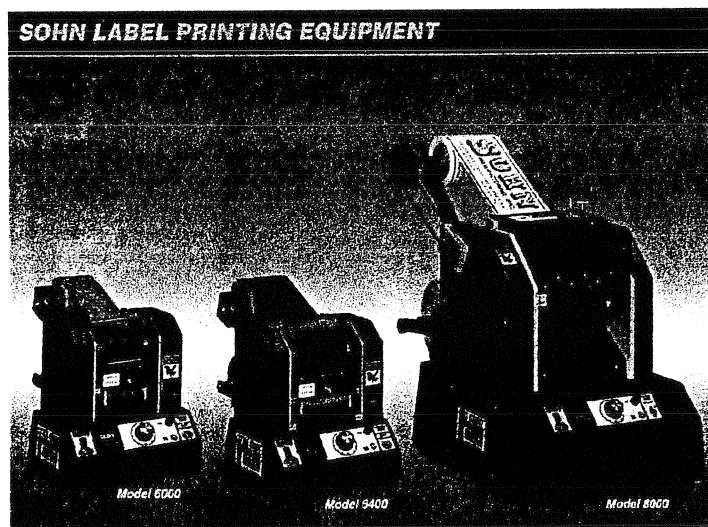
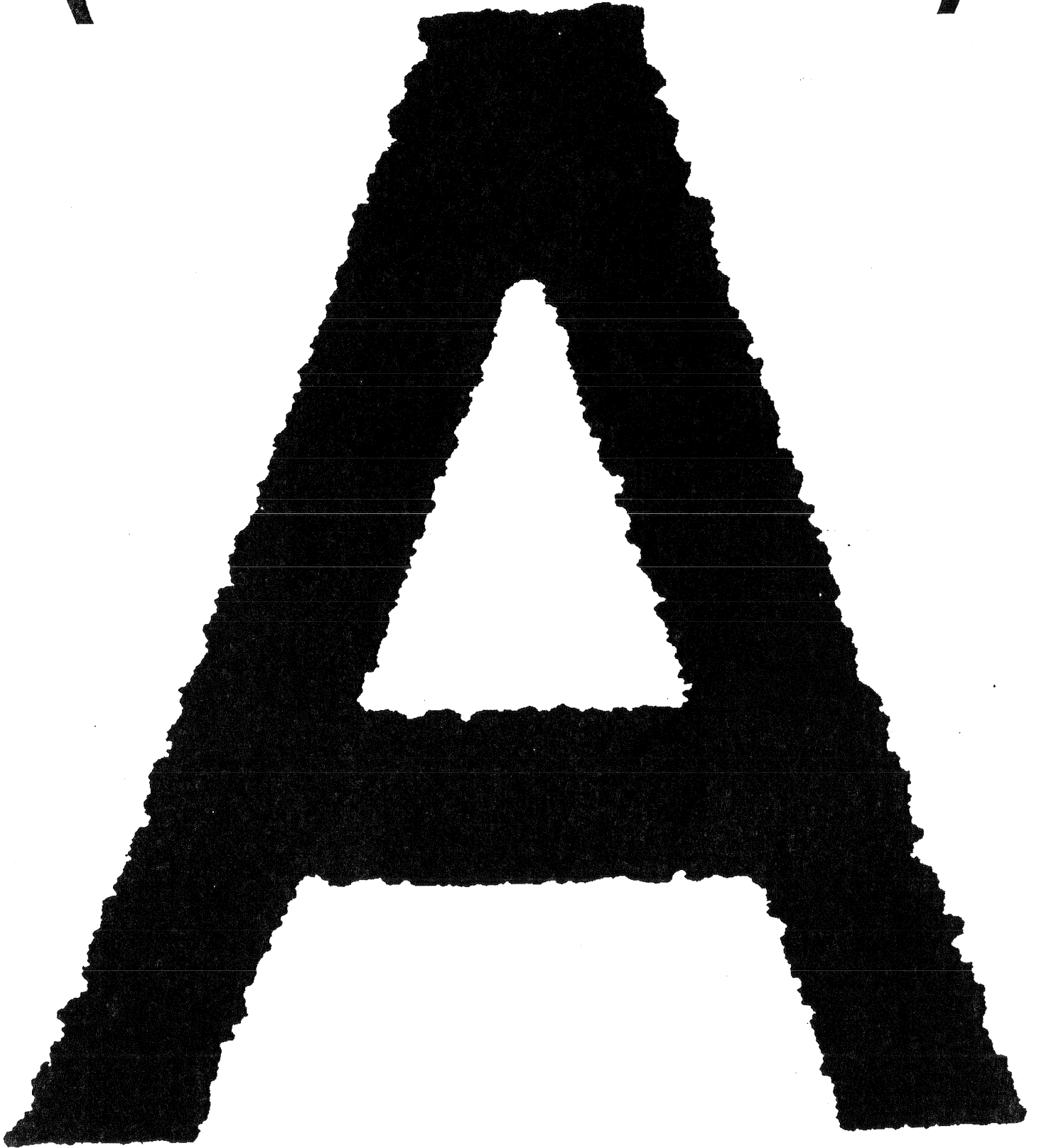


