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1. BASIC WET PROCESSING TERMS

ABSORBENCY: The ability of one material to take up another material.

BLEACHING: It is a process to remove the natural and artificial impurities in fabrics to obtain clear white for finished fabric or in preparation for dyeing and finishing.

CHEESE: A cylindrical package of yarn wound on a flangeless tube.

DENSITY: The mass per unit volume

DYEING: It is a process of coloring fibers, yarns, or fabrics with either natural or synthetic dyes.

DYES: Substances that add color to textiles.

EFFLUENT: Waste water released after pretreatment, dyeing & finishing of Textile.

FINISHING: It includes various operations such as heat-setting, napping, embossing, pressing, calendaring, and the application of chemicals that change the character of the fabric.

LUSTER: The quality of shining with reflected light on textile material.

pH: Value indicating the acidity or alkalinity of a material.

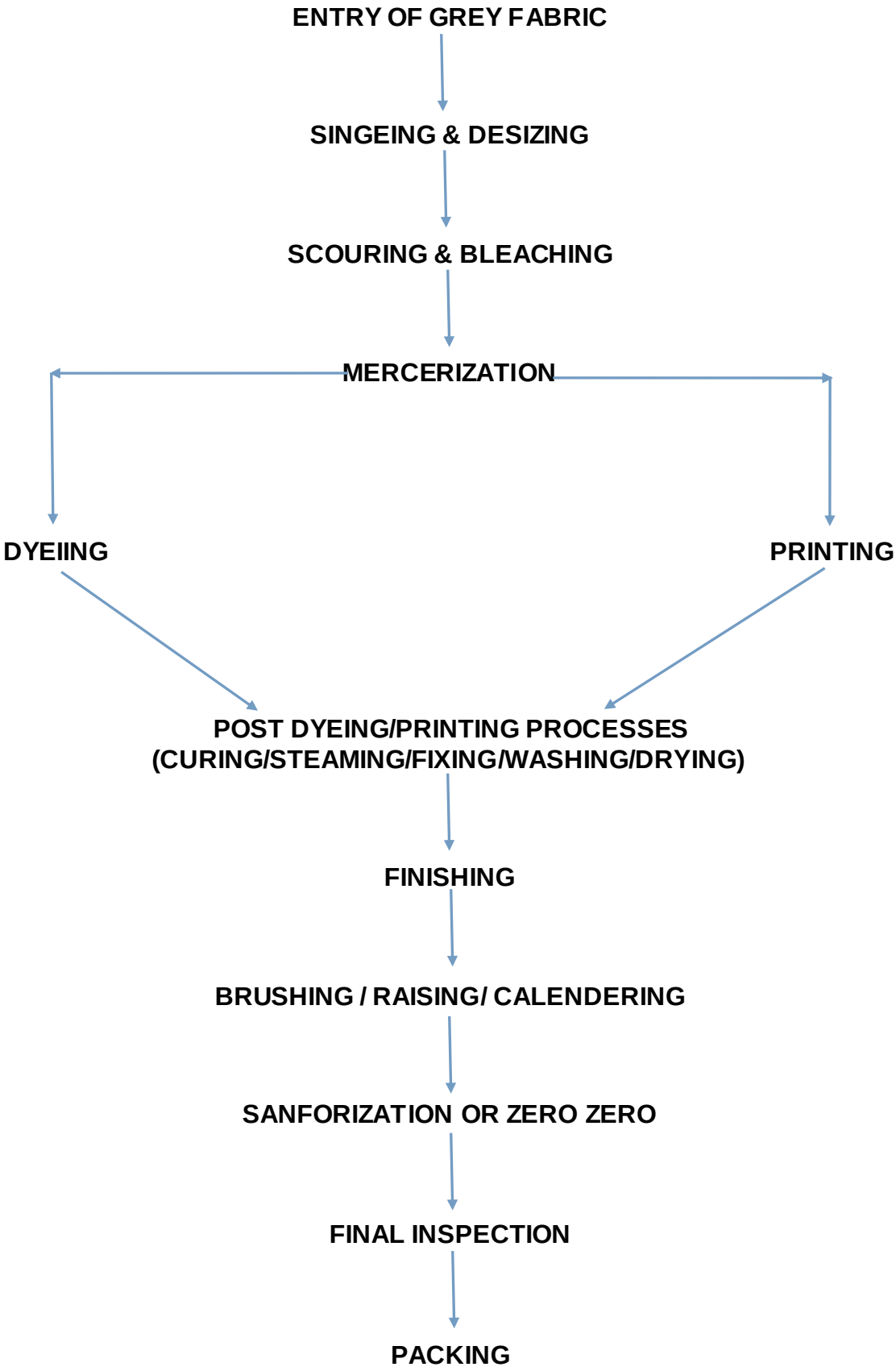
PIGMENT: An insoluble, finely divided substance, used to color fibers, yarns, or fabrics.

