

TERRY AIR-JET WEAVING MACHINE

DORNIER ServoTerry®



Quality creates value

DORNIER

WEAVING



READY FOR THE
FUTURE

Terry Air-Jet Weaving Machine DORNIER ServoTerry®: Setting new standards in terry weaving

The new terry air-jet weaving machine DORNIER ServoTerry®, is based on the stable basic concept of the proven DORNIER air-jet weaving machine system family. Electronic drives and optimized mechanical engineering support a wide range of applications with optimum performance and easiest handling. Yet it meets the highest demands on fabric quality, provides gentle terry reed impact and an extraordinary low warp end break level combined with excellent filling insertion consistency. DORNIER ServoTerry® is universal in use and allows producing high-quality velour and towel fabrics using single and plied yarns with variable pile heights and number of fillings per terry group. Its capabilities include hand and bath towels as well as terry cloth for leisure, sport, beach and swimwear.



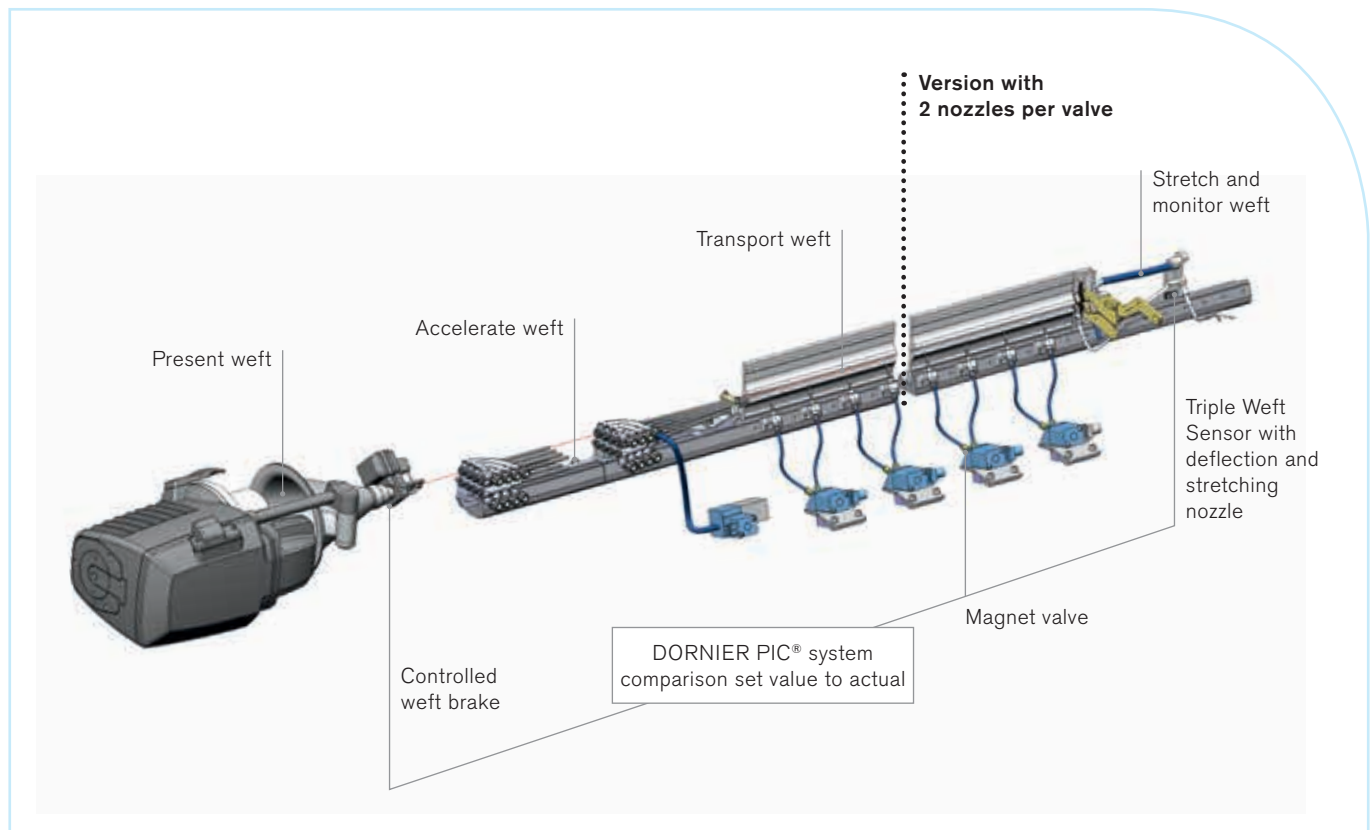
The spectrum of application of the terry air-jet weaving machine DORNIER ServoTerry®:

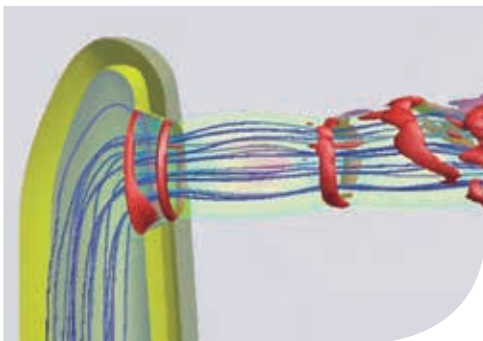
- Jacquard and dobby machines in nominal widths of 190 to 360 cm
- Free selection of pile height and number of fillings per terry group
- Precise mirrored pattern weaving
- Terry fabrics with high fabric weight
- Diverse borders with varying filling yarns
- 8 color filling feed
- Flexible, fast changeover from tucked to cut selvages

Forward thinking – the DORNIER pneumatic filling insertion system

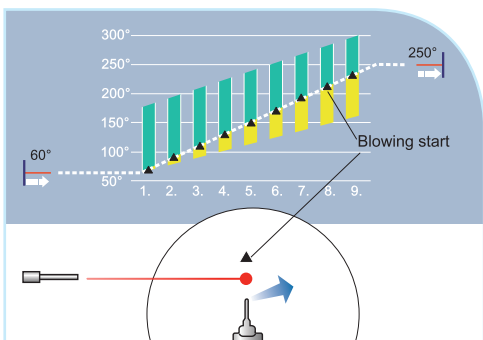
DORNIER's patented PIC®-System (Permanent Insertion Control) permanently monitors the most important electrical filling insertion elements. Right at the outset it recognizes imprecise operation of filling insertion elements. It sets new standards for process reliability and quality consistency. Feeders with reliable layer separation activated via CAN interface support exact feed length measuring for insertion. Flow optimized main and relay nozzles as well as short reaction times and low air pressure volumes in the regulation circuit of the patented DORNIER ServoControl® provide gentle, low tension force application on filling threads. This allows higher speeds with lower thread break counts combined with less yarn napping and therefore better final fabric quality. Combined with electronic controlled switching times and nozzle timing, these devices guarantee high flexibility with lower air consumption. The modular, patented Triple Weft Sensor with deflection and stretching nozzles opens up a new dimension in reliable filling monitoring.

The permanent control of the insertion nozzles' jetting sequence with a continuous standard value comparison (PIC®) assures weaving quality and precludes machine downtime. Defective or worn magnets are indicated immediately. Yarn-, speed- and width-related parameters for the control of the nozzles pick and pick are supplied from a data library. The timing of the electronically controlled filling scissor can be set on the display with the machine running.





Easily accessible electromagnetic valves supply air to up to 8 main nozzles in tandem design (option). Servo valves regulate the pressure for these main nozzles depending on the required thread arrival time. A precisely dimensioned air supply unit serves the main, relay and stretching nozzles. Decisive handling simplification: Semi-automatic filling threading by main and tandem nozzles per push-button.



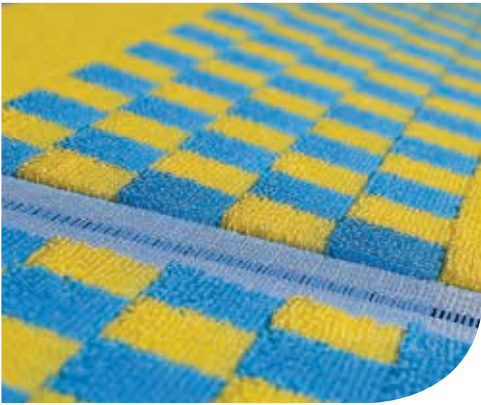
DORNIER EcoValveControl® – EVC

The newly developed DORNIER EcoValveControl® detects the arrival of the weft end in the area of the respective relay nozzle group.

