



Inkjet Textile Printer

FOREARTH

LIVING TOGETHER, FOR THE EARTH

**Kyocera's vision for the future is harmony with nature:
living together for the earth,
FOREARTH, a new inkjet textile printer, is now here
to realize this vision.**

Considering global environment and contribute to a sustainable society is responsibility for us. Kyocera focuses on the field of digital textile printing and created innovative solutions.

FOREARTH inkjet textile printer expands your creativity with sustainable textile printing.
Kyocera's new printing solution for the fashion industry.

Inkjet Textile Printer

FOREARTH



"FOREARTH Realizes Innovative Textile Print

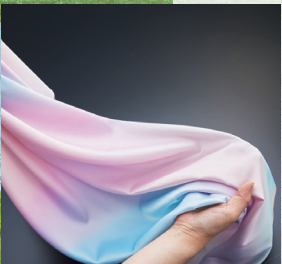


ing Solution"



Next to Zero Water Use

Conventional textile printing uses dye ink, which requires a large amount of water for many processes both before and after printing. Kyocera has developed proprietary pigment ink that alleviates this problem. FOREARTH cut the number of processes requiring large amounts of water by utilizing Kyocera Integrated Printing System (KIPS). Water requirements for equipment maintenance is also recycled to reduce water usage thoroughly.



Materializing Soft Hand Feel with High Quality Color, and Fastness

Kyocera's proprietary technology and pigment ink maintain the fabric's softness to expand the capabilities of pigment ink. The newly developed Kyocera Integrated Printing System (KIPS) in FOREARTH uses a unique all-in-one textile printing system, pre-treatment liquid, pigment ink (Picfy), and finishing agent to achieve high quality color and fastness and soft hand feel. The system is adaptable to a wide range of categories, from women's fashion, sportswear, to babywear and home textiles.



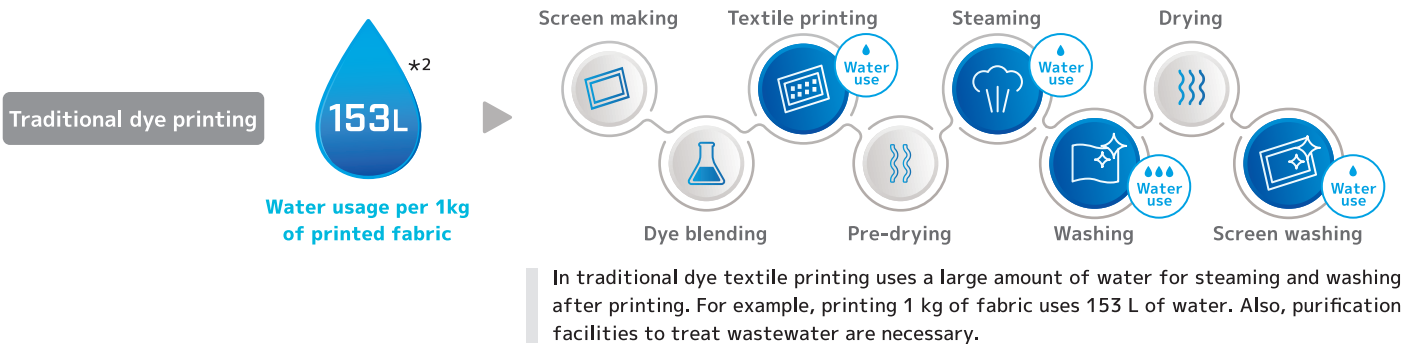
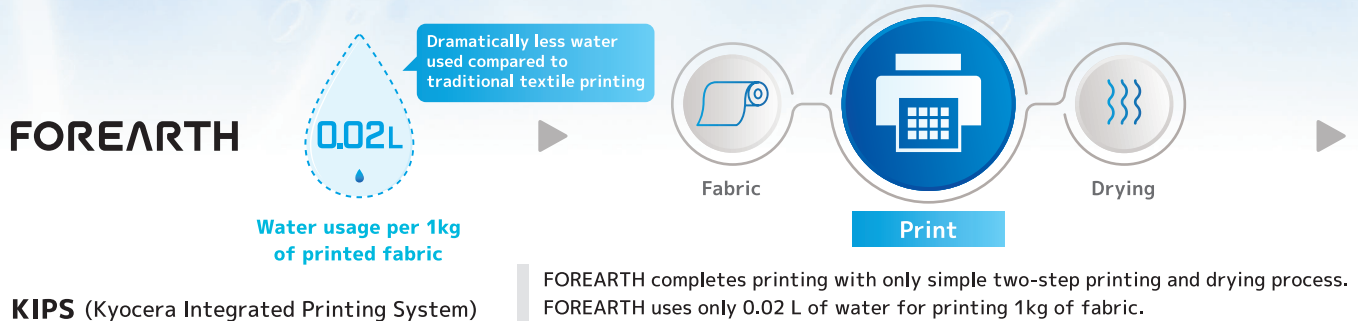
Compact Production and Water Free Concept Expand the Choice of Installation Place that Leads to New Supply Chain Innovation

