

# OFFSET PRINTING

Offset printing is a commonly used technique in which the inked image is transferred (or “offset”) from a plate to a rubber blanket, then to the printing surface.

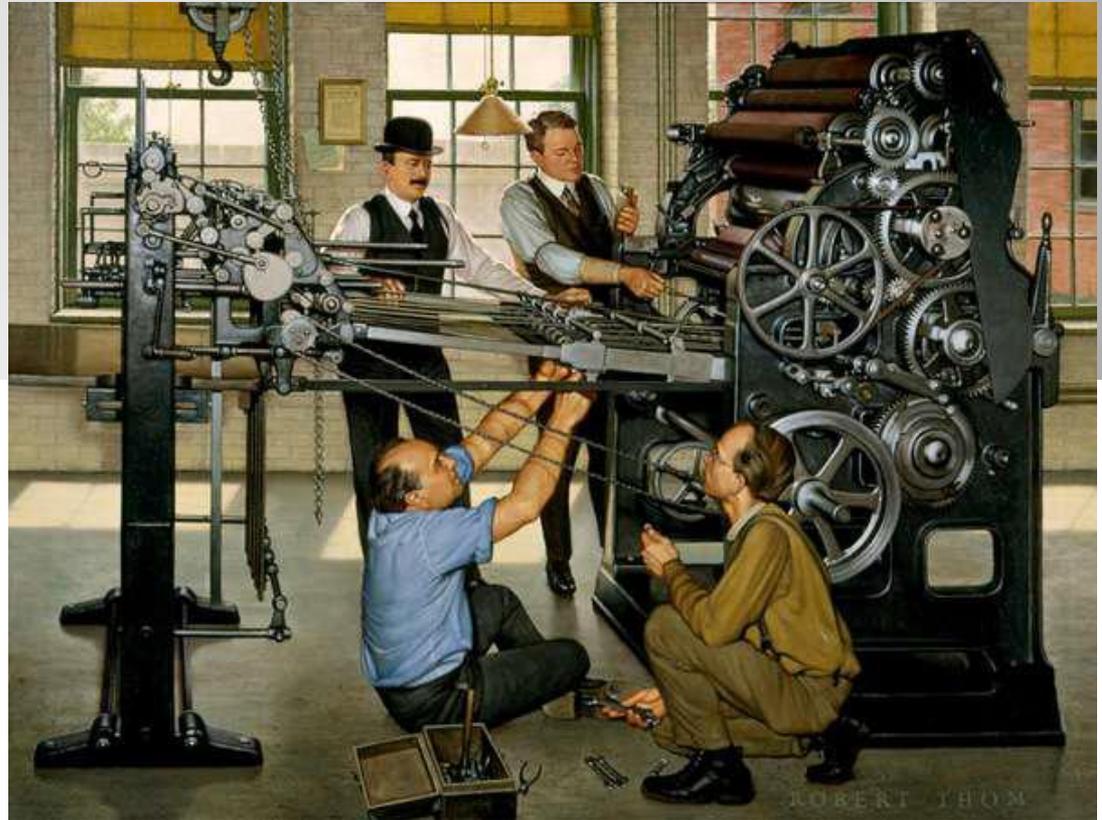
# HISTORY OF OFFSET PRINTING

- Lithography was initially created to be an inexpensive method of reproducing artwork
- The word 'lithograph' historically means "an image from stone" or "printed from stone".
- The first rotary offset lithographic printing press was created in ENGLAND and patented in 1875 by ROBERT BARCLAY.
- In the end of 19th Century , photography became popular, many lithographic firms went out of business

# HISTORY OF OFFSET PRINTING

- In 1901, Ira Washington Rubel of New Jersey discovered that when printing from the rubber roller, instead of the metal, the printed page was clearer and sharper.
- After further refinement, the Potter Press printing Company in New York produced a press in 1903
- By 1907 the Rubel offset press was in use in San Francisco.
- The Harris Automatic Press company also created a similar press around the same time.

- Development of the offset press came in two versions: In 1875 by Robert Barclay of England for printing on tin, and in 1904 by Ira Washington Rubel of the United States for printing on paper.



# ADVANTAGES OF OFFSET PRINTING

- Consistent high image quality.
- Quick and easy production of printing plates
- Longer printing plate life than on direct litho presses
- Low cost and high quality.