Affordable Flexography

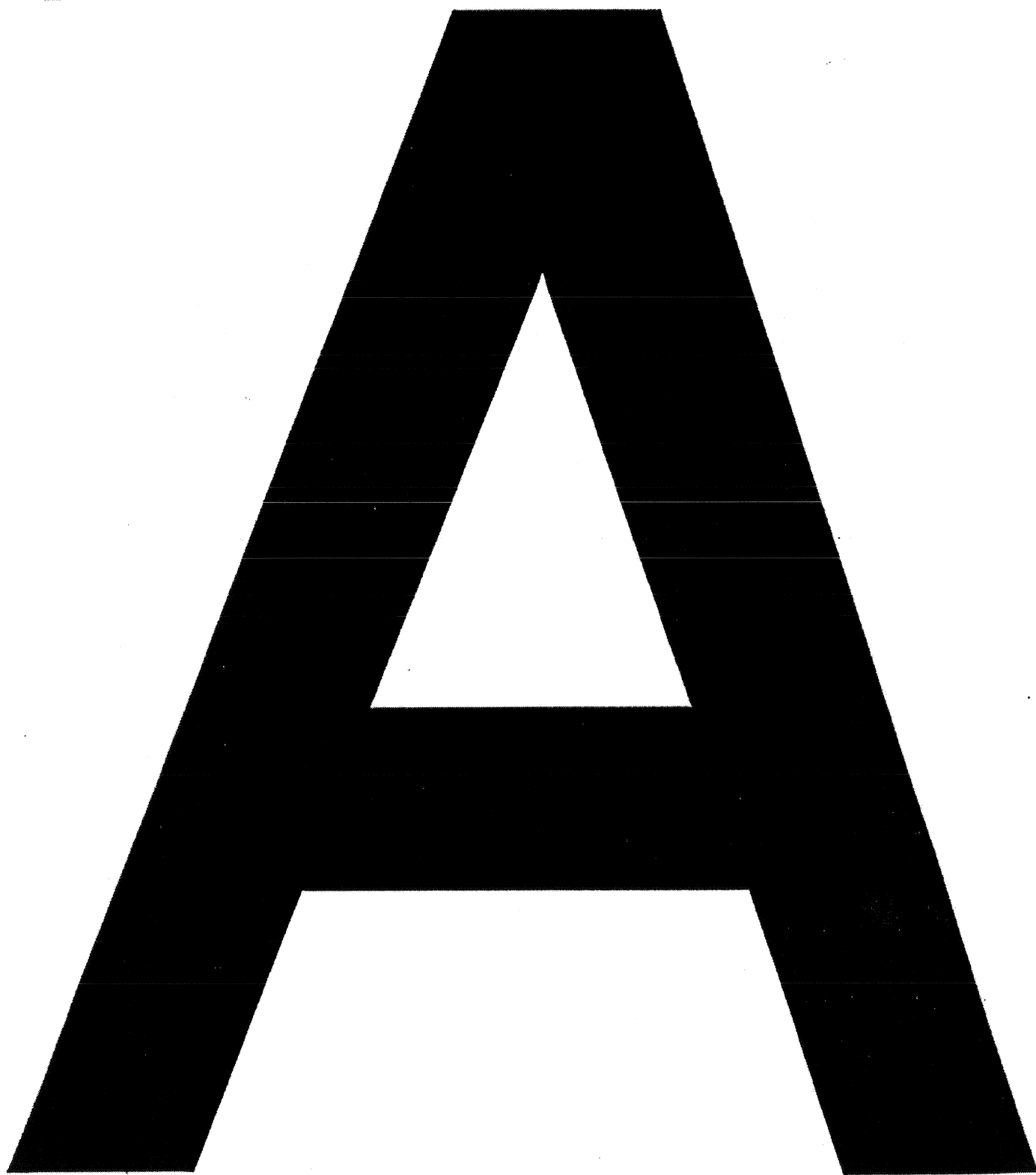
By: Robert Newton & Christina