Chainless

Merceriser

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**ACCESSORIES**

The SWASTIK Merceriser can be provided with a NaOH preparation tank, chilling arrangement for the lye and a caustic recovery plant, if required. The machine can be supplied with acid neutralization system in the washer and a Dryer.

**WET-ON-WET MERCERISING**

Desize Impregnated Fabric can be Mercerised right away in our Wet-on-Wet Merceriser WWW-X. The number of Washing Compartments depends upon the quality of fabric and the production required. In cases where the fabric is Mercerised after Scouring, Wet-on-Wet mercerising is possible using only one Pre-wash Tank. Washing after mercerising remains standard. A heavy duty Squeeze Nip "Hi-Squeeze" with anti-deflection roller prior to the Impregnator enables uniform mercerising results. Impregnator for Wet-on-Wet Merceriser is equipped with an automatic dye concentration controller.

**HOT MERCERISING**

Being a cost effective measure, the tendency to use Hot Mercerising is on the increase in recent years. Hot Caustic lye (at about 65°C ± 5°C) penetrates better and more evenly to the yarn core (of the fabrics). Swelling is faster as compared to cold Mercerising which helps to improve the dimensional stability of fabrics. Hot Mercerising ensures better Dye penetration and imparts a softer handle and better appearance. Shorter impregnation time requirement reduces investment cost.

For Hot Mercerising, the Impregnating section is equipped with an indirect steam heating system with a temperature controller to maintain uniform temperature.

**THE COLD IMPREGNATION PROCESS**

The traditional cold impregnation process imparts more lustre to the fibre than the hot impregnation system mainly due to the greater shrinkage and high tensions needed to re-stretch to width.

**COMBINATION CHAIN AND CHAINLESS MERCERISER**

**WIDTH STABILITY**

Can be achieved by differential speed setting of the squeezing units, controlling the shrinkage or elongation of the fabric. This can be done manually or through automation, using PLC.

**COMBINATION CHAIN AND CHAINLESS MERCERISER**

Besides Lustre, Depth of Colour and fabric feel, dimensional stability of the fabric is the most essential objective of mercerization today. These can be fulfilled with the combined chain and chainless merceriser. The length and width of the fabric can be controlled at will (within physical limits) using the combination of Chainless driven rollers with fully controlled drive and a stenter frame.

The layout of the machine is shown in the layout drawing below. The intensive impregnating zone is followed by a reaction zone. Up to this point, the fabric guidance is on the chainless principle. A part of the Stabilizing zone is a stenter section using the pin chain principle. Final stabilization compartment is again chainless and is followed by the normal high-efficiency washing and neutralizing compartments.

In the Stabilization, the uniformly applied lye is removed. Hot caustic lye is first sprayed onto the fabric, gradually reducing the shrinking force. In this section the fabric can be stretched to the desired width with a comparatively less force. The possibility of stretching on the stenter ensures uniform shrinkage and even distance between warp yarn from the selvage to the center. This is an important advantage of the combined chain and chainless merceriser if dyed woven or striped fabrics are to be processed. Increase in fabric width can also be achieved. The pin chain permits stretching by increasing the speed or shrinkage through fabric overfeed.

**AUTOMATION**

SWASTIK offers a fully automated machine with the most modern PLC control system which ensures optimum production. The level of automation can be designed for specific requirements of individual customers. Typical level of automation to access and control basic machine parameters, functions and displays using PLC with Graphic Colour Screen Display of various functions on a Touch Screen, can be as follows:

- Drive synchronisation
- Automatic Speed Control of machine through programmed Dwell time
- Lye Dosing and concentration control as per set parameters
- Liquor/Water ratio proportionate to fabric weight
- Level control
- Temperature control
- Fabric Tension control by overfeeding in the Impregnator and Stabilizer
- Acid Dosing with pH control

The system can be interconnected to a host computer or other PLC for networking or data monitoring. Remote access of the control system is possible through use of a modem connected to the PLC

Automatic operation and control with necessary sensors provide extremely efficient operations. Lye concentration and dwell time control with perfect temperature regulation; ideal water flow regulation; level control etc., provides for excellent mercerising effect. A pH controller helps achieve neutral fabrics before drying and a Moisture Controller prevents unnecessary over-drying of the fabrics.