



PIONNERING INNOVATIONS
150 YEARS

COLARIS textile prints

.....	4
.....	5
.....	6
.....	8
reactive	10
rowel	12
acid	14
anionic	16
disperse	18
blanket	20
/AT	22
pigment	24
.....	26
S	27
in center	28
ology center	30



highlights

- ◆ digital workflow from design through production
- ◆ open ink system allows free selection of ink from certified ink suppliers
- ◆ permanent ink circulation system for efficient production
- ◆ automatic printhead cleaning system for extended printhead service life
- ◆ printhead re-condition center for extended printhead service life

1874

QUALITY SINCE 1874
Factory Franz Zimmer's Erben KG Warndorf

1951

g machine



1955

RSD rotary screen printer



1976

carpet printer

2001

CHROMOTEX digital inkjet printer
for special applications

2008

er for textile



2012

COLARIS-NF
narrow single-pass printer for webbings



1. Which fiber, size or target market do you seek for and what's your fastness requirement?
2. Do you have equipment available, which you would like to integrate into a new print line?
3. Is there a specific ink supplier you wish to work with? Will you require technical and technological support from the ink supplier?
4. Is your plant and the environment prepared for a fully digital workflow? Industrial production requires process stability.
5. Which software is most suitable for your business and how do you integrate the design into a printable color?
6. How do you define, measure and communicate the colors internally and with the customer? Do you have a measuring system such as a spectrophotometer?
7. Which requirements or skills are needed to operate a digital print line? Which requirements or skills are needed to operate a digital print line given capacity, regarding to the utilities or the operator?



SELECTION DEPENDS ON THE RESEARCH AND FINAL APPLICATION.



ACID|METAL COMPLEX

protein based,
and polyamide fibers

light fastness	+
wash fastness	++
croak fastness	++
chlorine fastness	+
brillianty	+++

.....

PROCESS REQUIREMENTS

- pre-treatment
- inkjet printing, drying
- steaming
- post-print washing
- drying

.....

END PRODUCTS



CATIONIC

acrylic fibers, cationic PES

light fastness	+++
wash fastness	++
croak fastness	++
chlorine fastness	+
brillianty	++

.....

PROCESS REQUIREMENTS

- pre-treatment
- inkjet printing, drying
- steaming
- washing
- drying

.....

END PRODUCTS



DISPERSE | SUBLIMATION

PES fibers

light fastness	+++
wash fastness	++
croak fastness	++
chlorine fastness	+
brillianty	++

.....

PROCESS REQUIREMENTS

- pre-treatment
- inkjet printing, drying
- thermal fixation
- reductive washing
- drying

.....

END PRODUCTS



VAT

cellulosic based and
polyamide fibers

light fastness	+++
wash fastness	+++
croak fastness	++
chlorine fastness	++
brillianty	++

.....

PROCESS REQUIREMENTS

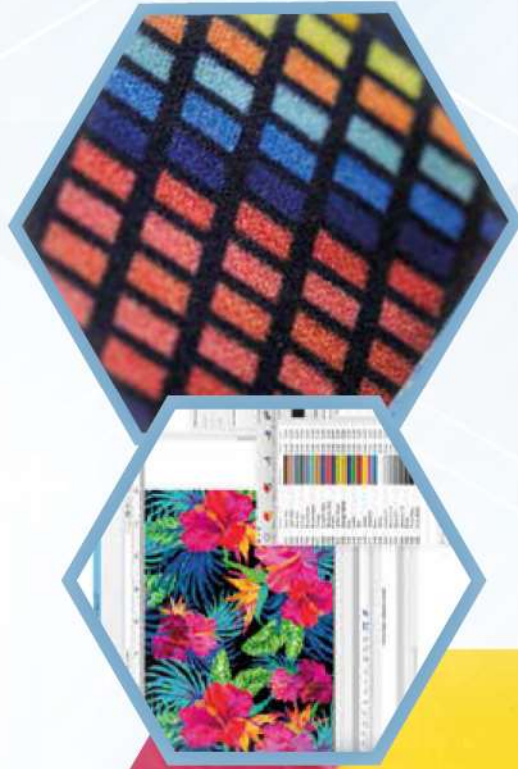
- pre-treatment
- inkjet printing, drying
- inline padding,
- steaming, washing
- drying

.....

