WEAVING TECHNICAL?
DO IT ITEMA!
Technical textiles already play an important role in our everyday lives and are set to proliferate even more in the near future. The reasons for this quick and continuing ascent are manifold. As increasingly sophisticated consumers, we are constantly looking for enhanced functionality, better performance and improved durability from our work, sport and leisure apparel, as well as from our home furnishings. Governments are adopting tougher regulations and instituting new stringent standards for health, safety and environmental compliance in both developed and developing countries.

Used in different sectors, technical fabrics are universally classified into application families that, at first sight, illustrate how widespread is their deployment:

- Protech
- Oekotech
- Medtech
- Sporttech
- Clothtech
- Buildtech
- Geotech
- Packtech
- Mobiltech
- Indutech
- Hometech
- Agrotech

In the next future, technical textiles are going to take even more center stage and become ever-more ubiquitous in architecture and green buildings, automotives, smarter cities, intelligent and energy efficient devices, furnishing and athletic, workwear and fashion apparel.

Weaving is by far the most flexible, convenient and high added value technology to turn yarns into fabrics. The wide range of densities and materials that can be processed guarantees endless possibilities and the opportunity to switch production with limited added costs.

Hence, weaving is the preferred choice when it comes to producing the widest range of fabrics, including Technical Textiles applications.

Itema, with over 200 years of combined expertise from the merger of three historic brands, such as Sulzer Textil (Sultex), Somet and Vamatex, expects that the positive trend for Technical Textiles spread will continue for the foreseeable future and is catering more to this particular and very demanding segment of the textiles market worldwide.

As a partner and weaving machinery supplier to textile manufacturers worldwide, Itema strongly believes in the endless opportunities and the growth potential of technical applications, and has therefore dedicated its twin R&D departments to develop the necessary technology to anticipate weavers’ requirements.

Itema is traditionally a leading supplier of weaving machines for technical fabrics production and derives a growing portion of the overall turnover from sales of looms specialized in technical textiles applications. A significant number of Itema weaving machines are successfully weaving a wide range of technical textiles in worldwide installations.

Furthermore, Itema is the only weaving machines producer to offer technical textile manufacturers the top three technologies for weft insertion, Rapier, Projectile and Airjet, in what is the most comprehensive portfolio on the market today for technical applications.

Taking into account the specific needs of technical textiles weavers, Itema is uniquely positioned in the market to provide dedicated best-in-class technological advancements and the strongest textile expertise.
Weaving Width

SK Weft Transfer with guided hooks
- 170 cm, 190 cm, 210 cm, 220 cm, 230 cm, 260 cm, 280 cm, 300 cm, 320 cm, 340 cm, 360 cm, 380 cm, 400 cm, 430 cm, 460 cm, 540 cm

FPA Weft Transfer Free Positive Approach
- 170 cm, 190 cm, 210 cm, 220 cm, 230 cm, 260 cm, 280 cm, 300 cm, 320 cm, 340 cm, 360 cm

Itema Rapier Weft Transfer System
- SK Weft Transfer with guided rapiers and hooks. Engineered for speed, provides high performances and superior fabric quality.
- FPA—Free Positive Approach—Weft Transfer featuring a race board with no guiding elements in the shed, it combines the versatility of a positive rapier system with higher performances and efficiency, enabling to weave even the most delicate monofilament yarns.

Multiple choice of Weft Cutter
- MOTORIZED WEFT CUTTER developed by Itema and introduced on the market in 2001, is driven by an independent motor allowing different cutting times for each weft color eliminating the time-consuming and accurate operation to find the best possible compromise to set one single cutting time for different weft yarns, resulting in:
  - much improved efficiency
  - no weft stops due to incorrect settings
  - weft waste optimization
  - perfect weft insertion
- ROTO CUT featuring an high precision rotary blade which cuts all the weft yarns at the same moment is the preferable choice in case of simple fabric constructions.

Double Press Roller
- Done for heavy fabrics to guarantee a constant fabric tension.

Multiple options of Back-Rest Roller
- Light Weight Back-Rest Roller designed to compensate the lack of elasticity of specific yarns.
- Double Back-Rest Roller with an increased cylinder diameter to optimally tolerate the warp yarns high tension
- Warp tensioner for an optimized warp tension

Full Width Temple
- Substantial main benefits:
  - Higher pick density possibility compared to standard templates.
  - Straight weft insertion over the whole reed width.
  - Uniform fabric structure over the entire reed width.
  - Possibility to easily switch from standard temple to full width temple.

Rotary Deviating Bar
- Providing high precision weft insertion by keeping the weft perfectly straight in the fabric.
- Ideal solution for mesh fabrics.

