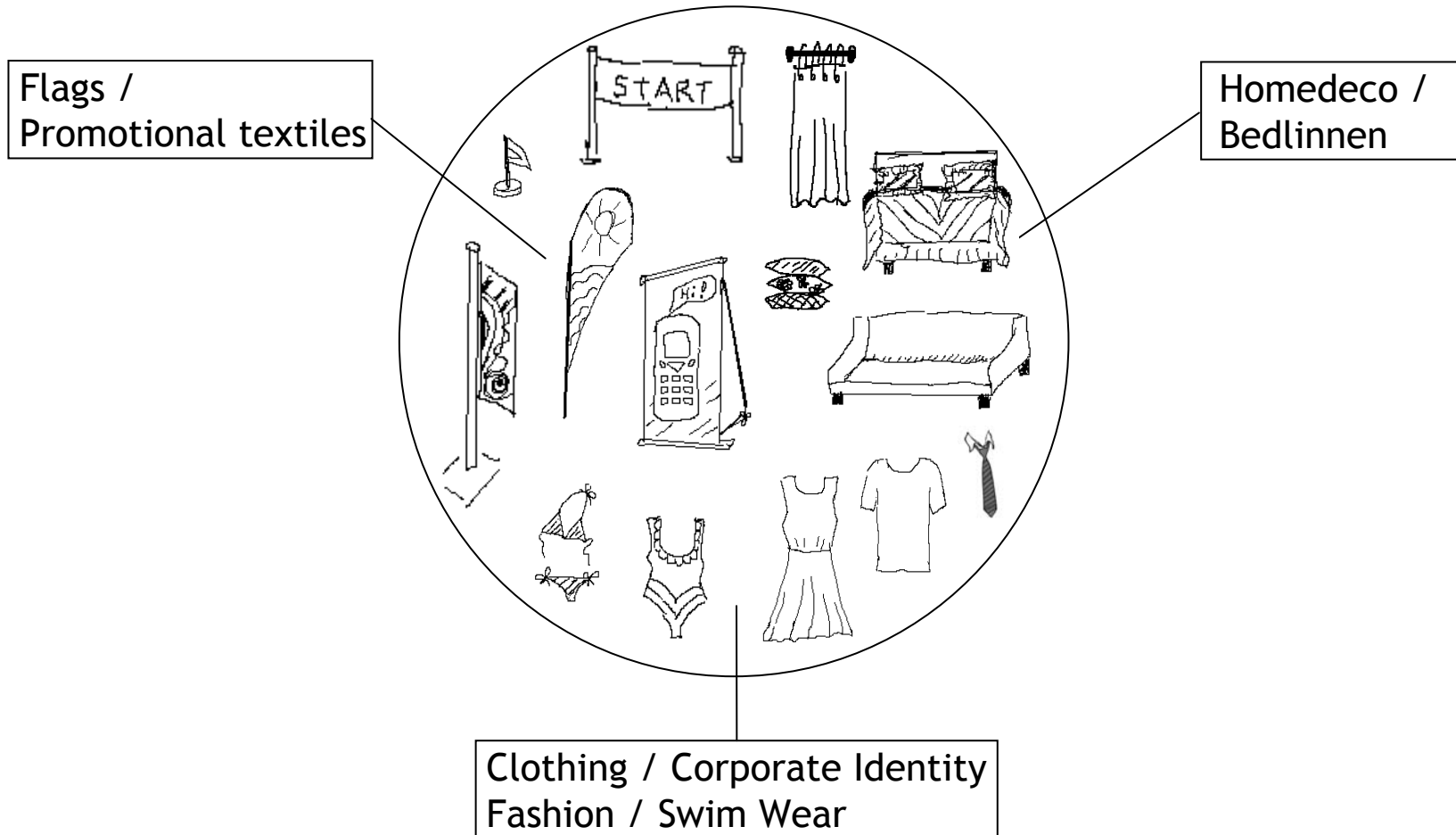
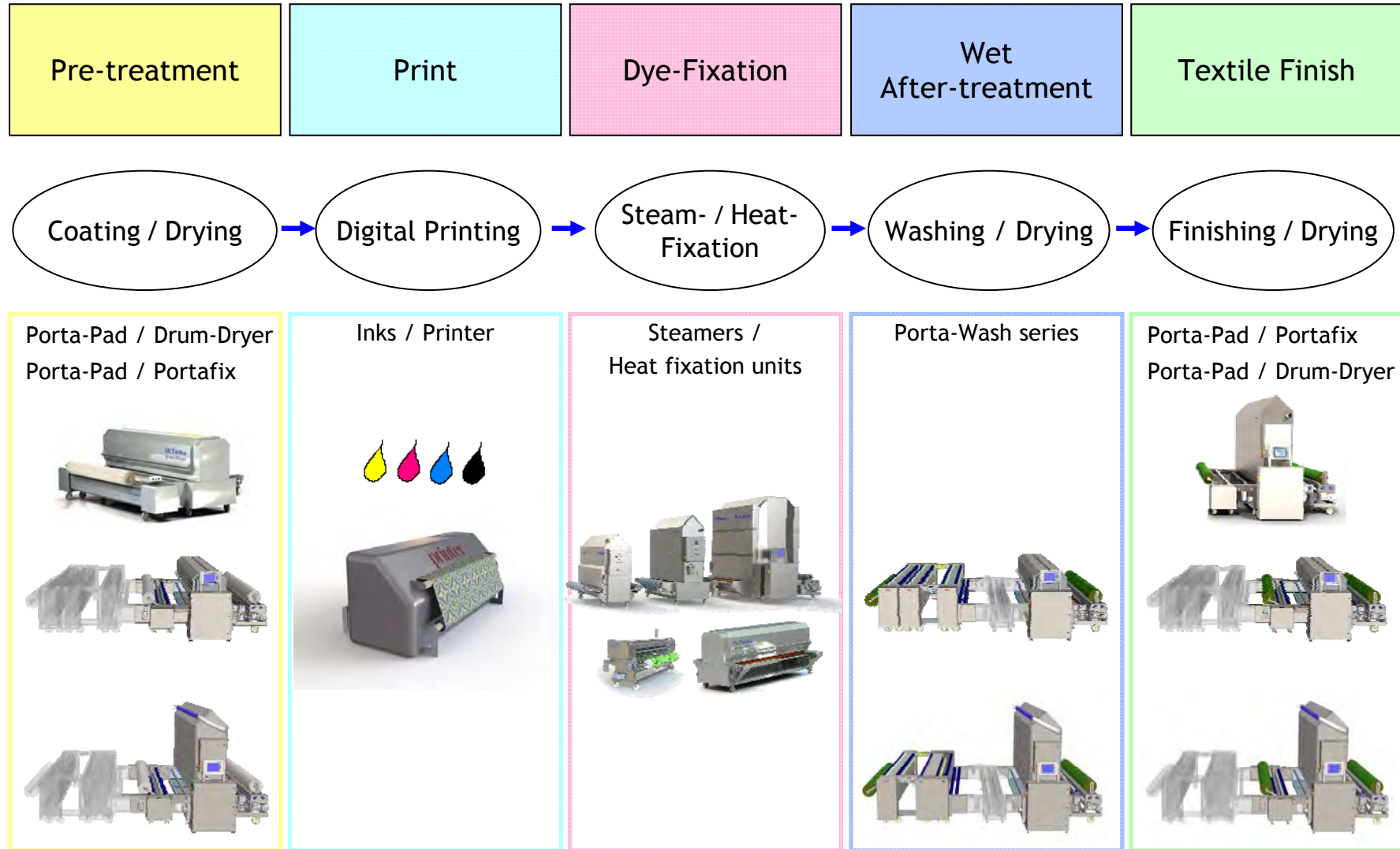
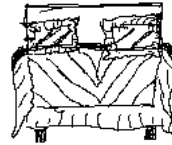
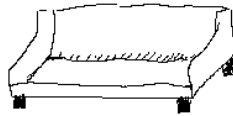


