

PRINTING – PART XIX

REF: TT/ SEPT 2021/ WK 2

c) Sublimation Printing Machine

Sublimation printing machines are designed based on advanced ink technology for fast fashion. The dye-sublimation printing process is used for printing on T-shirts, sportswear, banners, table covers etc.

In this printing system, the important parts are sublimation ink printer, computer, sublimation paper, and heat press.

After the design is selected, it is printed onto the sublimation paper by sublimation printer. Some sublimation printers have in-built software necessary in setting up the material or design to be printed. These computer programs are called RIP software or Raster Image Processor.

RIP SOFTWARE OR RASTER IMAGE PROCESSOR

A raster image processor or RIP is software that translates computer files like InDesign, Illustrator, Photoshop, PDF, JPG, etc. to a raster image also known as bitmap image that the printer can understand and print.

This software enables handling many file types and file sizes.

RIP can also be used to enlarge images for printing without loss of detail.

The printers which do not have in-built software can be purchased separately. In those cases, it is important to check that the software is compatible with the type of printer being used.

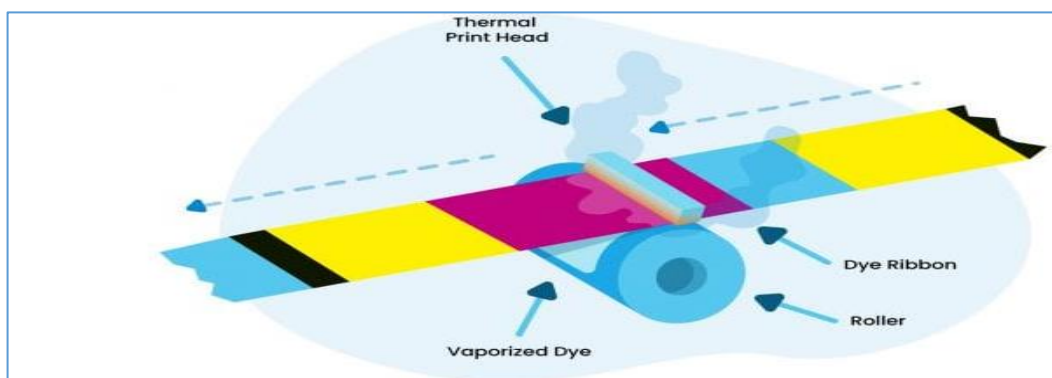


Fig 1.1 Working of Sublimation printer

Ref: coastalcreative.com



With the sublimation printer, any color can be printed and transferred onto the printing paper. Once the transfer paper has been printed with the design, it is then printed onto the fabric by heat press. Heat press is a necessary step in sublimation printing system. In order to transfer the image from the paper to the substrate, it requires a heat press process that is a combination of time, temperature and pressure. The printed transfer paper transfers the ink to the fabric. As the printed paper connects with the substrate in a heat press, the heat, pressure and time work together to sublimate the inks. There is one alternative process in which the transfer paper is removed from the substrate and allows the inks to be directly dispersed. Here, a heat press is needed to fix the inks into the substrate.

There are different types of heat press are used in this printing system. Depending on the end-product and volume the type of heat press to be used is decided.

- **Flatbed Heat Press** - This type of press is suitable for printing on apparel.
- **Calendar Heat Press** - When sublimation printing is done on larger, softer material like clothes, banner etc., a calendar heat press is used.
- **Small Heat Press** - If printing is done on small items, a small heat press would be sufficient. This press does not take up a large of space and can incorporate pressing different types of items.
- **3D Vacuum Heat Press** - This type of heat press was designed for sublimating on surfaces that are not flat.

The ream of the transfer paper is aligned with a bolt of fabric so that the printed side is facing the fabric. The transfer paper and the fabric are then fed into a heated roller. The sublimation process takes place within this heated roller. Through a combination of pressure and heat, the solid sublimation ink on the transfer paper becomes hot, evaporates and diffuses into the fabric. This intense heat opens the pores of the fabric, allowing the ink vapor to go into the fabric.

Once the heat is removed, the pores of the fabric are closed trapping the ink vapors. The ink then converts back to its solid state within the fabric. As a result, the material has been permanently dyed with a full color and high-resolution image.

References:

1. <https://www.vispronet.com//>
2. <https://sellmerch.org/>
3. <https://edgecolours.com/>
4. <https://coastalcreative.com/>

.....To be continued.....

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Last week`s Answers: 1) DIGITIZATION 2) MINIMAL 3) AIDED 4) MOLECULES

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