END PRODUCTS

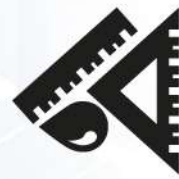
Digital printing is a complex task for which the entire workflow has to match. From design, color management and communication up to printer calibration - all must be perfect for a superb result.

Essential tools are fast computers with fast networks, a lot of memory space and well trained operators.



PRINTER CALIBRATION

Basic process setup and print resolution must be defined and stable before a calibration is made.



COLOR MEASUREMENT

Digital printing needs digital information to communicate. Color measurement is essential. Differences



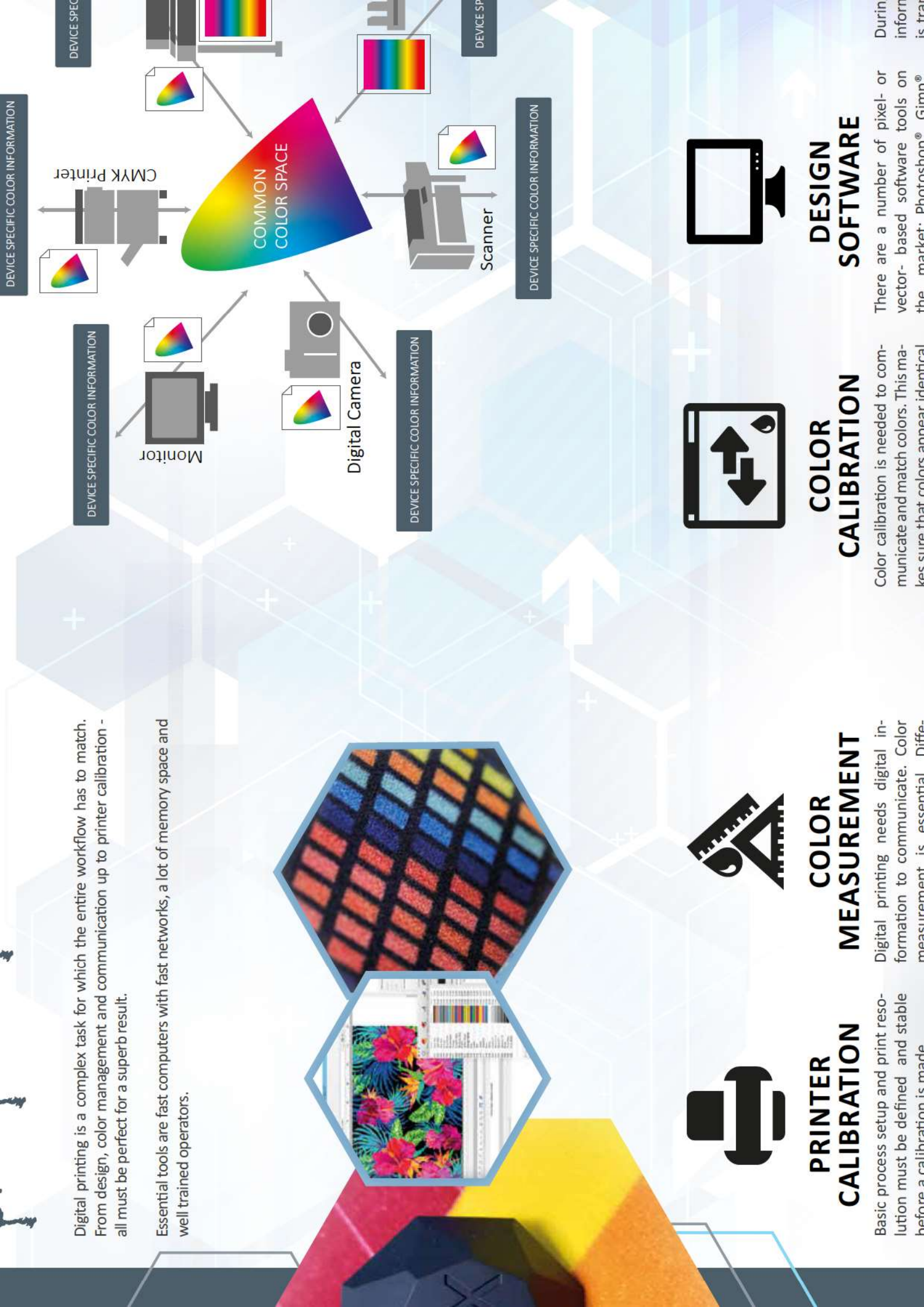
