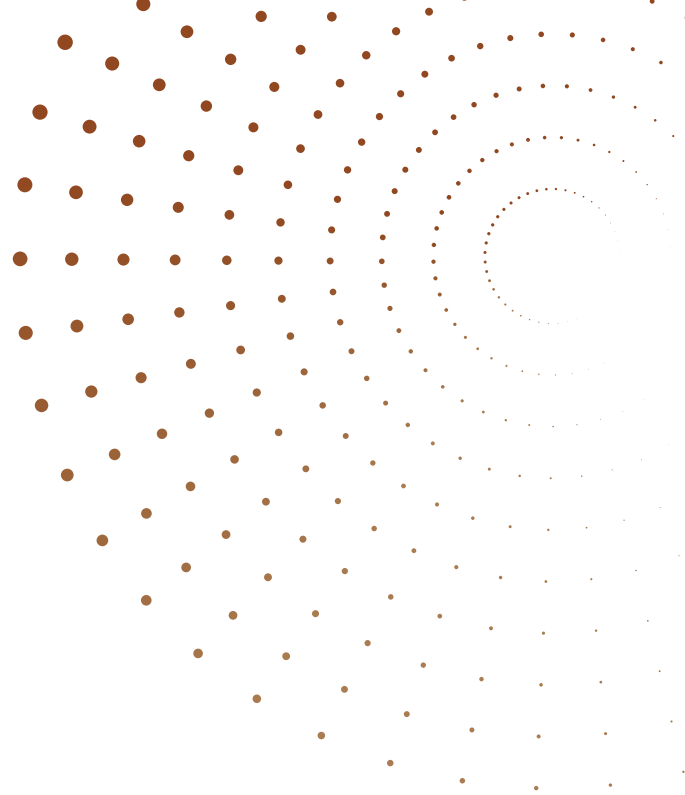
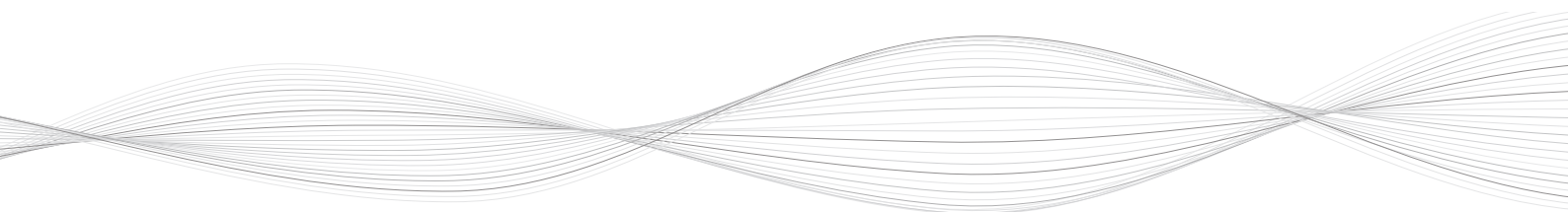




GEEN® COLD FOIL - COLD FOIL PRINTING MACHINE

Technical Specifications





GEEN® Cold Foil Printing is a technology used in the printing industry to apply metallic foil to various materials without the need for heat. It is eco-friendly and fully recyclable unlike metallised works.

This process involves the transfer of a metallic foil layer onto the substrate using adhesive material. Here are the key materials involved in cold foil printing:

Foil Rolls:

The foil is transferred onto the printing substrate during the cold foil printing process.

Adhesive:

Cold foil adhesive is applied to the substrate in the desired pattern or design. This adhesive acts as a bonding agent between the foil and the substrate. It allows the foil to stick to the specific areas where the adhesive is applied.

Printing Substrate:

This refers to the material onto which the foil is transferred. Common substrates include paper, cardboard, plastic, and all other smooth materials commonly used in the printing industry.

Offset Printing Press:

Cold foil printing is done using a special printing press equipped with the necessary mechanisms for applying adhesive, transferring foil, and printing the colours.

Die or Plate:

A die or plate is used to create the desired pattern or design for applying the adhesive to the substrate. It is an essential tool for creating intricate and precise foil designs. **GEEN® Cold Foil Printing Machine uses standard offset printing plates which helps to decrease the cost of production.**

Lamination Unit (Optional):

In some cases, a lamination unit may be used in the cold foil printing process to enhance the durability and appearance of the printed material. The lamination process involves applying a protective layer over the printed foil.

These materials and components work together in the cold foil printing process to create eye-catching, metallic finishes on various printed materials. Cold foil printing is often chosen for its versatility, cost-effectiveness, and ability to produce high-quality metallic effects without the need for heat.



GEEN® Cold Foil Printing Machine Version: *Small Format 50x70 cm GEEN*

BASIC MACHINE DATA

Standard Features

- High-performance material and design with reinforced main two-beam.
- Integrated and robust drive system.
- Fixed/adjustable track side rollers on the main side carriage for precise alignment on the machine rail.
- Dustproof electrical cabinet for the drive system and power distribution circuits.
- Touch screen adjustable foil tension.
- Hose and cable entry system for the base portal.
- Heavy-duty, precision-engineered system.

Machine Size

Average Size
Width : 1.800 mm
Length : 900 mm
Height : 1.000 mm
Weight : 500 Kilogram

Operational Specification

Cold Foil Material Width Size (Maximum) : 750 mm
Cold Foil Material Width Size (Minimum) : 100 mm
Maximum Cold Foil Roll Length (Recommended) : 5.000 Meters

Paper Thickness (Min.-Max.) : 90-450 GSM/M²

Maximum Revolution Speed : 12.000 Hour/Speed
Recommended Spin Speed for Foil Saving Printing : 6.000 Hour/Speed

Main Motor Servo Total Power : 4,5 kw x 2 PCS
Total Power : 9 kw +/- 10%

Power: 380 Volts / 50 Hz

Air Source Pressure : 0,5 - 0,8 Bar

Notes:

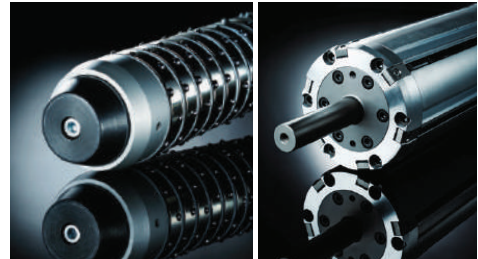
Unless otherwise specified, the power line input is inside the system.
If utilities and power sources are not available in this area,
longer hoses and cables should be provided.

Recommended Offset Printing Machine Top Clearance Dimensions

(for informational purposes)
Height Over Machine : 1.300 mm ∞
Width Machine: +500 mm

Tool Stations

Machine Itself: 1 Unit
Frictional Shafts: 2 Units (for Multiple Foil Usage and Foil Saving)
Standard Shafts: 2 Units (for Single Foil Usage)



GEEN® Cold Foil Printing Machine Version: *Medium Format 70x100 cm GEEN*

BASIC MACHINE DATA

Standard Features

- High-performance material and design with reinforced main two-beam.
- Integrated and robust drive system.
- Fixed/adjustable track side rollers on the main side carriage for precise alignment on the machine rail.
- Dustproof electrical cabinet for the drive system and power distribution circuits.
- Touch screen adjustable foil tension.
- Hose and cable entry system for the base portal.
- Heavy-duty, precision-engineered system.