Thermal Cutters
- Available with different cutter head according to fabric thickness and composition. Provide top quality selvages, ease of use and long-lasting wire even with the heaviest fabrics.

Itema Electronic Weft Brake
- Implemented between pre-feeders and weft insertion system, the Itema Electronic Weft Brake allows a more gentle weft treatment reducing the weft tension peak thanks to different braking force levels that can be set directly from the machine console.
The Itema rapier R9500 is born to be **versatile**.

Ever since Itema designs and develops internally its rapiers, leveraging the exclusive heritage of the big names of the past, namely Somet, Sulzer and Vamatex.

The Itema R9500 is known to be **the most positive negative rapier machine in the market**, due to the uniqueness of its weft transfer system which provides unparalleled versatility of yarns and patterns.

**Dedicated devices have been developed to excel in the weaving of technical fabrics, adding to the already excellent R9500 base sturdiness and flexibility, through key reinforcements and core advancements.**

Depending on the application, the R9500 can be equipped with **optimized devices** to get superior **sensibility** to weave even the most delicate weft and warp monofilament yarns, maximum **sturdiness** to easily handle the heaviest fabrics and best-in-class performances in terms of **fabric quality** and **machine efficiency**.
The unmatchable uniqueness of the positive weft transfer consists in the single insertion driven by the projectile, which catches the weft and carries it directly with no exchanges, providing unparalleled efficiency.

Sturdy machine structure
Ensuring the longest life span in the market and the highest resistance to heavy fabrics and complex fabric constructions and the uniqueness of a weaving width up to 655 cm.

No Weft and Warp Waste
Due to the uniqueness of the positive weft transfer which provides the elimination of the waste selvedge.

Adaptive Selvedges to minimize Yarn Wastage
The width of the tucked-in selvedges can be chosen from 18 mm and up to 35 mm (ideal for applications such as agro and geotextiles, geogrids). Moreover, the P7300HP can be equipped with devices to produce leno or melted selvedges.

FPB - Fast Projectile Brake
Controlled by the microprocessor, it requires no manual adjustments reducing maintenance and providing a smooth and safe weft insertion.

Reinforced Main Machine Drive and Sley Drive
- RSP Version maximum beat-up force 11'000 N/m and R3 Version maximum beat-up force 15'000 N/m
- Main machine drive up to 6 belts and 7.5 or 12 Kw powerful main motor
- Additional sley drive for a powerful need beat-up (12 mm need baulk and 9 mm need dent)

Reinforced warp tensioner versions
- Additional supports according to the width of the machine
- Second deflection roller on R3 Version

Reinforced Warp let-off and take-up drives
- Reinforced master and slave electronic let-off drive for full beam arrangement
- Powerful electrical take-up motor
- Take-up roller with center support (on RSP Version)
- Floating take-up with 140 mm main roller (on R3 Version)
- Additional cloth pull off device (only in combination with a batching motion)

Shed formation
- Reinforced dobby and wide sprocket chain drive
- Under motion with additional guides

Weaving Width

<table>
<thead>
<tr>
<th>Model</th>
<th>Standard and R Versions</th>
<th>RSP Version</th>
<th>R3 Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>P7300HP</td>
<td>220 cm, 260 cm, 300 cm, 360 cm, 430 cm, 480 cm, 655 cm</td>
<td>220 cm, 260 cm, 300 cm, 360 cm</td>
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<tr>
<td>P7300HP RSP</td>
<td>220 cm, 260 cm, 300 cm, 360 cm, 430 cm</td>
<td>(on request: 430 cm, 460 cm, 540 cm)</td>
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</tr>
<tr>
<td>P7300HP R3</td>
<td>220 cm, 260 cm, 300 cm, 360 cm, 430 cm</td>
<td>(on request: 430 cm, 460 cm, 540 cm)</td>
<td></td>
</tr>
</tbody>
</table>

Weaving Width
P7300HP Standard and R Versions
220 cm, 260 cm, 300 cm, 360 cm, 430 cm, 480 cm, 540 cm, 655 cm

P7300HP RSP Version
220 cm, 260 cm, 300 cm, 360 cm, 430 cm, 480 cm, 540 cm
(on request: 430 cm, 460 cm, 540 cm)

P7300HP R3 Version
220 cm, 260 cm, 300 cm, 360 cm, 430 cm, 480 cm
Technical fabrics are the specialty of the legendary and unique P7300HP due to the unparalleled versatility and reliability of its weft insertion system. The unmatchable uniqueness of the positive weft transfer consists in the single insertion driven by the projectile, which catches the weft and carries it directly with no exchanges, providing unmatched efficiency.

