be effected through the coupling with the control technology of the weaving machine.

ADVANTAGES:

- ***Weft insertion without twist of the wire***
- ***Immediate quality improvement in the produced fabric***
- ***High homogeneity in the produced fabric***
- ***Low fabric tension***
- ***Fully automatical adaption to the working speed of the weaving machine***
- ***Integrated control with interface to the weaving machine***
- ***Retrofittable without any difficulties***
- ***Suitable for all wire weaving machines with gripper***

TECHNICAL DATA:

- ***Number of bobbin positions:*** *1*
- ***Bobbin diameter:***
  max. 250 mm
- ***Bobbin length:***
  max. 200 mm
- ***Bobbin weight:***
  max. 25 kg
- ***Delivery speed:***
  max. 600 m/min steplessly adjustable
- ***Size:*** *W x H x L:*
  165 mm x 165 mm x 95 mm
  including switch cabinet
- ***Connection values:***
  Connection voltage:
  400 VAC / 3-Phase
  Max. back-up fuse: *32 A*
  Electric frequency: *50 Hz*

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9.3. Zero Twist M

The Zero Twist M is the result of extensive developments made by ontec.

It allows inserting monofilamentous weft threads twist free into the shed.

Based on the available innovative materials and processing techniques there are only a few limits for the production of high-performance fabrics. The drawing of the weft thread "overhead" is one of these limits. The yarn twists with every enlacement drawn from the rigid husk once around itself. The number of yarn twists depends on the width of the fabric and the filling degree of the weft thread husk. The fast-forward device itself does not cause any twists. The twisted thread is inserted into the fabric and when closing the shed is fixed in twisted condition. This causes tensions in the fabric and inhomogeneous surfaces.

The Zero Twist M from ontec is provided for a weaving machine. For this reason the usual bush frame is omitted. The high dynamic driven bobbins unwind the weft thread tangentially and therefore twist free. The yarn guide is effected by ceramic guide elements to the integrated, sensitively tareable dancers via weft thread storage to the insertion positions. Each bobbin supplies exactly the quantity of thread that the storage retrieves.

As standard the Zero Twist M is equipped with two bobbin positions. Thus it can release up to 1080 metres of monofilaments per minute. Executions with three or more bobbin positions and special executions are available on request.

ADVANTAGES:

- ***Weft insertion without twist of the thread***
- ***Low fabric tension***
- ***High homogeneity in the surface***
- ***Fully automatical adaption to the draw off speed of the storage***
- ***Integrated control with an interface to the weaving machine***
- ***Retrofittable without any difficulties***
- ***Suitable for all gripper weaving machines***

TECHNICAL DATA:

- ***Number of bobbin positions:*** *2*
- ***Bobbin diameter:***
  max. 350 mm
- ***Bobbin length:***
  max. 370 mm
- ***Bobbin weight:***
  max. 25 kg
- ***Delivery speed:***
  max. 540 m/min yarn delivery
- ***Size:*** *W x H x L:*
  1000 mm x 2200 mm x 1000 mm
- ***Weight:*** *440 kg*
- ***Connection values:***
  Connection voltage:
  400 VAC / 3-Phase
  Max. back-up fuse: *32 A*
  Electric frequency: *50/60 Hz*

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10. FEEDER CARBON-PROTECTION

FCP D 1400

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10. FEEDER CARBON-PROTECTION FCP D 1400

The ontec Feeder Carbon-Protection FCP D 1400 protects the electronic system from carbon fibres when using yarn fast-forward devices in weaving machines.

When processing electric conductible carbon fibres the protection of electronic component parts of the production machines is especially important. For this purpose ontec has developed a special safety device. This prevents the ingress of carbon fibres and dust.

The system guarantees an especially high protection for the electronic systems. The control device is integrated directly into the switch cabinet.

ADVANTAGES:

- ***Integrated air supply***
- ***Optic display of the present air pressure***
- ***Optic display for excess pressure***
- ***Excess pressure separately adjustable***

OPTION:

- ***Connection of 4 or 8 yarn fast forward devices possible***

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11. DRAWING UNIT

11. DRAWING UNIT

The ontec drawing unit serves for the production of half open up to almost closed even biaxial +/- 45° non-crimp-scrims with defined openings.

Two evenly drawn layers of the 90° glass knitted fabric are fed to the machine in an angle of + and –45°. These are knitted together.

Through the stitch row conform horizontal weft insertion equal thread distances and an adjustable draping ability are obtained.

Stretched and exactly parallel reinforcement fibres guarantee the highest mechanical features.

A combination with fibre mats or cut fibres is possible.