Machine Size

Average Size
Width : 2.290 mm
Length : 900 mm
Height : 1.200 mm
Weight : 650 Kilogram

Operational Specification

Cold Foil Material Width Size (Maximum) : 1.020 mm
Cold Foil Material Width Size (Minimum) : 100 mm
Maximum Cold Foil Roll Length (Recommended) : 5.000 Meters

Paper Thickness (Min.-Max.) : 90-450 GSM/M²

Maximum Revolution Speed : 12.000 Hour/Speed
Recommended Spin Speed for Foil Saving Printing : 6.000 Hour/Speed

Main Motor Servo Total Power : 5,5 kw x 2 PCS
Total Power : 11 kw +/- 10%

Power: 380 Volts / 50 Hz

Air Source Pressure of Shafts : 0,5 - 0,8 Bar

Notes:

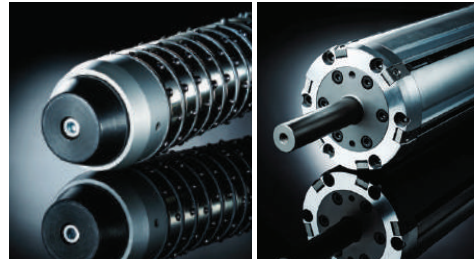
Unless otherwise specified, the power line input is inside the system. If utilities and power sources are not available in this area, longer hoses and cables should be provided.

Recommended Offset Printing Machine Top Clearance Dimensions

(for informational purposes)
Height Over Machine : 1.500 mm ∞
Width Machine: +500 mm

Tool Stations

Machine Itself: 1 Unit
Frictional Shafts: 2 Units (for Multiple Foil Usage and Foil Saving)
Standard Shafts: 2 Units (for Single Foil Usage)



GEEN® Cold Foil Printing Machine Version: *Big Format 100x140 cm GEEN*

BASIC MACHINE DATA

Standard Features

- High-performance material and design with reinforced main two-beam.
- Integrated and robust drive system.
- Fixed/adjustable track side rollers on the main side carriage for precise alignment on the machine rail.
- Dustproof electrical cabinet for the drive system and power distribution circuits.
- Touch screen adjustable foil tension.
- Hose and cable entry system for the base portal.
- Heavy-duty, precision-engineered system.

Machine Size

Average Size
Width : 2.800 mm
Length : 900 mm
Height : 140 mm
Weight : 1.000 Kilogram

Operational Specification

Cold Foil Material Width Size (Maximum) : 1.200 mm
Cold Foil Material Width Size (Minimum) : 100 mm
Maximum Cold Foil Roll Length (Recommended) : 5.000 Meters

Paper Thickness (Min.-Max.) : 90-450 GSM/M²

Maximum Revolution Speed : 12.000 Hour/Speed
Recommended Spin Speed for Foil Saving Printing : 6.000 Hour/Speed

Main Motor Servo Total Power : 7,5 kw x 2 PCS
Total Power : 15 kw +/- 10%

Power: 380 Volts / 50 Hz

Air Source Pressure of Shafts : 0,5 - 0,8 Bar

Notes:

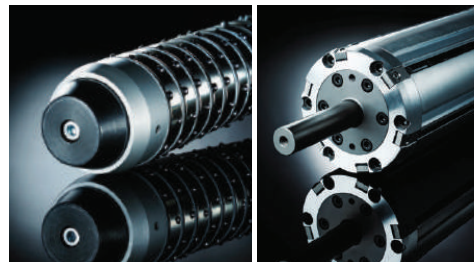
Unless otherwise specified, the power line input is inside the system. If utilities and power sources are not available in this area, longer hoses and cables should be provided.

Recommended Offset Printing Machine Top Clearance Dimensions

(for informational purposes)
Height Over Machine : 1.700 mm ∞
Width Machine: +500 mm

Tool Stations

Machine Itself: 1 Unit
Frictional Shafts: 2 Units (for Multiple Foil Usage and Foil Saving)
Standard Shafts: 2 Units (for Single Foil Usage)



General Features

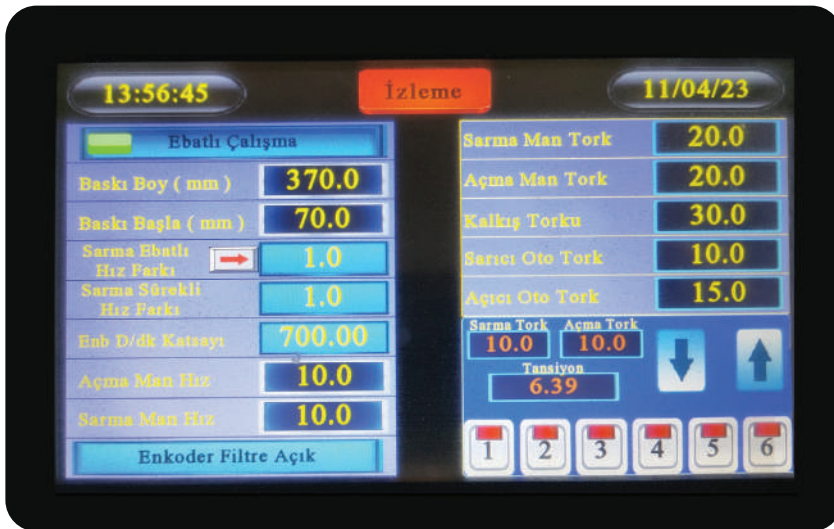
- Enhanced touch screen interface for easy use
- Operational flexibility with different language options
- Specifically calibrated for your printing machine to facilitate easy installation of printing tools
- Bright, wide colour LCD touch screen
- Real-time multitasking to increase efficiency
- Ergonomic panel layout to reduce operator stress
- Controls the most complex process tools
- Easily create prints with the program generator library and parametric data fields
- Remote diagnostics allow real-time testing and troubleshooting
- Integrated custom processor
- Speed potentiometer
- Standard toggle switches for station up/down
- Built-in software
- Integrated emergency stop button
- Integrated safety key switch for safety lockouts
- Foil printing control without the need for additional panels
- Operator panel with IP54 industrial protection rating
- Quick foil change capability
- Precise height control up to the plate edge.
- Advanced printing integration
- Internal electric structure for safety
- Integrated print indicator
- Internal sensor hardware
- Design with special parts at high-tech universal standards.

Next-Generation Touch Screen Control Panel

GEEN® Cold Foil Printing Machine is a specially designed, powerful, and user-friendly cold foil printing module. The fundamental principles in developing the new GEEN® Cold Foil Printing Machine touch-screen-based control unit include simplicity and ease of use. From the start to the printing process, it provides users with clear, step-by-step instructions. The screen, with ready options for new operators, guides through print preparation and initiation by following simple prompts. Ensure instant access to the controls you need for faster and easier operation. GEEN® Cold Foil Printing Machine simplifies the process by calibrating your print. It automatically adjusts the machine's print settings based on material thickness, material type, and desired print quality. With these features, GEEN® Cold Foil Printing Machine is operator-friendly and much easier to use compared to other branded models.

Display Position: Lower left on the machine

Control Buttons Position: Lower right on the machine



Operator-Friendly

- Reduces training time by half
- Decreases installation time
- Enhanced processing power for faster operation
- Installation and integration in different languages are available upon request.