All around Digital Direct Printing



Processes in Digital Printing





1. Reactive dyes

- a) on plant fibre: cotton, linnen, viscose for e.g. indoor decoration, clothing
- b) on animal fibre: silk, wool for e.g. luxurious indoor decoration, clothing

Porta-Pad / Drum-Dryer



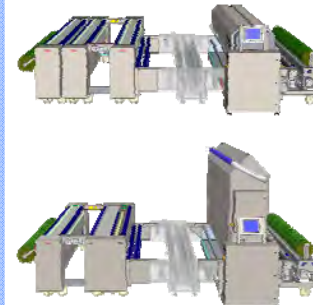
Inks / Printer



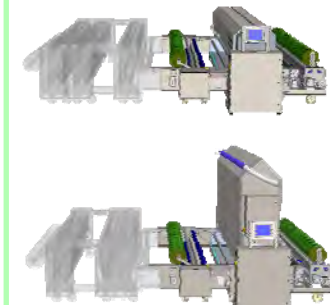
Steamer series



Porta-Wash series



Porta-Pad / Drum-Dryer
Porta-Pad / Portafix



Inkjet-Coating:

- e.g. - thickener x,
- pH-regulator
- ...
- recipe: ink supplier

Dye gammut:

Reactive dyes

Fixation conditions:

- a) saturated steam:
~ 100°C, ± 10 min.
- b) saturated steam:
~ 100°C, 12-15 min.

Washing process:

- rinsing cold
- washing hot
with surfactant

Finishing / Drying:

- softener,
- crease-resistant
- antisoil-release /
- drying

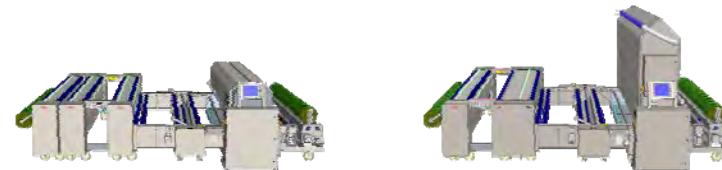
Example of:

Dye Fixation with

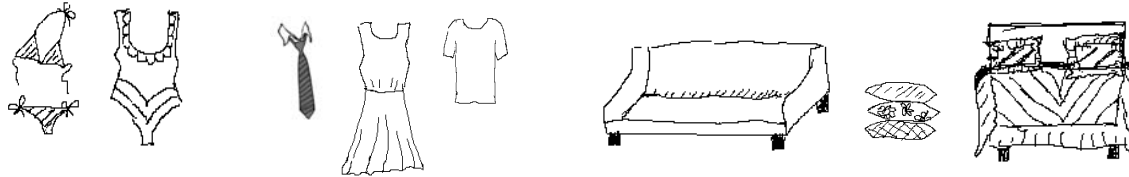


B-STeaM / Portafix / E-STeaM

Wet process lines for washing / padding or finishing / drying



Porta-Wash/Porta-Pad/Drum-Dryer // Porta-Wash/Porta-Pad/Portafix



2. Acid dyes

- a) on animal fibre : silk, wool for e.g. luxurious indoor decoration, clothing
- b) on synthetic fibre: polyamide for e.g. swimwear, sportswear

Porta-Pad / Drum-Dryer



Inks



Steamer



Porta-Wash series



Porta-Pad / Drum-Dryer



Inkjet-Coating:

- e.g. - thickener x,
- pH-regulator
- ...

e.g. - recipe: ink supplier

Dye gammut:

Acid dyes

Fixation conditions:

saturated steam
~ 100°C, 30 min.

Washing process:

- rinsing
- washing, hot with surfactant

Finishing / Drying:

softener,
antisoil-release,
crease-resistant,
UV protection /
drying

Example of:

Dye Fixation

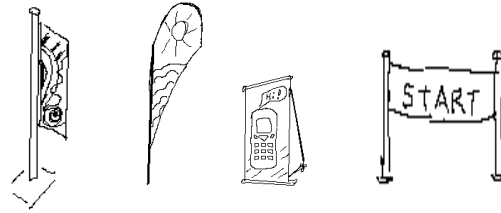


E-STeaM

Wet process lines for
washing / padding or finishing / drying










Porta-Wash/Porta-Pad/Drum-Dryer



3. Disperse dyes

a) on polyester for e.g. flags, promotional textile

<p>Porta-Pad / Drum-Dryer</p> 	<p>Inks</p>  	<p>Dye Fixation</p>  	<p>Porta-Wash series</p> 	<p>Porta-Pad / Drum-Dryer</p> 
<p>Inkjet-Coating: e.g. - thickener x, - pH-regulator - ... e.g. - recipe: ink supplier</p>	<p>Dye gammut: Disperse dyes</p>	<p>Fixation conditions:</p> <ul style="list-style-type: none"> • Dry Heat fixation ~175-200°C, 20-60 sec. 	<p>Washing process:</p> <ul style="list-style-type: none"> • 30-50°C rinsing with surfactant or • mild reductive washing, neutralizing 	<p>Finishing / Drying:</p> <p>UV protector, flame-resistant, antistatic, anti-soil release / drying</p>

