



COLARIS.HIGH PERFORMANCE PRINTER FOR SPECIAL APPLICATIONS



Home Textiles Carpets
Fashion Towels Flags & Banners
Automotive Decoration Apparel

COLARIS

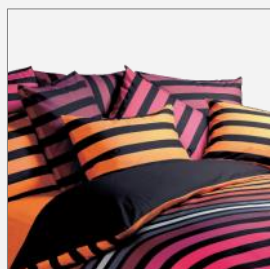
ZIMMER AUSTRIA

140 years of revolutionary innovation and developments with well-known quality and service for the textile industry on a global scale.

The modular layout of **COLARIS** allows not only integration of various machine components such as inline pre-treatment or inline finishing on various different products but is additionally ready for implementation of future technology.

The concept stands for

- Modular design
- Robust structure
- Precision in printing
- Low maintenance costs
- Most economical printing
- Ready for the future



APPLICATIONS		Ink types (reactive, disperse, acid, pigment, vat)				
		R	D	A	P	V
Fashion Printing	Fashion clothing	●	●	●	●	●
	Underwear/Lingerie	●				
	Night wear	●			●	
	Sportswear	●	●	●		
	Swimwear		●	●		
	Bottom wear	●			●	
	Outer wear	●	●	●	●	●
	Function wear		●		●	
	Accessories	●	●	●	●	●
Home Textiles	Bed & bath	●	●		●	●
	Window fashion	●	●		●	●
	Upholstery	●	●			●
	Bespoke fabrics	●	●		●	●
	Decorative fabrics	●	●		●	●
	Velours	●	●	●		
Promotion Fabrics	Terry fabrics	●	●			●
	Blankets		●			
	Flags & banners		●	●		
	Interior decoration		●		●	
	Parasol & sunshades		●		●	
Technical Textiles	Automotive		●			
	Architectural use		●		●	
	Canopy & awning		●		●	
	Camping & tents	●	●		●	●
	Military use	●	●	●	●	●

COLARIS

SPEED MATTERS!

Quality textile printing is related to saturated colors, best penetration and excellent fastness.

High demand of ink is not effecting COLARIS print speed.
Actual ink consumption depends on substrates and is controlled by RIP software.

COLARIS.INDUSTRIAL DIGITAL INKJET PRINT LINES

COLARIS, the high performance digital textile printer offers now an enhanced field of use. It can even be customized as a 5,200 mm specialized carpet printing line. The printer offers unmatched flexibility and can be tailored to the needs of any potential customer, no matter if it is used as a fashion or carpet printing line.

All print lines can be combined with analogue or digital inline pre-treatment, fabric press station, various fabric drying and ink fixation systems – either inline or offline, whatever being beneficial to achieve the required result.

Due to its modular design the **COLARIS** printers are suitable for printing on any kind of textile incl. woven, knitted and nonwoven substrates within a weight range from 30 through 1,200 g/m².

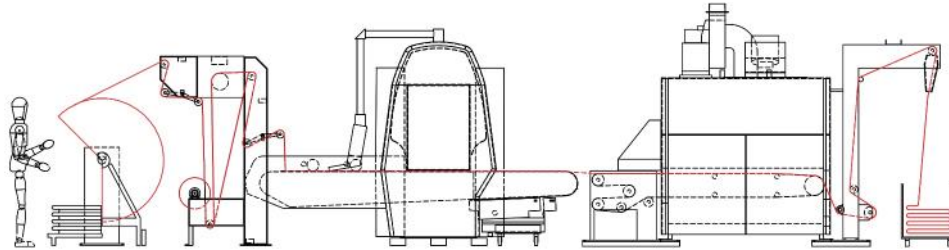
The printers are available with 4, 6 or 8 color set-up, with up to 16 print heads in 4 color mode or up to 8 print heads per color bar when more than 4 colors are installed. It is also possible to fill color bars with clear ink or other compounds that are supportive to achieve a certain demand.

When designing the **COLARIS** maximum attention has been given to the economics of printing and to an eco-friendly print production. Substantial reduction on ink consumption and saving of energy are achieved through new print head and process technology for various textile substrates.

COLARIS.CONFIGURATIONS

	COLARIS 12-2200	COLARIS 48-2200	COLARIS 48-2600	COLARIS 48-3400	COLARIS 96-2200	COLARIS 96-2600	COLARIS 96-3400
Max. print width	2200	2200	2600	3400	2200	2600	3400
Number of colors	up to 12	up to 12	up to 12	up to 12	up to 12	up to 12	up to 12
Print heads/color	1 or 2	4 / 8	4 / 8	4 / 8	8 / 16	8 / 16	8 / 16
Max. sqm/h at 400 x 800 dpi	120	240 / 470	260 / 510	300 / 580	470 / 890	510 / 970	580 / 1110
Recommended dryer	IR	3-pass	3-pass	3-pass	2 x 3-pass	2 x 3-pass	2 x 3-pass