Standard Cold Foil Printing Process

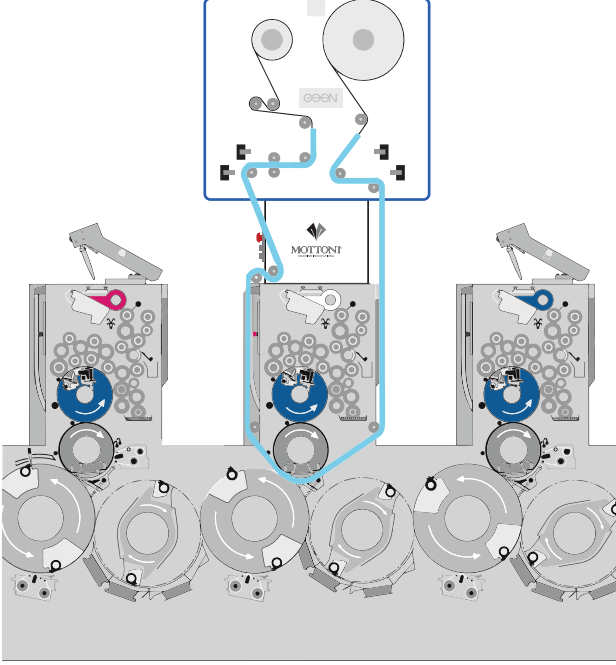
The standard cold foil printing process for an offset printing machine is a sophisticated technique designed to impart a metallic finish to various printed materials, enhancing their visual appeal and creating eye-catching effects. This process seamlessly integrates with offset printing technology, offering a cost-effective and versatile solution for producing high-quality prints with metallic accents.

Design and Preparation:

The journey begins with meticulous design and prepress work. Graphic designers create intricate designs, specifying areas where the metallic foil will be applied. This stage is crucial for achieving precise and captivating results in the final printed material.

Printing Press Setup:

The offset printing machine is meticulously set up to accommodate the cold foil printing process. The machine is equipped with a dedicated cold foil unit that allows for the precise application of metallic foil onto the printed substrate. This setup ensures the seamless integration of cold foil technology into the standard offset printing workflow.



Cold Foil Material Preparation:

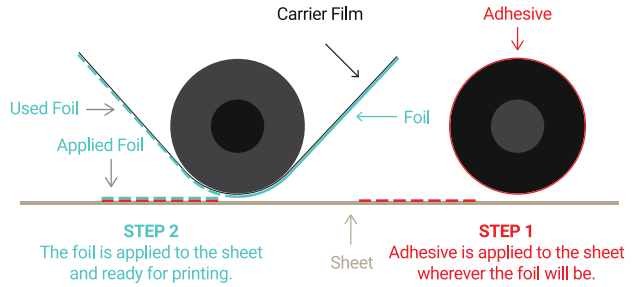
Specialized metallic foil rolls, often made of aluminum, are prepared for the cold foil printing process. These rolls are loaded onto the foil unit of the printing press, ready to be transferred onto the designated areas of the printed material.

Foil Application:

As the printing process commences, the cold foil is applied to the substrate in the designated areas. The foil adheres to the substrate through the use of a specially formulated cold foil adhesive. The offset printing machine precisely transfers the foil onto the substrate, creating metallic accents according to the design.

Finishing and Quality Control:

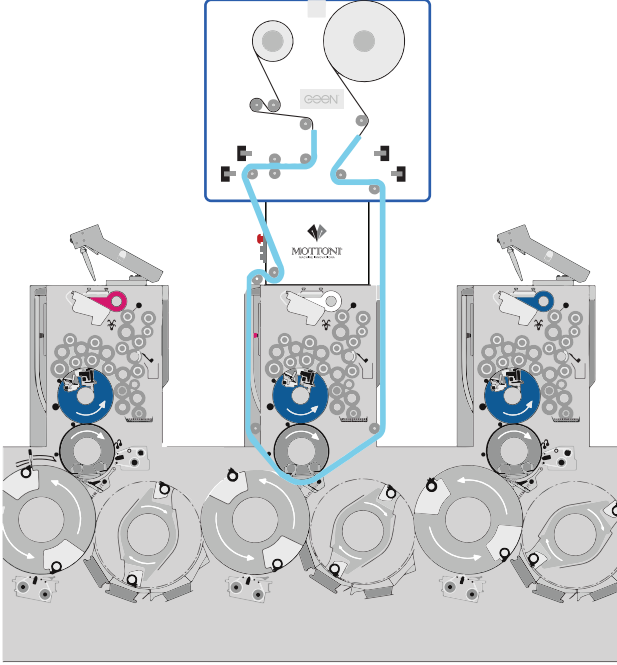
After the cold foil printing process is complete, the printed material may undergo additional finishing processes, such as cutting, folding, or other post-press treatments. Quality control measures are implemented to ensure that the final product meets the desired standards of precision and visual appeal.



The standard cold foil printing process for an offset printing machine offers a versatile and efficient solution for adding metallic embellishments to a wide range of printed materials, including packaging, labels, and promotional items. This technique combines the benefits of offset printing with the aesthetic enhancements provided by cold foil, resulting in visually stunning and market-ready products.



CONVENTIONAL



CONVENTIONAL or UV Cold Foil Printing Process with Labelling and Packaging Materials (IML + OPP)

The CONVENTIONAL or UV Cold Foil Printing Process, combined with In-Mold Labeling (IML) and Oriented Polypropylene (OPP), represents a cutting-edge approach to elevate the aesthetics and functionality of labels and packaging materials.

Design and Preparation:

In this innovative process, the journey begins with the meticulous design and preparation of artwork. Designers create visually appealing graphics and designate specific areas for the application of cold foil, keeping in mind the unique requirements of In-Mold Labeling (IML) and Oriented Polypropylene (OPP).

Printing Press Setup:

The heart of the operation lies in the meticulous setup of the printing press. Tailored for CONVENTIONAL or UV cold foil printing, the press is equipped with specialized units for In-Mold Labeling (IML) and Oriented Polypropylene (OPP). This ensures seamless integration of various printing technologies for a cohesive and captivating final product.

Cold Foil Material Preparation:

Metallic foil rolls, designed for compatibility with CONVENTIONAL or UV printing, are prepared for application. These rolls are loaded onto the foil unit of the printing press, ready to impart a luxurious and eye-catching metallic finish to the designated areas.

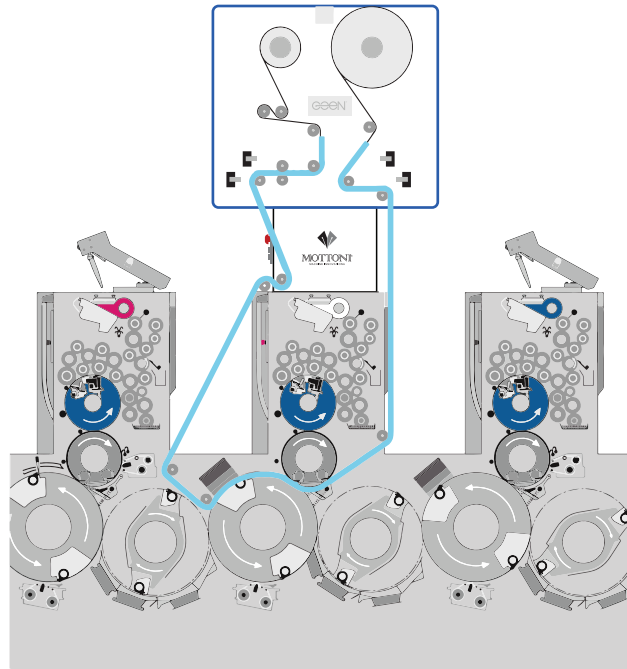
In-Mold Labeling (IML):

The In-Mold Labeling (IML) process introduces a revolutionary dimension to packaging. Cold foil-printed labels are precisely applied to the mold surface before injection molding. This unique approach ensures a flawless fusion of the label with the final product, resulting in a seamless and visually striking outcome.