The P7300HP continues to harness great interest from projectile weaving aficionados and represents an unbeaten and unbeatable benchmark for those looking to weave the very widest fabrics - up to 655 cm weaving width - and high-specialty materials, such as agrotexile, geotextile and carpet backing fabrics. When it comes to weaving tape yarns, the Itema projectile weaving machine provides the highest performance compared to all the other insertion technologies in the market.

The projectile P7300HP V8 in its standard version is ready to weave a wide range of technical textiles.

Furthermore, the P7300HP is available in RSP and R3 configurations, customized to weave high-end filter fabrics, heavy geotextiles and high-end conveyor belts. Reinforced to weave the most heavy textiles, the RSP version features a beat up force up to 11.000 N/m whilst the R3 version can reach up to 15.000 N/m.

The projectile P7300HP guarantees unparalleled results when weaving specific, high quality technical fabrics, ensuring top fabric quality, significant cost savings and outstanding reliability.
Best-in-Class Shed Geometry
Optimal heald frame position guaranteeing higher speed and longer life cycle for heddles and harness frames. The optimized beating stroke is ideal to weave the widest range of fabrics ensuring perfect fabric quality.

BLC - Brush Lycra Clamp Nozzle
Dedicated solution to weave elastic weft yarns ensuring superior fabric quality and reliability, ideal for medical applications (i.e. gauze).

Low Blow Single Hole Relay Nozzles
New generation of nozzles to provide lower air consumption and requiring lower maintenance.

Multiple Selvedge Formation Options
In addition to mechanical tuckers, melting devices and air tuckers are available; for cut and full-width reed, both side and central tuckers are provided, reducing style change set up operations.

ELD - Electronic Leno Device
Patented solution for leno binding to ensure no speed limitations, higher performances and reduced maintenance.

Multiple options of Back-Rest Roller
• Reinforced Back-Rest Roller eliminating friction to allow an improved warp tension control
• Elastic Back-Rest Roller ideal for warp tension compensation

Double Tandem Nozzles
Allowing to weave even the most coarse yarns at high speed.

New Sley Cam Profile
• Longer weft insertion time due to longer dwell
• Reduced air consumption

iREED
Patented device to lower air consumption when weaving coarse yarns in narrow width.

A9500 FT

Weaving Width
160 cm, 180 cm, 200 cm, 230 cm, 280 cm, 300 cm, 320 cm, 340 cm, 360 cm
The airjet A9500 - the most innovative airjet weaving machine in the market - inspires the curiosity and sparks the interest from real technology buffs and has already amassed important references, especially in medical applications and automotive fabrics.

Looking at specific technical applications, the Itema airjet A9500 provides undeniable benefits, matching unparalleled performances and the highest productivity with superior textile efficiency.

The Itema A9500 is pre-set for independent motorized Jacquard with no cardan shaft, allowing to weave specific technical textiles (such as Airbag OPW) with no speed limitations.

When it comes to weaving very high density fabrics, the A9500 is customized with dedicated devices to ensure best-in-class results. Key components are reinforced to ensure optimized machine control and reliability whilst Itema patented devices guarantee reduced consumption and superior textile efficiency.
WEAVING TECHNICAL?
DO IT ITEMA!

A quick journey through the most popular technical applications
AGROTEXTILES

The term Agrotextiles describes all the fabrics used for agricultural and horticultural applications, including fabrics for shading, livestock protection, weed and insect control, water saving, extension of the growing season, soil separation, frost protection.

The Itema Projectile P7300HP for Agrotextiles

Unique in the market, Itema provides the projectile P7300HP for agrotextiles production in weaving width up to 655 cm. The unmatchable uniqueness of the projectile positive weft transfer provides unparalleled versatility even when it comes to weaving the demanding PP tapes yarns, commonly used in agrotextiles applications, and ensures top fabric quality and the highest efficiency rate. A further unmatchable advantage of the P7300HP for agrotextiles is the absence of weft and warp waste due to the projectile direct transfer which allows a perfect fabric binding with no need of waste selvedge device, providing substantial cost savings. Last but not least, the special tucked-in selvedge of 35 mm available on P7300HP provides a crucial selvedge reinforcement giving a fundamental benefit during fabric finishing.

The Itema Rapier R9500 for Agrotextiles

For simpler fabric constructions, the wide width version of the rapier R9500 is available in weaving width up to 540 cm, featuring reinforced fabric take-up and back-rest rollers to ensure maximum reliability and resistance even at the maximum stress occurring when weaving heavy fabrics in wide weaving width.

Superior fabric quality and unparalleled machine performances are guaranteed by a winning duo: the SK Weft Transfer System and the Motorized Weft Cutter.
AIRBAG FLAT & OPW

Installation of front and lateral airbags as passengers protection are standard on automobiles in most developed Countries and are quickly expanding in emerging Countries as well, representing one of the biggest growing segments in the automotive industry.

