

spgprints®



RSI & Rotamesh for Industrial Printing

Rotary Printing Solutions and their implementation in your printing process.

Increased demand for quicker, more efficient Industrial Printing.

As the Industrial Printing market is growing rapidly, the production has to keep up with the growing demand. For example, for Printed Electronics this demand is caused by the increased use of smart devices, but also the development of sustainable energy and flexible Printed Circuit Boards.

There are several ways to adjust to this increased demand. For example, Rotary Screen Printing enables your printing process to print quicker and more efficiently (and save money along the way). This brochure will explain how Rotary Screen Integration (RSI®) works and how it can optimize your manufacturing process.

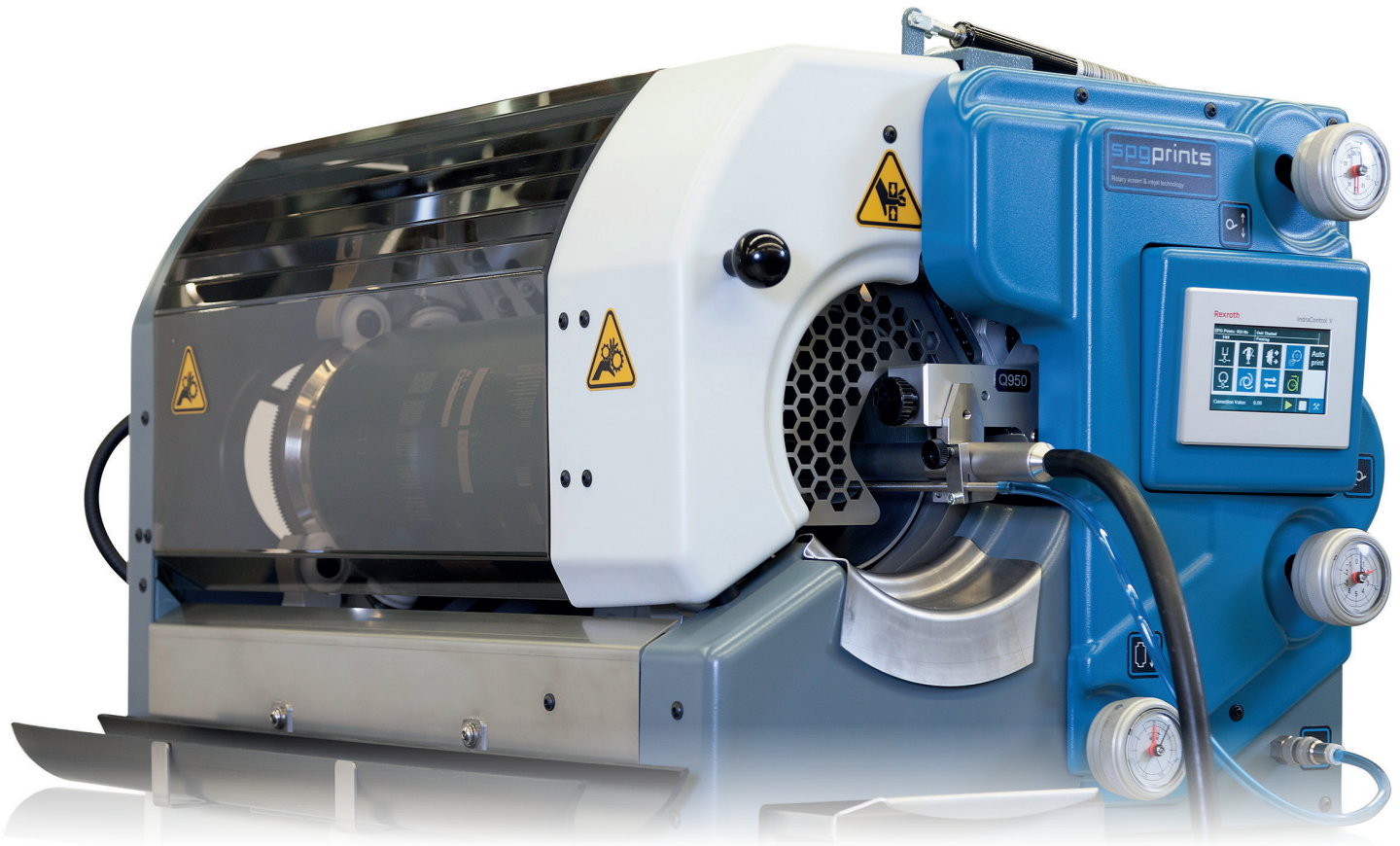
Drivers and Challenges.