SOFTENER: A product designed to impart soft mellowness to the fabric.

YARN: A generic term for a continuous strand of textile fibers, filaments, or material in a form suitable for knitting, weaving, or otherwise intertwining to form a textile fabric.

YARN COUNT: Yarn count is the numerical expression of yarn, which defines its fineness or coarseness. (Linear density).

2. SEQUENCE OF OPERATIONS IN WET PROCESSING



3. Brief note about continuous Bleaching:

Bleaching and its importance:

The aim of bleaching is to remove any unwanted colour from the fibres and to bring whiteness to fabric thereby it improves the absorbency of the material for dyeing and printing. The most common bleaching agents are hydrogen peroxide & Hypochlorite.

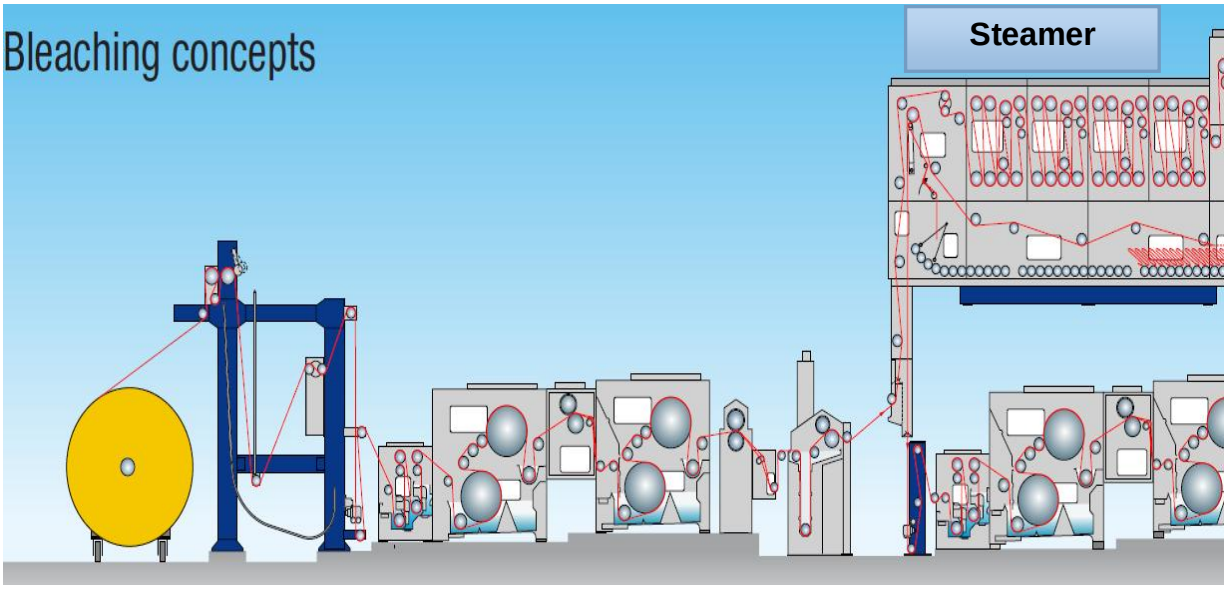
Unbleached fabric

Bleached white fabric

Importance of continuous pretreatment processes:

In continues bleaching range it combines the pre-treatment processes of textiles like desizing, scouring and bleaching in this machine itself. This minimises energy consumption and reduces number of operations.

4. Details of Continues Bleaching Range



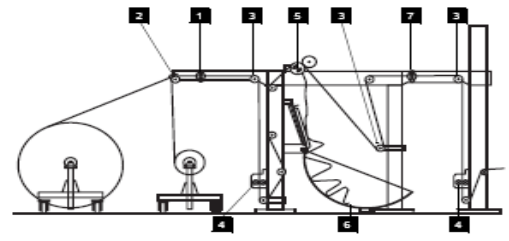
Inlet J-scray | **Pre-washers** | **Liquor pad** | **Post washers**

The three Processes involved in Continuous Bleaching Range machine are:

1. **Desize Wash (**To remove starch content from fabric)
2. **Scouring (**To remove the impurities present in fabric & to improve absorbency)
3. **Bleaching: (**To bring whiteness to the fabric.)

