HGS Machines

SAPPHIRE

Unleash Unmatched Speed & Precision –

High-Performance Textile Printing at Its Best!

Redefining Machines.

Everything is possible

High-end digital printing

The Sapphire from HGS Machines offers unsurpassed quality and value to textile printers who are taking the first step into digital production. It also offers a step up to high-performance, high-quality production for printers who wish to delelop their digital capabilities further. Sapphire uses several printing modes and 16 or 32 Ricoh Gen 6 printheads with a resolution of 1200 & 600 dpi. Apart from ease, accuracy and productivity, Sapphire offers flexibility and may be used with Reactive inks and different drying methods.

Save time, space and money

Digital printing has many benefits. It makes short-run, fast-turnaround jobs affordable for customers and profitable for printers. It eliminates screen preparation time and makes more time available for printing full production runs on scren printing lines.

Multitude of applications

Open creative possibilities with the wide range of natural fabrics, both knitted as well as woven. Blotches and gradations can be printed with intense colors and smoothness thanks to the variable dropsize technology combined with the unique, unrivalled native 1200 dpi resolution. This also allows the printing of very fine lines and geometric designs that no other digital printer on the market can match.

Engineered for performance

Full control in one integrated system

The Sapphire is a complete system, designed and engineered to make a complete solution. All elements are made to work together: printheads, inks, substrate conveyor, and dryer. With Sapphire from HGS, configuring the right combination for your requirements is possible without compromising results.

Nova+Pro unrivalled image quality and long printhead life

The Sapphire comes standard with the Nova+Pro waveform, which ensures perfect drop positioning on the fabric for flawless image quality without striping. The Inline placement of printheads ensures no light-dark color effet in bloch color printing, increasing print speed while preventing the "Soccerfield effect." Additionally, this system extends printhead lifespan and minimizes issues like misaligned or missing nozzles, ensuring optimal printing results.

End-to-end support of your business

With HGS you can access decades of experience in textile printing, right from the source. Our application support specialists are dedicated to help you explore new possibilities and will share everything there is to know to keep your Sapphire in perfect condition. And when outstanding results matter, rely on HGS´ ink technology. Our performance inks are specially formulated to deliver optimum performance. Our inks guarantee unattended printing without nozzle blockages or print head failures while adhering to the highest standards and legislation on sustainability.

End-to-end control for quality output

The right balance of technology incorporated in Sapphire, internationally recognized inks and our full support ensures end-to-end control for consistent high-quality output. Whereas Sapphire is built to control high speed and high quality in two different configurations. The Sapphire with 16 printheads is a great option for entering in digital printing, where the Sapphire with 32 printheads is the preferred choice for high volume printing. A Sapphire can be later upgraded at the customer site from 16 to 32 printheads. The combination of RICOH GEN 6 print heads, Ink recercullation, chilling plant and our specially formulated performance inks ensures excellent runnability and longer print head lifetime. Most importantly, you can count on strong and vivid colours at the lowest possible ink consumption.
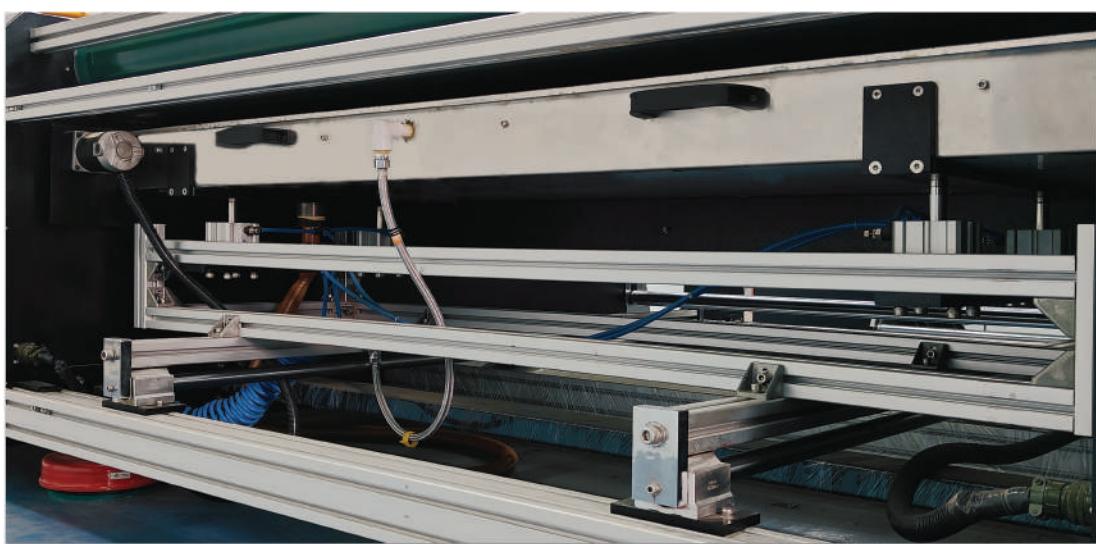
A closer look to inspiring details

| Features	Description
Printing width	1800 mm
No. of PH	16 or 32
Print heads	Ricoh Gen 6
Ink	Reactive or Pigment
Colours	8
Environment Conditions	Room temperature 20 - 25°C
Printer Electronic	BYHX
Conveyor Cleaning system	3 Sponge roll & 1 brush roll, Back dryer, fabric supporting roll
Compressed Air	Consumption: 0.03m3/min Air pressure: 0.7Mpa
Print head gap	Up to 10 mm
Rip Supported	Neo Stampa
Electricity load	16H- 26.8kw, 32H- 31.7kw (approx.)