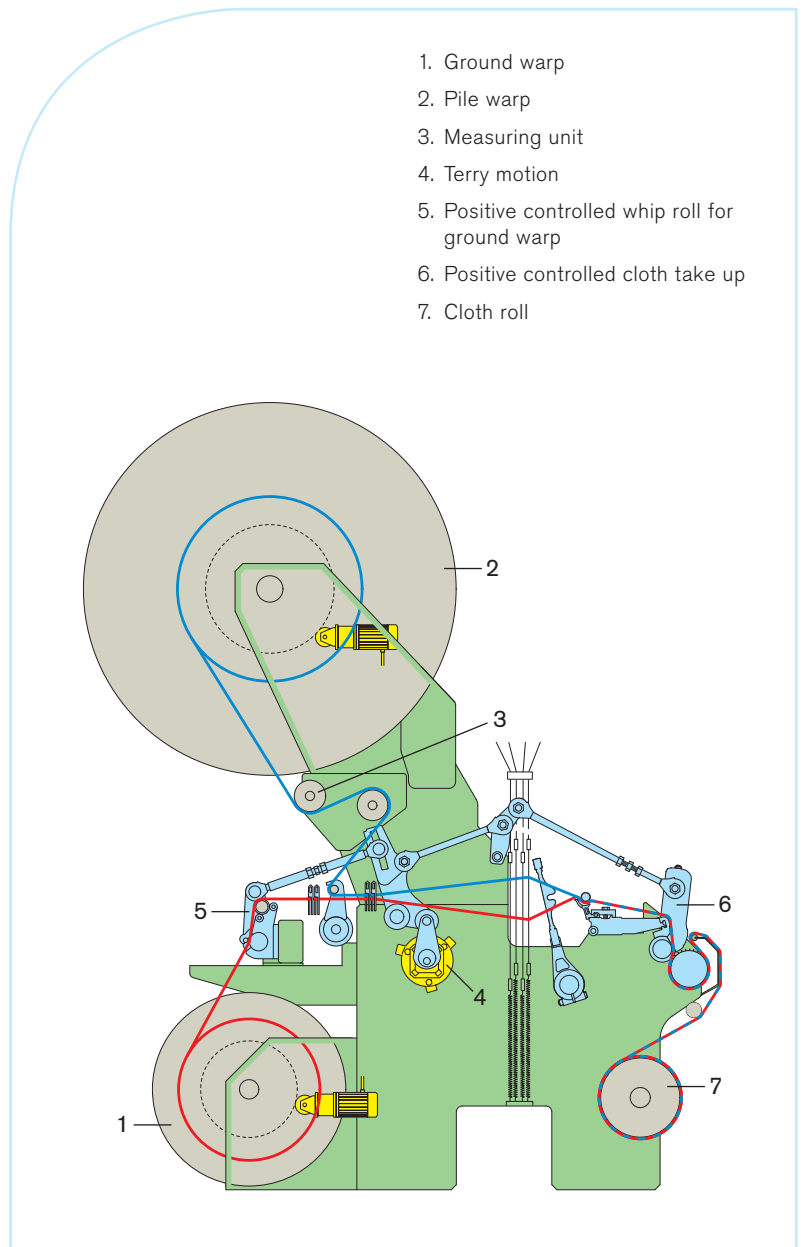
The magnet valve of the nozzles therefore opens only when the weft end enters the zone of the air-jet. The control automatically prohibits a premature opening, thus saving air.

The right combination of electronic and mechanical engineering guarantees gentle pile formation and a high level of quality

Pile formation is based on the principle of stable, precise cloth control. Positive control using a back-rest roll and terry bar in combination with the temples move the fabric to the reed for group beat-up. The integral reed drive remains and therefore provides the precision required for the group impacts. A compact, simplified back-rest roll system with optimized warp stop motion positioning improves handling and has a decisive influence on reducing warp end breaks. At the same time, a significant reduction in mechanical components reduces the maintenance effort. High precision in permanent pile warp feed monitoring bring constant pile height, best quality and constant cloth weight. The weaving process is so exact that precise mirrored patterns are possible with only minimum shearing waste for velour weavers.

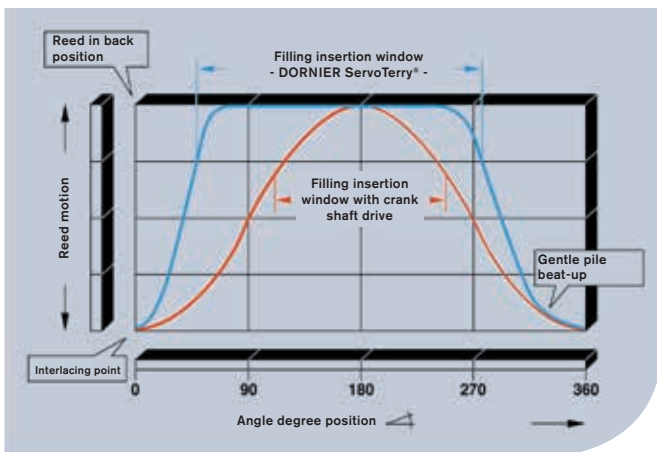


Pile heights are calculated automatically from terry spacing, work-in and filling group. A measuring device ensures the pile length needed for pile formation with a positively controlled increment precision of 0.01 mm independent of the warp beam diameter. This pile warp end feed method supports precise transition between varying pile heights, from border to first pile loop as well as from 3 to 4, 5, 6 or 7-pick terry fabric.





DORNIER air-jet terry weaving machine with electronically controlled Jacquard machine with DORNIER SyncroDrive®



By the compact back-rest roll, clean thread separation via exact warp stop motion positioning and the 20% reduction in deflection points bring a decisive reduction in warp end breaks.

Large filling insertion window through optimized reed movement

The reed dwell time can be adapted to the machine widths variably and therefore provides more time for the weft insertion. This enables the machine to process an extremely wide spectrum of different yarn types.

The special characteristics of the DORNIER ServoTerry®: Reed movement with a large insertion window is the smooth movement sequence for a gentle terry beat-up.