COLOR CALIBRATION

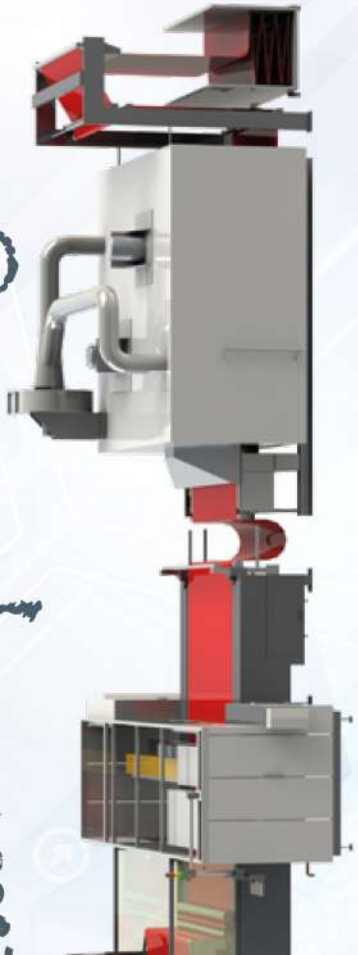
Color calibration is needed to communicate and match colors. This makes sure that colors appear identical



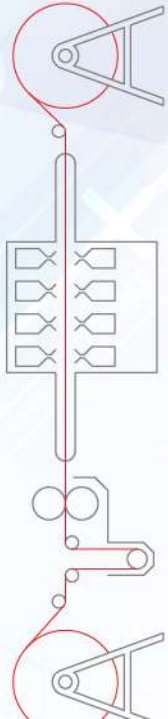
DESIGN SOFTWARE

There are a number of pixel- or vector-based software tools on the market. Photoshop® Gimp®

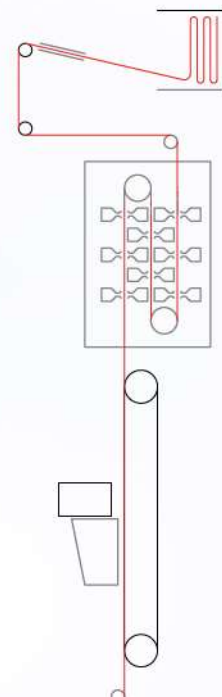




on fabrics made of cellulosic fibers such as cotton, linen, viscose, etc. For control of penetration and to achieve colors the fabric needs a special inkjet preparation. Depending on the substrate can be done as an inline or an offline process.