One of the most important Drivers of taking your Industrial Printing to the next level, is the increased use of them for smart and connected devices. Devices are developing rapidly, with inventions like sensor technology, cellular connectivity and the transition to the cloud. This connectivity, driven by the “Internet of Things”, is implemented in (ware)houses, retail stores, wearables, smart packaging solutions and cars. Applications become smaller, which is why the demand for low-cost and lightweight Printed Electronics grows.



But what is the most efficient way to create these low-cost and lightweight Printed Electronics? Using Industrial Printing for mass production requires the development of new substrates and inks, but also optimizing the performance of your manufacturing line. Each customer requirement asks for its own technical expertise, which is why our R&D department is always eager to think about the newest solutions together. We believe the sharing of knowledge is the driving power of development.

Rotary Screen Integration (RSI®) is one of these areas of expertise. It gives your manufacturing process plenty of benefits and enables you to deliver what your customers need: quick and efficient Industrial Printing. In Chapter 2, we will explain what RSI® is exactly, before zooming in on how this solution can improve your manufacturing process.



Rotary Screen Integration (RSI®).

Rotary Screen Integration, RSI® for short, is a solution for success in a lot of applications. RSI® is based on patented RotaMesh® screen technology. RotaMesh® is a 100% nickel, non-woven material. Its unique hexagonal structure creates outstanding stability. This leads to sharp print results, a long lifetime and easy handling.

RSI® for Industrial Printing

The RSI® modules are designed to permit great flexibility in placement on your equipment. This makes the technology a perfect fit for Industrial Printing, as it offers you maximum freedom in tailoring your printing operations to customers' requirements. The modules are available for print widths from 10" up to 24", printing wider is also possible with the RSI Mid Web Print Module.

The screens are available with various mesh counts and open areas, to provide top-quality results for a broad spectrum of applications and endless possibilities. RSI® enables you to manufacture economically, reliably and rapidly at the same time.

■ Economical Operation

Individual screens can be run up to 500.000 linear meters (1.64 million feet), ideal for long runs and repeating orders. The unique and durable RotaMesh® screens can be re-engraved up to 20 times and sometimes even more, allowing you to save on your screen costs, especially for short runs.

■ Direct integration

The RSI®-modules can be integrated with all major Rotogravure presses, by custom-modification of all new or existing roll-to-roll presses. Depending on your requirements, the RSI® modules may be fitted in a fixed position or on an interface frame.

■ Features for productivity

The Rotary Screen modules are capable of operating at web speeds up to 150 m/min (490 feet/min). A well-thought design and software concept ensures that exchanging screens and squeegees is accomplished in minutes - minimizing downtime between jobs.

Specific solutions: RotaMesh® and RotaPlate®

The **RotaMesh®** screen is known as the workhorse among screens. It is available in seamless and welded executions, with a printing width up to 900 mm (the seamless variants even up to 2,6 meters). Provided with different types of emulsion and with thicknesses up to 250 microns, this screen gives you the ultimate freedom for your print work.

The second solution, the **RotaPlate®** screen, comes as a pre-coated mesh material in several widths up to 565 mm, on a roll or in sheets. This ensures flexible and easy in-house engraving. Each RotaPlate® screen has 40% more holes per square centimeter than corresponding woven screens, which results in 15% more precise ink transfer onto the substrate. This leads to sharper fine prints and smoother solids. RotaPlate® allows you to print faster at a higher quality.