Flat woven fabrics are employed to make front (driver and passenger) airbags whilst side curtain airbag consist in OPW - One Piece Woven cushion.

Flat woven fabrics are silicone-coated to provide the desired air permeability and heat resistance. After weaving, these fabrics are cut out, assembled and sewn.

Shape and structure of OPW airbags, thanks to Jacquard shedding machines, are created during the weaving process with a double weave fabric construction, resulting in no subsequent sewing operations.

The Itema Rapier R9500 for Flat and OPW Airbags

The rapier R9500 ensures the optimal ratio between performances and top fabric quality both for flat and - with Jacquard shedding motion - OPW airbag fabrics.

The rapier weft transfer system FPA - Free Positive Approach is the ideal solution to ensure a gentle treatment of the delicate multifilament warp yarns used in the weaving of airbag fabrics.

Flexibility is further increased due to the Motorized Wett Cutter, which provides also a minimized weft waste. Reinforced take-up and back-rest roller are provided to guarantee excellent handling of the highest warp tensions and maximum machine performance. The Full Width Temple is a fundamental device to ensure multiple benefits: weaving of higher pick density fabrics, perfectly straight weft insertion and uniform fabric structure over the whole reed width.

The Itema Airjet A9500 for OPW Airbags

The Itema airjet A9500 is pre-set for independent motorized Jacquard allowing to weave OPW airbags with no speed limitations. The reinforced take-up and back-rest roller eliminate the friction allowing an improved warp tension control, whilst the left and right independent bobbin selvedge

APPLICATIONS
Flat fabric, one piece woven

YARNS PROCESSED
PES / 235 - 350 - 470 - 580
700 Dtex

COMMON WEAVING WIDTH
280 cm
Para-Aramid woven fabrics are employed for their remarkable performances in anti-ballistic clothes and helmets. Moreover, Para-Aramid fabrics are used as a substitute of asbestos in brake and clutch linings, tyres reinforcement, as well as in airplane, boats, and high-end automobiles industries.

The Itema Rapier R9500 for Para-Aramids Fabrics

The best-in-class shed geometry of R9500 features the smaller shed opening of its category ensuring top fabric quality even when it comes to weaving high-specialty filament yarns such as para-aramids. Para-aramids and mixed aramids yarns are effectively woven with the FPA—Free Positive Approach Weft Transfer System—which guarantees the most gentle treatment even of the most delicate warp filament yarns.

A double weft cutter option is available according to fabric constructions. In case of multiple weft configurations the Motorized Weft Cutter is the ideal device, whilst for simpler fabric constructions the Rotocut is the preferable choice.

Main success factor when weaving para-aramids is the capability to maintain the lowest possible tension of warp and weft yarns and R9500 can be equipped with effective devices to achieve this goal. The Low Weight Back-Rest Roller represents the best solution to compensate for the inelasticity of the para-aramids yarns. Its lightweight structure provides a wide movement ability and the highest degree of reactivity facilitating the warp yarns tension compensation during frames and reed crossing. Para-aramids weft yarns are perfectly controlled thanks to the Itema Electronic Weft Brake that provides a constant low tension with easy setting of braking times directly from the machine console.
AWNINGS FABRICS

Outdoor awnings and tents for commercial activities and houses are woven from 100% dyed polyacrylate fibres which give protection from sunlight and weather whilst providing exceptional color brilliance and wide design possibilities.

The Itema Rapier R9500 for Awnings Fabrics
The reinforced take-up and back-rest rollers guarantee an excellent handling of the highest warp tensions whilst ensuring superior machine performances. Full Width Temples or Standard Temples are easily interchangeable according to the fabric’s construction.

The Itema Projectile P7300HP for Awnings Fabrics
The P7300HP in RSP or R3 configuration can weave the coarsest polyacrylate yarns up to 30 tex guaranteeing top fabric quality and superior machine efficiency thanks to key machine’s reinforcement. The reinforced Warp Stop Motion easily withstands even the heaviest warp yarns providing outstanding machine reliability and significantly reducing yarn deflection.
CARPET BACKING

Carpet backing provides shape, structural stability and protection to the carpets used in household and industrial applications. The two main components of carpet backing are the primary backing, which is the coarse fabric through which the carpet fibers are looped or interwoven and the secondary backing that provides support to the overall carpet, and helps to insulate the carpet from moisture, bacteria and mold which can seep up from the floor.