OFFLINE INKJET PRE-TREATMENT:
 Inkjet application followed by stenter drying required for wet-on-dry print process



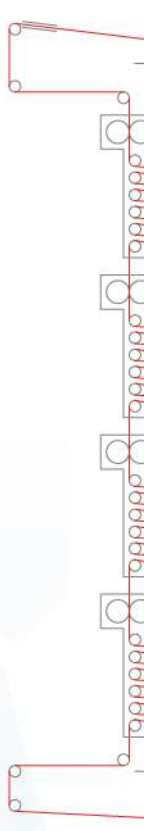
INLINE PRINTING:
 Printing on ready for inkjet prepared fabric

2



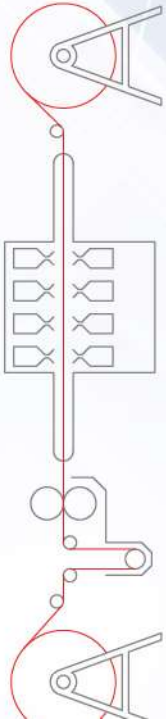
Reactive prints are known for a good wash fastness, fine haptics and brilliant colors, achieved by thorough cleaning in a post-print washing process.

Typical applications are fashion fabrics, cotton and cotton/viscose blended bed sheets, terry towels and other cellulose-based substrates.



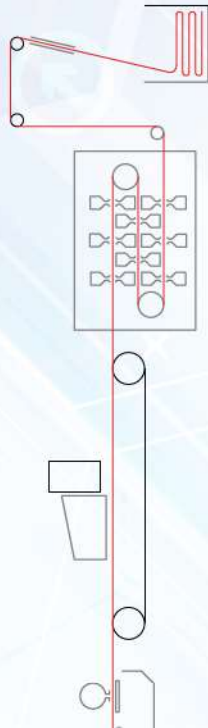


t applications are terry towels or bathrobes. Such items are more and more considered as a personal statement. Fancy, multi-color designs are economical print process only. COLARIS printers with automatic seam detection can handle a slightly varying towel length.



OFFLINE INKJET PRE-TREATMENT:

adder application followed by stenter drying required for wet-on-dry print process



INTEGRATED:

et-on-wet process – integrated inline fabric pre-treatment, by inkjet printing and drying printing and drying on ready for inkjet prepared fabric

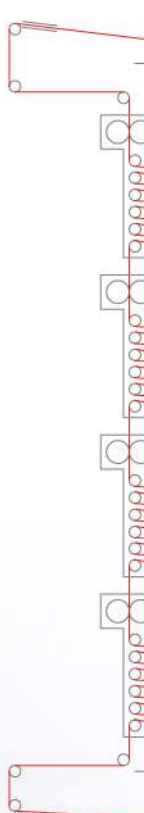
STEAMER

THERMOSOL



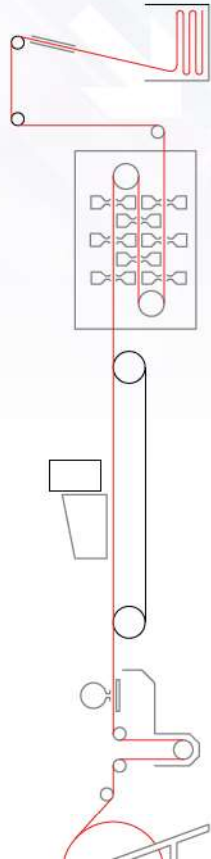
2

Post-print washing is mandatory for reactive towel printing. Only through removal of unfixed dyes, good fastness properties can be achieved.



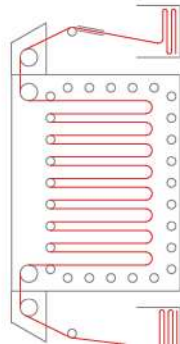


more complex than a simple print and dry process. Most important criteria are penetration and sharpness of the print. Typical acid print applications and fabrics for public transport vehicles which are fabrics made from wool or kind of these fibers.