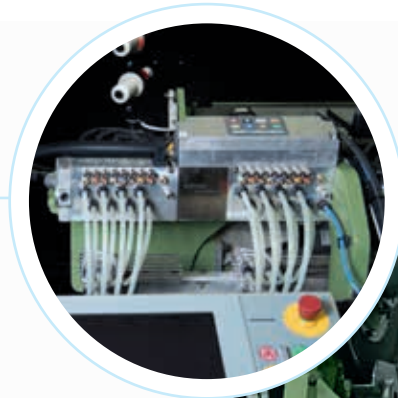


The DORNIER ServoTerry® at a glance: Sturdy technology with intelligent controls

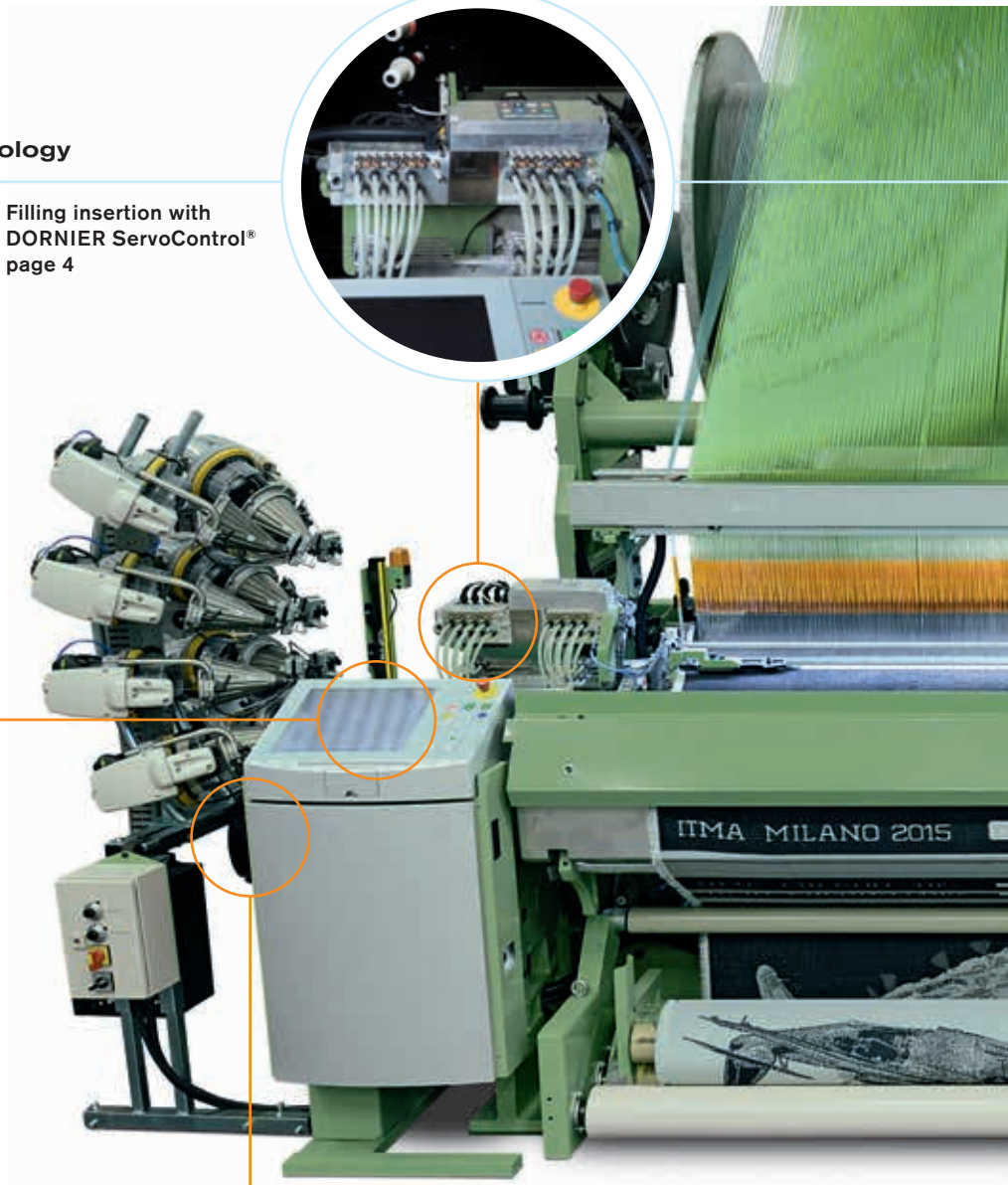
The air-jet terry weaving machine DORNIER ServoTerry® is designed on the stable basis concept of the proven DORNIER system family. It offers thanks to the electronic drives and an optimised motion characteristics a large application spectrum with an optimal running performance and easiest handling.