COLARIS

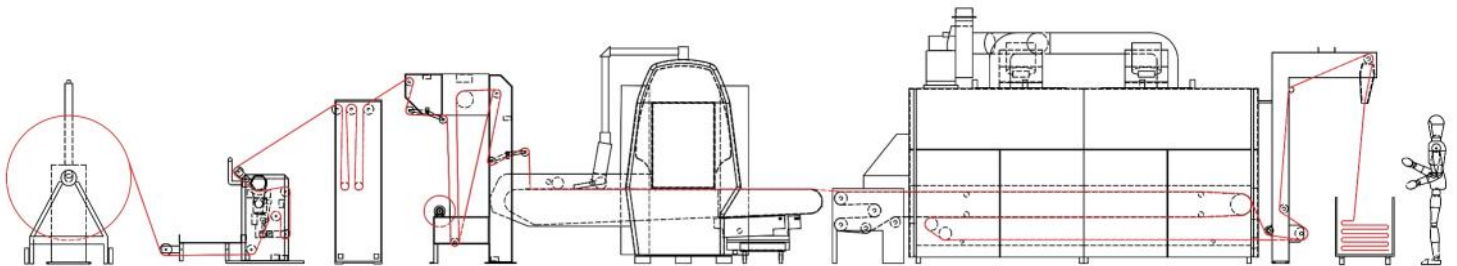


Total length: approx. 12 m

COLARIS - BASIC

COLARIS digital textile printing line for pretreated flat textiles, made from cellulose, polyester, polyamide fibers (incl. Lycra blends) which can be printed with Reactive, Acid, Disperse or direct Sublimation inks.

It is widely used for fashion, apparel, home textile, upholstery, decorative fabrics, flags & banners, interior decoration, window fashion, sun blinds and shades, camping articles, automotive fabrics and many more.



Total length: approx. 18 m

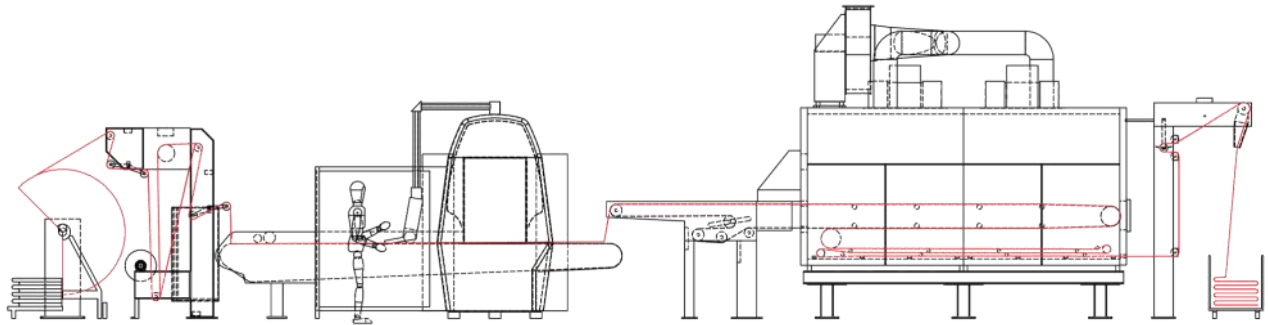
COLARIS - INLINE PRE-TREATMENT MAGNOROLL GMA

COLARIS combined with in-line pre-treatment system **MAGNOROLL**

Acts bi-functional: pretreats the fabric and enhances the penetration on heavy products at reduced ink costs.

The inline pre-treatment reduces process costs dramatically and increases print penetration and fastness. On heavy substrates the separate padder pre-treatment is not needed anymore. This is an ideal combination for prints on heavy upholstery fabrics incl. linen, velvet and flock fabrics. Also penetration on flag material is improved dramatically.

COLARIS



Total length: approx. 17 m

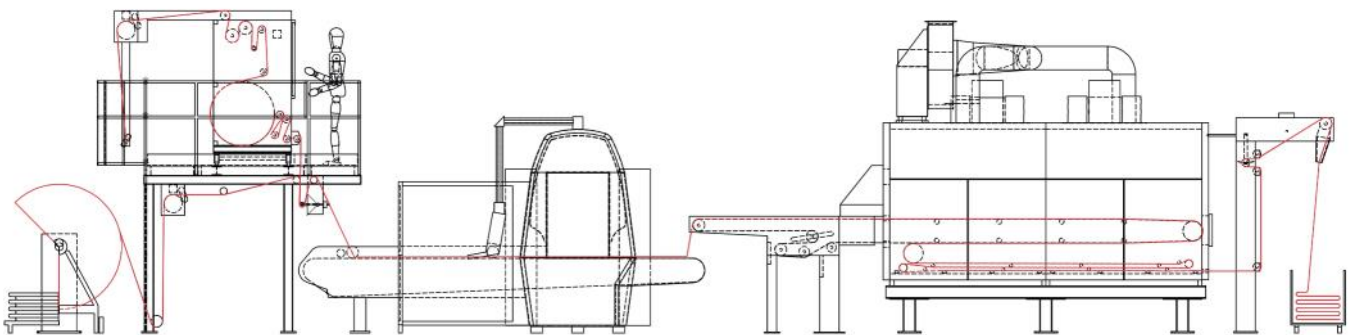
COLARIS - INLINE DIGITAL PRE-TREATMENT

COLARIS printing line for velour velvet and other voluminous substrates.

