

Bachelor of Journalism & Mass Communication

JMC 107 Design and Graphics

UNIT III

Printing Methods

Letterpress, Cylinder, Gravure, Screen, Offset printing, Plate Making.

Rotary Printing Press

A rotary printing press is a printing press in which the images to be printed are curved around a cylinder. Printing can be done on large number of substrates, including paper, cardboard, and plastic. Substrates can be sheet on a continuous roll through the press to be printed and further modified if required. Printing presses that use continuous rolls are sometimes referred to as "web presses". Rotary drum printing was invented by Richard March Hoe in 1843, perfected in 1846 and patented in 1847. Today, there are three main types of rotary presses; offset commonly known as web offset, rotogravure, and flexo (flexography). While the three types use cylinders to print, they vary in their method. Offset lithography uses a chemical process which an image is chemically applied to a plate. Lithography is based on the fact that water and oil do not mix, which enables the planographic process to work.



Gravure Printing Press

Gravure printing is totally opposite printing method of letter press printing method. There are two types of cylinder are used for printing, first is impression cylinder and second is plate cylinder. Plate cylinder is standing in ink tank and paper roll is running in these cylinders. It is commonly used for labels and packaging, competing against flexography. Photogravure is a process used mostly for fine art prints. It's a type of intaglio printing process, in that it involves engraving the image onto an image carrier.



In gravure printing, the image is engraved onto a copper cylinder because, like offset and flexography, it uses a rotary printing press. The vast majority of gravure presses print on reels of paper, rather than sheets of paper. Gravure printing is used for long, high-quality print runs such as magazines, mail-order catalogues, packaging, and printing onto fabric and wallpaper. It is also used for printing postage stamps and decorative plastic laminates, such as kitchen worktops.

Advantage

- This method is very for various colors printing. The result of printing is much better because of the use of good quality screen.

- The speed of printing machines in this methods is very fast and the printing of this method have very colorful.
- With the help of this printing method you can create good printing quality on cheap paper and on plastic sheets.

Disadvantage

- This printing method is not suitable for short numbers of printing due to high cost for making gravure cylinder.
- This printing method is harmful for health and environment due to the use of alcohol based ink.
- In this printing method, there is need of big investment.

Screen-printing

Screen printing is one of the early methods of printing. It involves the passing of ink or any other printing medium through a mesh or 'screen' that has been stretched on a frame. The nylon and silk cloth is used for this printing. This type of printing made by hand with the help of table but now semi-automatic and automatic machines are used for screen printings. The screen can be re-used after cleaning. There are three common types of screen printing presses. The 'flat-bed', 'cylinder', and the most widely used type, the 'rotary'.



Screen printing was a technique first used by the Chinese almost 2000 years ago. They used human hair stretched across a wooden frame to form the screen. To that they attached a stencil made from leaves stuck together into different shapes. This was probably the first application of screen printing ever. In 1907, it was Samuel Simon near Manchester who patented the first ever industrial screen printing process. Many years later close to the First World War, John Pilsworth of San Francisco developed the Select-a-sine method, which basically introduced the concept of multi-color printing using the same screen.

Screen printing is mainly used to print on paper, plastic, cloths, glass for visiting cards, invitation cards, Marriage cards, envelopes and letterhead. The CD covers you see are all screen printed. Beautiful cotton fabrics, silk and polyesters can all be screen printed on. Posters, signs, flyers, advertisements on buses, t-shirts and even watch dials are screen printed. Thus there are many applications of screen printing.

Advantage

- It has to need low investment for printing.
- This method is used for printing on cloths and plastic sheets.
- This method is used for various colored printing.
- Screen printing is possible for light colored printing.

Disadvantage

- The consumption of colored ink is high.
- This printing process is very slow in speed.
- The cost of large number of printing is very high through this method.