MACHINERY MANUFACTURER

Zimmer AUSTRIA

COLARIS *narrow fabrics*

DIGITAL PRINTING SYSTEMS

02/2024

content

highlights

- digital workflow from design through output
- open ink system allows free selection from certified ink suppliers
- permanent ink circulation system for efficient production
- printhead re-condition center for extended printhead service life
- modular concept for standalone or all inline print production
- environmentally-friendly, sustainable process

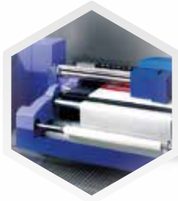
milestones

1874 QUALITY SINCE 1874 -
Factory Franz Zimmer´s Erben KG Warndorf

1951 Start of ZIMMER AUSTRIA -
first duplex blanket printing machine

1955 RSD rotary screen printer

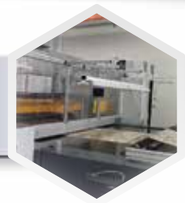
1976 CHROMOTRONIC digital carpet printer



2001 CHROMOTEX digital inkjet printer
for special applications

2008 COLARIS
digital inkjet printer for textile

2012 COLARIS-NF
single-pass printer for webbings



2022 COLARIS digital camouflage printing system

decision guidance

1. What is the target market and final application?
   military webbings, automotive seat belts, medical bandages, technical tapes, decoration ribbons, promotion lanyards
2. What maximum print width and what production capacity are required?
   Are webbings to be printed on one side or on front- and backside in a single pass?
3. What is the fiber base and construction of the substrate?
   polyamide, polyester nonwoven etc.
4. Any specific fastness requirement to be matched?
   The fiber base defines which ink is to be used. Inks are widely responsible for fastness properties such as rub-, light- and wash-fastness.
5. Is there existing equipment that can be used?
6. Which design and RIP software is best for my business?
7. Do I have the right people to operate print line and software?
8. Last but not least: Are the overall costs within an economic range?

R&D SUPPORT
APPLICATION TECHNOLOGY

MACHINERY
ENGINEERING & MANUFACTURING

SERVICE
SOFTWARE & TECHNICAL SUPPORT

concept

The narrow fabrics market is used to deal with big volumes, since ever. The global trend of individualization is a challenge for conventional printing - not so with the COLARIS-NF printing technology.

The digital workflow guarantees fastest market response, irrespective of order quantity.

Depending on the required printing process the printing line can be configured to the customers´ needs.

Besides the printer, ZIMMER AUSTRIA is also offering machinery for pre-treatment, drying, heat fixation, steam fixation and washing of the fabric – either as integrated units in a complete production line (inline) or as separate process units (standalone).

It is also possible to use existing equipment and synchronize it with the COLARIS-NF printer.

APPLICATIONS

- automotive
- technical
- military
- promotion
- decoration
- apparel
- elastics
- wash labels

ADVANTAGES

- a fully digital workflow ensures accurate re-production of any design or color shade
- efficient production of short runs and samples
- change of color and design on the fly
- different colors or patterns on front and back
- any pattern/color combination in one process
- no production loss due to clean-up or pattern/color changes
- reduced waste water
- no color kitchen required
- less auxiliary chemicals required
- reduction of process steps

ink classes

THE INK SELECTION DEPENDS ON FIBER AND FINAL APPLICATION.

ACID

polyamide (nylon)
wool, silk

light fastness	++
wash fastness	++
crock fastness	++
chlorine fastness	+
brilliancy	++

PROCESS REQUIREMENTS
- inkjet pre-treatment
- printing, (drying)
- steam fixation
- washing
- drying

END PRODUCTS
military belts, hook & loop, technical tapes, velvets

REACTIVE

cotton/cellulosic fibers, wool/protein fibers

light fastness	+
wash fastness	+++
crock fastness	++
chlorine fastness	+
brilliancy	++

PROCESS REQUIREMENTS
- inkjet pre-treatment
- printing, (drying)
- steam fixation
- washing

END PRODUCTS
deco/flower tapes, elastics & underwear, belts

DISPERSE

polyester

light fastness	++
wash fastness	++
crock fastness	++
chlorine fastness	+
brilliancy	++

PROCESS REQUIREMENTS
- inkjet pre-treatment
- printing (drying)
- heat fixation
- washing

END PRODUCTS
wash labels, seat belts, elastics & underwear, heavy duty belts, hook & loop, velvets, zippers, technical tapes

SUBLIMATION

polyester

light fastness	+
wash fastness	+
crock fastness	++
chlorine fastness	+
brilliancy	+++

PROCESS REQUIREMENTS
- inkjet pre-treatment
- printing
- heat fixation

END PRODUCTS
lanyards, satin ribbons, taffeta, deco tapes, packaging, heavy duty belts, wristbands