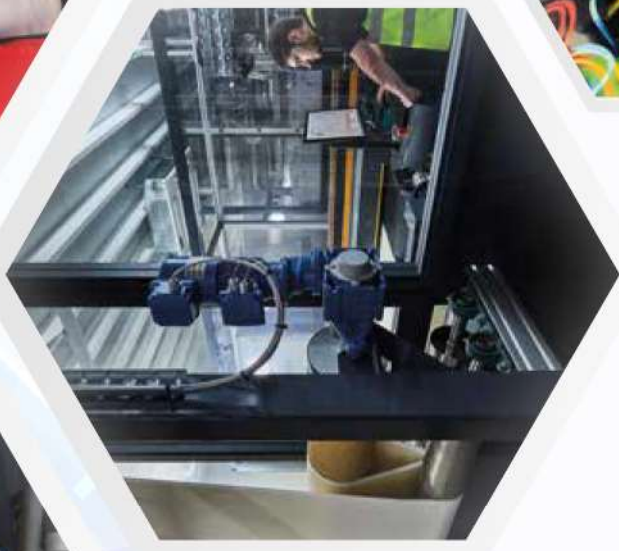
ONLINE PRE-TREATMENT & DIGITAL PRINTING:

wet-on-wet process - integrated inline pre-treatment, followed by printing and drying.



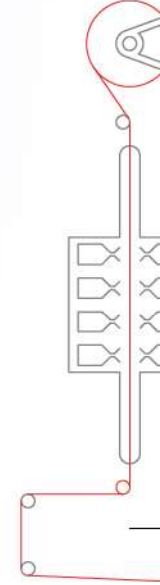
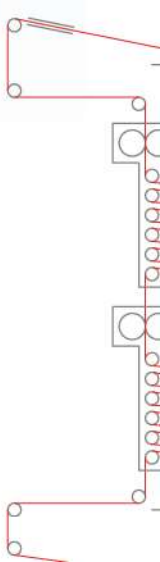
OFFLINE FIXATION PROCESS:

- () OFFLINE: saturated steam
- () INLINE: saturated steam



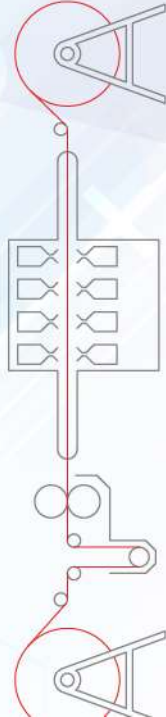
Typical applications are upholstery, velour and seat furnishings for public transport vehicles such as train systems, cable cars, buses and aircrafts with high seat load.

ACID prints are known for good fastness properties. For extended fastness pre-metallized inks are available. Such inks are good for improved light and chlorine fastness.



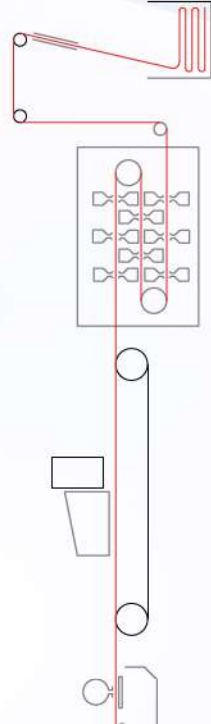


ially when used in combination with acrylic fibers are well resistant against weather conditions and are therefore ideal for outdoor use such as canopies



OFFLINE INKJET PRE-TREATMENT:

adder application followed by stenter drying required for wet-on-dry print process



NTING:

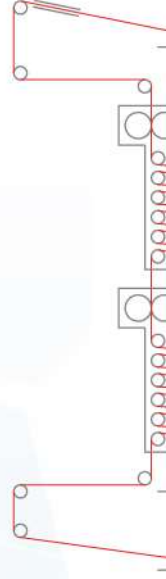
et-on-wet process – integrated inline fabric pre-treatment, by inkjet printing and drying printing and drying on ready for inkjet prepared fabric



RESTA

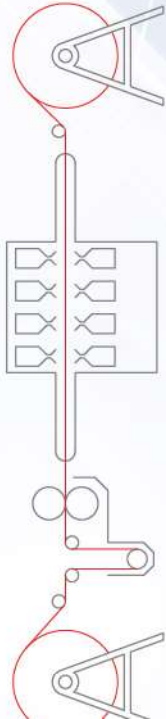


Acrylic fiber printing may include artificial fur, acrylic blankets as well as outdoor fabrics. Additionally, printing of CDP (cationic dyeable polyester) becomes popular too, as the dyes do not require high temperature fixation but can easily be fixed in saturated steam condition.