# Before Offset Printing

Every printing process starts with the creative process. Writers, editors, graphic designers and artists are the initial step in the creation of flyers, magazines, brochures, books and other print pieces.

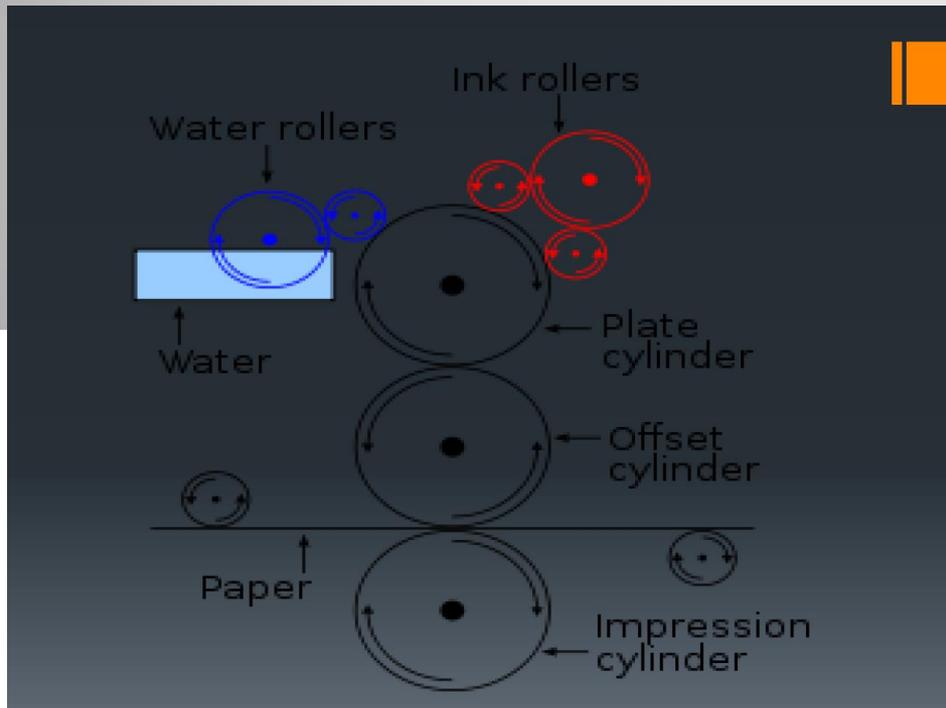
After the artwork has been completed, edited and proofread, a digital "printer's file" is ready to print.

**Azimuth Print** offer the complete design package from concept to finished product. Our fixed price approach to design is fresh, simple and effective. We take pride in our dedication to delivering projects on time and at a fixed cost.

Whether you're a start-up company requiring logo ideas or an existing company in need of marketing communications, we're here to help make your mark and differentiate you from the competition.

Every printing technology has its own identifying marks, as does offset printing. In text reproduction, the type edges are sharp and have clear outlines. The paper surrounding the ink dots is usually unprinted.

# OFFSET PRINTING PROCESS



The most common kind of offset printing is derived from the photo offset process, which involves using light sensitive chemicals and photographic techniques to transfer images and type from original materials to printing plates

# PARTS OF OFFSET PRINTING PROCESS

- The inking system(ink fountain and ink rollers)
- The dampening system(waterfountain and water rollers)
- The plate cylinder
- The offset cylinder(or blanketcylinder)
- The impression cylinder



# TYPES OF OFFSET PRESSES

## Sheetfed Offset printing press

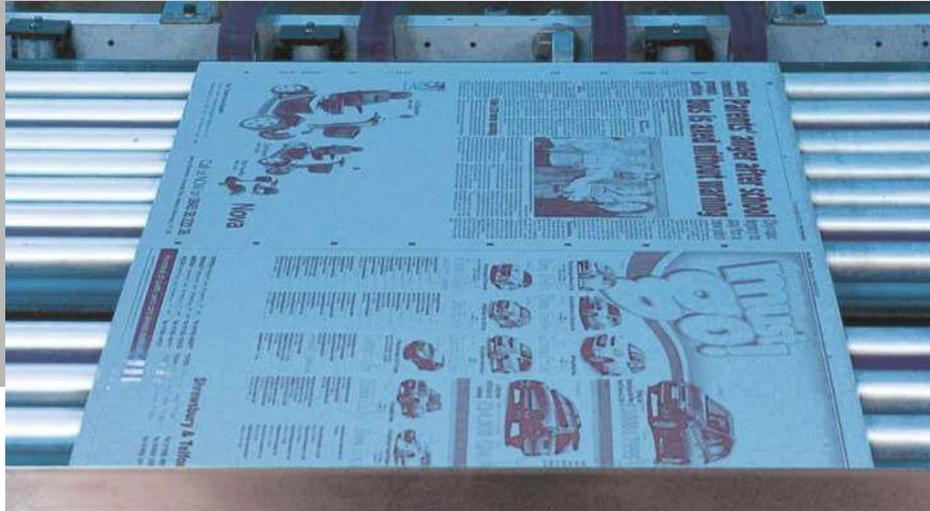
- Sheetfed Offset printing press
- In this kind of offset press the printing is carried out on single sheets of paper as they are fed to the press one at a time