TECHNICAL DATA:

- ***Base material:***
  glass knitted fabric (90° biaxial)
- ***End product:***
  Half open up to almost half closed even biaxial +/-45° non-crimp-scrim with defined openings
- ***Finished width:***
  = width of the 90°- basic fabric x 0,71
  e. g. working width: 108" (2740 mm) of the basic fabric;
  resulting in: 76" (1930 mm) finished width for the biaxial fabric
- ***Production speed:***
  fabric: max. 5 m/min
  biaxial fabric: max. 5 m/min

FIELD OF APPLICATION OF THE HIGH PERFORMANCE COMPOSITE MATERIALS:

- ***Transportation:*** *Automobile, railway, maritime traffic, aviation, space flight*

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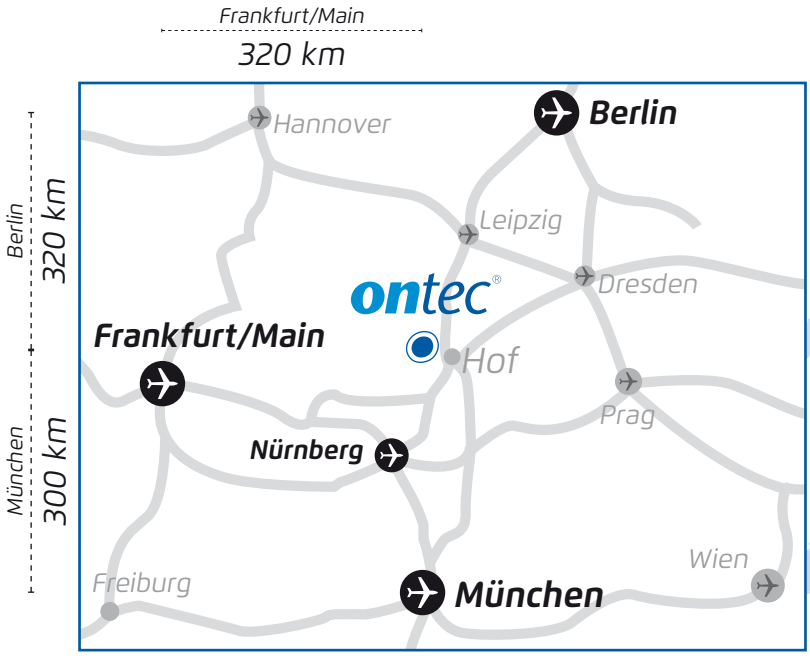

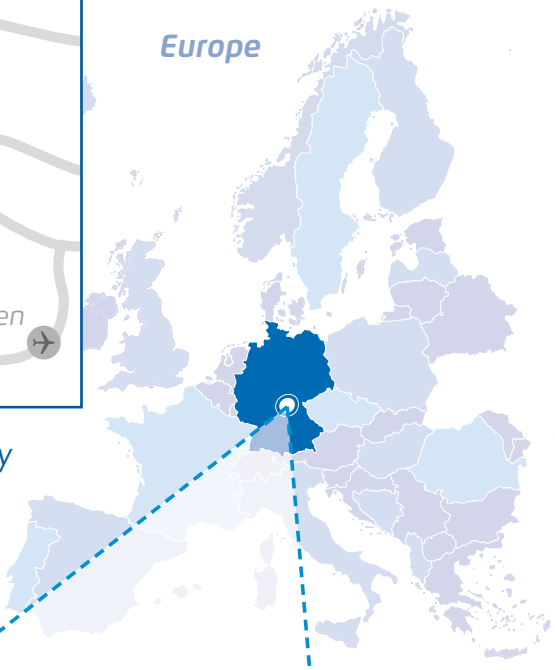

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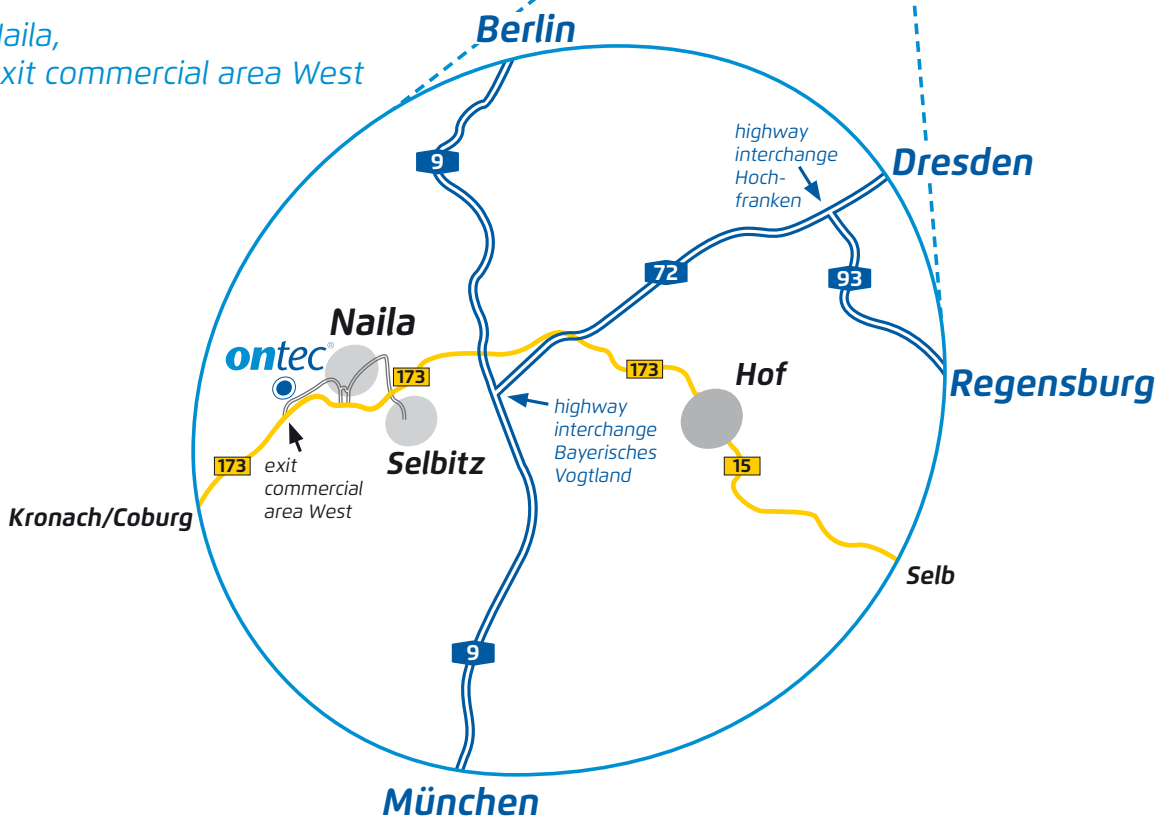

