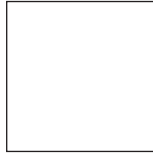




## SECURITY FOILING LIMITED

SECURITY SOLUTIONS FOR THE WORLD WIDE MARKET



### Introducing the Platinum 1040 SF Cylinder Press

#### Introduction

The Press is based on the proven technology of the letterpress cylinder process. This offers all the advantages of the 'round on flat' stamping principle. It is an ideal machine for stamping and embossing, using the wide variety of paper/board and foils available. Being a highly versatile machine it is equally capable of producing the finest detail work as it is of producing large foiled areas. The Press is also designed for the application of holograms combining high quality production with minimal waste levels.

Being part of the Blockfoil Group, Europe's largest trade hot foil blockers, means that Security Foiling Limited presses have been refined by continual operator feedback to become what is now the most comprehensive range of foiling presses available.

The basis of the design is, reliability, ease of use, quality of blocking and ease of maintenance. Sophisticated, but simple to use, computer controls allow the Press to perform complex tasks without lengthy set up procedures. Advanced computer logic ensures that hologram registration is maintained even when operating at high speed. Precise control of the foil positioning ensures maximum utilization of expensive holographic foils.

Through many years of experience, in particular with the hot foil blocking of holograms, the Press has been uniquely designed for the application of holograms. Many features have been incorporated for ease and efficiency of operation. These include an adjustable height machine bed, fast change foil systems and computer controlled hologram registration.

During the entire build cycle there are four separate test phases to ensure the quality and reliability for which Security Foiling Limited has become renowned. Each individual process that goes into the construction of the machine is fully documented and checked. Customers are welcome to send representatives to our factory to monitor the machine build at all stages in its production. The Press is offered with a comprehensive installation and training package. Extended training can also be arranged at our UK facility.

#### General Description

The PLATINUM 1040 SF Security Press is designed to apply Holographic Hot Stamping Foil and non-Holographic Hot Stamping Foil on to sheets of Bank Note paper and other Security Papers. The components, performance and control mechanisms are described in this document and any authorized addendum to it.

A Victoria press base unit is completely renovated and is then converted into a hot stamping security press as follows:

- Base Unit Renovation
- Replacement Bed Assembly
- Electrical System
- Comprehensive Software package
- Press Control System
- Paper Handling System
- Foil Handling System
- Guarding System

The foiling equipment added to the base press uses newly manufactured components that are tested, reliable and of good quality. All work is carried out in accordance with the Technical Standards specified herein.

### **Paper Handling System**

There is a comprehensive stream feeder head incorporating lifting and forwarding suckers, an air sheet separator and an air blast for lifting sheets during the forward cycle.

An electronic paper stack height control system

All are fully adjustable to deal with different paper types.

An automatic registration device ensures that the paper is positioned correctly.

Delivery grippers transfer the sheet to the delivery belts, and then to the delivery pile.

The sheet delivery is open and safe to make close inspection of the sheet in the delivery during production

Sheets can be removed from the delivery stack allowing full quality inspection whilst the press is running.

### **Foil Control Unit**

The foil control system is the key to efficient application of holographic foils. Security Foiling Limited has developed many unique software and hardware features that are incorporated into the Press. These features allow the control of foil to an extent not possible with other presses. The short foil path minimizes stretch and so increasing the accuracy and quality of registered hologram application.

The foil pull through section is substantially constructed and is mounted on the end of the bed. The foil pull assembly can accommodate up to four full width rewinds, up to twelve hologram rewind units or a combination of both types of rewind. Each of the foil pull units feature a microprocessor control, allowing five different pull lengths with up to ninety-nine repeats of each length per program. Complex foil advance programs can be entered into the computer to cope with the most demanding of hologram layouts. The units can be programmed to achieve 'step-ins' when running registered image holograms.

Each foil pull assembly is driven by a high power motor that produces a dynamic performance capable of pulling a length of foil at speeds up to 3,000 impressions per hour. A further rotating bar rewinds the spent foil, which is then easily removed for disposal. The speed of pulling the foil is automatically minimized offering excellent foil control. There is also a foil counter on each foil pull to tell the operator how many impressions are left before the foil runs out so increasing operator efficiency.

The foil control system comprises a foil tray mounted on the end of the bed near to the cylinder. The foil tray is made from 2mm passivated steel with an easy release lid to gain full access. This incorporates several dividing plates, which position the foil in its correct position, and also creates a line tension for the foil, which is maintained from the maximum roll to an empty one. An additional full width foil bar can be located in the foil tray. This has location and tensioning collars fitted along the shaft for optimum foil control. The complete foil tray assembly is purpose built to suit the Platinum Press.

Foil movement is activated by the modular foil pull through the unit mounted on the opposite end of the bed to the foil tray. This foil pullthrough unit is built up of 10 narrow width units. The individual narrow width units are mounted on a dovetail bar and can be positioned at any

point across the width of the bed.

Each foil rewind is microprocessor controlled to allow three different pull lengths with up to 99 repeats of each length per program.

The nip rollers are turned by means of precision stepper motors, which can achieve a pull resolution of 0.1 mm which is essential for accurate application of registered holograms. A foil counter can be set to monitor the foil usage and, when exhausted, will automatically stop the security press. Foil pull velocity can be automatically optimized or set manually. A trash shaft mounted directly above the nip rollers collects the waste foil. This trash shaft utilizes a disposable foil core, which makes trash collection and disposal fast and efficient.