The Itema Projectile P7300HP for Carpet Backing

Primary carpet backing are woven with PP tape yarns in warp and weft whilst secondary carpet backing with spun in weft and the projectile P7300HP is by far the best weaving technology to weave this specific type of yarns. The core advantage of the P7300HP lies in its positive weft transfer that provides unparalleled textile efficiency even when it comes to weaving the demanding PP tape yarns. Moreover, the absence of weft and warp waste allows a substantial and unparalleled cost savings for the weaver.

APPLICATIONS
Primary and secondary carpet backing

YARNS PROCESSED
PP (Polypropylene) Tapes
Warp from 350 to 500 Dtex
Weft from 670 to 1160 Dtex

COMMON WEAVING WIDTH
390 cm, 430 cm, 460 cm, 540 cm
Coating fabrics represent the most widely used material for temporary construction applications due to the excellent compromise between costs and benefits. These fabrics are woven with polyester multifilament or monofilament yarns and then coated with different synthetic thermoplastics (i.e., PVC and PU). Coating fabrics are employed in a wide range of sectors, including truck tarpaulin, protective work and safety wear, hot air balloon, performance tent and leisure inflatable.

The Itema Rapier R9500 for Coating Fabrics

For the benefit of weavers of coating fabrics, Itema provides the R9500 in weaving width up to 360 cm equipped with FPA - Free Positive Approach Weft Transfer System, which is the ideal configuration to weave zero twist yarns in warp and weft, in single or double insertion, up to 1100 dtex and monofilament yarns up to 0.4 mm.

In wider weaving width, the R9500 up to 540 cm equipped with the SK Weft Transfer System ensures the effective weaving of T60 warp yarns.

Coating fabrics may have very open constructions (mesh fabrics) and R9500 can be equipped with the Rotary Deviating Bar to ensure a high-precision weft insertion due to the weft which is maintained perfectly straight while inserted in the fabric.
CONVEYOR BELTS

Reinforcing fabrics are woven for two main categories of conveyor belts: multi-ply rubber belts and lightweight rubber belts. End uses for multi-ply rubber belts include mining, agricultural equipment, transportation of heavy abrasive materials such as rock, ore or gravel. Medium and lightweight conveyor belts are used in package handling, food processing, fitness equipment, and other light duty or high-speed applications.

Fabrics for conveyor belts can be divided into the below main clusters:
- EP type made with PES/Polyester yarns in warp and PA/Polyamide yarns in weft
- EE type made with PES/Polyester yarns in warp and weft
- SP type made with Polyester spun in warp and weft

The *Itema Rapier R9500* for Conveyor Belts

For light to medium conveyor belts (EP ranging from 100 to 400) the R9500 in weaving width up to 260 cm equipped with FPA - Free Positive Approach Wefl Transfer System provides the best fabric quality and production speed ratio. The R9500 optimized shed geometry featuring the smaller shed opening in its category ensures superior fabric quality, a lower warp tension and the strongest beat-up force.

Two dedicated devices make the R9500 the ideal machine to weave the demanding and heavy yarns used in the production of conveyor belt fabrics:
- the Double Back-Rest Roller to optimally compensate the warp yarns high tension
- the Double Press Roller designed to guarantee a constant fabric tension

Thermal Cutters to effectively cut fabric’s sides are recommended.

The machine can be equipped with arrangement for *warp feeding from external creel or warp beams.*

The *Itema Projectile P7300HP* for Conveyor Belts

The projectile P7300HP in H3P or R3 configurations is the only weaving machine that can successfully and easily weave heavy conveyor belts with more than EP600. In fact, due to the reinforced machine structure and to the positive pin needle warp insertion, the P7300HP can handle the heaviest yarns with excellent performances in terms of speed and machine efficiency.

**APPLICATIONS**
Heavy, medium and lightweight conveyor belts

**YARNS PROCESSED**
PES, PA, CO

**COMMON WEAVING WIDTH**
230 cm, 280 cm, 360 cm
FILTER FABRICS

Filter fabrics are used for separation and filtration in various applications such as in medicine, chemistry, process engineering, air conditioning, automotive and water purification. Filter fabrics are mainly woven with high-precision mesh constructions in medium high densities using polyester, polypropylene or polyamide monofilament yarns.

The Itema Rapier R9500 for Filter Fabrics
The Itema rapier R9500 is the ideal machine to weave the widest range of monofilament yarns thanks to the FPA - Free Positive Approach Weft Transfer System, which combines the versatility of a positive insertion system with the superior performances of negative rapiers, eliminating the risk of breakages of the delicate warp and weft monofilament yarns without sacrificing speed and efficiency.

The Double Back-Rest Roller optimally compensates the warp yarns high tension and their inelasticity. The perfect handling of the fabric production process is also entrusted to the Double Press Roller and to the Reinforced Temple Support which guarantee a constant fabric tension otherwise compromised by the high fabric rigidity. Thermal Cutters to effectively cut fabric’s sides are recommended.