The Benefits of Rotary Screens

Using Rotary Screens brings a couple of advantages to your manufacturing line. We listed the most important benefits:

- **Long Lifetime** - RotaMesh® and RotaPlate® are solid nickel screens with a unique hexagonal structure. Both are known for their long lifetime. A lifespan approaching 500.000 linear meters of printed substrate is not uncommon, which translates into fewer changeovers and increased press uptime.
- **Extremely Sturdy** - The extremely sturdy and stable material is built to withstand the impact of manual handling, resulting in fewer remakes.
- **Re-use for repeat orders** - Rotary Screen Printing gives you the opportunity to re-use the same screen for repeat orders. The mesh can be washed several times, which saves you the time and the money that would be required to make a new screen every time.
- **Less Downtime** - The sturdiness and resistance to wrinkling cause RotaMesh® to be almost unbreakable. The screens don't get damaged during pre-press or printing.
- **No backup screen required** - As the screens last long and are extremely unlikely to break, there is no need to produce backups. This cuts your screen costs even further.

Rotary Screen Solutions in practice.

As mentioned, RotaMesh® and RotaPlate® are available with various mesh counts and open areas, to provide top-quality results for a broad spectrum of applications. You can combine plenty of applications, ink types and substrates, as shown in the Table below.

Applications	Ink types	Substrates
raised ink deposits	spot colours	Polyethylene
opaque colours and extreme coverage	fluorescent colours	polypropylene
metallic finishes	metallic colours	polyester
fine lines and sharp letters	Hot-foil imitations	polystyrene
large solid areas	magnetic inks	polycarbonate
UV varnish and primers	glitter inks	paper
tactile images, warning symbols, Braille	(tactile) varnish	PVC
3D effects	scratch-off	foils
security features	optically variable inks	uneven surfaces
glow in the dark	adhesives	absorbent substrates
hologram imitations	(ir)reversible thermo sensitive inks	...and more

Using RSI® is perfect for long runs and repeat orders, as it can run up to 500.000 linear meters (1.64 million ft). Additionally, back-ups are not necessary, and the screens can be stripped and reused for up to 20 (or even more) different jobs, making it a very sustainable solution. Not only is RSI® sustainable, but it also will favor your production capacity. The Rotary Screens are capable of operating at web speeds of 150 m/min (490 ft/min) and exchanging screens and/or squeegees is done within minutes. No mechanical or electrical adjustments are required, so downtime will be minimal.