PIGMENT

all types of fibers

light fastness	+++
wash fastness	+
crock fastness	+
chlorine fastness	++
brilliancy	++

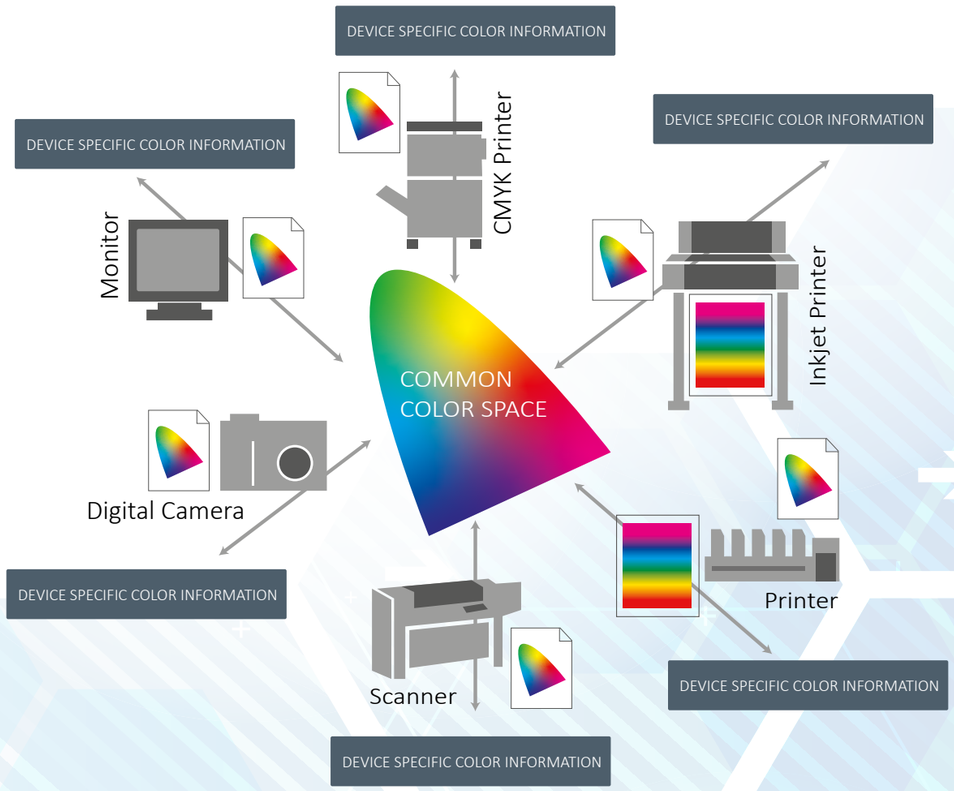
PROCESS REQUIREMENTS
- inkjet pre-treatment
- printing
- heat fixation

END PRODUCTS
lanyards, satin ribbons, taffeta, deco tapes, packaging, heavy duty belts, wristbands, hook & loop

pre-print process

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.

Calibration is a software supported process made in several steps (linearization, printing and measuring targets, generating of printer and ICC profiles).

COLOR MEASUREMENT

Digital printing needs digital information to communicate. Color measurement is essential. Different measuring devices can be used - depending on substrate and surface.

Color is normally communicated within the L*a*b color-system.

COLOR CALIBRATION

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

A re-calibration is normally needed if a major parameter (base material, ink, fixation process, ...) is changed within the total process.

DESIGN SOFTWARE

There are a number of pixel- or vector- based software tools on the market: Photoshop®, Gimp®, Nedgraphics®, Illustrator®, Corel Draw®...

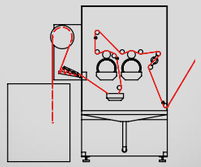
RIP PROCESS

During the RIP process the color information from the art-work file is transformed and split into channels. For each process color (ink) one channel is used.