Example of:

Dye Fixation

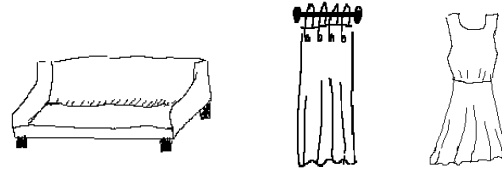


I-Fix

Combi line for
fixation / (washing) / padding or finishing / drying

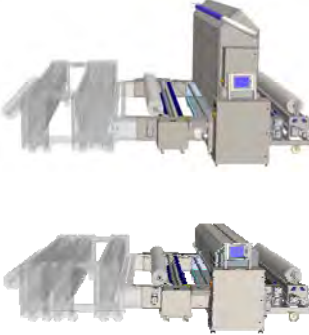

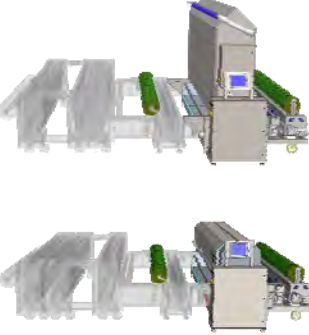
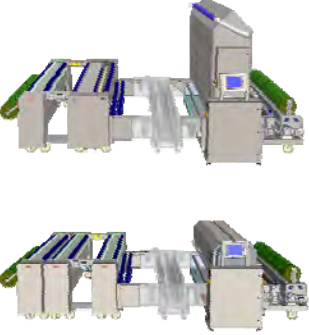
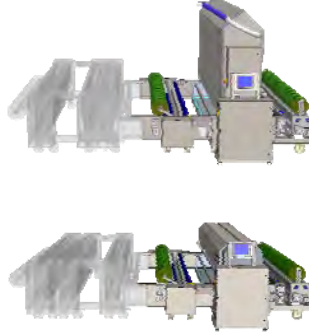


(Porta-Wash) / Porta-Pad / Drum-Dryer



3. Disperse dyes

b) on polyester for e.g. high-quality indoor decoration, clothing

<p>Porta-Pad / Portafix Porta-Pad / Drum-Dryer</p> 	<p>Inks</p> 	<p>Dye Fixation</p> 	<p>Porta-Wash series</p> 	<p>Porta-Pad / Portafix Porta-Pad / Drum-Dryer</p> 
<p>Inkjet-Coating: e.g. - thickener x, - pH-regulator - ... e.g. - recipe: ink supplier</p>	<p>Dye gammut: Disperse dyes</p>	<p>Fixation conditions:</p> <ul style="list-style-type: none"> • High Temp. steaming ~ 165-175 °C, 6 min. • Dry Heat fixation ~175-200 °C, 20-60 sec 	<p>Washing process:</p> <ul style="list-style-type: none"> • 30-50 °C rinsing with surfactant or • mild reductive washing, neutralizing 	<p>Finishing / Drying:</p> <p>antistatic, flame-resistant, antisoil-release / drying</p>

Example of:

Combi lines for fixation / washing / padding or finishing / drying



Porta-Wash/Porta-Pad/Drum-Dryer // Porta-Wash/Porta-Pad/Portafix

Properties of the Porta-Pad padding and coating unit

The Porta-Pad is a modular roll-to-roll padding unit especially developed for applying pre- and after treatment chemicals e.g. an ink-jet pre-treatment or a fabric protector finish. Especially suited for a wet-in-wet finishing process line-up combined with washing.



- for inkjet-coating and after-treatment of cloth
- cost-effective and simple application process
- excellent evenness over the complete width
- very suitable for short runs
- high efficient vacuum extraction for cloth friendly application of chemicals
- low content saves on chemicals
- recycling of padding liquid
- for drying combinable with Drum-Dryer, I-Fix or Portafix Universal
- In-line finishing after washing saves extra drying cycle
- available in a 1.85, 2.50 and 3.40 m width

Example of:

Inkjet-Coating
/ Drying

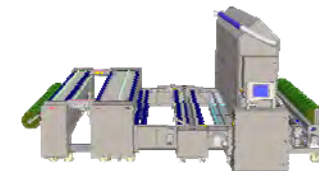


Porta-Pad /
Drum-Dryer

Wet process lines for washing / padding or finishing / drying



Porta-Wash/Porta-Pad/Drum-Dryer /



Porta-Wash/Porta-Pad/Portafix

Properties of the B-STeaM fixation unit

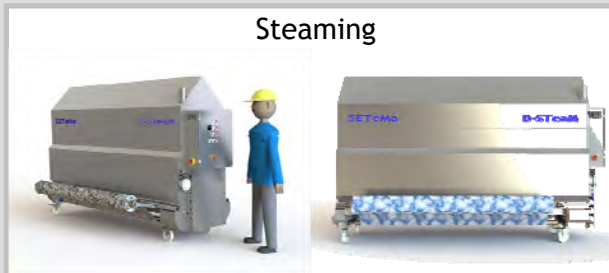
The B-STeaM is a compact and reliable steam/air fixation unit with integrated steam generator for the fixation of textile dyes.



- fixation of reactive, acid, disperse dyes & pigment
- on board steam generator
- High STeaM re-flow system for exceptional colours
- low fresh steam consumption
- reproducible and uniform fixation results
- low operational and maintenance costs
- available in 2.20 m width

Example of:

Steaming



Properties of the Portafix Universal fixation / drying unit

The Portafix Universal is a modular steam/air fixation unit with integrated steam generator for the fixation of textile dyes. Besides this is especially suited for steam-drying.

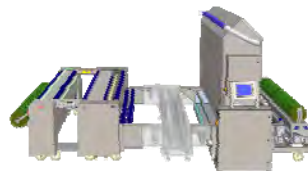


- fixation of reactive, acid, disperse dyes & pigment
- on board steam generator
- High STEaM re-flow system for exceptional colours
- low fresh steam consumption
- reproducible and uniform fixation results
- no leaders for feed-in / feed-out

- low operational and maintenance costs
- usable as universal dryer also
- upgradable production speed
- available in 1.85, 2.50 and 3.40 m width

Example of:

Steaming / Washing / (Finishing) / Drying



Porta-Wash / (Porta-Pad) / Portafix Universal

Properties of the E-STeaM fixation unit

The E-STeaM is a modular high volume production steamer with integrated steam generator for the fixation of textile dyes.



- fixation of reactive, acid, disperse dyes & pigment
- on board steam generator
- High STeaM re-flow system for exceptional colours
- low fresh steam consumption
- reproducible and uniform fixation results
- no leaders for feed-in / feed-out

- low operational and maintenance costs
- upgradable production speed: Reactive 108 till 432 m/h
- available in 1.85, 2.50 and 3.40 m width

Example of:

Steam- / Heat- Fixation



E-STeaM series: ES-B and ES-U modules

Properties of the I-Fix

The I-Fix is a complete autonomous heat fixation unit that can be coupled in-line to each digital printer without the need of a mechanical or electrical interface.



- fixation of disperse direct / disperse sublimation dyes
- operational within 15 minutes
- integrated exhaust

In-Line:

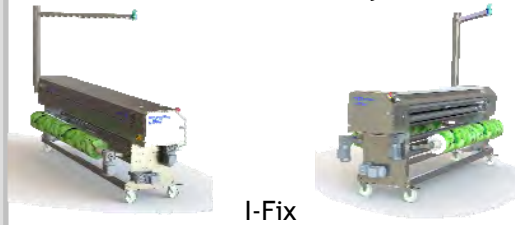
- fits every digital printer
- no electrical or mechanical interface
- no heat or vapour influence on printer

Stand-Alone:

- output of almost 200 sqm/h
- usable as universal dryer also
- available in 1.85, 2.50 and 3.40 m width

Example of:

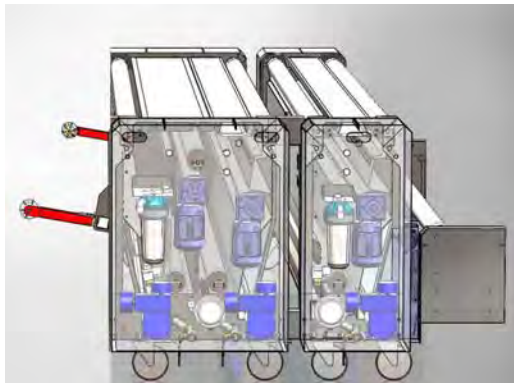
Heat Fixation / Dryer



I-Fix

Properties of the Porta-Wash washing series

The Porta-Wash is a modular roll-to-roll washing system consisting of 4 selectable washing modules to be combined into a washing line according to process and fabric requirements.