The fabric is either supplied by A-frame bales or by plated stacks, and is positioned by the fabric guiding system onto the printing blanket.

The **DPT (Digital pre-treatment)** applicator which is based on the **CHROMOJET** printing system applies the pre-treatment digitally controlled at the required amount. The pre-treatment is then distributed and penetrated into the substrate by a distribution press roller.

The fabric is printed in wet on wet condition which enhances penetration of the pile fabric and reduces ink consumption substantially.



Total length: approx. 19 m

COLARIS - TOWELS

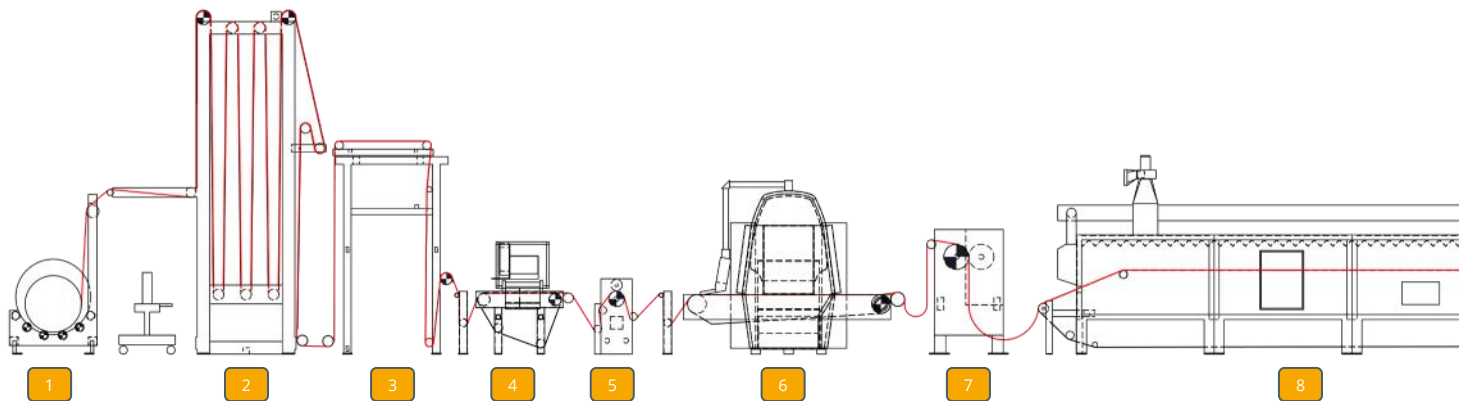
COLARIS printing line for terry fabrics.

The terry fabric is either supplied by A-frame bales or by plated stacks, passes the needle wheel fabric alignment system and is fixed in weft aligned condition onto the printing blanket.

The **DPT (Digital pre-treatment)** applicator which is based on the **CHROMOJET** printing system applies the pre-treatment which is then distributed by a traversing press-roller into the print substrate.

Direct printing onto the wet fabric enhances the penetration and reduces the ink consumption remarkably.

COLARIS.INDUSTRIAL INKJET PRINTING ON CARPET

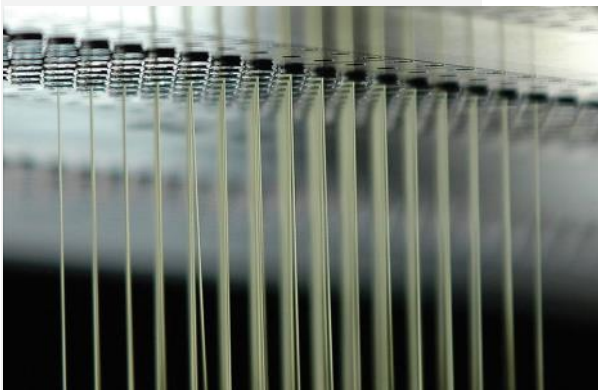


COLARIS.LINE - WITH CHROMOJET INLINE DIGITAL PRE-TREATMENT



A combining of the **CHROMOJET** valve based digital INKJET printing line, successfully used in the carpet printing industry for many years, with the **COLARIS** digital piezo based INKJET printer makes it possible to push the print resolution beyond any limit known so far.