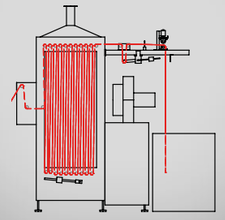
process possibilities

1 INLINE PRE-TREATMENT

optional

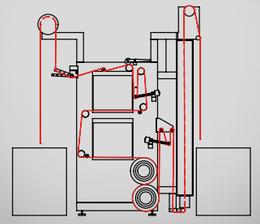


2 INLINE DRYING

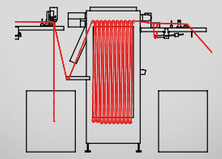


optional

3 COLARIS PRINTER

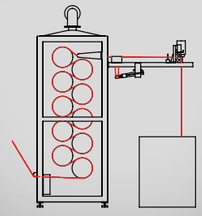


4a INLINE STEAM FIXATION



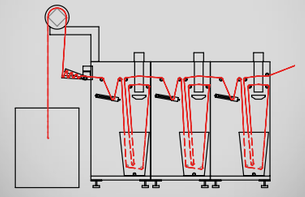
optional

4b INLINE HEAT FIXATION

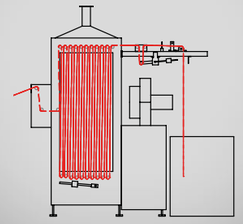


optional

5 POST-PRINT WASHING



6 DRYING



TECHNICAL DATA

fabric feeding:

- Box-to-box
- Roll-to-roll
- Box-to roll
- Roll-to-box

dryer options:

- electric heated (hot air, contact heat, infrared)
- gas heated (hot air, drum)
- steam heated (hot air)

FABRIC FEEDING SYSTEM

COLARIS-NF PRINTER

DRYER

WINDER

COLARIS-NF SINGLE

The COLARIS-NF Single is a single-pass digital printer for one sided printing on narrow fabrics.

One side printing is typical for individualizing of consumables such as face masks or cleaning whipes. It is also used for printing of hook & loop quick-fix-and-release tapes, bandages or wash labels.

FIBERS|DYE

- polyamide webbings - acid
- polyester webbings - disperse or sublimation
- polyester non woven - pigment or sublimation

APPLICATIONS

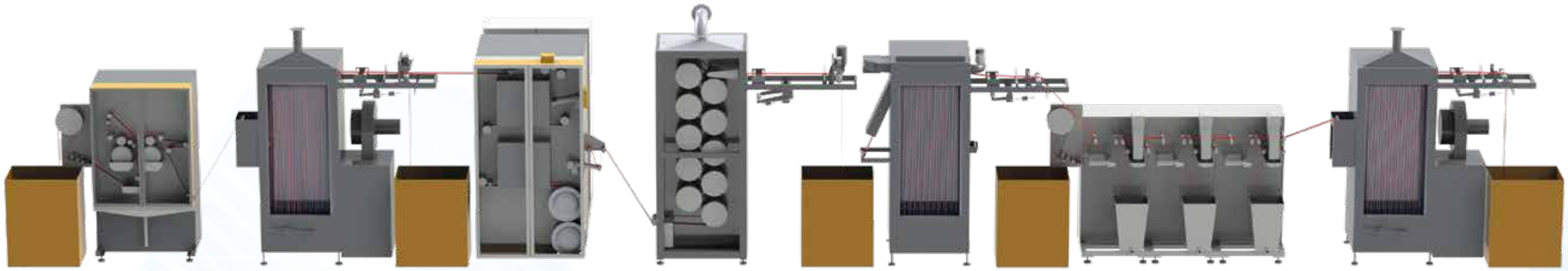
- hook & loop
- face masks
- cleaning wipes
- medical bandages
- printing on pre-dyed substrates

TECHNICAL DATA

print width:
available at 100 mm (4“)
or 300 mm (11,8“)

print speed:
up to 30 m/min

number of colors:
up to 12 process colors



PRE-TREATMENT UNIT | DRYER | COLARIS-NF MULTI | HEAT FIXATION UNIT | STEAM FIXATION UNIT | WASHING UNIT | DRYER

COLARIS-NF MULTI

The COLARIS-NF Multi is a single-pass digital printer for narrow fabrics. It is the only digital inkjet printer in the market which can print front- and backside of a substrate simultaneously in a single pass.

Images for frontside and backside may be identical, mirrored or even of a different design. It is also possible to print on one side and apply a single, uniform color shade (digital dyeing) on the other side.

FIBERS|DYE

- polyamide webbings - acid
- polyester webbings - disperse or sublimation
- polyester non woven - pigment or sublimation

APPLICATIONS

- military webbings
- safety belts
- technical tapes
- decoration ribbons
- promotion lanyards
- zippers

TECHNICAL DATA

configurations:

working width 65 mm (2,5”)
at up to 8 colors

working width 130 mm (5,1”)
at up to 6 colors

manufacturing

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

The drop-watcher evaluates the qualification of inks from different manufacturers for COLARIS printers and controls ink samples provided by certified manufacturers for customer safety.

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 to customers about results on their own products.

It is also used as a service center for our customers´ personnel in case of new product development, as well as for operator training .

COLARIS

MACHINERY
MANUFACTURER

chromojet

DIGITAL PRINTING
SYSTEMS

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www.zimmer-austria.com

Eibergstrasse 2-8
6330 Kufstein | AUSTRIA

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

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