The Itema Projectile P7300HP for Filter Fabrics
In case of high-end, heavy filter fabrics, the P7300HP in RSP and R3 configurations ensures an effective and easy insertion even of the most coarser monofilament yarns.

APPLICATIONS
Filtration

YARNS PROCESSED
PES, PP or PA monofilament

COMMON WEAVING WIDTH
Up to 260 cm
BOLTING CLOTHS
FINE FILTER FABRICS

Fine filter fabrics - e.g. bolting cloths - are made by very fine high precision monofil cloth constructions of high densities. According to their application, yarns of special manufacturing and treatment can be used. Bolting cloths are used in high specialty applications, such as medical (blood filtration), automotive (fuel filtration), printing and electronic components (touch screens).

The Itema Rapier R9500 and P7300HP for Bolting Cloths

Itema developed an advanced version of the rapier R9500 fine-tuned for weaving bolting cloths. The innovative machine features special beat up system and shed geometry, with optimized FPA rapiers to perfectly handle these delicate yarns.

The projectile P7300HP in bolting cloth execution is also available for the weaving of bolting cloths guaranteeing excellent fabric quality and machine performances thanks to the worldwide renowned projectile weft insertion system.
Geotextiles are robust and durable fabrics designed to increase soil stabilization and ground support. Typically made from polypropylene yarns, woven geotextiles grant high tensile strength at low elongations, durability and resistance to environmental influences, reducing maintenance costs and improving the performance of paved and unpaved surfaces. Main applications of geotextiles are ground stabilization and erosion control, drainage and collection of superfluous water such as rainwater, soil filtration, roads reinforcements, embankments.

The Itema Projectile P7300HP for Geotextiles
Available for the benefit of geotextiles weavers in weaving width up to 655 cm, the P7300HP offers the unmatchable uniqueness of the positive projectile weft transfer providing unparalleled versatility even when it comes to weaving the demanding PP tapes yarns, commonly used to weave geotextiles. A further unmatchable advantage of the P7300HP is the absence of weft and warp waste due to the perfect fabric binding with no need of auxiliary selvedges, providing substantial cost savings. Last but not least, the special tucked-in selvedge of 35 mm available on P7300HP provides a crucial selvedge reinforcement giving a fundamental benefit during fabric finishing. In case of extremely dense fabrics - such as geo-reinforcement textiles, the Itema P7300HP in RSP and R3 configurations is customized and reinforced to weave up to 15,000 N/m reed beat up force (weaving width up to 390 cm).

The Itema Rapier R9500 for Geotextiles
For simpler fabric constructions, with multifilament yarns, the Itema rapier R9500 provides excellent fabric quality and superior machine performances. In weaving width up to 360 cm with the FPA - Free Positive Approach Weft Transfer System and in combination with the Motorized Weft Cutter, the R9500 offers unbeatable versatility and efficiency.
FIBERGLASS

Fiberglass fabrics are used as key materials in numerous products of everyday life due to their tensile strength, temperature resistance, low elongation and dimensional stability. Almost any weave pattern can be woven with glass fibers and the basic patterns are: plain, basket and their derivatives, unidirectional, as well as leno weave for producing mesh fabrics. Main fiberglass fabrics applications are:

- Aerospace (i.e. flooring, closets, seating, air ducts, cargo liners, insulating applications and various other cabin interior parts)
- Automotive (i.e. clutch discs and brake pads reinforced with woven fiberglass to maintain the integrity of the composite in a hot and abrasive environment)
- Construction (i.e. mesh fabric can be used for facade reinforcement and for prevention of cracks in interior walls; PVC coated fiberglass fabrics for mosquito nets, insect protection, filter fabrics)
- Electrical and electronics (i.e. printed circuit boards, tubing products)
- Medical applications (i.e. medical castings and tapes, orthotic products and bandages)

The Itema Rapier R9500 for Fiberglass

Itema developed an advanced, high-performance version of R9500 to weave fiberglass ranging from 5tex to 600tex yarns ensuring high speed and superior machine efficiency. Used in many applications, fiberglass needs to be woven on a sensitive and, at the same time, sturdy weaving machine. The rapier R9500 designed to weave fiberglass features a brand-new Light Weight Back-Rest Roller ensuring high reactivity, able to compensate the lack of elasticity peculiar of these specific yarns. Furthermore, specific to weave fiberglass is the Rotary Deviating Bar, designed for open construction patterns (mesh fabrics) to avoid weft distortion.