Oriented Polypropylene (OPP) Printing:

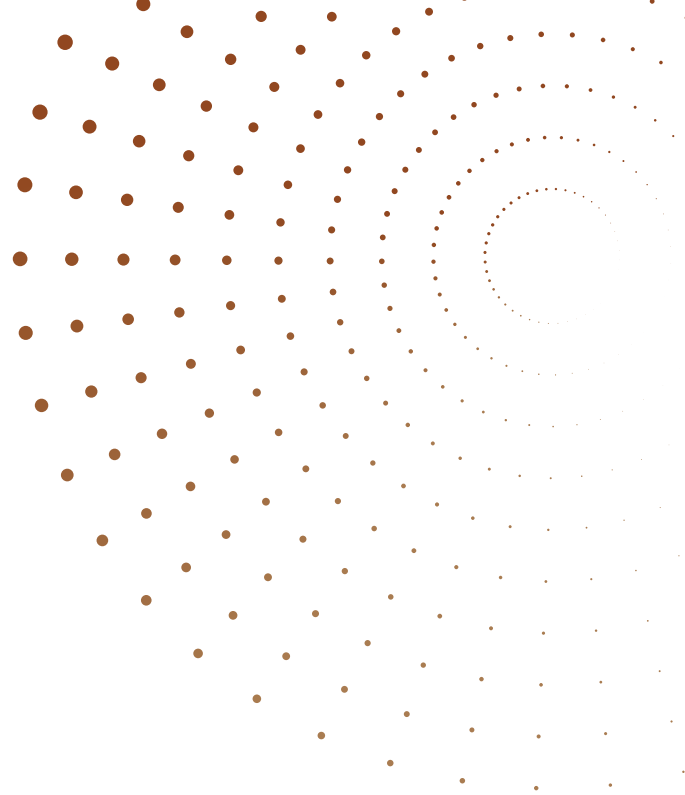
Oriented Polypropylene (OPP) serves as a versatile and transparent packaging material. Through the use of a dedicated station on the printing press, cold foil printing is expertly applied to OPP, adding a layer of sophistication and visual appeal to the packaging.

UV



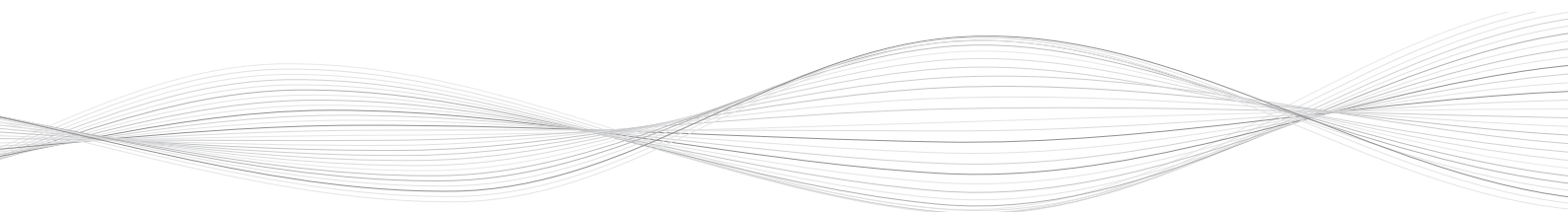
This integrated CONVENTIONAL or UV Cold Foil Printing Process with Labelling and Packaging Materials (IML + OPP) not only enhances the visual appeal of products but also ensures durability and efficiency in the production line. The use of CONVENTIONAL or UV Cold Foil Printing Technology facilitates rapid curing, contributing to the overall speed and sustainability of the printing process. As a result, brands can achieve a harmonious blend of aesthetics and functionality in their labeled and packaged products.





GEEN® COLD FOIL - COLD FOIL PRINTING MACHINE

Consumables



GEEN COLD FOIL PRINTING TECHNOLOGY USAGE AREAS

- PACKAGING

- * Cosmetic packaging
- * Food packaging
- * Pharmaceutical packaging
- * Luxury goods packaging

- LABELS

- * Product labels
- * Wine and beverage labels
- * Health and beauty labels
- * Industrial labels

- CATALOGUES

- * Product catalogues
- * Fashion catalogues
- * Furniture catalogues
- * Specialty item catalogues

- MAGAZINES

- * Fashion magazines
- * Lifestyle magazines
- * Specialized interest magazines
- * Promotional magazines

- GREETING CARDS

- * Holiday cards
- * Birthday cards
- * Anniversary cards
- * Special occasion cards

- POINT-OF-PURCHASE (POP) DISPLAYS

- * Retail displays
- * Standees
- * Counter displays
- * Shelf talkers

- BOOK COVERS

- * Hardcover book covers
- * Paperback book covers
- * Limited edition book covers
- * Educational book covers

- PROMOTIONAL MATERIALS

- * Posters
- * Banners
- * Event invitations
- * Promotional brochures

- APPAREL TAGS AND PACKAGING

- * Clothing tags
- * Apparel packaging
- * Fashion accessory packaging
- * Shoebox labels

- CALENDARS

- * Wall calendars
- * Desk calendars
- * Promotional calendars
- * Customized event calendars

- EVENT TICKETS

- * Concert tickets
- * Theater tickets
- * Sporting event tickets
- * VIP event passes

- PRODUCT MANUALS

- * User manuals
- * Instruction booklets
- * Technical manuals
- * Equipment guides

- DIRECT MAIL PIECES

- * Postcards
- * Direct mail flyers
- * Coupons
- * Membership cards

- SECURITY PRODUCTS

- * Security Labels
- * Tamper-evident labels
- * Authentication labels
- * Anti-counterfeit labels
- * Track and trace labels

- Secure Documents

- * Secure certificates
- * Authentication documents
- * Sensitive information documents
- * Official government documents

- Security Packaging

- * High-value product packaging
- * Authentication packaging
- * Anti-counterfeit packaging
- * Secure pharmaceutical packaging

- Authentication Stickers

- * Holographic authentication stickers
- * Sequentially numbered stickers
- * Customized authentication stickers
- * UV-resistant authentication stickers

- Secure ID Cards

- * Government ID cards
- * Access control cards
- * Employee identification cards
- * Event and conference badges

- TicketsSecurity Features

- * Holographic elements on tickets
- * Secure features for coins
- * Anti-counterfeit measures for tickets
- * UV and IR security features

- Security Seals

- * Tamper-evident seals for products
- * Authentication seals for documents
- * Secure packaging seals
- * Holographic security seals

- SULPHITE BOARD

- * Boxes
- * Game cards
- * Catalogs
- * Product packaging

- LEATHER-COVERED CARDBOARD

- * Luxury packaging
- * Leather product packaging
- * Gift boxes
- * Special collection packaging

MATERIALS THAT CAN BE USED WITH GEEN COLD FOIL PRINTING TECHNOLOGY

- AMERICAN BRISTOL PAPER

- * Business cards
- * Invitations
- * Postcards
- * Greeting cards

- COATED CARDBOARD

- * Packaging boxes
- * Gift boxes
- * Display stands
- * Presentation folders

- ART PAPER

- * Art prints
- * Posters
- * Brochures
- * Flyers

- IML & OPP (In-Mold Labeling and Oriented Polypropylene)

- * Food containers
- * Beverage bottles
- * Household product packaging
- * Industrial product labels

- COMPUTER BRISTOL PAPER

- * Office documents
- * Report covers
- * Presentation folders
- * Professional documents

- PLASTIC FOIL

- * Transparent packaging
- * Packaging films
- * Bottle labels
- * Promotional materials

**Cold Foil
Printing on
all smooth
surfaces**



Cold Foil Glue/Adhesive Material



Brand: ZELLER - GMELIN

Origin: Made in Germany

Description:

EURALUX GLUE COLD FOIL STAMPING LM for SILVER FOILS

Product Code: O08341LM-D012

Box Weight: 1 KG

Consumption Information for Models:

The current procurement cost of adhesive material is 25 Euros per kilogram. Consumption is equivalent to traditional ink, depending on the density of the printing layer.