Printing System for Industrial Printing

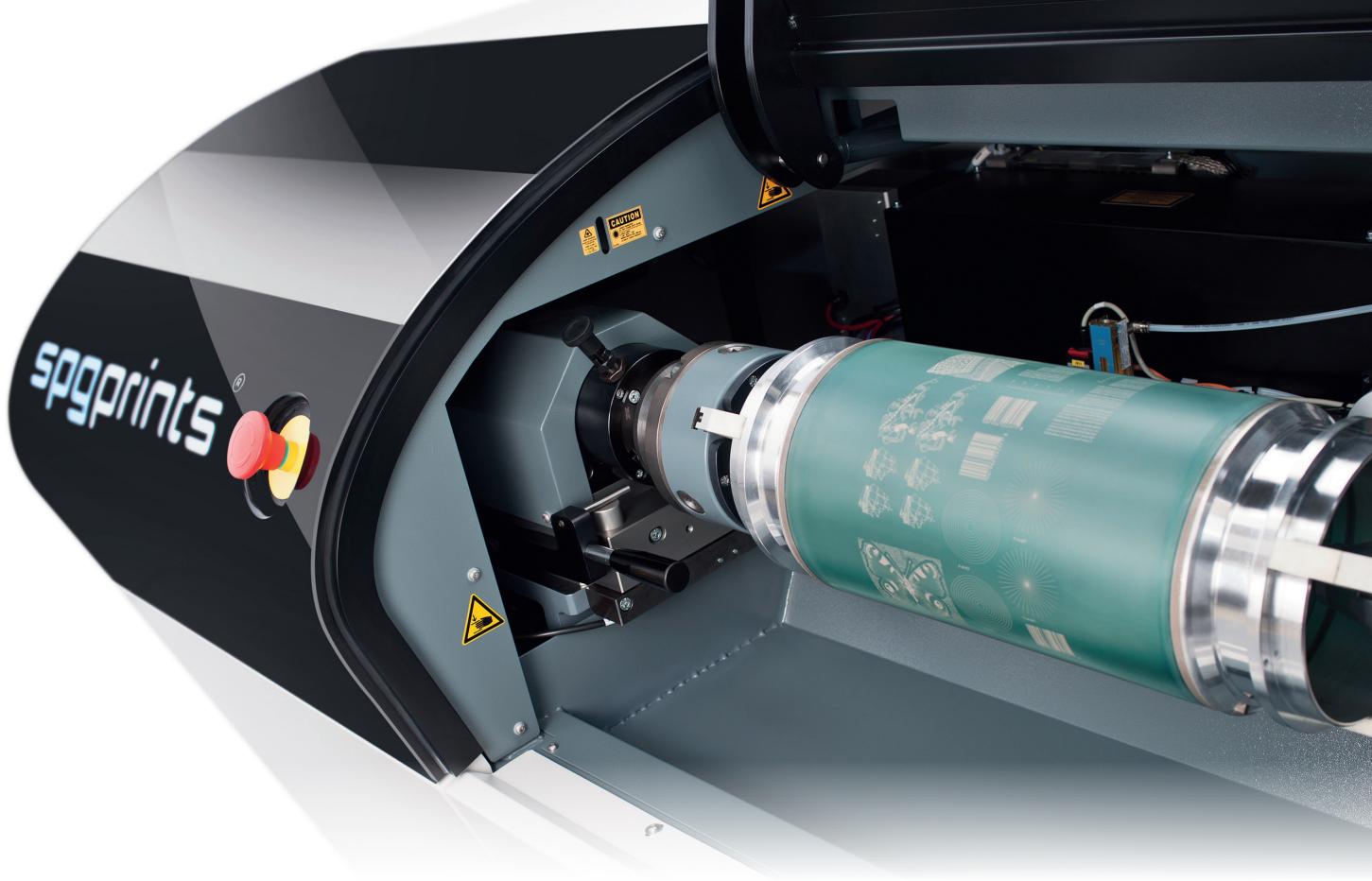
The Hot Air Rotary Screen Printing line is a high-volume solution for Industrial Printing. The position of the dryers, on top of the printing stations and the platforms between the printing stations, allows for easy (visual) inspection of the printing process. The machine also leaves space for the integration of UV/NIR/IR systems. Its design - with one or more printing stations in one line - enables you to produce your product in one single run. The type of substrate you use is not a problem; the machine handles all sorts of substrates, from sensitive film to heavy paper.



Rotary screen production line

Complete solution for Industrial Printing:

- Maximum 16" width
- Electrical heated, high efficient hot air dryers
- 4 meter drying content
- Driven cooled rollers
- Well balanced web tension control
- In register printing
- From one up to 4 print stations



Prepress processes

For every step in the screen-making process, specialized Pre-press equipment has been developed. Thanks to this, our experts can guarantee optimal performance in terms of accuracy and repeatability.

The system will be completely modified to your needs, as it follows a completely modular design concept. Every prepress kit is delivered with a starters kit, which includes chemical tanks, chemicals, a spray gun, support blocks for screens, and a balloon set. Everything you'll need to start with Rotary Screen Printing is available for you.

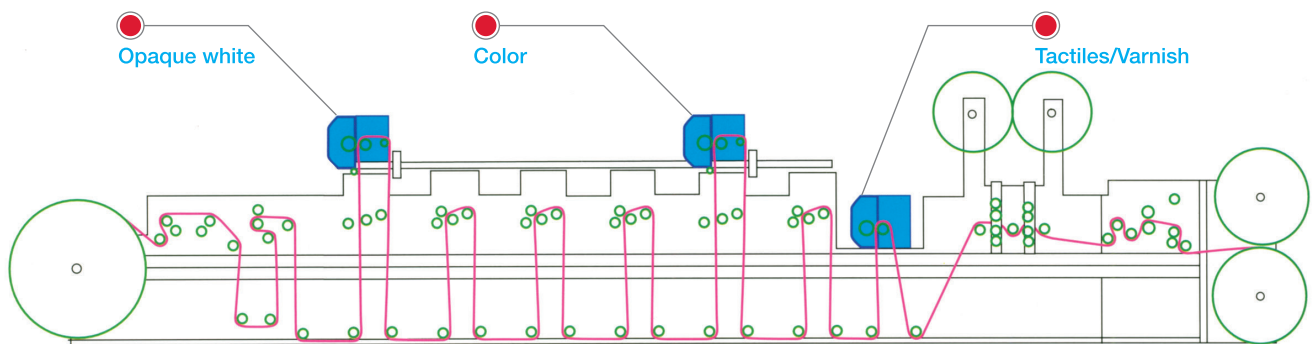
The RotaPlate® Pre-press equipment makes flexible and easy in-house engraving of rotary screens possible. This leads to significant cost savings, as preparing a RotaPlate® screen will not take you more than twenty minutes.

