

## BASIC PRINT PROCESSES

The five basic printing processes are letterpress, lithographic offset, gravure, screen printing and digital printing. Lithographic offset is the predominant process used in printing today. The main printing processes can be defined according to the physical characteristics of the printing surfaces used.

Most printing processes require the paper to be either sheet-fed or web-fed.

### Lithographic Offset

This is the predominant process used in printing today, being used for a wide range of items from letterheads to books and magazines. Lithography (generally known simply as “litho”) is “planographic”, with a flat printing surface, rather than raised – as in letterpress – or recessed, as in gravure. The area from the plate which is to be printed is treated chemically so that it accepts ink and rejects water; while the non image area is treated to accept water and reject ink. The whole plate surface has both ink and water applied to it. When the inked and dampened plate is then pressed against paper, only the image area is printed. The inked image on the metal plate is “offset” (printed) onto a rubber blanket which is wrapped around a rotating metal cylinder; the image is then transferred from the blanket onto the paper.

### Letterpress

Letterpress is a “relief” printing process, where the image to be printed is raised above the background. These elements are assembled together within a frame which is placed in the press. The raised surface is inked by rollers and then pressed against paper to make the impression. As the background is lower than the printing area, it does not come into contact with the inking rollers or the paper, so does not print. In traditional letterpress, all the text is printed from metal type and the pictures from letterpress blocks.

### Gravure

Gravure is an “intaglio” process, with the printing image recessed into the plate and filled with liquid ink; the non image area is wiped free of ink, so that ink is deposited on the paper only from the recessed wells.

### Digital Printing

A system of printing, which involves bypassing the traditional route of making printing plates and imaging directly from digital data.

### Sheet Fed and Web Fed Offset Processes

Most printing processes require the paper to be either **sheet-fed or web-fed**. In **sheet fed printing**, the paper which is originally made in the form of reels, is cut into sheets of a suitable size for the press being used. The feeder section of the press picks up the sheets, using a combination of metal fingers and vacuum suckers, and feeds them through to be printed. The sheets then pass on to the delivery end of the press, still as flat sheets. With sheet fed, folding or other finishing processes are a separate operation.

With **web-fed** printing, the paper is supplied to the machine in the form of reels. The front end of the press has a reel stand, which holds the paper as it is unwound and fed through the press. The actual method of printing is the same as with the sheet fed, but printing can take place at much higher speeds because the machine is not slowed down by having to pick up and put down each sheet before printing the next. Most web presses also incorporate some form of finishing facility after printing. Usually this is folding, but it can also include various types of gluing, stitching and perforating. The advantages of web-fed printing are speed, the fact that folding can be done at the same time, and that paper on reels is cheaper than paper in sheets, therefore web-fed presses lend themselves to longer runs.