Fast Ethernet Technology

Filling insertion with
DORNIER ServoControl®
page 4

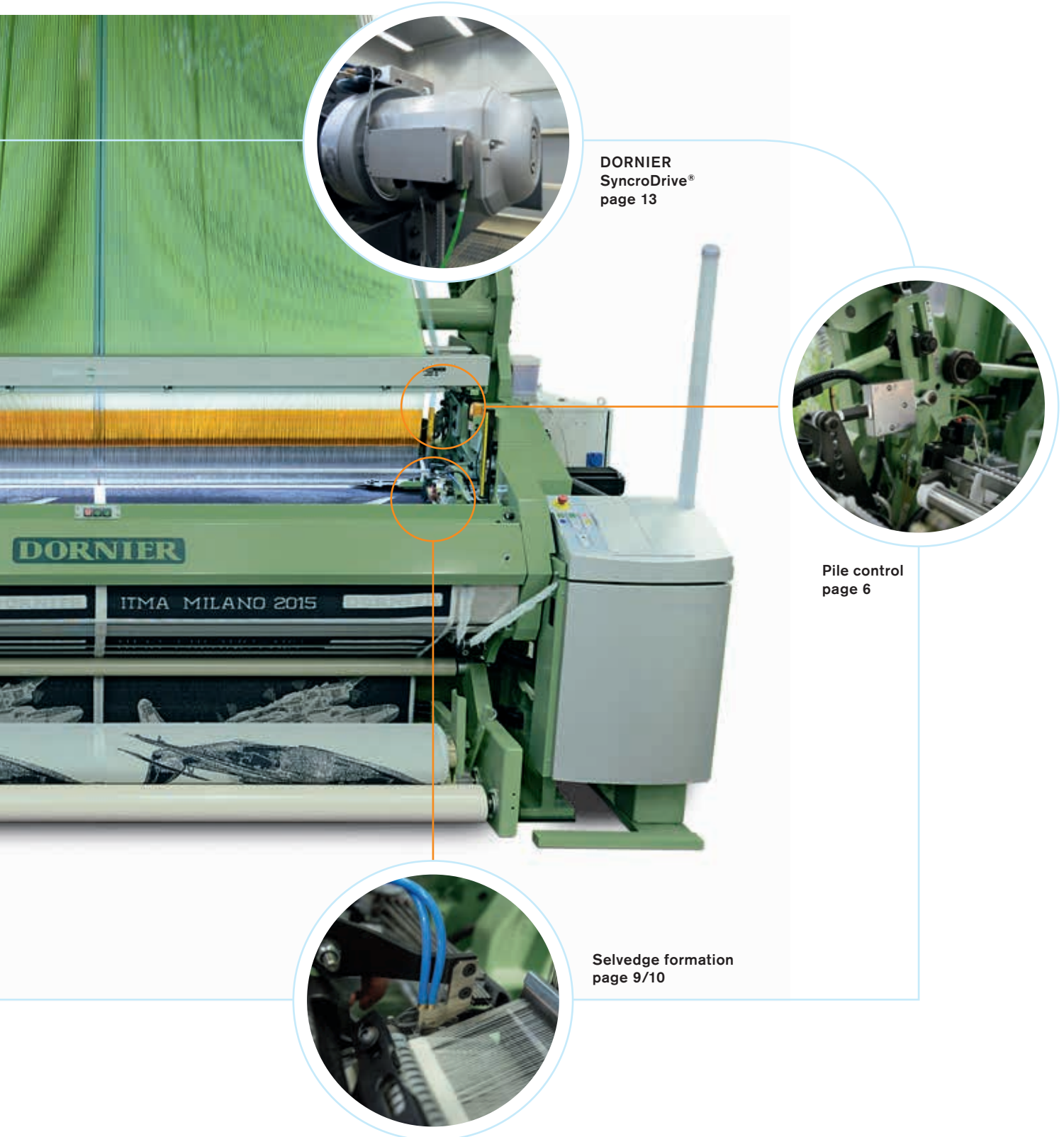


DORNIER ErgoWeave®
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DORNIER SyncroDrive®
page 13

Significant improvements could be implemented with respect to energy consumption and machine performance. This electronic control is now also available for the air-jet terry DORNIER ServoTerry® FT.



**DORNIER
SyncroDrive®**
page 13

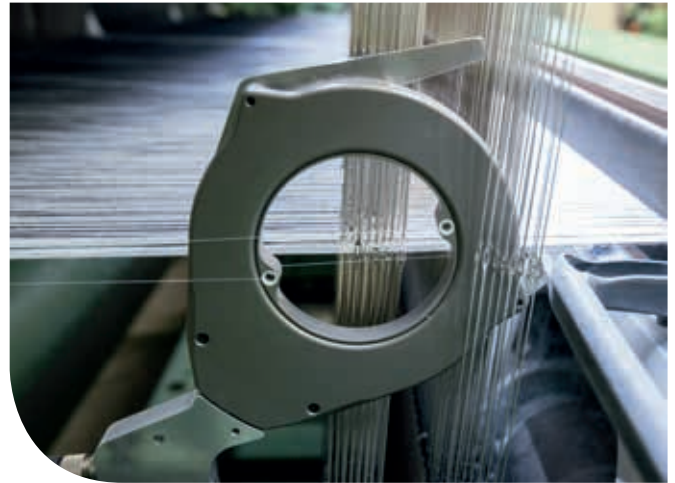
Pile control
page 6

Selvedge formation
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Reliable selvedge formation at high weaving speeds – the DORNIER selvedge formation devices



On the pneumatic tucker, DORNIER PneumaTucker®, threads are tucked using an electronically controlled air-jet. The number of filling threads to be tucked simultaneously and the timing of the electronic scissors can be set easily on the display.