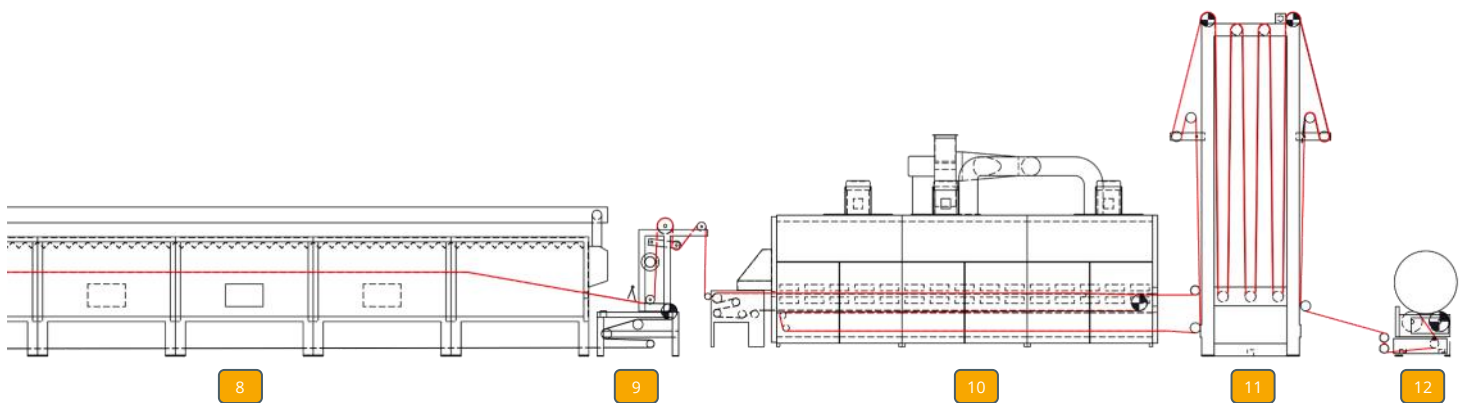
The **CHROMOJET** technology is used as a digital applicator for INKJET pre-treatment. The applied pre-treatment, equally distributed in the pile fabric by a penetration roller is subsequently printed with the **COLARIS.INKJET** piezo printer in a wet on wet process.



This specially developed process combines the advantages of both systems: perfect penetration by **CHROMOJET** technology and high resolution printing by **COLARIS.INKJET** piezo printer.

Print resolution can be 800 dpi or more. A large color gamut with highest image quality including fine degradation of colors are the benefits. This makes the reproduction of photographic images much easier by using a real four-color printing with CMYK process colors.

COLARIS



COLARIS.FINISHING LINE - STEAMING, WASHING, DRYING



The layout of a typical PA carpet printing line for loop or cut-pile carpets will be based on the well-proven components from a **CHROMOJET** print plant.

- 1 Fabric unrolling
- 2 Roller compensator
 - (pre-steamer or pre-washer)
- 3 Carpet centering device
- 4 **CHROMOJET.DPT** applicator for inline pre-treatment of the carpet
- 5 Distribution & penetration roller
- 6 **COLARIS** digital inkjet piezo printer
- 7 Press station for enhanced penetration of the print
- 8 Horizontal inline steamer
- 9 Carpet washer with vacuum extraction
 - (carpet pile impregnation)
- 10 High capacity nozzle dryer or stenter dryer
- 11 Roller compensator
 - Inspection table
- 12 Re-rolling

COLARIS



HIGH PERFORMANCE industrial inkjet print heads

- StarFire™ SG1024/SA 12 - 35 pl
- StarFire™ SG1024/MA 30 - 75 pl
- StarFire™ SG1024/LA 75 - 180 pl

TECHNICAL DATA

ZIMMER AUSTRIA offers 3 different models of the new high performance industrial inkjet print heads from FUJIFILM Dimatix. The **StarFire™ SG1024 (SA/MA/LA)** is a compact, self-contained unit built to withstand demanding industrial textile printing and other applications. It uses field proven materials to deliver consistent output over a long service life with continuous ink recirculation and single color operation at 400 dpi. Equipped with a single replaceable metal nozzle plate that is designed to withstand abrasion and to resist damage.

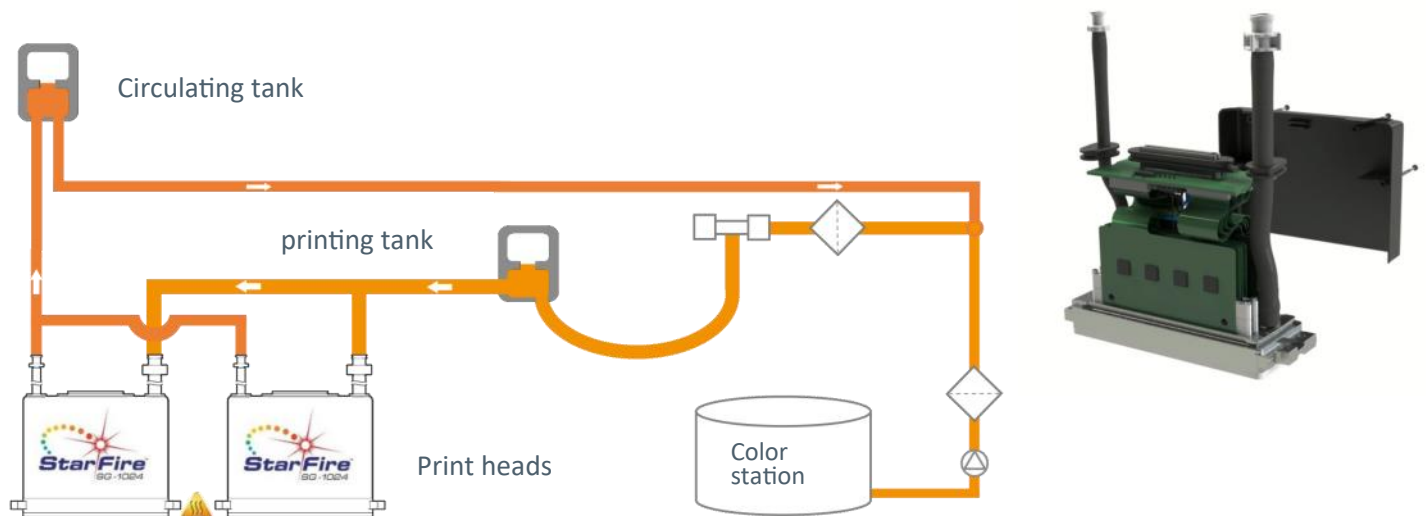
Print head models	StarFire™ SG1024/SA	StarFire™ SG1024/MA	StarFire™ SG1024/LA
Number of addressable jets	1,024	1,024	1,024
Waveform & fluid dependent drop size	12 - 35 pl	30 - 75 pl	75 - 180 pl
Applications	Light & medium fabrics i.e. fashion, home textiles, flags & banners, ...	Heavy textiles i.e. carpets, velour, plush, terry products ...	Voluminous substrates i.e. carpets, furs, blankets, ...