Cold Foil Rolls Material

Brands:

All globally recognized cold foil manufacturing companies.

Consumption Information:

The current cost of cold foil per square meter by different vendors is approximately between 0,17 Euros and 0,21 Euros.

Description:

* Consumption varies depending on the type of printing whether partial or full.

* Generally, we recommend using foil rolls with a width of up to 102 cm and a length of up to 5,000 meters. Custom sizes between 10-102 cm can be used and supplied for cold foil rolls.

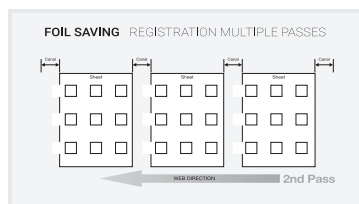
Printing Quantity:

The printing quantity is calculated based on the size of the design.



Notes:

- * The supply of rubber blanket and adhesive materials is entirely the responsibility of the end-user.
- * GEEN® is not responsible for problems arising from the use of unsuitable material.
- * Your foil saving can be in different proportions based on assembly plan as shown in the diagram.



Cold Foil Blanket

Brand: RELCO

Origin: Made in Germany

Description: BLACK PEARL 1.85 MM SUPER-PRESS RUBBER BLANKET

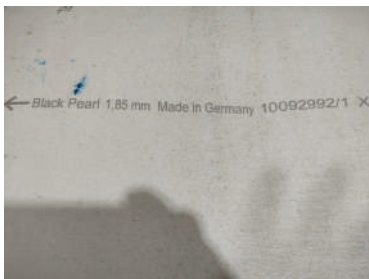
Consumption Information:

As an example, the current price for the special blanket product used for Cold Foil Printing in offset machines with dimensions like 70x100 cm is approximately 250 Euros.

Prices may vary based on the model, brand, and dimensions of your offset machine.

Dimensions:

Blanket measurements between 35x50 cm - 140x220 cm.



HOT FOIL

Printing	Same cost in both processes	
Lamination	8 manpower hours	Size adjustment
		Preparation 280 €
		Stamping
	8 printing press hours	400 €
	Die-cuttings	250€
	Foil	225€
		1.155 €

GEEN® COLD FOIL

Printing	Same cost in both processes	
Lamination	8 manpower hours	Size adjustment
		Preparation 0 €
		Stamping
	8 printing press hours	0 €
	Offset plates	10€
	Adhesive	52€
	Reels of Foil	650€
		712 €

In conclusion, the cost advantage of Cold Foil on Hot Foil is around 35%

COLD FOIL ADVANTAGES

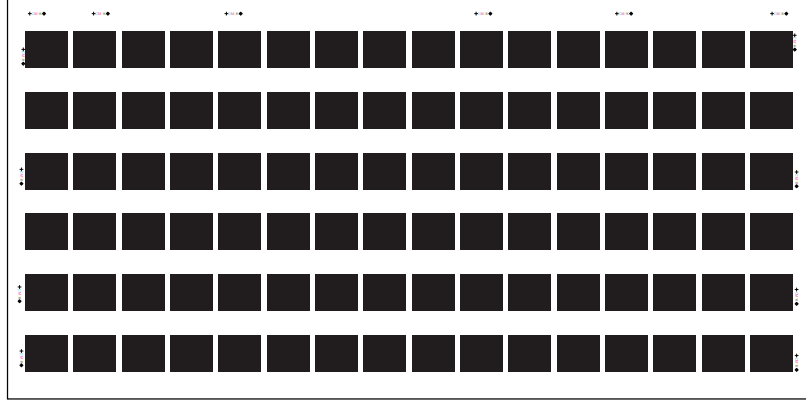
With Cold Foil by GEEN®:

- **Reduce** production **costs** by 30%;
- **Reduce** production **times** by at least 50%;
- Implement a **single organic process**;
- Get a **unique product** that meets a big unsatisfied request;
- Make **fast and easy preparations** with the Foil Stop system, which will lead to **zero consumption** of startup foil;
- **Forget about additional tools and die-cuttings**;
- Obtain **precision in line with the lithographic register**;
- Eliminates the need for special and expensive **training for the operator**, it's up to us, quickly and at no extra cost;
- Efficiently **short and long runs**;
- You can also use **Frictional shafts**;
- Released from any kind of limitation in the **foil coverage**;
- SARC Semi-Automatic Roller Change: Automatic reel changer system that dramatically reduces the time spent in new reels loading and empty reels discharging, optimizing and increasing production times.



CMYK Offset Printing on Silver Cold Foil Print Usage

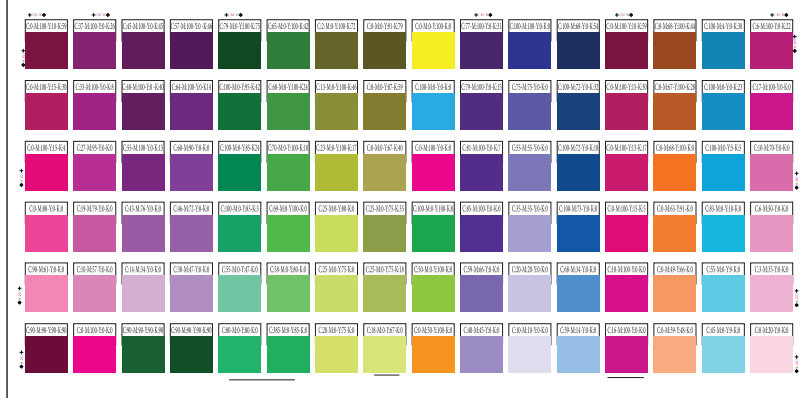
Step 1 : Silver Cold Foil Section Printing Plate Preparation - CTP