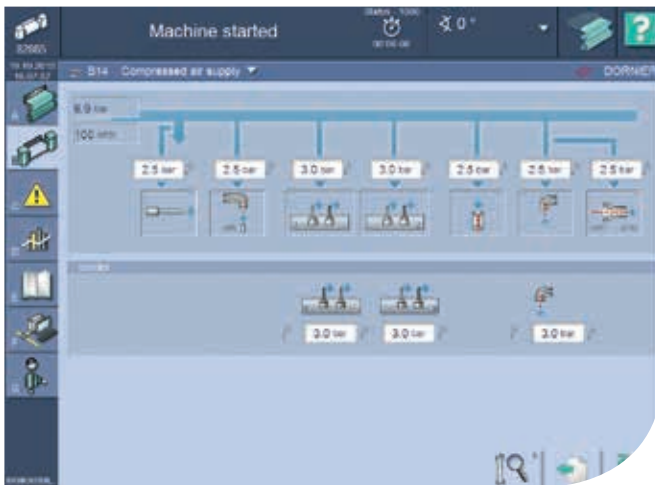
The patented full-turn leno DORNIER MotoLeno® works with system-dependent direction reversal. No extra shafts are required for the leno. It creates an intensive binding with exceptionally short thread ends and uses standard king spools.

Perfect fabric selvedges - quality due to latest electronics

DORNIER offers innovative, patented selvedge devices with decisive advantages. The freely programmable 2-end full-turn leno DORNIER MotoLeno® can be used for any filling thread type and fabric design. The result – fast selvedges without thickening that remain secure during finishing. Warp breaks in the selvedge area are drastically reduced. Although leno selvedges predominate in terry weaving, DORNIER also offers tuck-in devices for outer and center selvedges. The pneumatic tucker DORNIER PneumaTucker® was developed for this purpose and creates clean tuck-in selvedges without mechanical moving parts and does not restrict the maximum machine speed. Weavers save yarn material and spare parts, personnel workload is reduced and efficiency increased.



Optimal weft insertion and control technology for border formation – with variable pressure levels and warp control options



Optimal weft insertion pressure for the complete weaving process for the reduction of energy consumption and expansion of pattern variety

In addition, the possibility has been created to work with two different tank pressures for the relay nozzles. They can be programmed electronically and selected pattern-controlled. Therefore, weaving of the terry ground and the borders can be set optimally in the weft insertion parameters, thus further reducing weft breaks and increasing insertion performance. The stable reed drive permits weaving of high-density borders with different materials such as cotton, chenille, viscose etc. Furthermore, the terry weaving machine with its positive control allows to weave pleated folds in the borders. These developments offer gentle processing while fulfilling highest quality demands.

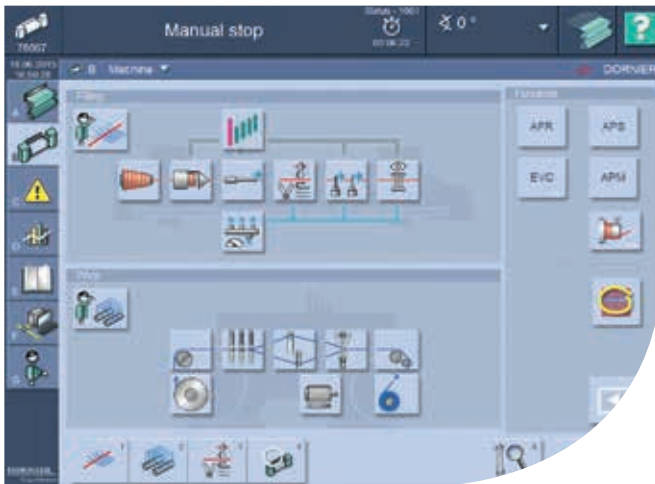


Filling control – the Triple Weft Sensor

The patented and conceptually modular Triple Weft Sensor, consists of a first and second filling stop motion combined with the stretching nozzle. It guarantees precise filling control of even most subtle yarns. The first filling stop motion monitors thread arrival, the second one thread breaks during insertion. The distance between both filling stop motions can be adjusted in accordance with filling yarn elasticity. After reed beat-up the thread is taken up by the deflection nozzle so that the stretching nozzle remains always free for the next filling insertion.

FT control system and DORNIER ErgoWeave®: Complex technology provides easy handling

Born out of practice, the new DORNIER ErgoWeave® operating concept enables for intuitive machine handling for the first time. The innovative FT control system newly developed for it forms the foundation stone for significant further improvements in the most diverse variety of sub-assemblies. It guarantees high reliability and efficiency in woven fabric production – with a technology which is open to future developments.