Newton



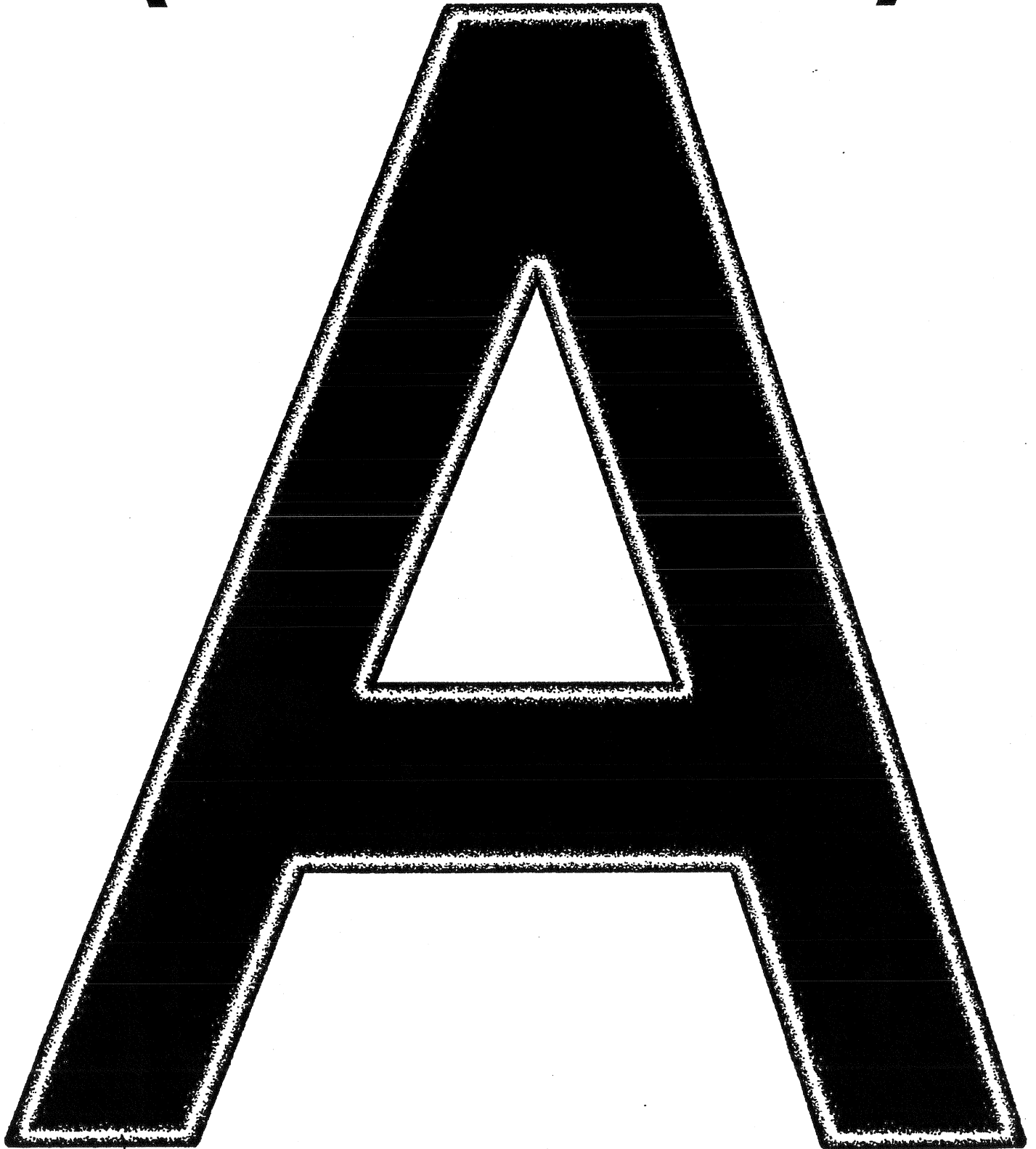
SCREEN PRINTING (SCREEN EDGES)



