

# SFM

## SHEET-FED FOIL PRESS

Have you noticed more blind embossing, flat foil stamping and foil embossing on business cards and stationery lately? If you're wondering what has caused the phenomenal growth in this market, the answer is simple; the continued success of the THERM-O-TYPE sheet-fed foil stamping presses.

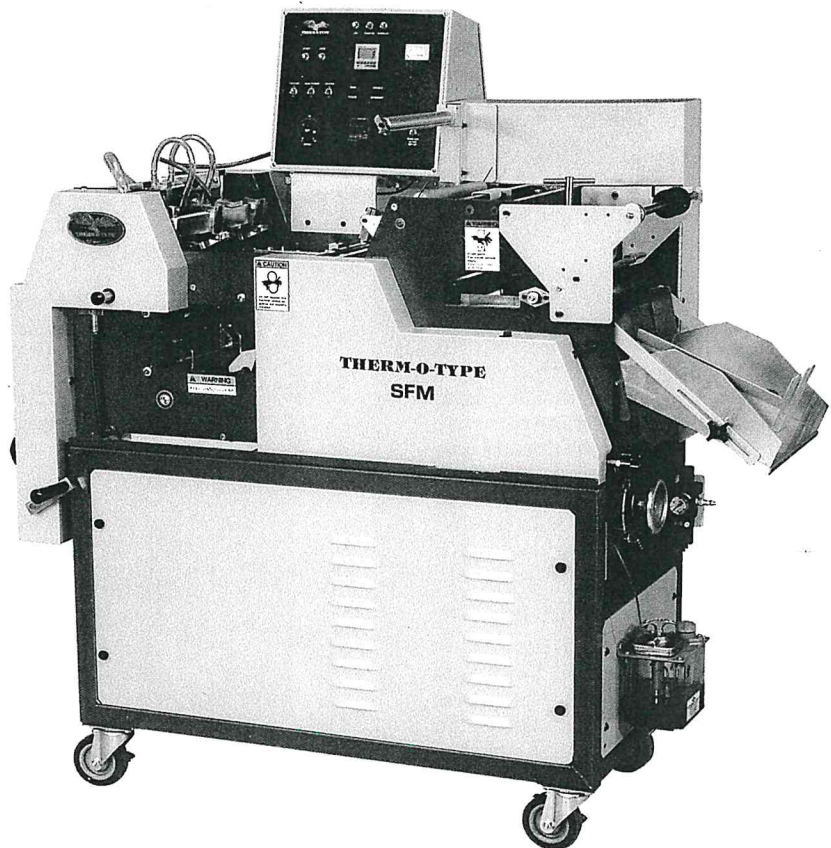
After analyzing the requirements of our customers producing thermographed business cards and stationery, THERM-O-TYPE began designing the SFM. Customer demands were clear. The press had to be fast, running over 5,000 impressions per hour. The layout needed to be similar to an offset press so that existing offset pressmen could operate the machine easily. The imprint area needed to bleed three sides when running a four-up card strip, using the same gripper edge as the offset press. Impression adjustment, makeready, registration adjustments, temperature control, double and skip sheet features had to be incorporated, efficient and easy to use. A centralized lubrication system should be installed to minimize down time and simplify maintenance. All of these features had to be incorporated into a machine that would be reliable, durable and affordable.

These demanding requirements, and more, have been met by the SFM foil press. With a proven track record of success, the SFM can be found in some of the largest foil stamping operations around the world. Over the years, the SFM has also become popular with both retail and wholesale stationery and business card manufacturers.

The SFM has a maximum printing area of  $5\frac{1}{8}$ " x 11". The maximum sheet size is 12" x 12". This allows letterheads to be run either the 11" or  $8\frac{1}{2}$ " way. Sheets can be registered to imprint between the lead and tail edges of the sheet. Envelopes can run "portrait" or "landscape" and envelope feeders are available that can be attached for higher volume production. Minimum sheet size is a  $3\frac{1}{2}$ " x  $4\frac{1}{2}$ ", two-up business card. The registration system includes a head stop with skew adjustment and side jogger with micrometer adjustment. Maximum speed is up to 6,000 sheets per hour.

A wide range of specialty products can also be produced with the SFM. Rotary file cards, round corner cards and door hangers can be die cut, and custom labels can be "kiss" cut using low cost, steel rule dies. Personalizing seasonal greeting cards and other items is an important SMF capability. "Scratch off" foil can be imprinted on contest tickets. Numbering can be run using standard type high numbering machines. Perforating, scoring, and imprinting work can also be run. (Numbering, die cutting, perforating, scoring, hand set type, Linotype slugs and hole punch tooling require an optional letterpress chase, furniture and quoins.)