Implementation and integration of Rotary Screen Solutions.

Now you know what Rotary Screen Printing is and how the solutions look in practice, it is important to know how you can implement this and what it might solve in your manufacturing process. SPGPrints offers a full-service package, ranging from installation to application support and training. We have a team of experts that can provide in-depth advice on specific production-related matters. In our Technology Center, customers can test new products and methods in an authentic production environment. All of these services make the implementation of new solutions very easy. You can decide how much service you need during the start-up and maintenance of your new rotary screen printing line.

Integration on your press

The RSI® module is a self-contained, single-color printing unit that can easily be integrated into your existing press. SPGPrints has OEM partnerships with many major narrow-web manufacturers that provide the supply of completely pre-integrated systems or the retrofitting of RSI® modules to previously installed lines.



It is also possible to directly integrate with machines supplied by non-partner companies. This can either be done with new or existing machines, both fully supported by SPGPrints training, start-up and application support. The supply of high-quality consumables such as screens and squeegees is also possible for these machines.

Performance options

Various optional accessories can be provided to boost the performance of your RSI® modules:

- Peristaltic ink pump, including hoses (to quickly interchange inks).
- Automatic ink level control to regulate the ink pump (to maintain a constant level inside the screen, ensuring optimal consistency in the printed result).
- Automatic register control (to maintain print accuracy throughout a run).
- Explosion-proof execution and certification of the print module (for safe operation in applications involving solvent-based and special-purpose flammable inks).

Rotary Screen Printing for your specific printing line.

Do you want to learn more about Industrial Printing and what a technological solution like Rotary Screen Printing can do for your printing process? Our experts can help you with a tailored "Proof of Concept", in which they show you exactly how to implement Rotary Screen Printing in your business.

[Request a unique Proof of Concept >](#)

Key takeaways.

The demand for (flexible) Industrial Printing is growing rapidly, and production has to keep up with this growth. In order to print quickly and efficiently, flexibility and the possibility to tailor your printing operations are important factors. This is what makes RSI® a perfect fit for Industrial Printing.

RSI® allows you to save on screen costs, as screens can be re-engraved up to 20 (or more) times. It is easy to integrate and downtime between jobs is kept to a minimum. Using RSI® is perfect for long runs and repeat orders, as it can run up to 500.000 linear meters (1.64 million ft). Other benefits of this technique can be found in chapter 2.2.

The implementation of RSI® is easy and the service you require during the start-up and maintenance of your rotary screen printing line is entirely up to you. If you have any questions about RSI® or integrating it to your specific Industrial Printing line, you can always *contact our specialists*. By requesting a free *Proof of Concept*, you can discover what this technique can do for your manufacturing right away. We'd love to hear your challenges and opportunities!

About SPGPrints.

For all of your printing needs, a reliable, cutting-edge solution is waiting for you. Whether your question is about screens, lacquers, inks, or digital engraving, all you need is a way to find the perfectly fitting solution.

As a global leading company in the printing industry, SPGPrints provides a broad range of system solutions for textile as well as graphic printing, including Industrial Printing applications. This not only entails our highly reliable Rotary Screen technology, but also an extensive program of precision metal products.

Our experts are always happy to help our customers solve their printing challenges. Not only with their own experience and knowledge, but also through continuous innovation and a powerful distribution network in more than 100 countries. This is how SPGPrints adds significant value to its customers' processes and products. How can we help you?