

The Viscosity Printing Process

Credited to being developed by Stanley William Hayter during the late 1960s in Paris, **viscosity printing** is a multi-color fine art printmaking technique that incorporates principles of relief printing and intaglio printing. It is based on the principle of viscosity (the characteristic of a fluid to resist flow) to print multiple colors of ink from a single plate, rather than relying upon multiple plates for color separation.

Intaglio prints are created from metal plates, either scratched into or etched with acid. An artist forces a viscous ink (similar to the consistency of oil paint) into grooves, scratches, etched lines or indentations that were created with a variety of etching tools. Then he wipes the polished surface clean using a loosely woven cloth, followed by newsprint, leaving ink only below the plate level. After covering the plate with a dampened paper and felt blankets, the artist runs it through a press where great pressure pushes the paper down into the engraved or etched grooves to pick up ink. In intaglio, the ink that was below the surface of the plate was printed and is now embossed on the paper. For a two-color print, two plates are used and the print is run through the press twice. In contrast, to create **relief prints, linoleum cuts and woodblocks**, an artist cuts away from the plate what he does not want to print, and roll ink over the remaining high parts of the plate.

Using variations of this technique, an artist can start by making a multilayered plate, much deeper than a normal etching. The plate is made of metal, as in the intaglio processes, and normally requires very long acid baths. To facilitate this process, the artist can instead construct **collagraphs**. In **collagraphy**, a variety of materials are applied to a rigid underlying layer (such as ragboard or masonite). The word is derived from the Greek word *koll* or *kolla*, meaning glue and graph, or the act of drawing. The artist begins by making collages of cardboard, pasted paper and other textures. Next he inks the resulting plate as an intaglio, or with a roller or paintbrush. The resulting print is termed a collagraph. Substances such as acrylic texture mediums, sandpapers, cloth, string, or cut cardboard can all be used in creating the plate. Collagraphy is a very open printmaking method. Ink can be applied to the upper surfaces of the plate with a brayer for a relief print, or ink can be applied to the entire board and then removed from the upper surfaces, leaving it in the lower spaces, resulting in an intaglio print.

In **viscosity printing**, artists often combine both intaglio and relief methods. Different tonal effects and vibrant colors result from differences in the depth of relief on an etched plate or collagraph's highly textured surface. By mixing three colors of ink, each of a different viscosity or amount of oiliness, adjusted by adding linseed oil. The plate is inked in several stages. The first ink is fairly dense — of a relatively high viscosity. The high-viscosity ink is applied as in any intaglio process --by forcing it into the recesses of the plate, and then wiping off the plate's surface. Then, a second color of ink is applied, and the thinnest viscosity, to the plate with a hard rubber roller, so that ink only transfers onto the highest areas of the plate. Finally, the artist applies a third color of ink, and a stiffer consistency, to the middle areas of the plate by using a soft roller. The oily ink on the top layer repels heavier ink, and the third ink, because it is applied with a softer roller, is forced into the indentations of the middle layer. The varying viscosities of the two rolled-on inks prevent them from mixing. To conclude, he places a damp sheet heavy paper over the plate and passes it through a press, printing all of the colors simultaneously. Through experimentation with complex combinations of varying colors and viscosities, the process results in unique prints and small editions.