Important innovations

- Data transfer is effected in real time
- Short response times guarantee faster reaction of all electronically controlled components at any time during the weaving process
- The defined time cycles are precisely and reliably observed and automatically corrected to the weaving machine's operational condition

Fast-Ethernet-Technology control system: Innovative and fit for the future

DORNIER is again successfully producing a revolutionary innovation in the new weaving machine generation's control technology. As with the introduction of the CAN-Bus in 1990, DORNIER remains true to its pioneering role, bringing, in the shape of the FT control system, a completely new type of system to the market which makes the reliable transfer of the largest quantities of data possible in real time.

The entire communication structure, with control, process and reference planes, is effected via Fast-Ethernet-Technology bus. This system is also co-responsible for safety on board of the new A380 Airbus. This shows impressively the high status DORNIER places on data transfer reliability. The new control system is a sustainable innovation carrier, also guaranteeing for forthcoming new developments in electronics and drive technology.

DoNet (Global Communication Network)

A standard integrated Ethernet interface permits to connect the weaving machine to all common production data acquisition systems or to a network. DoWeave, a PC program, is available for processing and managing machine, style and pattern data. When the machines are networked, style and pattern data can be exchanged bidirectionally between the DoWeave PC and DORNIER ErgoWeave®. Furthermore, software updates can be centrally provided and machine data secured (backups).

When an Internet connection is set up between DORNIER and your DoWeave PC, with prior authorization, remote diagnostics provide assistance for troubleshooting via Teleservice (DoTes).

DORNIER ErgoWeave®'s integrated browser permits to use own applications of your intranet. Via Internet it is possible to place speedily and comfortably orders by PC using our proven EPOS system.

Online documentation

The online help provides directly a description of the menu pages, parameters and messages, relevant for the current context, and saves the user from having to search in the software manual.

In addition to online help, the entire content of the printed user instructions is displayed on the dialog panel. This online user instructions provide information required for daily work on your weaving machine:

Overviews, function and component descriptions, information for your safety, setting work, operating instructions, cleaning, lubricating, maintaining, troubleshooting and repairing.

An intelligent link between the online help and the online user instructions makes it very comfortable to swap between the two. Interactive tables of contents and indices further facilitate locating information.

The DORNIER ServoTerry® is trimmed from A to Z for efficiency

The air-jet terry weaving machine combines intelligent solutions which – in their totality – represent a technological quantum leap resulting in a clear-cut improvement of economy. The new FT control ensures optional resource usage, making extremely flexible machine operation possible. Various main assemblies obtain decisive feature changes – beginning with the drive, via filling insertion and statistical evaluations, through to quick and reliable product reproducibility. The air consumption is – compared with its already excellent predecessor – again substantially reduced. Combined with important increases in productivity and shortened set-up times this decisively raises economics.

Reduced maintenance needs

- CompactDrive with reduced maintenance times
- DirectDrive and DORNIER SyncroDrive® drive systems without clutch-brake unit
- Maintenance-free single-hole relay nozzles
- Compact throttle block with stable arrangement of air-hose connections

Reduced set-up times

- Faster width changes
- Integrated speed control
- Effective reproducibility of electronic article data on settings
- Electronic adjustment of shed-closing during operation with DORNIER SyncroDrive®



Efficient and secure production

- Reduced manual time on filling stop repairs through compact throttle block
- Gentle insertion of delicate yarns and low tensile strength material
- DORNIER PIC® – permanent monitoring of electronic filling insertion components
- Gentle reed movement for an even pile creation

Reduced air consumption

- New valve technology with faster reaction-times and reduced dead volumes
- New, faster DORNIER ServoControl®-2 with integrated monitoring of entry air pressure
- DORNIER EcoValveControl® EVC
- Different pressure levels programmable for ground fabric and the border via the electronic air pressure supply unit

The Lindauer DORNIER GmbH: A company with a background and a future

Lindauer DORNIER GmbH has been producing weaving machines for over half a century. Since the beginning of our technical developments in weaving, our central focus and our unbroken enthusiasm are aimed at perfected technologies for the production of high quality woven fabrics. "Quality creates value" is our creed and we are doing our utmost to continue setting quality standards.

The DORNIER system family: Air-jet and rapier weaving machines

The unique DORNIER system family consists of air-jet and rapier weaving machines based on an identical, robust machine frame and equipped with uniform electronics. The operative and maintenance personnel are therefore working on identically designed machines – despite different filling insertion systems. Accessory exchangeability and largely identical spare parts reduce inventory and save money.

Technology leader with two supporting pillars

With both its company divisions – weaving machines and specialty machines – DORNIER belongs to the technology leaders of the world. In specialty machine construction, DORNIER is market leader for the engineering and production of drying and film stretching plants. In addition to the packaging industry, these films find ever increasing use in high-tech products like semi-conductors, condensers and film displays for mobile telephones and flat screens.