TECHNICAL FEATURES

- Robust and reliable construction
- Coated metal nozzle plate - to withstand abrasion and resist damage
- High firing frequency - for high productivity
- High drop velocity - distance between print head and nozzle can be up to 10 mm
- **VersaDrop™** - Incorporated binary and greyscale jetting modes
- **RediJet™** - Continuous ink recirculation system to avoid nozzle blockage and to reduce ink waste
- 3 interchangeable printing modules with different drop sizes for a wide range of applications



INK.SUPPLY & CIRCULATION SYSTEM



BASICS

Most people are talking about resolution and dpi only. In textile printing most important is to have the right ink amount to get a good penetration and vibrant colors. The actual ink demand determined by the fabric is identified by the calibration print.

The ink amount or (ink lay-down) is specified by the following parameters:

- Resolution in X and Y axis
- Drop size in pico liters
- Number of passes (used to increase the X-dpi and the ink amount)

The ink lay-down on a single color can be calculated as follows:

$$\text{Ink lay-down (ml/m}^2\text{)} = \text{X-dpi} * 1,000 \text{ mm} / 25.4 \text{ mm} * \text{Y-dpi} * 1,000 \text{ mm} / 25.4 \text{ mm} * \text{dropsize (pl)} / 1\text{E}9$$

$$\text{Simplified: Lay-down (ml/m}^2\text{)} = \text{x-dpi} * \text{y-dpi} * \text{dropsize} / 645,000$$

Example

$$2 \text{ passes with smallest drop size at } 400 * 800 \text{ dpi: } 400 \text{ dpi} * (2 * 400) \text{ dpi} * 10\text{pl} / 645,000 = 5 \text{ ml/m}^2$$

$$3 \text{ passes with biggest drop size at } 400 * 1,200 \text{ dpi: } 400 \text{ dpi} * (3 * 400) \text{ dpi} * 240\text{pl} / 645,000 = 179 \text{ ml/m}^2$$

The actual ink laydown of a design is in most cases below the single color max. ink lay-down!

PRINTING.SPEED

The printing speed depends on the following parameters

- Required ink lay-down
- Number of passes

If you compare the performance of inkjet printers you should always use a printed sample and compare print quality, penetration and the speed achieved on this sample.

The theoretical printing speed using a single pass is in many cases not sufficient to reach a good quality.

COLARIS

COLARIS.ADVANTAGES

- High-capacity industrial ink jet printing system for textiles and carpets
- Built for 24/7 operation
- Print head failure does not stop production - printing continues at reduced speed
- Suitable for light weight silk to heavy velour terry towels and carpets
- Recommended inks ensure excellent fastness properties and Oeko-Tex® Standard 100
- Open ink system – any ink approved by **ZIMMER AUSTRIA** can be used
- Open to various RIP Software. i.e. Caldera®, Inedit®, and others.
- Fully assembled printer for easy shipment and quick start-up
- Multilingual user interface
- **ZIMMER AUSTRIA** gives full support with technical and technological know-how
- Customer support by local service partners
- Simple and easy upgrade of hard- and software
- Remote maintenance system included



MODULAR.LAYOUT

- Fabric feeding device built according to customers' requirements (A-frame, small batch unrolling, lattice guiding for elastic fabrics, etc...)
- Patented inline pre-treatment by **MAGNOROLL** application system or **DPT** (Digital inline pre-treatment) with a **CHROMOJET.PRINTER**
- Suitable for any fabric structure incl. woven, circular and flat knits, flock, velvets, velour terry fabrics, nonwoven, tufted and many more
- The already existing printing widths 2,200, 2,600 and 3,400 mm have been completed with 4,200 and 5,200 mm width to cover the demand of digital carpet printing
- Ink setup for CMYK, CMYK+2 or CMYK+4 or with 2 x CMYK for double speed printing
- Efficient head cleaning
- Permanent ink circulation system for reduced maintenance costs and reduced ink consumption
- Ink storage tanks with large capacity, allowing refill from any canister size without production stoppage
- Various post-treatment equipment available