- removing of coating chemicals and non-linked dyestuff
- 4 different washing modules
- free configuration
- afterwards upgradable
- high temperature washing
- long dwell time with minimal water content
- high efficient vacuum extraction of polluted water
- recycled and fresh soft water spraying nozzles
- counter flow heat exchanger for hot water
- thermally isolated walls
- pre-drying vacuum system ensures cost effective drying
- available in 1.85, 2.50 and 3.40 m width

Example of:

Wet processing lines for washing / (finishing) / drying



Porta-Wash / (Porta-Pad) / Drum-Dryer // Porta-Wash / (Porta-Pad) / Portafix

Properties of the Drum-Dryer / Drum-Fix

The Drum-Dryer is a modular roll-to-roll drying unit developed for the combination with the Porta-Wash washing units and the Porta-Pad coating unit. Moreover it's an excellent heat fixation unit for disperse dyes.



- for drying and heat-fixation
- efficient heat transfer by aluminium drums
- one-sided contact only
- integrated exhaust
- for all types of textile cloth
- fixation of disperse direct / disperse sublimation dyes
- free configuration from 1 to 4 drums
- combinable with Porta-Wash and Porta-Pad
- in-line drying after washing and padding
- available in 1.85, 2.50 and 3.40 m width

Example of:

Drying / Heat Fixation



Drum-Dryer / Drum-Fix

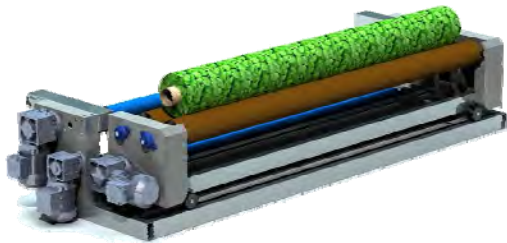
Properties of the winding units

The winding units are modular units and can be selected from roll-to-roll, lorry to lorry, batch winder or a combination of these.

centre winder



ascending batch winder






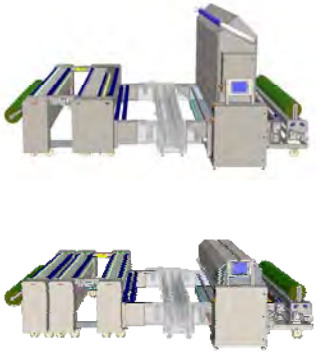
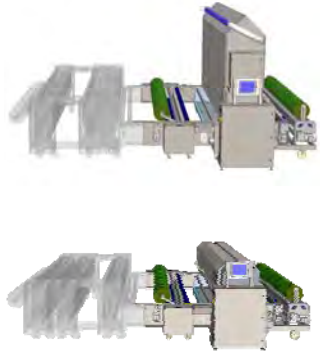
- modular combinable
- no heavy axle
- easy to fasten
- adjustable in width
- conical suspension for different cardboard tubes
- transverse substrate correction with cloth side detection
- scroll rollers for e.g. knitwear

Example of:

winding units



Advantages / Highlights

Pre-treatment with the Porta-Pad	Direct Print with textile dyes	Dye fixation with B-STEaM, Portafix Universal, E-STEaM or I-Fix, Drum-Fix	After-treatment with the Porta-Wash	Textile Finishing with the Porta-Pad
				
<ul style="list-style-type: none"> • cost-effective and simple application process for inkjet pre-coatings • excellent evenness over the width and length • resulting in even and reproducible printing results • very easy to operate 	<ul style="list-style-type: none"> • waterbased dye inks developed for real textile print • providing textile fastnesses • eco-friendly (Ökotex), sustainable • big colour space • vivid colours 	<ul style="list-style-type: none"> • excellent colour yield, maximum colours • excellent evenness • reproducible and uniform fixation results • energy efficient • low operational and maintenance costs 	<ul style="list-style-type: none"> • removing coating chemicals and non-linked dyestuff • providing good water and wash fastnesses • extremely economic concerning water and energy use • pre-drying vacuum system ensures cost effective drying 	<ul style="list-style-type: none"> • flexible and easy solution for applying chemicals • suitable for wet-in-wet processing saving time and money • providing usability of endproduct like professional textile finish