With you in dialogue

A meaningful dialogue with you, the users of our technologies, is pivotal for the success of DORNIER. For us it is matter of concern to provide prompt and competent support throughout the world at any time. You profit simultaneously through the constant exchange of experience with our skilled technicians. Therefore we maintain our own technical textile laboratories including trial machines for weaving trials in Lindau (GER), Charlotte (USA) and Shanghai (PRC). Sales teams with technicians are available for you in Mumbai (IND) and Istanbul (TR) too.



The DORNIER ServoTerry® in detail

Filling insertion

System with main and relay nozzles, profiled reed, with Permanent Insertion Control (DORNIER PIC®)
 DORNIER ServoControl® and DORNIER EcoValveControl® EVC
 Electronic air pressure supply with two different programmable pressure levels for the relay nozzles for ground fabric and border

Main nozzle

Mobile tandem booster nozzle (TDM)
 Tandem nozzle Plus (option)
 with semi-automatic threading-up device and Positive Weft Clamp type PWC (option)

Weft Sensor

Triple Weft Sensor

Reed drive

Bilateral gearboxes with complementary cam assemblies for a soft motion-sequence for a gentle terry impact

Width reduction

Symmetric up to 40 cm per side, asymmetric up to 100 cm
 Larger reductions on request

Filling insertion rate

Over 1,820 m/min, double pick insertion possible

Terry parameters

Stepless adjustment of pile reed spacing value up to 22 mm
 Adjustable are: 32 pile heights, 3- to 7-pick terry, 32 different densities

Yarn counts

From Ne 3 - Ne 70 either single, plied, fancy spun yarns or chenille yarns
 From 40 dtex - 1,200 dtex either flat, textured or fancy filament yarns

Filling colors

1 - 8 colors, any sequence, pick at will

Filling accumulators

From various manufacturers, controlled through the DORNIER-Electronic (CAN)
 Controlled filling tension devices

Automatic Filling Repair AFR

Automatic filling break repair AFR for the 1st and 2nd pick (for 3-pick terry)

Shed formation

Dobby for up to 20 harness frames with 12 mm pitch
 Electronically controlled Jacquard machine with up to 12,000 hooks

Selvedge formation

Two-end disc leno device DORNIER MotoLeno®
 Tucked selvedges with DORNIER PneuMaTucker® (right, left and in the center)
 Quick change from tucked to leno selvedges and vice versa

Cylinder temples

Swivel-mounted

Electronic Warp Let-off motion EWL

Electronic warp let-off motion with absolute sensor and setting accuracy of +/- 1 gram
 Ground warp beam support EuroFix and universal
 Top warp beam support EuroFix and pivot
 Ground warp beam dia. 800 and 1,000 mm, top warp beam dia. for up to 1,250 mm

Electronic Cloth Take-up motion ECT

Electronic, synchronized with EWL
 Setting accuracy 0.01 picks/cm
 Cloth roll diameter 540 mm, with off-loom take-up up to 1,800 mm

Automatic Start-mark Prevention ASP

ASP including harness levelling, high torque start-up of main motor, single pick insertion mode

Electronics

Modern FT technology with Fast-Ethernet-Technology
 15" touchscreen display DORNIER ErgoWeave®
 Modern safety technology
 Software update via USB or online

Electronically-regulated weaving parameters

32 different values can be pre-programmed for the filling density, speed and ground warp tension and then be read out of the pattern for weaving operation

DoNet (Global Communication Network)

Total networking between machine, host computer and DORNIER for spare parts ordering, user manuals, setting instructions, style and performance data and remote diagnostics by teleservice

Please ask our sales and service personell for further details

Machine type code

Terry Air-Jet Weaving Machine DORNIER ServoTerry®

ATSF 8/S 260 G

Number of filling colors
 Shed formation

S: Dobby machine

J: Jacquard machine

Nominal width in cm

C: CompactDrive

D: DirectDrive

G: Separate drives DORNIER SyncroDrive®

Dimensions

Nominal width	Machine width*	max. reeded width J	max. reeded width S	min. reeded width**
cm	mm	mm	mm	mm
190	6,210	1,900	1,880	900
220	6,510	2,200	2,180	1,200
240	6,710	2,400	2,380	1,400
260	6,910	2,600	2,580	1,600
280	7,110	2,800	2,780	1,800
300	7,310	3,000	2,980	2,000
320	7,510	3,200	3,180	2,200
340	7,710	3,400	3,380	2,400
360	7,910	3,600	3,580	2,600

Overall depth

For 800 mm ground and 1,000 mm pile warp beam ø 1,890 mm
 For 800 mm ground and 1,250 mm pile warp beam ø 1,890 mm

For 1,000 mm ground and 1,000 mm pile warp beam ø 1,990 mm
 For 1,000 mm ground and 1,250 mm pile warp beam ø 1,990 mm

* Width valid for dobby machines with 6 colors
 ** Further width reductions on request

For precise measurements of each type of machine outlined, please contact DORNIER

Subject to change

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