COLARIS

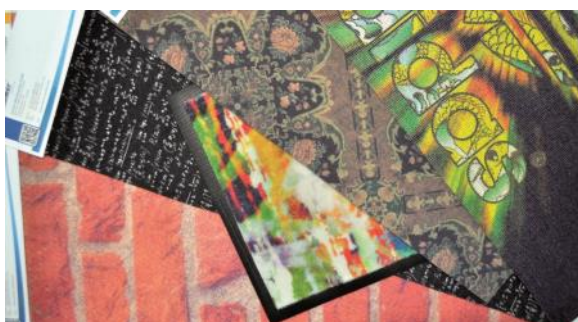
GOOD.PENETRATION IS A MUST FOR YOUR PRINTING PRODUCTS



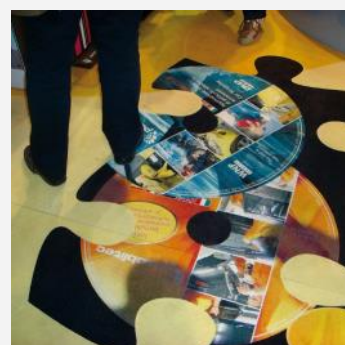
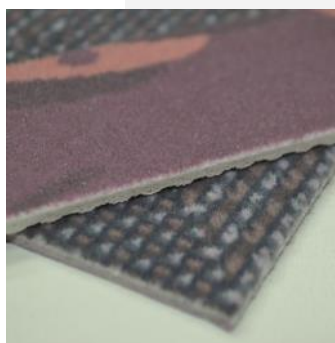
Perfect penetration avoids „grinning“ on elastic substrates



Controlled penetration on velour products



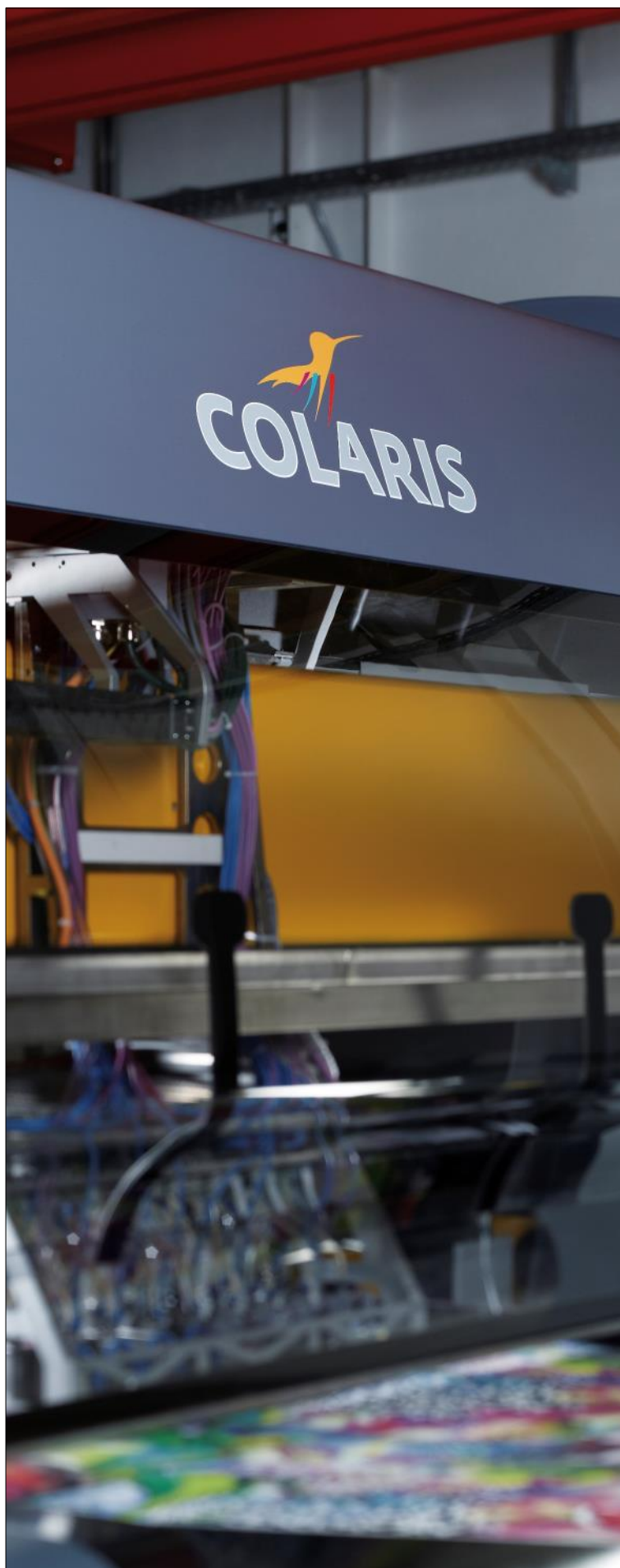
Floor coverings from needle felt, flock and flat woven substrates



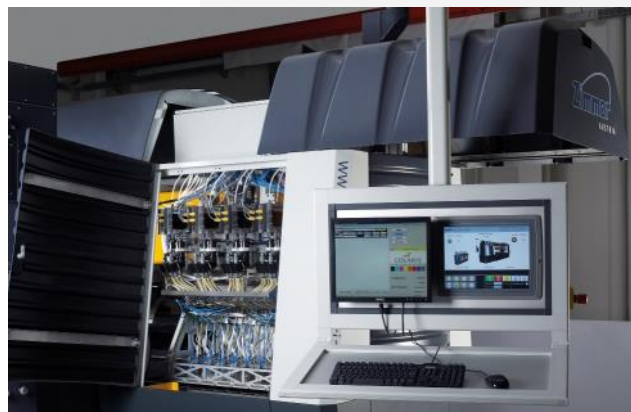
Flags and banners out of polyester or nylon with full penetration