### **Guarding System**

The security press is fitted with guards throughout. This includes metal and Perspex guards, which protect the security press operator from any moving mechanical components and also any electrical components.

The guards are part of a fully interactive system, which incorporates mechanical and electrical interlocks. These prevent the security press from operating if all contacts are not made. The security press will also stop running if any of the guards are disturbed in any way and a message will be displayed on the main control station to show the status of the security press, including which guard is open.

The guards play a major part in the safety of the security press, which is paramount to the safety of the operator. In addition to these features there are a selection of emergency stop buttons placed strategically throughout the security press. The comprehensive manuals supplied with the security press give clear safety messages that must be noted when being trained in operation of the security press.

### **Optional Extras**

- 6 Zone Adjustable Bed
  - Shredding and Compacting System
  - Auto Sheet Pre-loader
  - Start-up Kit
  - Additional Foil or Hologram Foil Rewinds
  - Remote Diagnostics Module and Service
  - Recommended Spare Parts
  - Installation and Commissioning
  - Operator and Engineer Training
  - Maintenance Contract
- Performance Specification

The PLATINUM 1040 SF Security Press is designed to apply Holographic Hot Stamping Foil and non-Holographic Hot Stamping Foil on to sheets of tax stamps, security papers, bank notes and general products according to the configuration of the press as detailed in the Technical Specification.

### **Operating Speed**

A maximum speed of 3000 sheets per hour would be possible subject to all other operating conditions and criteria being optimized. The speed is determined by:

- a) the characteristics of the paper being processed; and
- b) the type of foil being applied.

### **Hologram Registration**

The hologram registration system has a theoretical optimum positional resolution of +/- 0.1 mm. When multiple impressions are made, using one foil rewind unit, in a single pass, then only one of the holograms will be placed within the given tolerance. The positional accuracy of all other holograms will be dependent on the positional tolerance of the image as manufactured in the foil.

Therefore the positional accuracy of the registered hologram images in the foil is critical and will affect the positional accuracy of features being applied by the PLATINUM 1040 SF Security Press.

The tolerance of multiple holograms applied in one pass with one foil rewind unit is dependent on the following:

1. The positional tolerance of the repeating image in the foil
2. The quality size and positional accuracy of the foil registration marks
3. The winding accuracy of the foil roll
4. The stretch characteristics of the foil
5. The relative area of the stamped area to the foil width
6. The temperature of the application.
7. The distance between and position of the multiple images.

When highly accurate tolerance foil is being used, SFL typically achieves a positional accuracy of +/- 0.5 mm over five images. The greater the distance between the images the greater the positional tolerance will become.

#### **Paper Characteristics**

Size: Paper sizes from 297 x 420mm to 730 x 1040 mm  
Weight: Sheet thickness varying from 70 gsm to 300 gsm

#### **Security Threads**

The PLATINUM 1040 SF can accommodate security threads in bank note paper when applying holograms. However, holograms should not be placed over the security thread. Attempts to do so could adversely affect the performance of the PLATINUM 1040 SF Security Press, and the quality of the hologram being applied.

#### **Foil Characteristics**

##### **Size**

Narrow Width Foil Pull-Through Units: Max roll width of 100 mm.  
Full Width Foil Pull-Through Units: Max roll width 1020 mm  
Standard foil unwind system Max roll diameter 125 mm  
Hologram cassette system Max roll diameter 100 mm

##### **Foil Type**

Conventional Polyester based foils can be used which vary between 12 and 30 microns thick.

##### **Layout**

The Layout of the holograms on the paper being processed must not be inside the 20 mm margin of the edge of the paper. It must also comply with any other requirements in the Technical Specification.

#### **Technical Specification**

##### **Paper Handling**

Maximum Mechanical Speed 3000 impressions per hour  
Maximum Sheet Size 730 x 1040mm  
Minimum Sheet Size 297 x 420mm  
Maximum Stamping Area 730 x 1040mm  
Maximum Sheet Thickness 0.65mm  
Minimum Grip Distance 10mm  
Height of Feeder Pile 500mm  
Height of Delivery Pile 690mm

##### **Foil Handling**

Maximum foil diameter 125 mm (approx. 2000ft @12 micron depending on foil type)  
Foil core size 25.4mm  
Minimum distance between foil rolls 2mm  
Number of foil rewinds Up to 4

Number of hologram registration Up to 12 narrow width units  
Maximum foil roll width 100mm (narrow width units only)  
1020mm (full width units only)  
Number of Lengths per program 3  
Number of pulls per length Up to 99  
Pull Resolution 0.1mm  
Hologram positional tolerance +/- 0.5mm  
Hologram Registration Mark 5mm x 5mm Bi-directional centered on image  
(recommended)

#### **Heating**

Heat Zones 6  
Temperature range 0-200 degrees centigrade  
Temperature sensors 24  
Adjustable Height Bed (Optional) +/- 0.6mm (1.2mm total)  
Die height 6.35mm or 7.00mm versions available

#### **General**

Dimensions approximate 2350mm(H) 2870mm(W) x 5750mm(L)  
Weight (kg) 8500 kg (approx.)  
Air Supply 5 bar (75 psi) of clean air  
Machine power supply 3 phase neutral and earth connections  
380 / 415 / 440 V  
50/60 Hz  
63 amps per phase  
30 kW ma  
Duty Cycle Continuously rated