**LITHOGRAPHY
(SMOOTH EDGES)**



FLEXOGRAPH (RING OF INK)



FLEXOGRAPHIC PRINTING

ADVANTAGES OF FLEXOGRAPHY

It can print on a wide variety of absorbent and nonabsorbent substrates.

It uses fast-drying Inks, whether solvent, water-base or ultraviolet {UV} curable.

It can print wet Ink over dry Ink to eliminate trapping problems, back-trap contamination and setoff.

It uses resilient rubber or photopolymer Image carriers that can print millions of Impressions.

Printing plate cylinders can be taken out of the press to enable printing plates to be mounted and proofed as a prepress operation.

Presses can accommodate a wide range of cylinder repeat lengths to match customer print length requirements* Flexography is a near total variable repeat-length-system.

Press speeds of up to 400 feet per minute or more are possible at Wisconsin Label Corporation.

Its Inking system can deliver a predetermined amount of Ink with minimum on-press adjustments,

It can print continuous patterns (gift wrap, wallpaper, floor tiles).

It can print on extensible plastic films.

It can print on the reverse side of stretchable, transparent films.

It can perform coating and inline laminating operations.

It is cost effective for many applications.

The return on Investment for equipment is high.

It enables fast turnaround time between Jobs.

It can do short-run work profitably.

Presses can produce In-line, pressure-sensitive labels in a continuous operation.

It can print 150-line and higher process color Jobs on smooth-coated substrates.

Flexographic printing utilizes a flexible, low durometer printing plate (made of either a polymer or rubber) that transfers Ink directly from an engraved cylinder (anilox roll)

to the plate and finally, to the printing substrate. Inks are low in viscosity and normally, fairly transparent. Anilox roller cell size and shape can be varied to suit the size and type of print necessary to achieve the correct color and print quality. Due to recent advances in press. Ink and plate technology, flexography can compete directly with other recognized high quality printing methods, it is the most versatile printing Method currently available!

PROCESS: It is a relief type of printing using flexible plates AND fast drying water-based Inks (could be fast drying solvent Inks)

RECOGNITION: Ring of Ink or "halo" around printing.

Flexography

Pressure Sensitive Labels

The process for turning the many component materials into a pressure sensitive label is called converting. The most often used processes in label production are flexography, letterpress, offset, and screen printing.

Flexography is used to produce all types of labels, particularly pressure sensitive, heat seal, and to some degree, gummed and ungummed labels. Presses for the flexographic process start as small as six inches in width with a single color station and progress to giant sixty and eighty inch wide, multi-color units which are employed in very specialized applications such as spiral wrapped can labels used to package oil and frozen juice concentrate. Many flexo presses are equipped with attachments that perform operations other than printing so that a finished product, such as a continuous label with die-cuts, can be completed in one pass.

The flexographic process is so named because it utilizes flexible plates made of rubber or, more recently, photopolymer. When preparing either rubber or photopolymer plates, the printing image will be photographically distorted to compensate for the stretch that occurs when the plate is wrapped around the relatively small cylinders.