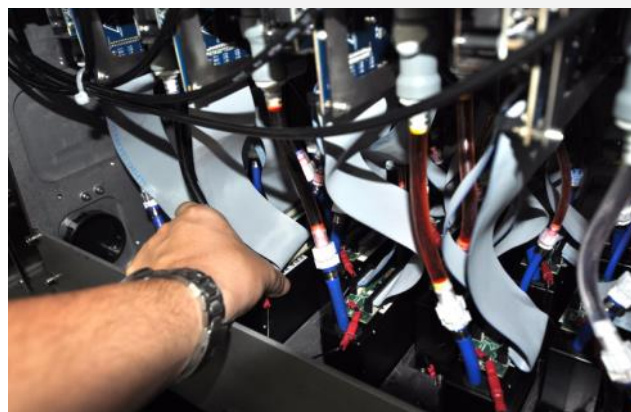
COLARIS



COLARIS.COMPONENTS

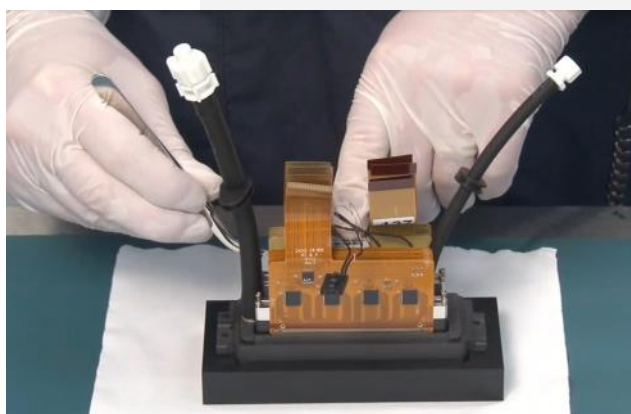


Large service doors for easy access and convenient machine maintenance



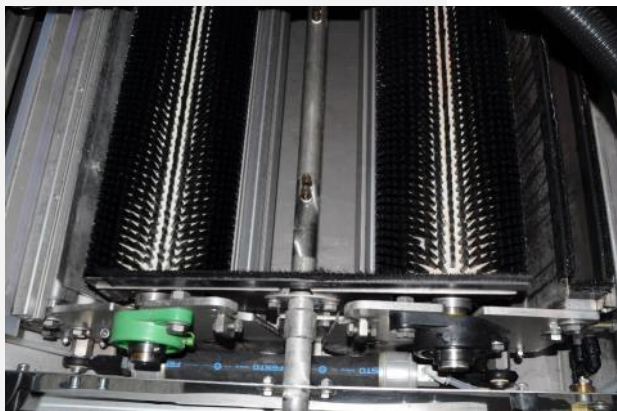
Maintenance friendly print head design

- Easy to access from all sides



Repairable print head for reduced maintenance costs

COLARIS



Printing blanket washing device

- Two individually driven brush rollers
- Twin doctor blades

Design guarantees clean and dry printing blanket



Servo driven traversing press roller

- Eliminates pressure marks on sensitive light weight fabrics or on heavy substrates such as terry towels, plush, velvet, flock or upholstery



PHC (Print head check)

Test pattern printed on a paper strip allows a quick nozzle check without stopping the printer

- Ink and fabric saving, increased efficiency, ensuring permanent print quality

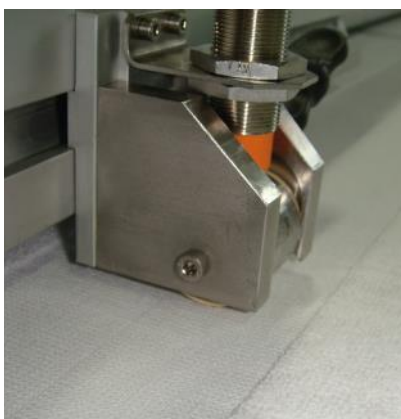
COLARIS.COMPONENTS



Large volume ink storage tanks with high capacity allowing refill from any canister size or shape without production stoppage



Printing blanket servo drive in combination with conveyor indexing system ensures positioning within 0.3 seconds at 5 μ m positioning accuracy (patent pending).



Optional border detection system for terry towel products to enable automatic center printing.



Integrated electrical cabinet reduces installation time, cable length and risk from external interference

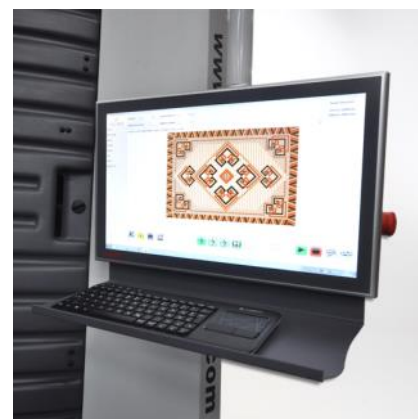
COLARIS



Thermoplast gluing device with IR heater and temperature control to adjust adhesion force of the printing blanket



Robust machine construction for production at highest precision



Windows based printer software with high-speed optical data transfer to the print heads and stroke-by-stroke data management

COLARIS

COLARIS.LINE COMPONENTS



MAGNOROLL GMA is used as an inline pre-treatment applicator, mainly for lighter to medium weight fabric qualities. Inline pre-treatment is used to enhance the penetration for reduced ink demand.