Flexibility and versatility are guaranteed by the FPA - Free Positive Approach Weft Transfer System. Flexibility is further increased due to the Motorized Weft Cutter. Moreover, the innovative ELD - Electronic Leno Device, unique in the industry, provides a complete leno binding at fabric sides. Optimized wear-resistant cutters have been designed to perfectly handle high-tenacity fiberglass yarns as well as a dedicated vulcanized rubber covering for the take-up roller facilitating fiberglass fabric movement. Furthermore, the Itema R9500 can be equipped with special low-friction surface weft feeders.
A Flexible Intermediate Bulk Container (FIBC), PP Bag or Big Bag is an industrial container made of flexible fabric designed for storing and transporting dry, flowable products, such as sand, fertilizer and granules of plastic. FIBCs are made of thick woven polyethylene or polypropylene, either coated or uncoated, and normally measure around 110 cm in diameter and ranging in height from 100 cm up to 200 cm. Their capacity is normally around 1000 kg, but the larger units can store even more material.

The Itema Projectile P7300HP for FIBC
FIBC fabrics require excellent fabric quality to ensure its multiple end uses. The Itema projectile P7300HP is unique in the market today to guarantee an optimal production of FIBC due to the superior versatility of the positive projectile weft transfer which allows to effectively weave even the coarsest polypropylene tape yarns (up to 5 mm tape yarns). The P7300HP offers perfect tucked-in selvedges allowing the sewing at fabric’s edge, providing higher warp density in selvedge area for perfect selvedge formation. For the ideal handling of heavy PP tape yarns the P7300HP can be equipped with the Fast Projectile Brake (FPB) that - controlled by the microprocessor - requires no manual adjustment, reducing maintenance and providing a smooth and safe weft insertion.
SAILCLOTH AND PARACHUTE

Sailcloth fabrics are mainly made with Polyester yarns with high shrinkage and high tenacity, providing good fill strength and an excellent bias stretch resistance to the fabric. Sailcloth are used in a wide range of boat and sail applications (i.e. spinnaker, cruising and racing sails) and for parachute’s fabrics. Performance is a key factor for sailcloth and main evaluation criteria are resistance, extreme natural conditions tolerance and fabric shrinkage.

The Itema Rapier R9500 and Projectile P7300HP for Sailcloth

The Itema Rapier R9500 with FPA - Free Positive Approach Weft Transfer System is the ideal configuration to weave sailcloth fabrics due to the widest versatility of multifilament polyester yarns that can be processed. Moreover, specific reinforced devices ensure superior machine performances in terms of reliability and efficiency:

- the Double Back-Rest Roller optimally tolerates the warp yarns high tension and compensates for their inelasticity;
- the Double Press Roller guarantees the perfect handling of the fabric production process;
- Reinforced Temple Support for a constant fabric tension and Full Width Temple for specific fabric constructions are available.

The Itema Airjet A9500 for Parachute Fabrics

When it comes to weaving light filament fabrics - such as parachute fabrics - the Itema airjet A9500 provides undeniable benefits, matching unparalleled performances and the highest production speed with superior textile efficiency.

To optimally weave light filament fabrics, the Itema A9500 features the Elastic Back-Rest Roller, a dedicated device for warp tension compensation useful when dealing with high-tenacity and rigid yarns. The double pick insertion ensures ripstop weaving and, furthermore, the Polito Nozzles guarantee high speed weft insertion and unparalleled productivity.
**Canvas Fabrics**

Canvas is an extremely durable plain-woven fabric used for several applications such as sails, tents, marquees, backpacks, shoes, handbags and painting surface. Woven with heavy and very dense constructions, canvas is mainly made with single or ply cotton yarns.

**APPLICATIONS**
- Sportswear, tents, backpacks, handbags, painting surface, anti-perforation textile sole

**Yarns Processed**
- Cotton, PES

**Common Weaving Width**
- From 170 cm to 230 cm

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**The Itema Rapier R9500 for Canvas**

Reinforced and equipped with dedicated devices, the Itema rapier R9500 successfully weaves the widest range of heavy canvas. Thanks to the SK Weft Transfer System, the R9500 guarantees high speeds and the highest efficiency rate. To effectively weave canvas the R9500 is configured with:

- **Double Back-Rest Roller** to optimally compensate the warp yarns high tension
- **Double Press Roller** to perfectly handle fabric production process
- **Reinforced Temple Support** which guarantees a constant fabric tension

Worth to mention in this field is a particular application woven with Polyester multifilament yarns, the **anti-perforation textile sole**. R9500 has proven unbeatable results in the weaving of this specific technical fabric, obtaining remarkable results in terms of fabric quality, machine reliability and high speed production. Main protagonists of R9500 top performances for the weaving of anti-perforation textile sole are the **FPA Free Positive Approach Weft Transfer System**, the **Double Back-Rest Roller** and **Press Roller**, as well as the **Reinforced Temple Support**.
MEDICAL FABRICS

From their first appearance as sutures more than 4,000 years ago to their present use in products ranging from gowns and wound dressings to arterial and skin grafts, fabrics have been explored as potential materials for novel applications in medicine and surgery. This continuous interest has its basis in the unique properties of fibers—which in many aspects resemble biological materials—and in their ability to be converted into a wide array of desired end products. Fabrics for medical applications typically have specific performance requirements related to strength, stiffness, abrasion resistance, and mechanical patency.