The SFM, equipped with an optional holographic foil registration system, can imprint individual holographic foil images as a security device. This excellent security feature is proving more and more important for documents and tickets as counterfeiters increasingly become more sophisticated.



*The SFM has become a proven performer in the foil stamping industry. Proven in some of the highest production plants in the country, the SFM offers exceptional productivity, fast set-up and ease of operation.*

For high production, long run shops, an optional slow delivery conveyor is available. This option allows one operator to easily run two SFM presses at one time.

The SFM continues to play an important roll in promoting the demand for foil stamping. As you can see, this machine is more than just a foil stamping press. The addition of an SFM in your shop will allow you to increase your profit margins by upgrading the value of work you are already producing, and by introducing a line of additional products and services to your customers. □

### SFM Features:

- 12" by 12" maximum sheet size
- $5\frac{1}{8}$ " by 11" max. impression area
- $3\frac{1}{2}$ " by  $4\frac{1}{2}$ " min. sheet size
- Skip sheet sensor/interrupt
- Up to 6,000 sheets per hour
- Resettable six digit counter
- Digital heat control
- Adjustable mechanical foil draw
- Mechanical foil tension control
- Double sheet sensor/interrupt
- Centralized lubrication system
- "Quick lock" die chase
- Electronic speed control

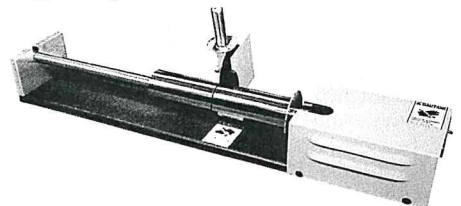
### SFM Options:

- Holographic foil registration system
- Slow delivery conveyor
- Special application chases

## POWERED FOIL CUTTER

Foil is produced in 24" wide rolls. Although you can usually purchase rolls from a foil supplier cut in any width for a small additional charge, foil stamping without a foil cutter is like operating a print shop without a paper cutter.

THERM-O-TYPE produces a simple electric foil cutter which can handle rolls up to 1,000 feet in length. Rolls of foil are slipped over a steel shaft with a soft aluminum cover. A locking mechanism grips the inside of the roll core. A large circular blade, mounted on a handle, can be positioned along a support shaft and secured in position for the correct cut off length. Starting the electric motor, and simply lowering the blade handle, accurately and cleanly cuts through the foil and supporting core.



As the blade dulls, it can be rotated to a new, sharp position. Dull blades can be resharpened by THERM-O-TYPE.

The THERM-O-TYPE powered foil cutter is an inexpensive must if you do foil stamping and will pay for itself in short order. □



# Foil Stamping

The world of foil stamping, blind and foil embossing will be a new one for most printers today. These processes are produced on "letterpress" equipment and use foil instead of ink to put an image on paper. The resurgence in demand for this type of work has created opportunities for not only increased profits for printers, but also greater creative freedom for graphic designers.

## Types of Dies

You can never begin a discussion on hot foil stamping and embossing without first understanding dies. A die is a metal plate which has been either chemically etched or mechanically and/or hand engraved to act as a medium to transfer foil or form the sheet to create an image. A "counter" is used to form the sheet into a blind and/or foil embossing die. Counters can be purchased with certain dies or can be cast or formed on the press.

Dies are usually divided into three different categories with various materials and thicknesses available which are designed to fulfill specific production requirements.

Flat foil stamping dies can be made from brass, copper or magnesium. Most flat stamping dies are chemically etched, using copper or magnesium. 1/4" thick dies are mechanically mounted. Less expensive 1/16" thick dies are available and are mounted with high temperature tape. 1/4" dies can usually be stored and reused but 1/16" dies are often damaged when they are dismounted. A counter is not required for flat foil stamping.

Blind embossing dies also come in brass, copper or magnesium. Blind embossing and foil embossing dies (covered in the next paragraph) are subdivided into single level and multilevel or sculptured dies. Single level embossing dies can create an embossed area with a single level. They are usually chemically etched in copper or magnesium. Multilevel or sculptured embossing dies have multiple levels of depth. This requires mechanical and/or hand engraving which substantially increases the cost of the die. Multilevel embossing dies are usually made of brass by an engraver. Both single level and multilevel embossing dies require a counter.

Foil embossing dies are made of brass and are the most expensive type of die. These dies form an embossed image on the sheet and transfer foil within this area at the same time. Foil embossing dies are made by engravers using special engraving tools. Lead time for these dies are usually several weeks and careful communication between the client and engraver is necessary. Obviously, a counter is required and it is recommended that several "pre-cast" counters be purchased when the die is ordered. On the plus side, good foil embossed work, with a well made die, is beautiful, and a brass die will last for years, if it is maintained correctly.