Step 2 : Result of Silver Cold Foil Section Printing



Step 3 : CMYK Printing Plate Preparation - CTP



Step 4 : Result of CMYK Printing on Silver Cold Foil



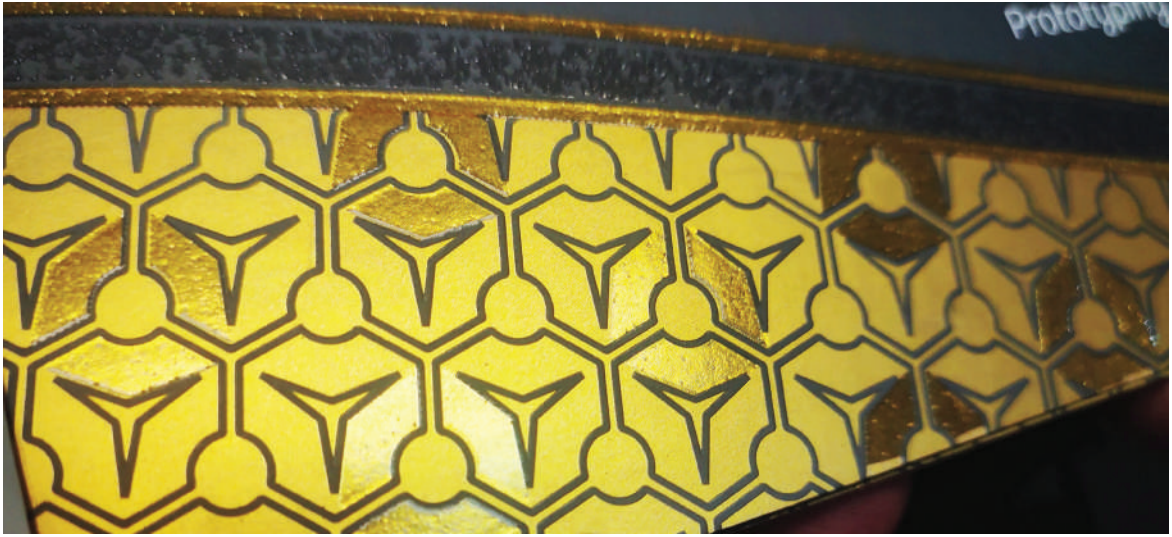
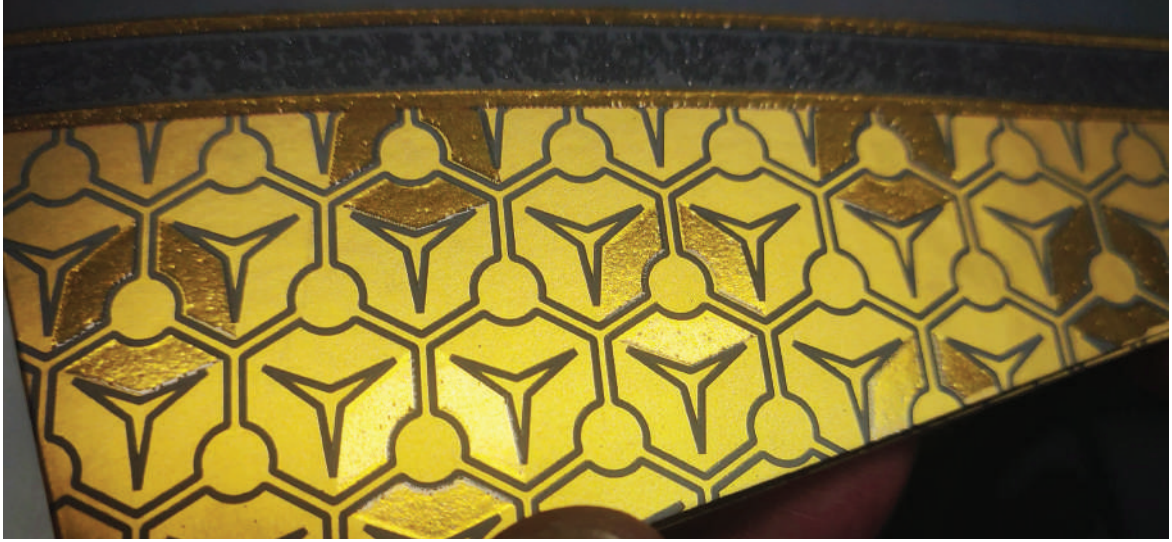
Gold Cold Foil Printing on CMYK Print Usage

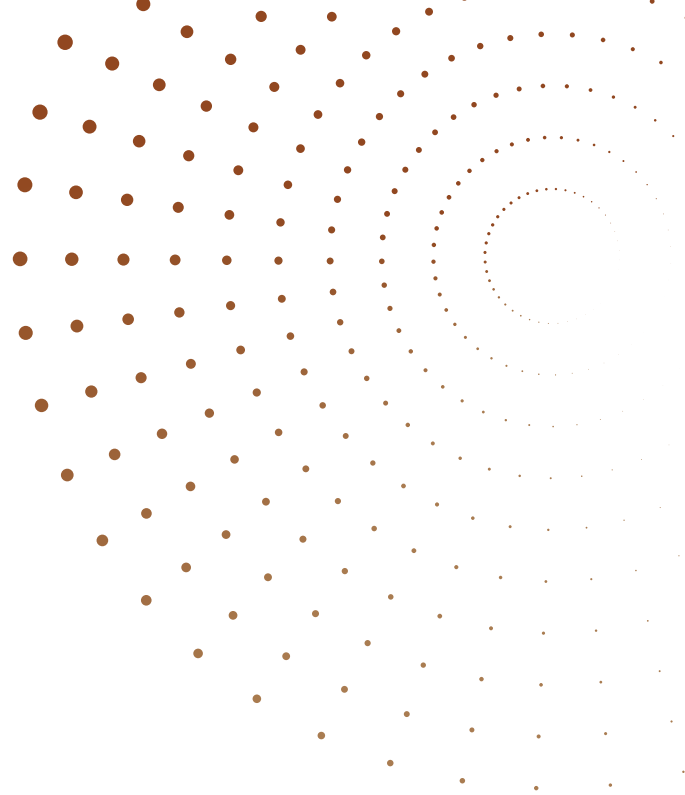
Step 1 : CMYK Printing / Step 2 : Local Gold Cold Foil Printing



Matte Lamination and UV Local Varnish Usage

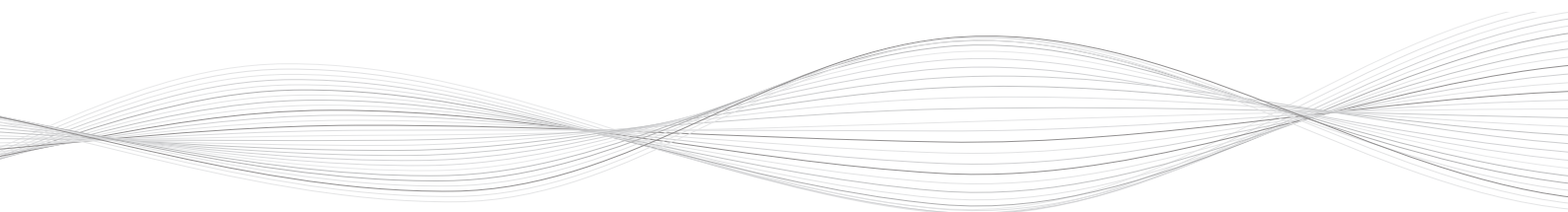
Step 1 : CMYK Printing / **Step 2 :** Local Gold Cold Foil Printing
Step 3 : Matt Lamination / **Step 4 :** Partial Local UV Varnish on Top