Medical fabrics are commonly made by the weaving of cotton, linen, polyester and lycra yarns.

The Itema Airjet A9500 for Medical fabrics

The Itema airjet A9500 offers best-in-class performances in terms of production speed and fabric quality when weaving the widest range of medical fabrics.

Elastic yarns, such as Lycra, are commonly used in weft when weaving medical fabrics. The A9500 features an innovative, Itema patented device the BLC - Brush Lycra Clamp to ensure a perfect handling of these specific yarns. Thanks to the BLC nozzle, the weft is held without movable parts to ensure superior fabric quality and reliability. Another Itema patented feature – the ELD Electronic Leno Device – with its innovative design, self-cleaning and no need to wind the leno spools, provides a perfect leno binding even at highest speeds, whilst reducing significantly operational costs.

Available on request, the Itema patented iREED® reduces the air consumption when weaving coarse yarns thanks to the new reed tunnel shape and new relay nozzles position which optimize the air flow in the reed channel.

Full Width Reed Tuckers reduce reeds stock and increase machine flexibility.
It is estimated that approximately 45 sqm of textile material is used on average in a car for its interiors, including fabrics for car seats, seatbelts, carpets, side panels and headliners.

Main key factors when weaving car interiors fabrics are resistance, waterproofing and good appearance. The yarns range from polyester, nylon, taslan to natural fibers, such as wool. Latest trends in car seat fabrics foresee the use of textured, fancy, chenille yarns to meet the growing fashion look requirements of the automotive industry.

The Itema Rapier R9500 and Airjet A9500 for Automotive Fabrics

The Itema rapier R9500 with FPA - Free Positive Approach Weft Transfer System ensures maximum versatility to weave the widest range of yarns and patterns - including fancy, textured, flock, chenille, bouclé and monofilament yarns used in automotive fabrics.

Excellent fabric quality, superior hand-feel weave and uniform fabric appearance are secured by the unique Itema Shed Geometry.

Full Width Temples for special fabric constructions are easily interchangeable with standard temples.

In case of high productivity, simple construction automotive fabrics, the Itema air-jet A9500 provides unbeatable speeds and efficiency whilst ensuring perfect fabric quality.
LENO FABRICS

Leno fabrics are based on the Leno Weave technique, in which two warp yarns are twisted around the weft yarns to provide a strong yet sheer fabric. Leno weave technique produces an open fabric (mesh fabric) with almost no yarn slippage or misplacement of threads. Leno fabrics are used in different applications, from construction to packaging passing through fashion apparel.

The Itema Rapier R9500, Airjet A9500 and Projectile P7300HP for Leno Fabrics

Leno fabrics - mesh fabrics are effectively woven on all three Itema weaving technologies thanks to dedicated devices with no speed limitations.

APPLICATIONS
Fiberglass, FIBC, secondary carpet backing, onion bags, hail protection fabrics

YARNS PROCESSED
PE, PA, PP yarns - PE, PA, PP tape yarns - spun yarns

COMMON WEAVING WIDTH
According to application
We believe in a trusted and reliable partnership with our Customers, supporting them throughout the whole life cycle of the weaving machine. Our dedicated after sales market qualified team promptly satisfy in real time every Customer’s request to ensure a win-win, long-term relationship.

The Itema skilled technicians and engineers provide:
- real-time textile, electronic and mechanical assistance
- tailor-made upgrade kits
- analysis and consulting regarding machines performances, including running costs and fabric quality

We recently launched a brand-new training center concept designed to provide tailored and accurate courses in a highly technological and user-friendly location. The Itema Campus is a fully functional center equipped with the latest loom models to give our Customers a warm welcome and the right learning environment. A team of skilled Itema technicians is fully dedicated to train the most demanding technical staff on how to maximize the performance of your Itema machines.

An intensive course to acquire all the necessary technical and textile knowledge to get the most out of the Itema weaving machines.

To facilitate and make even easier our Customers’ access to the Itema Campus Training Centers a dedicated online portal is available to easily and quickly book the desired technical trainings.

Discover more at www.itemagroup.com/training
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