Flexographic Process - Inking System

Impression Cylinder

Plate Cylinder

Anilox Roll

Pan Roll

Web

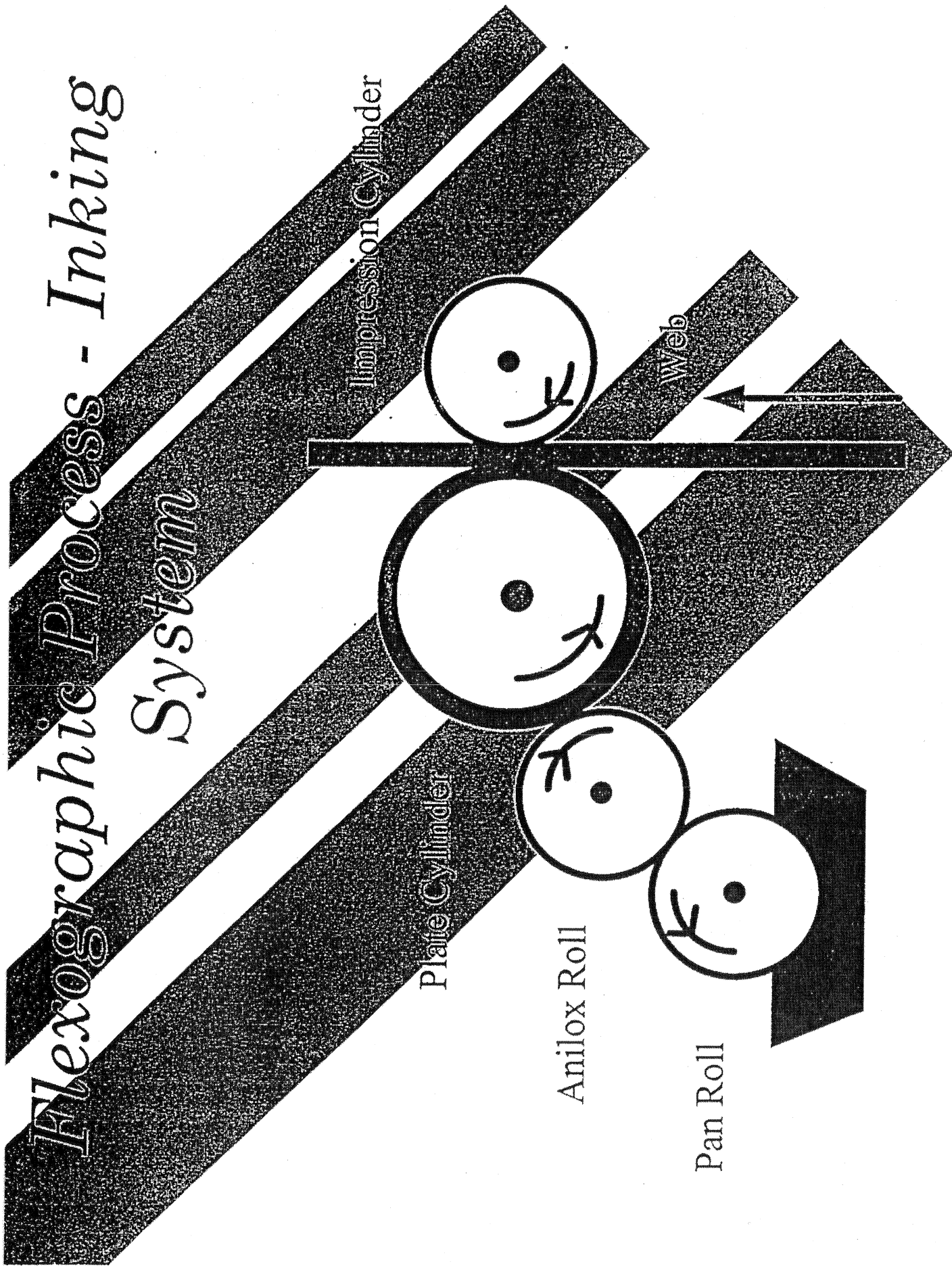
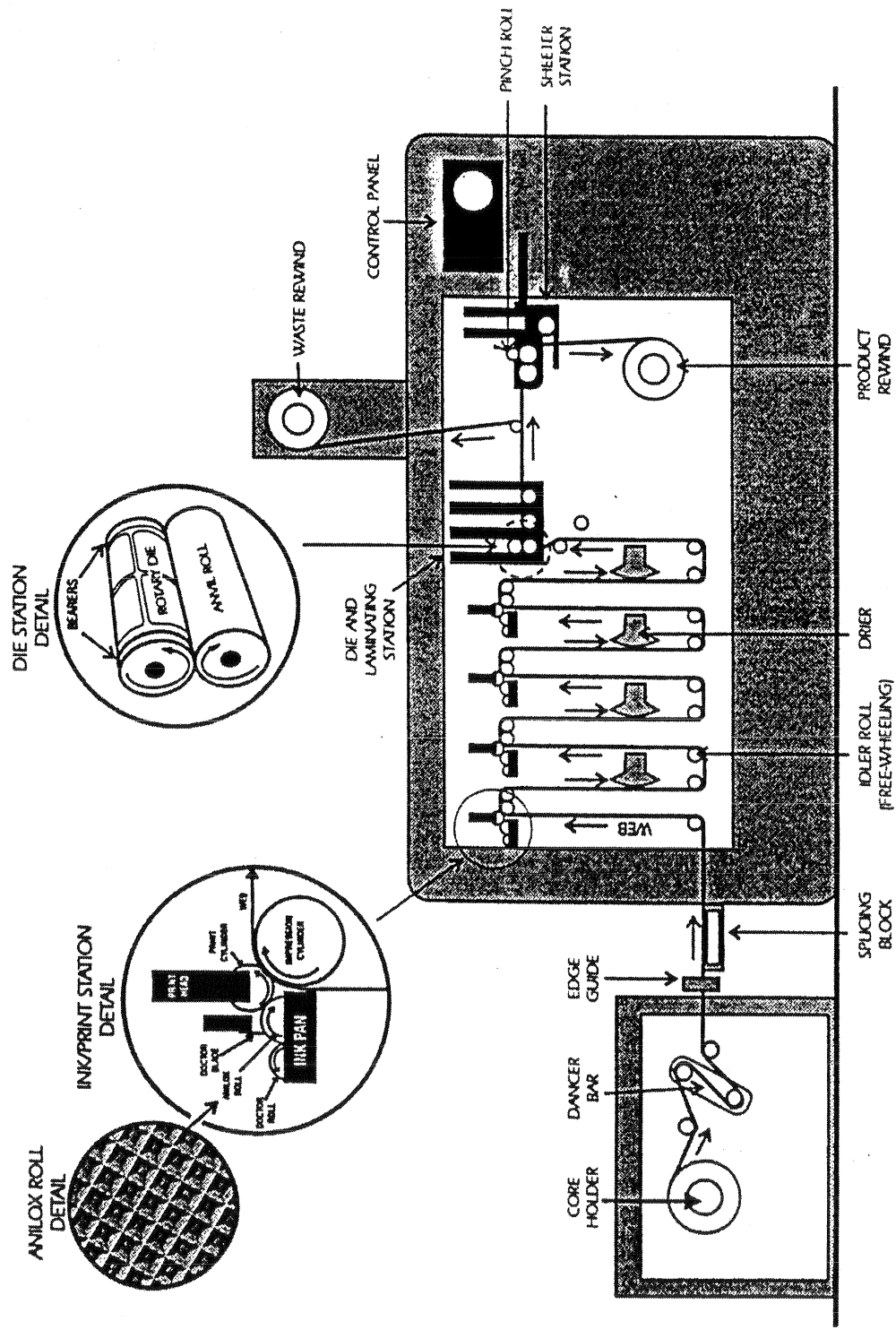