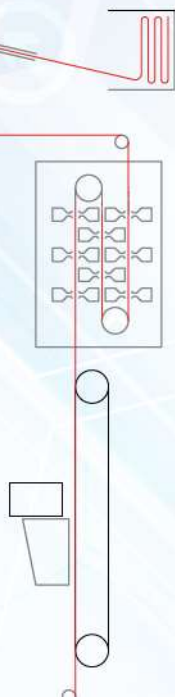


ATION inks are categorized by their molecular structure. They are also known as high energy disperse inks. Disperse is referring to the ink characteristics, as they are kept evenly distributed within the ink by a dispersion to reduce the risk of aggregation/agglomeration to a minimum.



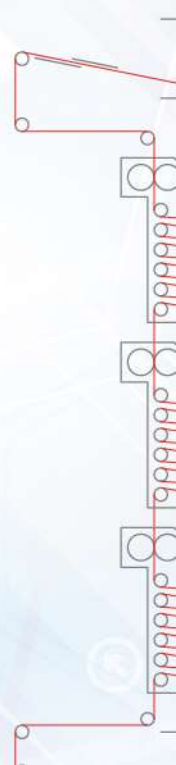
OFFLINE INKJET PRE-TREATMENT:

Pre-treatment application followed by stenter drying is required for wet-on-dry print process

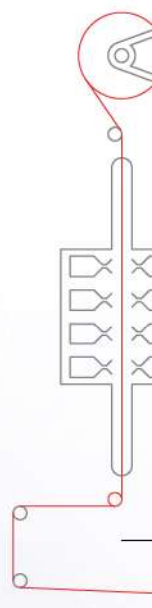


DIGITAL PRINTING:

Direct printing and fixation of inks on ready for inkjet prepared fabric

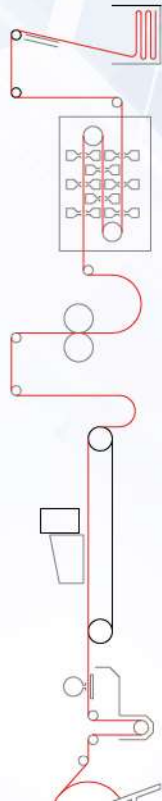


PES DISPERSE printing covers a wide range of products including shower curtains, window fashion, flag & banners, various outdoor fabrics, etc.



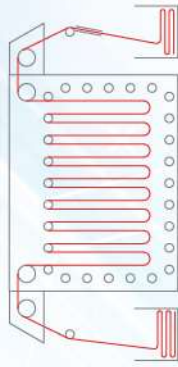


Alternative for a medium energy disperse application is a PES blanket print line. Raschels, especially raschel blankets, need good penetration. COLARIS blankets are configured a stand-alone printers or as a complex, fully integrated, all-inline



ON-LINE DIGITAL PRINTING:

On-wet process – integrated inline fabric pre-treatment, followed by inkjet printing, penetration enhancer and drying



OFFLINE DYE FIXATION PROCESS:
saturated steam or thermosol hot air fixation

2

Dye fixation is commonly performed in a hot air condition or using superheated steam at 180 °C, reducing the risk of ghost prints with delicate designs. For high temperature steam fixation, a loop steamer is the most commonly used equipment to achieve excellent prints at good dye penetration and fixation.

