PRINTING – PART XVII

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c) Digital Printing Machine

Digital Textile Printer is the latest innovation in the field of Textile Printers. The design is printed directly on the textile materials. Digital printers provide cost-effective production, high production speed and design customization.

Earlier digital printers were used only for sampling purpose. Plotter type machines based on digital printing equipment designed for graphical application. In the field of textiles, they are used for sampling, transfer print and small lots of any kind of printed fabric products. Production speed is limited, applied inks could be dye and pigment-based inks.

Later In the early 2000's, multi-pass digital textile printing machines were developed. After some ten years, further innovation in this area took place and the Single-Pass textile printer came to market. – These are scanner type machines equipped with a printing blanket. It is the most important machine type for textile applications used for apparel and home textile products.

Fig 1.1 Digital Printing Machine
Ref: itnh.com

Multi-pass digital textile printer or Multi-pass scanning textile printer is somewhat similar to the inkjet printer used at offices or home. In multi-pass scanning textile printer, the printer heads move from left to right over the

substrate. After moving along the whole substrate, the printer heads move forward and start printing another horizontal bar moving from right to left. All these horizontal bars together create the whole design.

Advantage of multi-pass scanning printing is that only a few print heads are needed to print the designs on fabric. The main advantage of multi-pass printing is that an error that may occur in one pass of the print heads is covered by the next pass of the heads over the same part of the design. So the more passes, the more likely that individual print errors in one strike are covered.

WHAT IS PRINT HEADS?
The print heads are components in a printer that houses inks. It is located under the cover of the printer.

The disadvantage of multi-pass printing is the reduction of speed. The more often the print heads will move over the same fabric area, the speed will be less. Also, the entire print design created by printing multiple layers of image on top of each other, will reduce the overall sharpness of the print because a small displacement of one layer to the others will lead to a lesser sharp print.

Single-pass printer is an improved printing machine that provides faster printing at a higher quality. The fast speed is because of the many print heads that are used in this printer. Instead of having a few printer heads moving from left to right over the substrate, single-pass printing uses multiple printer heads which are positioned along the whole width of the fabric. Since the fabric moves at a constant speed through the printer, the printing is fast and the entire print design is created in one pass.
The advantage of single-pass printing is the high production speed and better sharpness. As there are no multiple layers in printing, the print is always sharp.
The disadvantage of single-pass printing is its cost compared to multi-pass textile printing because of the many print heads that are needed to cover the whole width of the printer for each color. Print heads are costly components, so the more printer heads there are incorporated in the machine, the more expensive the machine will be. Also, all print heads need individual drive electronics, which also contribute to a higher cost of the printer. Print head errors are one more disadvantage of this printer. When one of the nozzles gets clogged, no ink can be printed on the substrate which will create white stripes in your design.

References:
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.....To be continued.....

UNSCRAMBLE THE JUMBLE WORDS
CANSGNIN
VANADAGET
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SASP

Last week`s Answers: 1) REPEATS 2) ORIGINAL 3) BLANKET 4) VIBRATION

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