DIAGRAM OF 4-COLOR WEBTRON FLEXOGRAPHIC PRESS



Affordable Flexography

WTEA presentation by

Robert Newton, Sheboygan South High, Graphic Communications Instructor

Christina Newton, Hustisford Jr/Senior High School, Technology Education Instructor

A. Design Considerations

1. Use of text and clipart
2. Keep design simple
3. Must have a frame around image

B. Plate making

1. Make negative with process camera or laser writer
2. Exposure of plate with Nuarc platemaker Negative
MUST be up-side down
(same as used for metal plates for offset press)
3. Develop plate (emulsion) by running water over,
Takes about twenty minutes.
4. Place on window sill overnight to harden

C. Mounting of plate

1. Use double stick tape
2. Must be proper height
3. Alignment considerations

Press and Supplies

Sohn Manufacturing
PO box X
Elkhart Lake WI 53020
920-876-3361
Contact: Harold Daehnert

Flexographic Technical Association

Free Membership
Assistance with equipment purchase
www.flexography.org

Contact your local Flexo printer

Robert Newton
Graphic Communications and Photography
South High School
3128 S. 12th St.
Sheboygan WI 53081
920-803-7846

Flexographic Printing Bumper Sticker Project

This project will be printed on the Sohn Label maker

- ____1. Design four thumbnails, Sticker is 3.5 X 7.5
- ____2. Take one thumbnail and make a rough drawing
- ____3. Have rough Drawing approved by instructor _____
- ____4. Using your thumbnail as a guide make the bumper sticker using QuarkXpress
- ____5. Print laser print at 600 dpi and have approved _____
- ____6. Make negative, have instructor check it.
- ____7. Obtain Flexographic emulsion and expose on platemaker for 150 seconds
negative should be placed upside down on emulsion side
- ____8. Rinse negative to remove unexposed emulsion and then place on window sill overnight to harden.
- ____9. Mount two layers of double stick tape on back of Plate and mount on press.
- ____10. Have instructor check set-up and then run 10 good copies
- ____11. Clean-up and return rollers to plastic bag.
- ____12. Turn in Negative, Plate and one sticker for Grade

Flexography

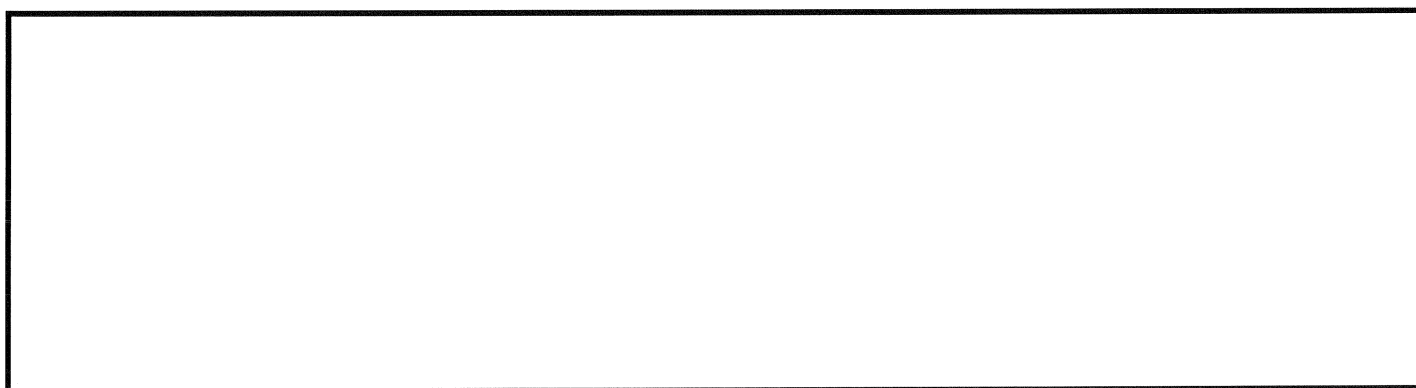
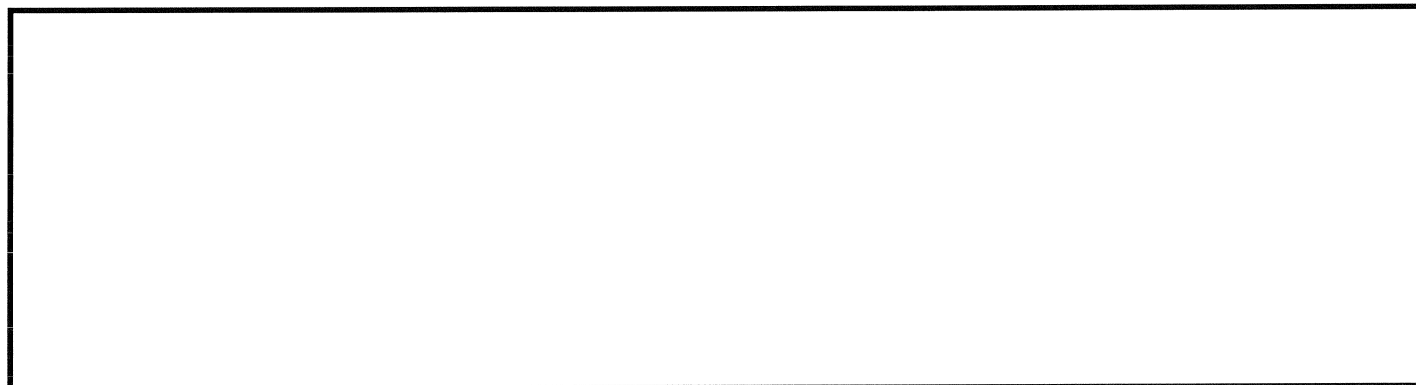
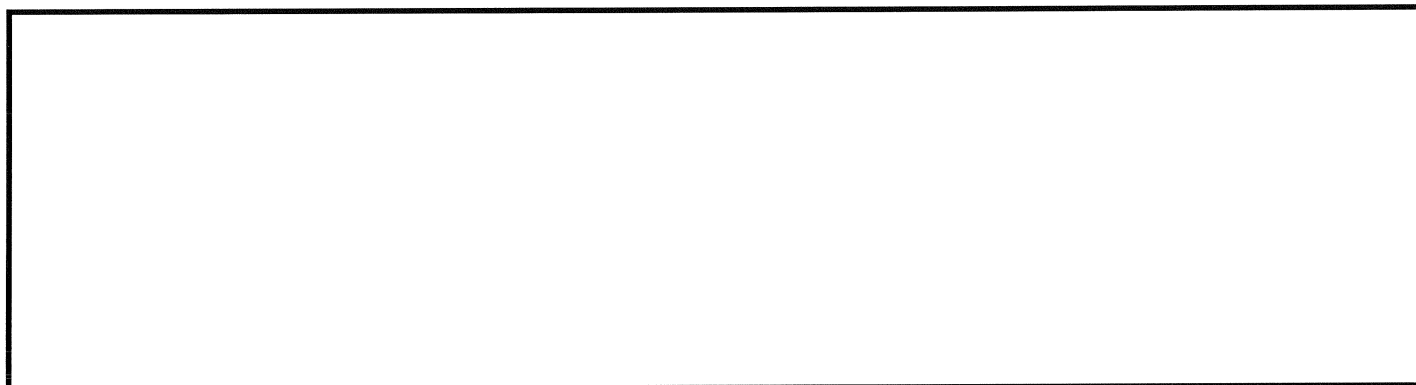
Name _____