GEEN® COLD FOIL - COLD FOIL PRINTING MACHINE

Foil Savings Options

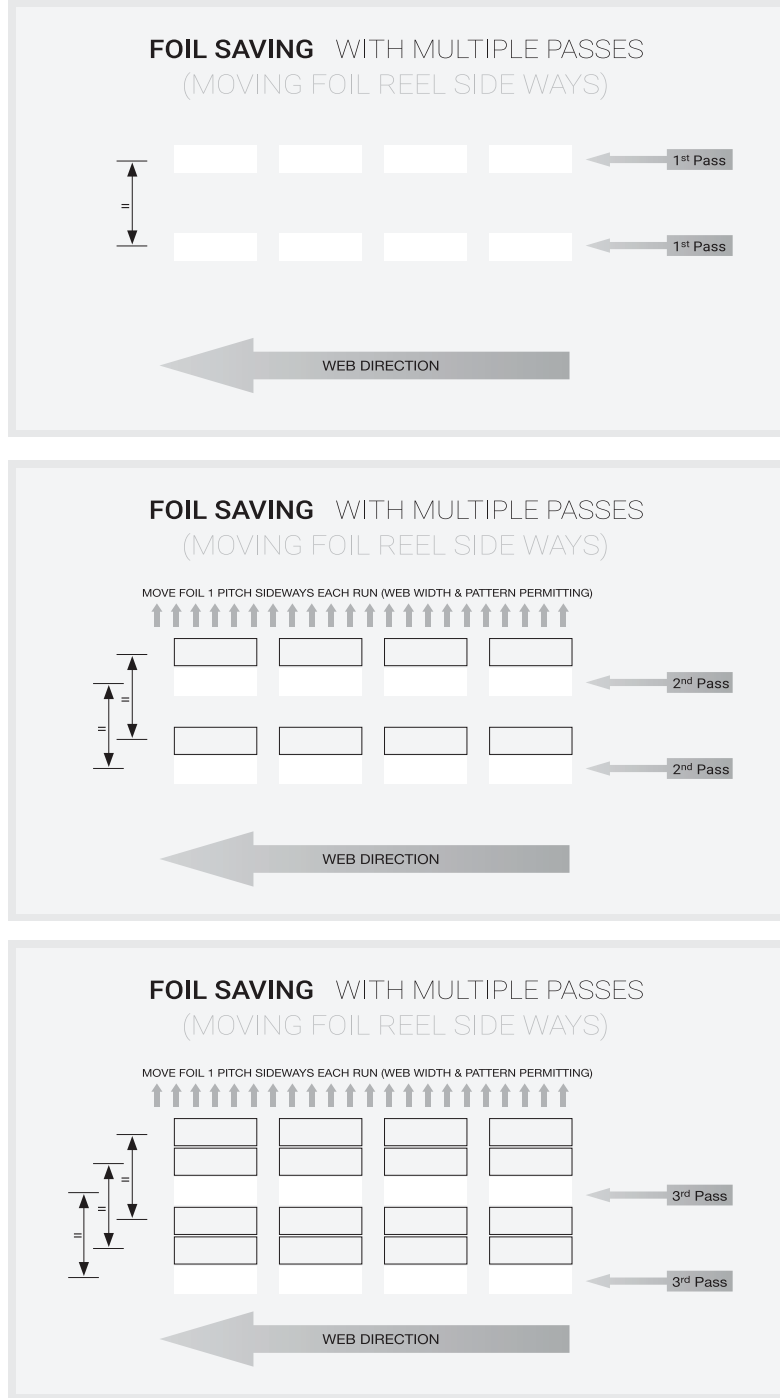


Foil Saving

GEEN® Cold Foil Printing Machine produces a high quality finished roll after the foiling process for multiple passes through the press when the pattern permits.

OPTION 1

The facility to move the image across the foil web and run multiple times eliminating the need to stock a variety of foil widths or run multiple reels for zoned foiling (Pattern and web width permitting).



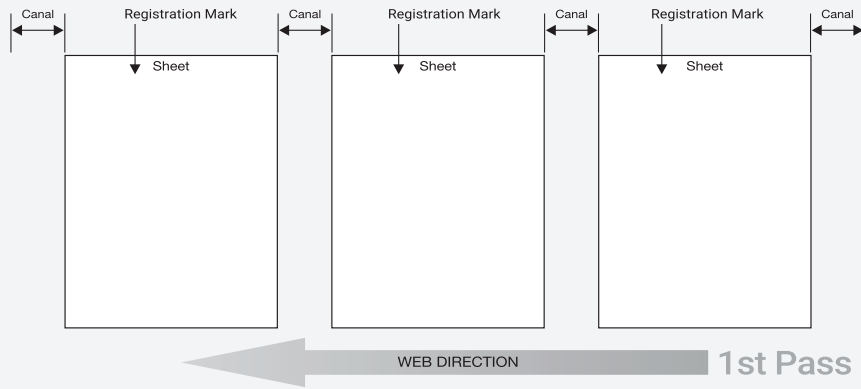
Foil Saving

GEEN® Cold Foil Printing Machine produces a high quality finished roll after the foiling process for multiple passes through the press when the pattern permits.

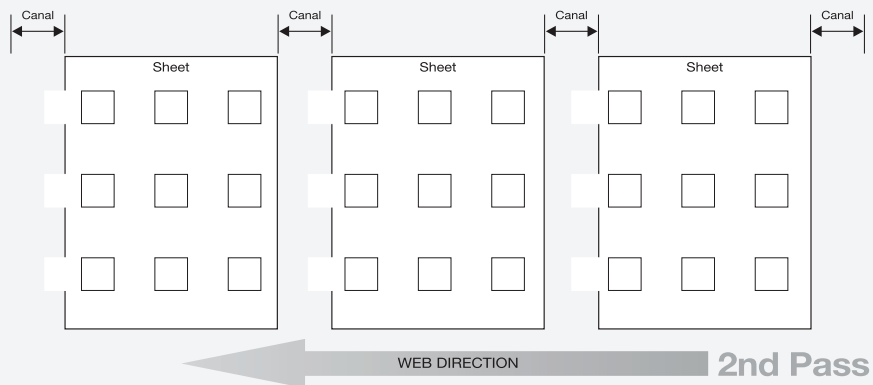
OPTION 2

A registration mark can be printed on the foil during each pass and a sensor is positioned on the turner unit which automatically adjusts the foil as the canal passes to maintain foil registration when running the foil through multiple times. This eliminates/reduces the waste between the print repeat length/canal waste if the pattern permits.

FOIL SAVING REGISTRATION MULTIPLE PASSES



FOIL SAVING REGISTRATION MULTIPLE PASSES



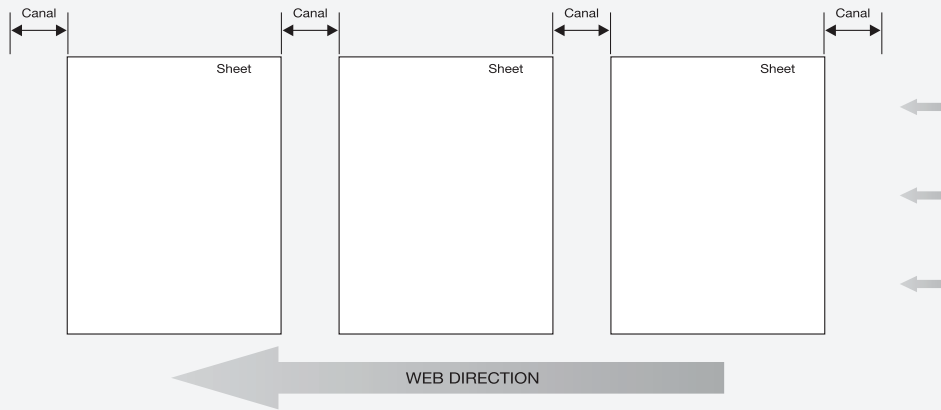
Foil Saving

GEEN® Cold Foil Printing Machine produces a high quality finished roll, controlling all tension zones throughout the foiling process.