FOREARTH has a simple two-step printing and drying process and drastically shortens the number of processes from design to production. This realizes a much smaller manufacturing area footprint compared to conventional textile printing. As FOREARTH uses only a little of water for printing and does not rely on water resources, it can be installed in almost anywhere such as onshore, nearshore. FOREARTH contributes to the reduction of logistics costs.

Water Free Concept

Eliminates High Water Usage Production Processes

FOREARTH achieves a water free concept^{*1} by using pigment ink, which eliminates the production and KIPS (Kyocera Integrated Printing System).



Delivering Soft Hand Feel, High Quality Color, and Fastness

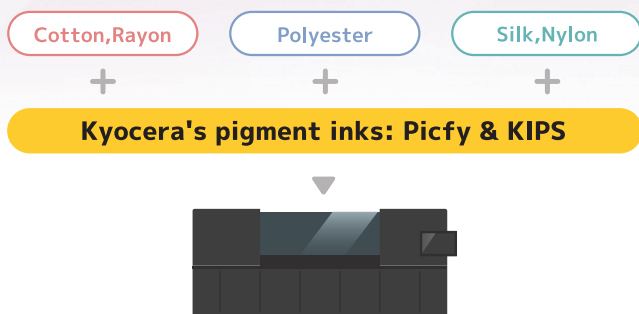
Creative Free

Single System for Various Types of Fabrics

Kyocera's circulating inkjet head and original pigment ink enable printing on a wide range of fabrics.

FOREARTH

FOREARTH adapts to various types of fabrics using a single system. This leads to production efficiency improvement.



A Digital Dye Textile Printing System

With conventional inkjet printing systems, dye inks need to be selected for types of fabric, and the system needs to be prepared separately for each ink type.



^{*1} : A system concept that does not use steaming, washing, or other water-based processes used in conventional textile printing.

^{*2} : Kujanpää, M., & Nors, M. (2014) . Environmental performance of future digital textile printing. VTT Technical Research Centre of Finland.

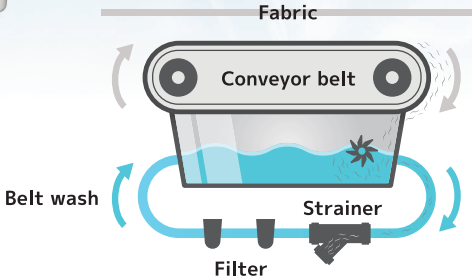
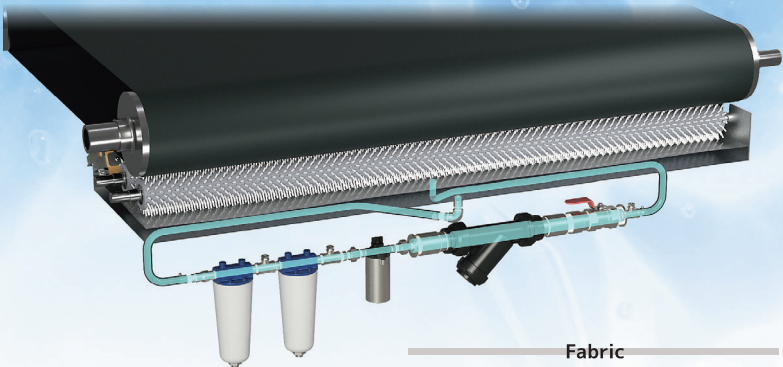
VTT Customer Report Vol. VTT-CR-04462-14

processes that use a large amount of water,

All in One Textile Printing System
KIPS (Kyocera Integrated Printing System)

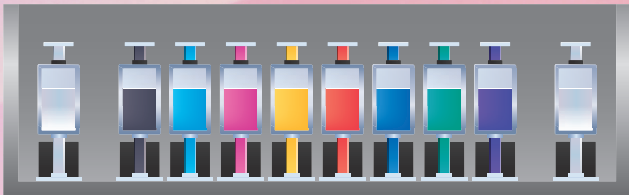
FOREARTH installs Kyocera's inkjet printhead which is top global share* for its digital textile printing and, by incorporating all in one textile printing system, KIPS, proprietary Picfy pigment ink, pre-treatment liquid, and finishing agent, the water free concept is realized.