**Print modes /
Production modes**

Sapphire with 16H

Passes	DPI	Productivity (sq mtr)
1	600 * 600	220
2	600 * 1200	130

Sapphire with 32H

Passes	DPI	Productivity (sq mtr)
1	600 * 600	400
2	600 * 1200	250

* Actual performance may depend on the specific type of system and application settings.

Designed for continuous production

Fabric infeed system

- Auto Fabric feeding ensure the fabric pasting easy on conveyour belt.
- Auto tensioning sensor to maintain constant tension throughout the length
- Multiple tensioning roller to control boing in fabric and ensure straight edges
- Guide supported Conveyor with adhesive keeps the fabric even and prevents creases while printing – achieving accurate printing results.
- Pneumatic controlled pressure roll ensure the fabric pasting even.
- Special Plateform to stand operator for his easy reach to handle the fabric feed.

Blanket cleaning system

- Equipped with brush roller and water jets to wash off the lint and excess inks on the blanket
- 3 Sponge roller to ensure removal of excess moisture
- Infrared belt dryer with hot air to dry the blanket completely and activate the adhesive on the blanket
- Extra adjustable Supporting fabric roll ensure removal of excess moisture in any condition.

Dryer

- Separate infrared dryer for rapid drying of printed ink on fabric
- Energy efficient radiation for reduced heat dissipation into the room
- Dryer with Hot air runs in diffrent 2 stages optional.

Ink system

- With Ink recirculation system, best for pigment printining
- With Ink cooling option, ensures longer runability of dark color printing & healthy PH life.
- 10 litre ink tanks for long ink refilling cycles
- Latest degassing and bubble removing system to avoid printhead blockage during printing
- Inline ink filters for safety of printhead
- Ink refill during running
- Low ink warning for operator attention

PH Carriage Assembly

- With Anti carriage crash sensor to protect print heads
- Linear servo motor with magnetic drive helps Sapphire to run without noise & performing as per market demand.
- Solid adjustable printer beem ensure more staibility of printer which helps to avoid vibration.
- PH carriage designed systematically by professionals to save time in case of maintainance.
- The unique Inline PH placement ensures NO ligh-dark color effect in bloch color printing, Please Note: Print sharpness comes always better on Inline system in comparison to staggered.

Applications of Digital Textile printer Perfect for

Sarees
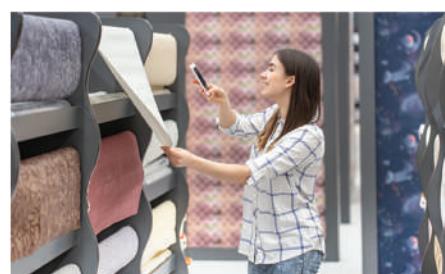
Suits and Dress Materials

Bed Sheets

Curtains and Upholstery

Why Choose Digital Textile Printing?

Unlimited Design Possibilities

Print detailed graphics, vibrant colors, photo-realistic images, and gradient effects with ease.

Low Minimums, High Flexibility

Ideal for customized pieces, boutique collections, and short runs without heavy setup costs.

Eco-Friendly

Consumes less water, fewer chemicals, and produces minimal waste compared to traditional methods.

Fast Turnaround

Quick sampling and production timelines help meet market trends and customer demands faster.

Quick Notes

About HGS Machines

Since inception in the year 2005, the HGS Machines Pvt. Ltd. has come into view after its merger with HGS engineering. Its leadership is marked by many successful challenges our constant chase of `excellence` and considered among the India's Digital Textile Printers Industry. HGS Group has supervised by young entrepreneurs under the guidance of Our Founder Director Mr. Prashant Mohan Vats, Who have a vast technical knowledge of industry. HGS had engineered the conveyer belt system in 2007, which was one of first innovation in the Indian digital textile industry. The objective was very clear to provide the highly competent & Global standard printers with the Economical price. At HGS, We understand the changing needs of printing industry. For execute your new collections every time, we make highly innovative & cost saving printers every time, which bears the exceptionality of high definition digital printing. We have also become a key player in the market for digital printing. In 2010 we were the first in the industry who manufactured a digital textile printer.
We have built a network in Pan India in more than 30 cities.
We take pride in putting our customers first, letting their ambitions inspire us, and deploying our expertise, resources and network to help them to achieve their goals. Our solutions are designed to empower customers worldwide in all stages of the printing process; from pre-press to printing, from textile to industrial – and beyond. That is the impact of a key player.

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hgsmachines.com