

Offset Press

The Offset Process

- Planographic - a flat plate (relatively speaking)
- Principle - oil and water do not mix
- Plate
 - Image areas - oleophilic
 - Non-image areas - hydrophilic

Discovery

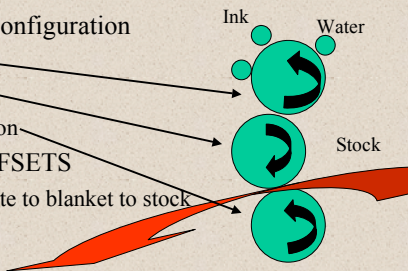
- Alois Senefelder - 1798
- Lithography
 - Litho = stone
 - Graphy = writing
- Bavarian limestone

Discovery

- Offset process - Ira Rubel, 1904
- Version of Litho press
 - Rubber blanket for an impression cylinder
 - Sheet misfed, stone printed on the blanket
 - Next sheet printed both sides, sharper quality
- Photo-offset lithography, 1910-20
 - Offset plates prepared from negatives

The Offset Press

- Cylinder configuration
 - Plate
 - Blanket
 - Impression
- Image OFFSETS
 - From plate to blanket to stock



Press Systems

- Feed
- Register
- Cylinder
- Inking
- Dampening
- Delivery

The Offset Press

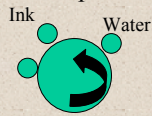
- Duplicators
 - Maximum sheet 11 x 17
 - Less control than larger presses
 - Spring control
- Press
 - Sheet size depends on press size
 - Runs on bearers

Press Feed System

- Feed classifications
 - Sheet fed
 - Web fed
- Sheet fed
 - Successive sheet feed
 - Stream feed

Dampening System

- Supplies moisture to the plate
- pH - measure of acid/base relationship
- form rollers - place dampening solution on the plate

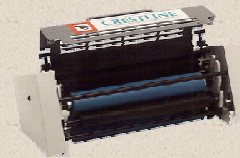
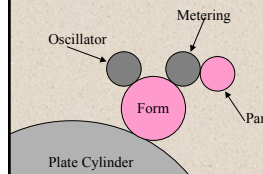


0 - acid 7 - neutral 14 - base



Crestline Dampening

- Aftermarket
- Improved dampening control



Inking System

- Ink fountain
- Keys - used to adjust ink
- Ductor roller - transfers ink from fountain to ink train
- Oscillator roller
- Form roller - places ink on the plate

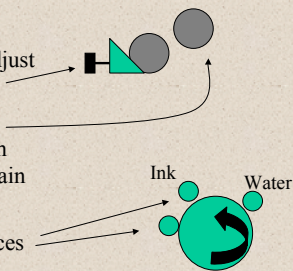
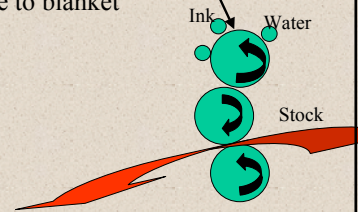


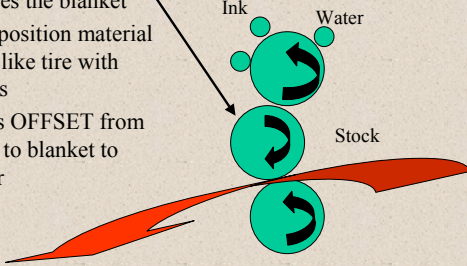
Plate Cylinder

- Carries the plate
- Contacts inking and dampening rollers
- Transfers image to blanket



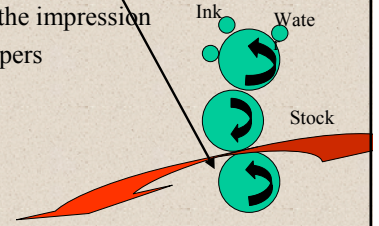
Blanket Cylinder

- Carries the blanket
- Composition material built like tire with layers
- Ink is OFFSET from plate to blanket to paper



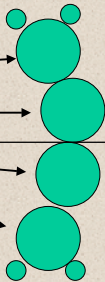
The Impression Cylinder

- Carries stock into contact with the blanket for image transfer
- Sheet held to the impression cylinder by grippers



Web Press Cylinder

- Blanket to blanket
 - Plate
 - Blanket
 - Blanket
 - Plate
- Stock printed both sides



Delivery System

- Sheetfed press
 - Chute
 - Chain
- Web press
 - Folded into signatures
 - Sheeted