*In terms of printing area, according to 2022WTiN



Circulating Belt Cleaning System
Reduces Water Consumption to the Utmost

Kyocera focuses on reducing water usage not only for printing process but also maintenance system, FOREARTH recycles cleaning water used for the conveyor belt with filters.



Pretreatment Liquid Kyocera's Pigment Ink Picfy Finishing Agent

Kyocera's Pigment Ink Picfy,
Pretreatment Liquid and Finishing Agent

FOREARTH discharges pretreatment liquid, pigment ink, and finishing agent in a continuous cycle that enables maintaining softness of a fabric.

Adaptable to a Wide Range of
Fashion and Textile Categories
with Soft Hand Feel

FOREARTH delivers soft hand feel, high quality colors, and fastness, and can be used for a wide range of categories such as woman's fashion innerwear, sportswear, and home textiles.

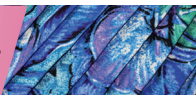


High Lightfastness



Printed colors on fabrics tend to fade due to light or ultraviolet rays, losing their original quality. Picfy as water-based pigment ink maintains color high lightfastness.

High Heat resistance



Since pigment ink has a high heat resistance, printed fabric with pigment ink is easily adapt to post pleating processes that potentially get color transfer in high-temperature heat treatment.

High Safety



Pigment ink is safe and suitable for baby wear, too.

Space-Saving Design, can be Installed almost Anywhere

Location Free

Space-Saving Design

FOREARTH's system has only two steps - printing and drying - drastically reducing the number of processes from design to production so it can complete print production using a much smaller footprint compared to conventional textile printing, which requires separate facilities for pre- and post-treatment processes.

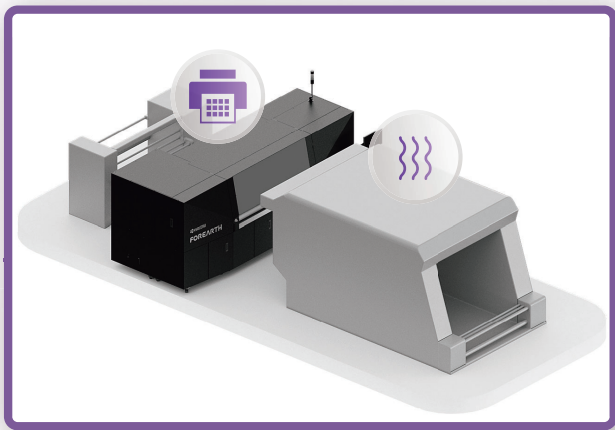


High Color Reproducibility and Stable Productivity

All in One Printing System with Stable Color Producibility and Reproducibility

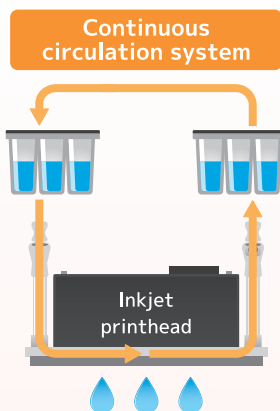
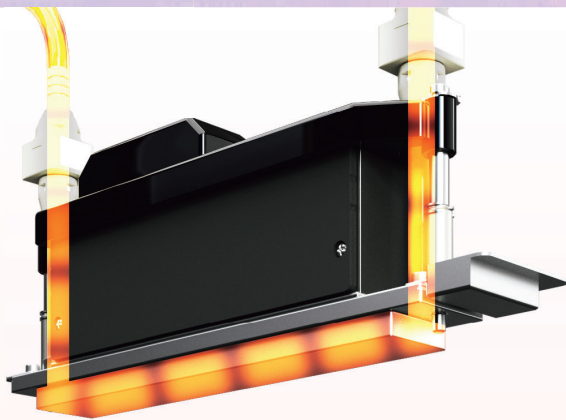
Dye textile printing has several processes that can affect color, requiring adjustment by experienced technicians, such as steaming and washing. FOREARTH greatly reduces the number of processes. Kyocera's original all in one system with proprietary pigment ink actualize high color stability and reproducibility.





Installable in almost Anywhere which Contribute to Shortening Lead Time and Cutting Distribution Costs

Traditional dyeing factories are operated in areas close to water resources since it uses a large amount of water for production. On the other hand, FOREARTH uses very little water for printing so production can be set up almost anywhere, including on-shore, near-shore, or more suitable areas close to consumers. FOREARTH contributes to the reduction of logistics costs, lead time, and surplus inventories.