Bumper Sticker

Date started _____

Make thumbnail Designs of three different layouts for a bumper sticker. After designs approved make all three on the computer. Choose one, make Negative. Remember you must have a border. Have final design approved. Maximum size 3.75 X 9

Start with new document landscape 10 x 8.5



Thumbnail Approval _____

Final Design Approval _____

Negative Approval _____

Press Setup/Run _____

OFFSET LITHOGRAPHY

- INKS** - Oil-based
- RUBBER** - Transfers Ink from the plate to the rubber blanket to the paper.
- BLANKET**
- USES** - Advertising, books, catalogs, greetingcards, posters, labels, packaging, folding cartons, coupons, trading stamps, pocket folders, brochures, calendars, maps, annual and quarterly reports, etc.
- STRENGTHS** - Uniform Ink coverage resulting in crisp, sharp graphics!

There are two basic differences between offset lithography and other printing processes: (1) It is based on the principle that grease and water do not mix and (2) ink is OFFSET first from the plate to a rubber blanket, and then from the blanket to the paper.

Plates for this type of printing are aluminum and usually are 30" x 40" in size. The image and non-image area are on the same level (or plane) on the plate. The printing image area is made grease-receptive and water-repellent. The non-printing areas are made water-receptive and ink-repellent. The plate is mounted on the plate cylinder of the press which, as it rotates, comes into contact successively with rollers wet by a water or dampening solution and rollers wet by ink. The dampening solution wets the non-printing areas of the plate and prevents the ink from wetting these areas. The ink wets the image areas which are transferred to the intermediate blanket cylinder. The inked image is transferred to the paper as it passes between the blanket cylinder and the impression cylinder.

Transferring the image from the plate to a rubber blanket before transfer to the paper is called the OFFSET PRINCIPLE. One major advantage of the offset principle is that the soft rubber surface of the blanket creates a clearer impression on a wide variety of paper surfaces and other materials with both rough and smooth textures with a minimum of press make-ready,

PROCESS: Separation of image and non-image areas is chemical rather than physical resulting in crisp, sharp graphics.

RECOGNITION: Can be recognized by very smooth print, as well as by the lack of any impression, ring of ink, or serrated edges. Inks used are oil-based and very strong in color value to compensate for the lesser amount applied and uses a combination of absorption and oxidation for drying.