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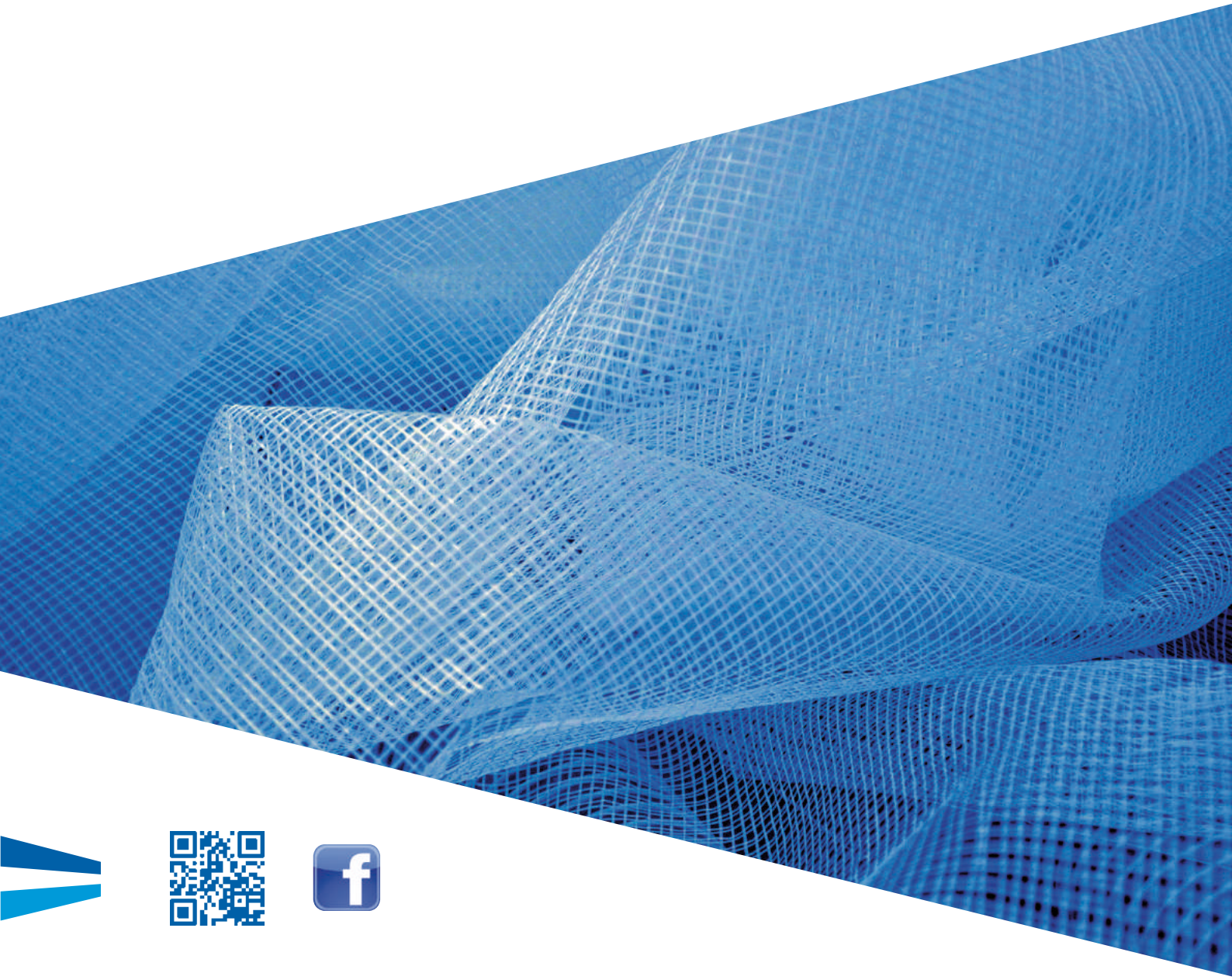

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