Less environmental change in color tone, reducing time and effort required for adjustment

FOREARTH

Delivery high stability and color reproductivity



Maintain stable coloring

Conventional dye printing

Environmental changes in color tone are likely to occur



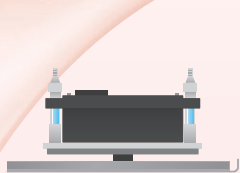
The adjustment is often required to keep color stable.

*The figure is an image

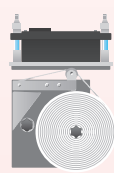
Latest Circulating Printheads for Stable Print Quality

FOREARTH is equipped with Kyocera's latest circulating printheads. Constant circulation keeps ink temperature and viscosity stable. It delivers stable colors and high color reproducibility.

Automatic Cleaning System for Stable, High-quality Printing



Printhead Cleaning with Blade



Printhead Cleaning with Cloth Wipe



Cap System Prevents Printhead from Drying Out

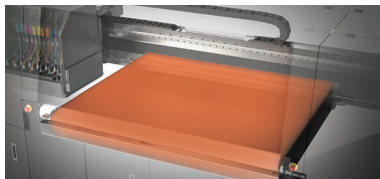
Conventional dye printing requires frequent adjustments to maintain color stability in post print process, as colors often change depending on the environment; for example, temperature, humidity, and passage of time. FOREARTH has high color stability, ensuring far less time and effort spent on adjustments.

High Productivity & Maintainability



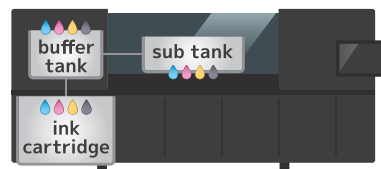
Sample Print Mode

By using sample print mode, automatic fabric size detection adjust print position on the belt. This makes it possible to print on small fabric size from A4 (210 x 297mm) in short amount of time, which also minimize the waste of fabrics.



Equipped with Conveyor Belt Heater

A belt heater is used to adjust the adhesion of the conveyor belt.

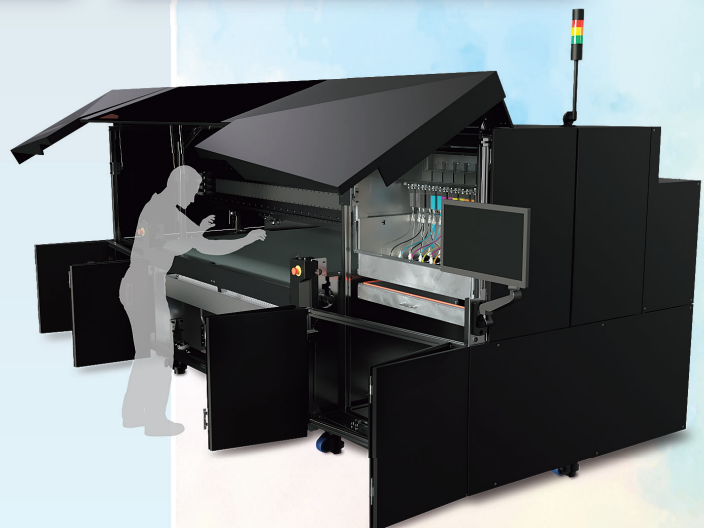


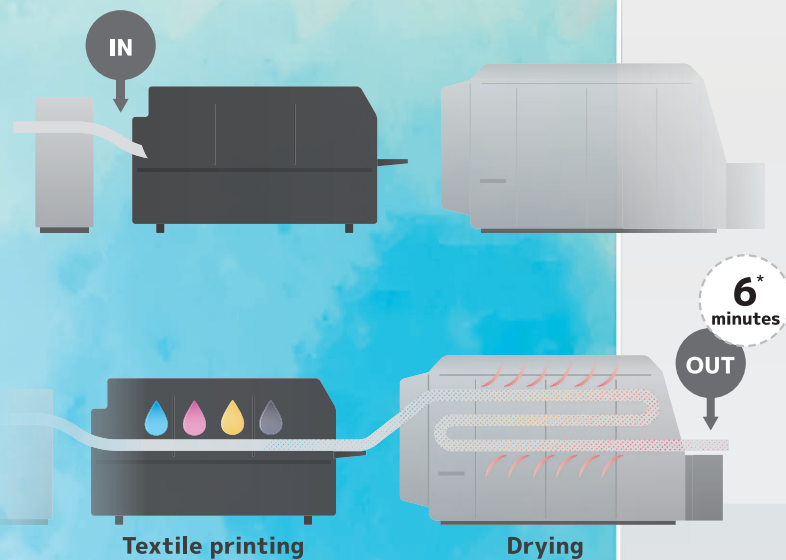
Possible Ink Replacement during Printing

FOREARTH's buffer tank enables ink replacement even during printing and minimize down time.