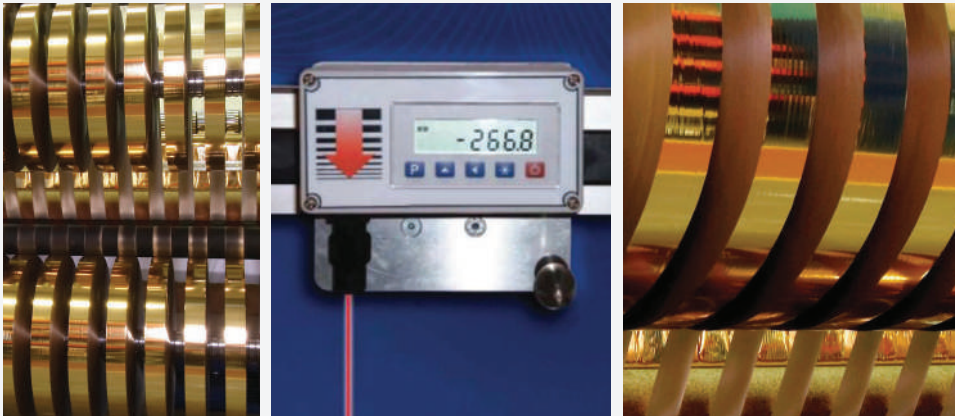
OPTION 3

Differential rewind and unwind shafts can be supplied for multiple reel unwinding and rewinding for Zoned Foiling as and where the foil is required. We normally recommend a maximum of 4-5 reels or one of the other foil saving options should be selected to reduce set up time. The reels and rewind cores are positioned using a lazer for rapid alignment to the printing plate. This option can't be used with registration or canal saving as the reels are mounted on a common shaft.

FOIL SAVING MULTIPLE REELS FOR ZONED FOILING

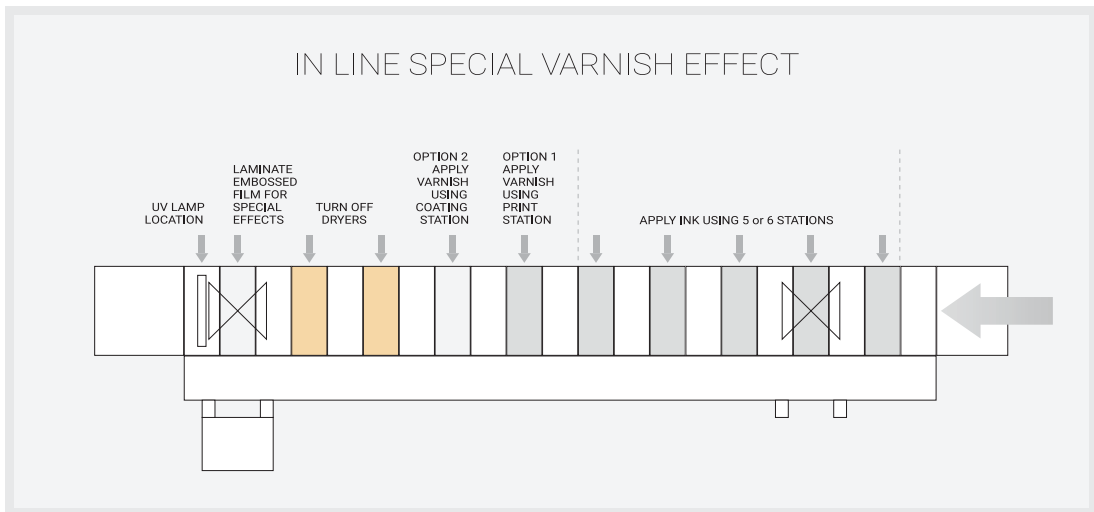
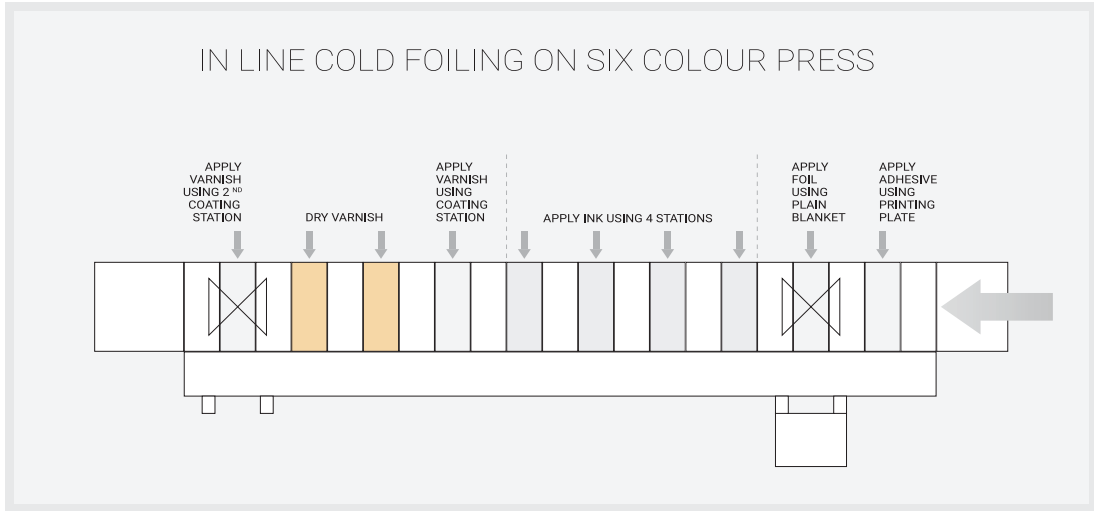


FOIL SAVING MULTIPLE REELS FOR ZONED FOILING



Possible Configurations

The diagrams below illustrate some possible locations when using the GEEN® Cold Foil Printing Machine module for in-line foiling or to create special holographic effects using UV Varnish.



Important Note

The supply of rubber blanket, cold foil, ink and adhesive materials is entirely the responsibility of the user. GEEN® is not responsible for problems arising from the use of unsuitable material.

Machine Acceptance

Factory Acceptance Test (FAT) is conducted to verify the functions and the performance.

Documentation

- User's manual and technical documentation in English.

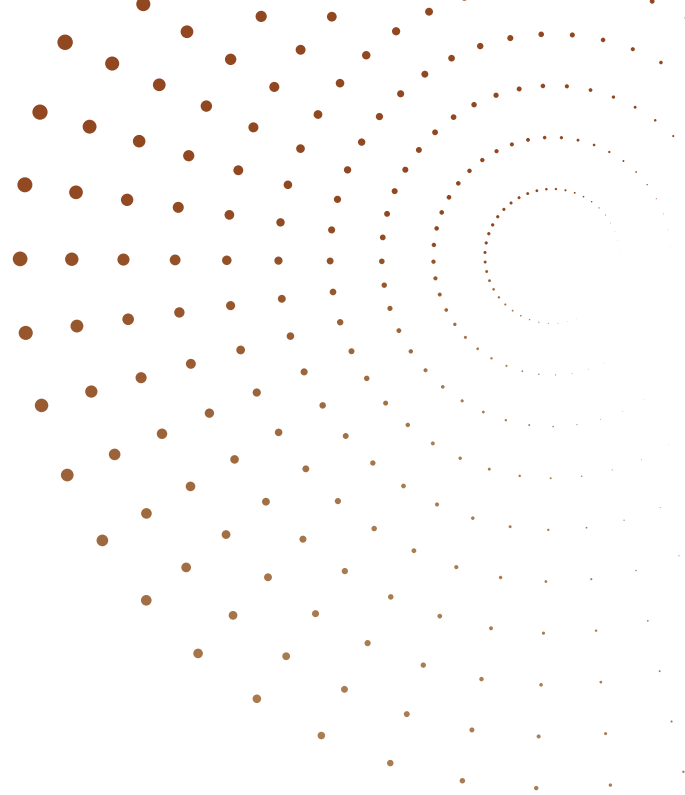
Tool Stations

Machine Itself: 1 Unit
Frictional Shafts: 2 Units (for Multiple Foil Usage and Foil Saving)
Standard Shafts: 2 Units (for Single Foil Usage)

Packing Type

The machine will be placed in a solid wooden box for shipment.





GEEN® COLD FOIL - COLD FOIL PRINTING MACHINE

Standard Information