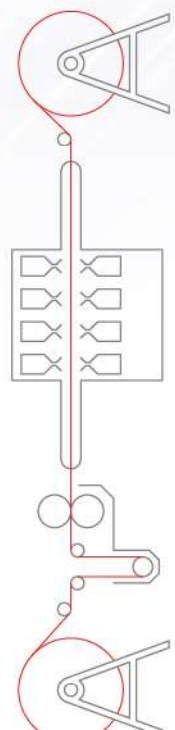
Deep penetration is mandatory to achieve deep colors on both sides of the blanket, although they are printed from one side only.





or unsurpassed fastness of cellulosic and regenerants with VAT dyes easily light exposure, boil washlorine bleach to a great

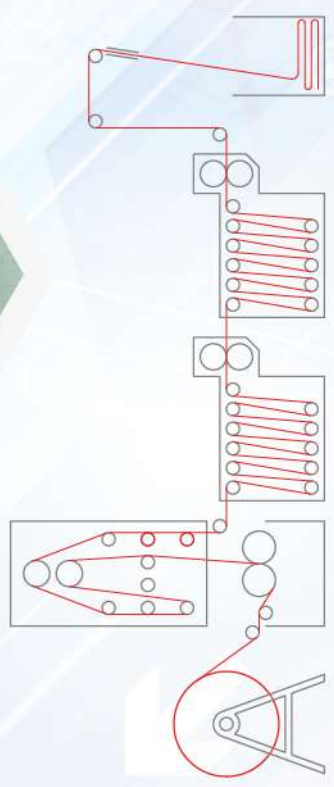
complex compared to printing solutions, but the end products are paying steps in processing.



OFFLINE INKJET PRE-TREATMENT: Stenter application followed by stenter drying required for wet-on-dry print process



Due to their high performance VAT prints are ideal for heavy duty environments and are also used for clothing in the security and special forces segment incl. camouflage fabrics.

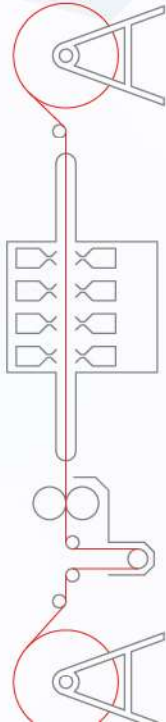


OFFLINE POST-PRINT PROCESSING:



forcing the industry to look at more eco-friendly processes.

One of the most eco-friendly print processes is digital printing. This process is less energy consuming and requires less water than traditional printing. Digital printing also allows for on-demand printing, which means that there is no need for large inventories of printed goods. This process is also more flexible, allowing for a wide range of print finishes and colors. With digital printing, the need for post-print finishing is completely eliminated. This means that there are no need for additional treatments, such as heat setting or wet rubbing. The benefits of digital printing are many, and the haptics have drastically improved with conventional pigments.



OFFLINE INKJET PRE-TREATMENT:

Pre-treatment application followed by stenter drying is required for wet-on-dry print process.

Pigment prints are suitable for almost any fiber class and are therefore the only ink suitable for multi-fiber-based substrates.

Pigment prints are known for high light fastness. Accordingly, window fashion, sun blinds and outdoor fabrics including various technical textiles, are the key products printed with pigment inks. The simple and environment-friendly process is rapidly growing - not just for the aforementioned end products, but also within the fashion and home textile market.

Laboratory components

In addition to complex print lines, ZIMMER AUSTRIA offers a large range of laboratory equipment like sample printers or evaluation devices for process development by our customers.

COLARIS 12-1200T



POST-PRINT PROCESSING LINE



COLARIS-IPT

Ink Performance Tester



TECHNICAL DATA

working width:
1200 mm

Operation options:
for individual pieces or
continuous processing

processing options:
steam fixation for dyes,
post-print washing or
pre-treatment application,
drying or hot air curing

dyestuff classes:
reactive, acid, cationic, disperse,
direct sublimation, pigment

For inline post-print washing, ZIMMER AUSTRIA can offer various combinations and dimensions of single-step or multi-step washing systems.



s suitable for COLARIS Digital Ink-
processes. The simplest option is
nent followed by a stand-alone
post-print fixation.

ts are available from ZIMMER
lled as offline or inline compo-



For inkjet pre-treatment ZIMMER AUSTRIA can provide MAGNOROLL coating units to be installed with a stenter as well as for inline pre-treatment. Applicators with vacu-