CHROMOJET inline pre-treatment system **CHR-DPT** is used as an inline pre-treatment applicator, mainly for medium to heavy substrates incl. terry towel, flock, velour, or even carpet substrates.

The digital application system precisely applies the amount of medium required for constant printing quality. The **CHROMOJET** based technology injects the pre-treatment with adjustable pressure and reaches the base of heavy substrates including carpet fabrics of 1,200 g/m².

This guarantees a perfect penetration and uniform color in light and dark shades.

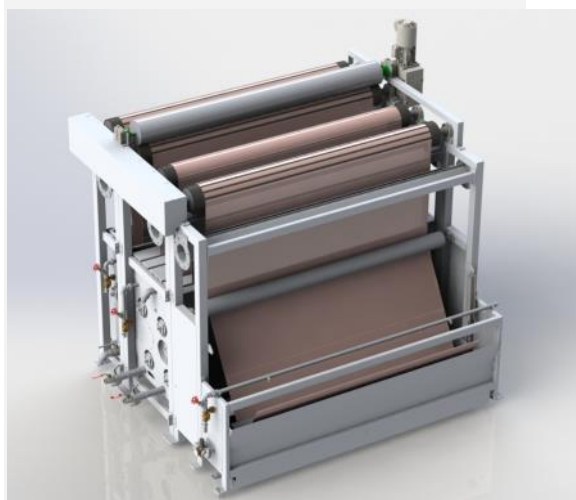


SUPRAPRESS press station is used as a penetration and equalization device to ensure maximum penetration on qualities like carpets or PES blankets. Also other products like velour or even flags and banners may benefit from the additional pressing in front of drying or in case of inline steam fixation process.

COLARIS.LINE COMPONENTS



SUPRAFIX SHS is a combined, horizontal color fixation system using optionally saturated steam, superheated steam or hot air condition according to the amount of ink being used. The fixation activity is controlled by a flow through steam/hot air stream and ensures highest penetration, ink fixation and drying in a single pass at shortest possible time. **SUPRAFIX SHS** avoids fabric handling in another offline process and reduces energy consumption substantially, making the process more economic and ecologic at the same time.



SUPRAWASH inline fabric washers are specially designed for the needs of heavy substrates made from PES or PA fibers. The installation of a **SUPRAWASH** unit within the post - processing line allows finishing the printed substrates without another offline process.



THERMOCURE dryers are used either right after the printing, in case of an offline fixation process, or as a final dryer after washing, when installed in a post-processing line. Instead of the **THERMOCURE** dryer also a stenter dryer can be installed in case the printed substrate is sensitive to shrinkage.

TECHNOLOGY.APPLICATION CENTER

With our **Technology Application Center** in Kufstein, **ZIMMER AUSTRIA** guarantees the worldwide customers an active and comprehensive support, including the development of new applications. From the initial idea right up to your production printing or coating line, our team provides support and advices.



COLARIS-Proof Printer



Drop watcher

ZIMMER AUSTRIA laboratories are furnished with state of the art facilities including equipment for ink development and ink evaluation.

The dropwatcher evaluates the qualification of inks from different manufacturers for **COLARIS** printer and also controls ink samples provided by certified manufacturers for additional customer protection.

Not only with various laboratory size equipment but also on real production lines, tests and development work for customers can be performed.

Upon request we can give you detailed information about the requirements and how your specific demand can be tested or jointly developed.



ZIMMER AUSTRIA lab printer

COLARIS



TECHNOLOGY APPLICATION CENTER

ZIMMER AUSTRIA offers customer oriented developments and applications using inkjet and valve jet digital printing and digital coating technologies.



SERVICE IS OUR BUSINESS.

QUALITY IS OUR FIRST PRIORITY!

All materials and components are inspected and tested before being assembled.





ZIMMER AUSTRIA offers customer oriented developments and applications using inkjet and valve jet digital printing and digital functionalization technologies.



FIRST IN QUALITY | FIRST IN SERVICE

All machines and components from **ZIMMER AUSTRIA** are strictly inspected and tested before shipping to customers to ensure efficient installation and best performance with 100% satisfaction.

COLARIS on-site customer support is guaranteed by service partners and **ZIMMER AUSTRIA** engineers and technologists.

This setup guarantees a short response time on a service call from a customer.

INNOVATION

QUALITY

SERVICE

Zimmer Maschinenbau GmbH

DIGITAL PRINTING SYSTEMS

Eibergstrasse 2-8

6330 Kufstein | AUSTRIA

Phone +43 (5372) 648 93 - 0

info@zimmer-austria.com

J. ZIMMER Maschinenbau GmbH, Kufstein reserves the right of technical and design modification of the equipment described within this brochure at any time without prior notice. This leaflet is for informative purpose only.