# TYPES OF OFFSET PRESSES



## **Web-fed offset printing press**

In this kind of offset press the printing is carried out on a single, continuous sheet of paper fed from a large roll. The sheet is then cut into individual sheets of desired sizes



# 1st step: Pre-press

Before the job can be printed, the document must be converted to plates. The plates are created from digital file.

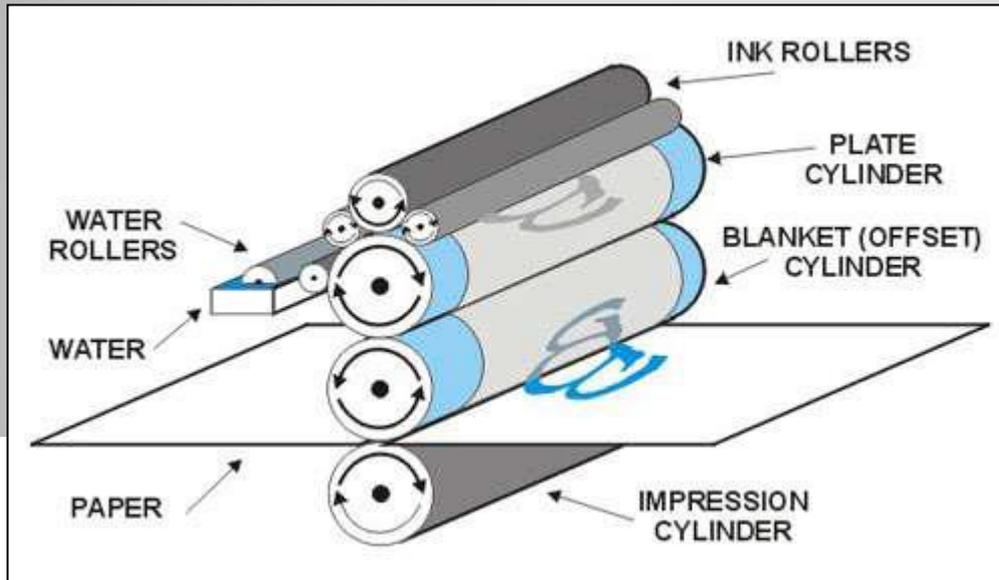
Each of the primary colours - black, cyan, magenta, and yellow - has a separate plate. We are using the best plate material, aluminium instead of paper plates, which are cheaper but not so good quality.



## 2nd step: Press Run

The pre-cut paper is fed through the press. The image area of the plate picks up ink from the ink rollers. The water rollers keep the ink off of the non-image areas of the plate. Each plate then transfers its image to a rubber blanket that in turn transfers the image to the paper. The plate itself does not actually touch the paper - thus the term "offset" lithography. All of this occurs at an extremely high speed. Our Heidelberg presses' quality is superb. They can run at 15,000 impressions an hour, so it takes hours not days for the job to be completed.

# The Inking Process



Ink and water do not mix - this is the underlying principle of offset lithography. The ink is distributed to the plates through a series of rollers. On the press, the plates are dampened, first by water rollers, then ink rollers. The rollers distribute the ink from the ink fountain onto the plates.



## 3rd step: Finishing

When our presses have finished the printing process:  
The papers are trimmed to the final size using our guillotines.  
The cut papers can be

- left as they are for flyers, leaflets
- folded for folded leaflets
- bound, stitched and laminated for books and booklets.

# Conclusion

Offset printing is the printing technique that has made news papers possible, books affordable and marketing and promotion weapons of the common man.