US
x-
ct
d-
a-
le
re
d
n

recognition

print

different
performance
from

(A/MA/LA)
built to
textile
applica-
materials to
er a long
ink recircu-
on at 400
replaceable



uction

resist

high

ce
bric can

d binary
as

DROP SIZES
7 - 21 pl

APPLICATIONS

light fabrics
i.e. wash labels,
laneyards, deco tapes,
fashion

1024 XSA

DROP SIZES
12 - 35 pl

APPLICATIONS

medium fabrics
i.e. belts, camouflage,
home textiles

1024 SA

DROP SIZES
30 - 75 pl

APPLICATIONS

heavy fabrics
i.e. technical webbings,
terry towels, velours,
transport fabrics

1024 MA

DROP SIZES
80 - 240 pl

APPLICATIONS

pile production
i.e. carpets,
blankets

1024 LA



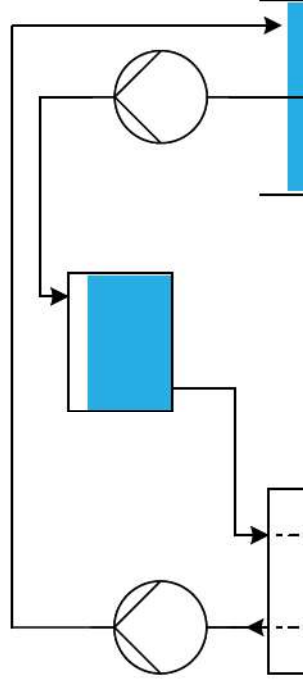
**PRINTHEADS
CAN BE COMPLETELY
DISMANTLED**



Printheads are a significant cost factor in digital printing systems. Nevertheless, our experience shows that rather deposits or mechanical damage result in malfunctioning printheads than natural aging. Usually, clogged printheads are no longer usable and must be replaced.

To relieve our customers and to extend the printheads service life, ZIMMER AUSTRIA built up a great deal of knowledge and technology to understand, clean and repair StarFire™ print heads. Depending on the error pattern and ink used, different approaches, chemicals and procedures are

INK SUPPLY & CIRCULATION SYSTEM



ZIMMER AUSTRIA Digital Printing Systems is known for flexibility and for building tailor-made machines and systems. This is the reason why we remain one of few textile machine manufacturers with a deep, vertical inhouse manufacturing capability.

Starting from engineering to mechanical manufacturing, electronic and software development, machine and control cabinet assembly, programming, internal testing, we also provide shipping, on-site installation, start-up and training of customer personnel and most important: after sales service through our own team.

Additionally, we can offer on-site process development and optimization for a wide range of digital printing and coating applications.

Zimmer Austria
 fu...
 cil...
 de...
 Th...
 qu...
 m...
 er...
 de...
 cu...



technology center

Our technology center is the heart and source of all our developments and innovations. New technologies and processes are developed and tested on individual textiles, carpets, narrow fabrics and other materials.

Our facilities are fitted with all technologies including CHROMOJET, COLARIS Printing and Coating Systems, as well as with a comprehensive set-up of laboratory equipment. But most important is the staff working in the Technology Center: Each of them is a specialist in his field.

The technology and application center supports machinery and technology development. Furthermore, it gives proof



COLARIS



**MACHINERY
MANUFACTURER**

chromoJET



**DIGITAL PRINTING
SYSTEMS**




INNOVATION | QUALITY | SERVICE


Zimmer
AUSTRIA

ZIMMER MASCHINENBAU GMBH
DIGITAL PRINTING SYSTEMS

www.zimmer-austria.com



 Eibergstrasse 2-8
6330 Kufstein | AUSTRIA

 +43 (5372) 64893-0
info@zimmer-austria.com

Your competent partner for process development, engineering, manufacturing and implementation of industrial printing and coating systems.

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 purposes only.