PRINTING – PART XV

REF: TT/ AUGUST 2021/ WK 3

a) Rotary Printing Machine (Continued)

Preparation of Rotary Screen

The preparation of rotary screens is an important process. The different steps of preparation of the screen and transferring the print design onto it are as follows:

- **Preparation of perforated shell -** A matrix of a steel cylinder is first prepared. This is then coated with a chemical that can withstand the action of electroplating. The coated matrix is electroplated with hexagonal perforations of the required size and mesh. The perforated shell is then cut to required width and fitted with end rings. The shell is then engraved and is ready for use as a rotary screen. Though costly but Nickel has been found to be the most suitable metal because of its high tensile strength, flexibility and good resistance to most of the chemicals used in textile printing.

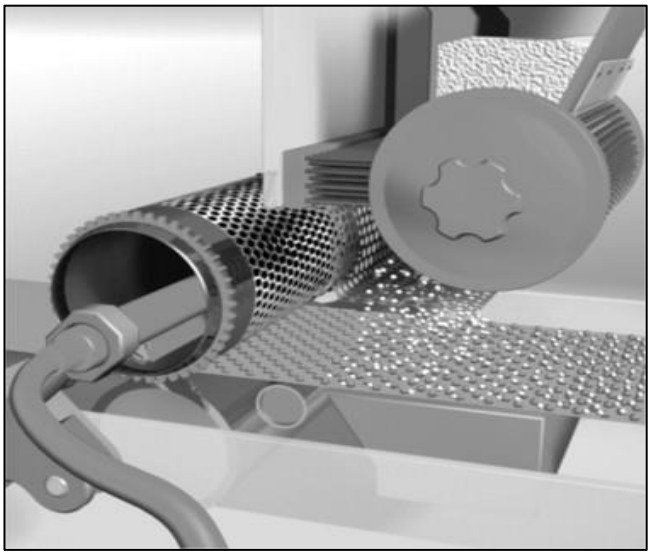

Fig 1.1 Rotary Screen
Ref: sciencedirect.com

- **Cleaning or Degreasing -** Easily removable tension ring is attached to both sides of the screen. The screen is cleaned or degreased using a type of soapy water that is able to clean the grease or oily substance on the screen. After attaching tension ring the screen has to be kept is polymerized at a

required temperature for recommended duration to achieve a suitable form for coating. The screen to be coated is kept in a room with light yellow. Excessive light dissipates the heat of the emulsion. To keep the temperature of the emulsion perfect, AC should be installed in the screen preparation room. The emulsion should be free from any dust particles because these particles will form a pinhole on the screen during screen coating. Hence, the screen preparation room should be cleaned at all times so that no dust particles from outside can enter the room. As per the thickness and sharpness required by the print design, different emulsions are used for screen coating. Coating can be done either manually or by machine. However, machine coating is generally done because of its advantages like uniform and smooth coating and also speed of coating.

- **Coating of screen -** After coating the screen, the screen has to be kept upright for some time so that the emulsion applied on the screen comes down by rolling. Then the screen has to be dried in the emulsion machine or it can be dried in a light-dark room with normal fan air, in this case, it takes more time.
- **Exposure -** After the screen coating, the screen has to be exposed. The device by which the screen is exposed is called the rotary screen exposing machine. There are three types of exposing machines: Manual exposing machine, Inkjet exposing machine and laser exposing machine. Inkjet exposing machine and laser exposing machine are the commonly used one.
- **Screen development -** After exposing the screen, the screen has to be developed within 10-15 minutes. If the screen kept for a long time, the emulsion of the screen becomes hard and there will be problem in screen washing. The exposed screen has to be carefully immersed in water in the developing tank so that the screen should not get rubbed against the developing tank. The screen is removed from the tank cleaned with water properly to clear the design area.

References:

1. https://apparelresources.com/
2. https://textilehelp.org/
3. https://www.textiletoday.com.bd/
4. https://textilechemrose.blogspot.com/
5. http://ideaflows.net/

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

UNSCRAMBLE THE JUMBLE WORDS
LEACNING
STAGANI
UREPOSEX
ERSCEN

Last week`s Answers: 1) SMUDGING 2) FEEDING 3) SQUEEZE 4) PUMPS

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