Full Frontal Access Design

The ink cartridges, belt washing unit, and carriage are all accessible from the front side of the machine for efficient maintenance.





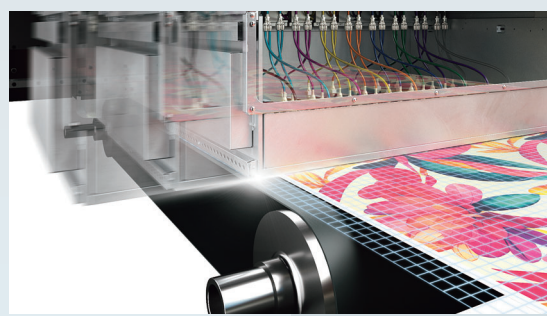
Kyocera Integrated Printing System Enables Speedy Printing

FOREARTH is equipped with KIPS, which allows printed textile to be completed using only printing and drying processes. The printed textile is taken out of the dryer 6 minutes after print starts.

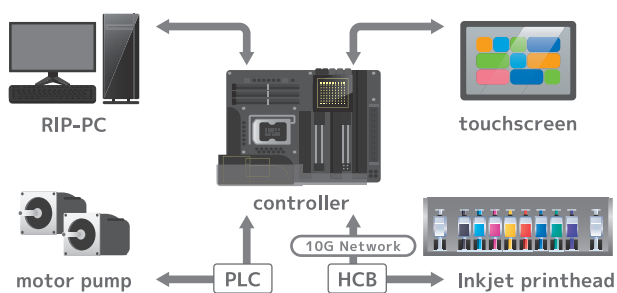
*Depending on ambient temperature and operating mode

High-precision Linear Carriage* Operation

FOREARTH's high-precision and high-speed linear carriage drive ensures precise printing quality in short time.



*Carriage: A unit equipped with inkjet printheads and parts necessary for printing



High-speed Data Communication System

Uses the high-speed 10G network enables high-speed communication with integrated control.

Specifications

Printhead	Kyocera circulating inkjet printhead
No. of printheads	Max.18 (Color: 16; Pretreatment Liquid: 1; Finishing Agent: 1)
Ink type	Water-based pigment ink
No. of colors	Up to 8 (CMYK + 4 special colors)
Ink capacity	10L
Max. print width	1800mm
Max. cloth width	1850mm
Resolution	600×600dpi
Print speed	Standard: High-quality mode; 2pass, 250m ² /h
Cloth transport	Adhesive belt
Belt cleaning	Automatic water circulation system
Feeder	Roll diameter: up to 300mm / Roll weight: up to 150kg
Dimensions	4600×2000×2000mm (T.B.D.)
Net weight	3500kg (T.B.D.)
Compatible RIP systems	Caldera / Inedit
Environmental conditions	Temperature: 20–30°C (22–28°C recommended) Relative humidity: 20–80% RH (40–80% RH recommended)
Power supply specifications	Rated voltage: 380–415V (3-phase + N) / Rated voltage: 200–208V (3-phase) Rated frequency: 50/60Hz Rated current: 60A

"FOREARTH" and "Picfy" are trademarks or registered trademarks of Kyocera Corporation in Japan and other countries.

About KYOCERA

Kyocera Corporation (TOKYO:6971, <https://global.kyocera.com/>), the parent and global headquarters of the Kyocera Group, was founded in 1959 as a producer of fine ceramics (also known as “advanced ceramics”). By combining these engineered materials with metals and integrating them with other technologies, Kyocera has become a leading supplier of industrial and automotive components, semiconductor packages, electronic devices, smart energy systems, printers, copiers, and mobile phones. During the year ended March 31, 2023, the company’s consolidated sales revenue totaled 2 trillion yen (approx. US\$15.1 billion). Kyocera is ranked #665 on Forbes magazine’s 2022 “Global 2000” list of the world’s largest publicly traded companies, and has been named among “The World’s 100 Most Sustainably Managed Companies” by The Wall Street Journal.



<https://forearth.kyocera.info/>