## The Work

Flat foil stamping is the most common type of work run on THERM-O-TYPE foil presses in today's marketplace. Gold, silver,

metallic color, holographic pattern and pigment foils are all commonly available and popular. Flat foil stamping is quick and easy to perform, requiring minimal operator skill and low cost dies.

Blind embossing is less popular than flat foil stamping. Probably, blind embossing is not used more often because there is no foil or color to accent the image and many customers and graphic designers are unfamiliar with the impact of this process. Blind embossing is simple, elegant and beautiful. Both, low cost chemically etched single level dies and more expensive and elaborate multilevel blind embossing dies, can be run on THERM-O-TYPE foil presses. Set-up time and skill is more demanding than flat foil stamping.

Many of our customers tell us that foil embossing is the most profitable process, per impression that they produce in their shops. Foil embossing is considered to be the most difficult type of foil work. This technique requires a higher level of operator skill and, depending upon the detail of the die, will demand additional time and care during makeready.

While foil embossing is normally run one time through the press, using an expensive die, some foil embossing jobs can be produced using a two pass operation. This process is called "stamp and bump" and requires a flat stamping die and usually a chemically etched single level embossing die. The sheet is flat foil stamped during the first pass through the press and "bumped" with the embossing die and counter on a second pass. This system works well when the cost of a foil embossing die cannot be justified, provided that the emboss is a simple, single level design.

## Paper

Most of the same rules that apply to putting ink on paper apply for foiling. As most customers know, when running offset, the smoother the finish of the stock, the sharper the printing will be. Customers don't expect to print small, fine line type on a rough weave cover stock, and the same is true when foiling.

When embossing or foil embossing, care must be taken to assure that the paper is suitable. Some stocks will not emboss well, and the paper may "shear" rather than form when compressed between the die and counter. This may cause weak areas or actual cuts along the edge of the image.

## Foil

Foil is manufactured by applying layers of various materials on a carrier roll. Layers consist of a release agent, then several layers of coloring, and finally an adhesive. The release agent controls how "tight" or "loose" the foil transfers from the carrier material to the paper.

Foil quality is the number one problem in the foiling industry. While consistency in color is usually excellent, the level of release from one roll to the next often varies excessively. The result of this problem is obvious to customers running foil. At times, they will purchase multiple rolls of foil with

the same color and release specification only to find that some rolls print well while others do not. For this reason, most customers agree that it is very important to find a high quality foil supplier and not go "bargain shopping" for low cost foil.

To control foil costs, most shops order 24 inch wide foil in various length rolls. THERM-O-TYPE produces a powered foil cutter that allows customers to cut foil to match the width of each job. Customers, who do not wish to purchase a foil cutter, can buy foil rolls cut to length from most foil suppliers for a small additional charge. All foil manufacturers distribute foil color charts to their customers and, recently, "Pantone" released a "Foil Stamping Color Guide" which, for the first time, standardizes foil colors between several major foil manufacturers.

Foils for paper are manufactured with a range of releases: tight, general and broad release are the three main categories. Tight release is for very small, sharp type. The general is for the average work and the broad is for large solids. Finding the correct release is often a trial and error process, so customers usually keep accurate records of the make and type of foil that works best for each specific job.

## Heat

The amount of heat applied to the foil is an important factor that can affect how well foil transfers to the sheet. Too little or too much heat will result in poor foil transfer. Too much heat may blemish the foil. It can also cause "feathered" edges around the image, and small type may "plug".

Most foil manufacturers today publish the recommended temperatures for optimum release on their foils. This information is good as a guide, but factors such as type of paper, impression dwell, pressure, type of die and makeready variables, will cause the actual foil release temperature to vary.

## Pressure

Too much impression pressure will "deboss" the stock and create feathered edges around the image. Too little pressure will not allow the foil to transfer. Sometimes, as little as .001" will bring up a die to make proper transfer.

All THERM-O-TYPE foil presses can control the impression pressure by adjusting a micrometer knob. The top and bottom platens are indicated and leveled at the factory to within half a thousandths of an inch. This makes it easy to lock up a job and get running. Often no special makeready is required when flat foiling, except adjusting the impression pressure control.

## Makeready

"Makeready" is the material which the die, foil and paper are being compressed against and must be correctly prepared. If necessary, the makeready can be adjusted to eliminate any low pressure areas. "Soft" and "hard" makeready may be required depending on the die, stock, and foil for a particular job. In general, fine line type requires a harder makeready to eliminate feathering while large solids require softer makeready to assure a complete release

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