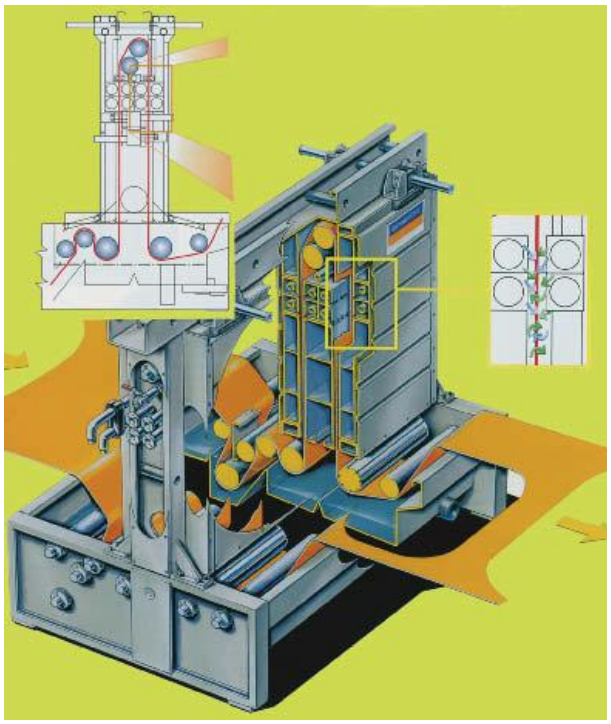
Inlet J-Scray:- It is to collect the fabric during batch changing to avoid machine stoppage by using tensioner roller, pressure roller and compensator.

Description of the fabric infeed with chute and batch change



1 Tensioning knob with crank
2 Guide roll with brakes
3 Guide roll
4 Fabric guide
5 Feeding device 20 - 30 kN
6 Chute
7 Electro magnetic fabric brakes or 3-phase voltage control

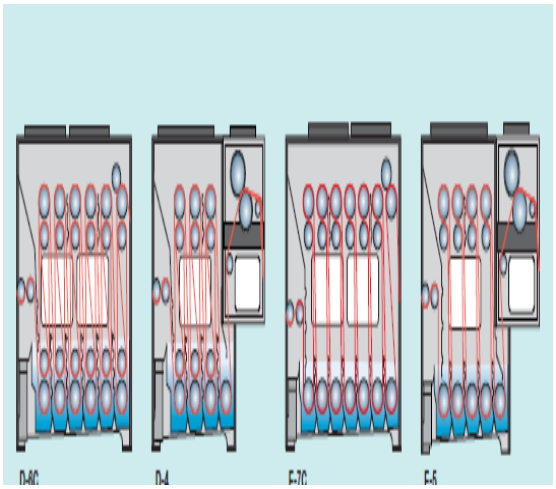
Steam and hot water injection: To wash off starch and desizing chemicals from fabric efficiently with injection of steam and hot water.

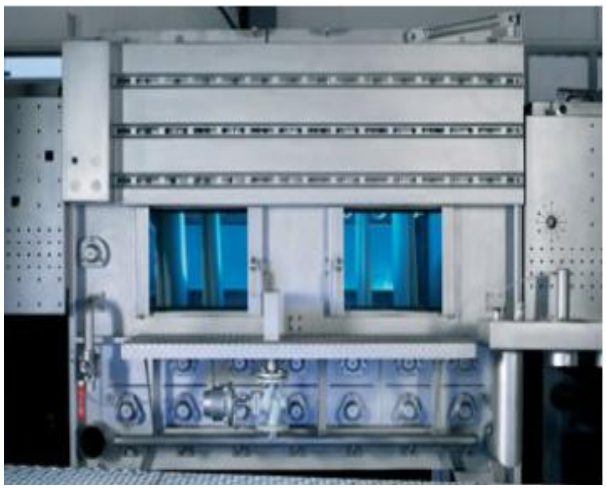


Steam and hot water injection unit

Pre-washing compartment:

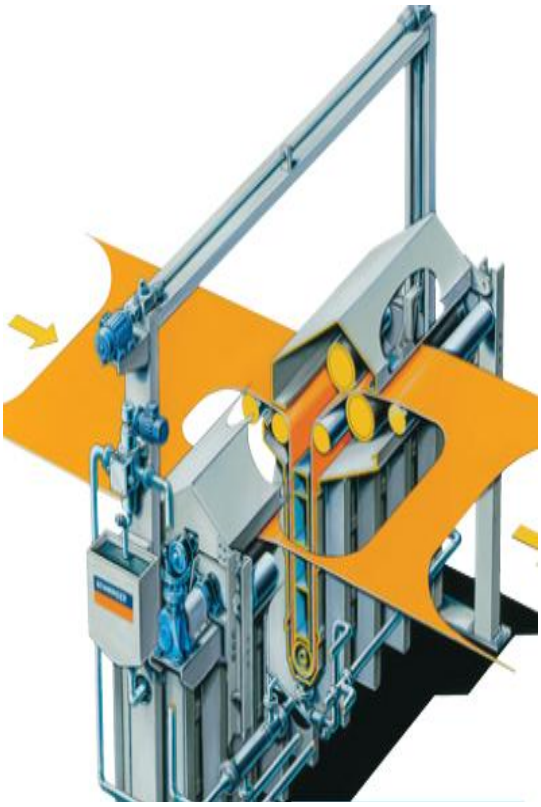
To wash off the starch and other impurities from desized fabric by using hot water.



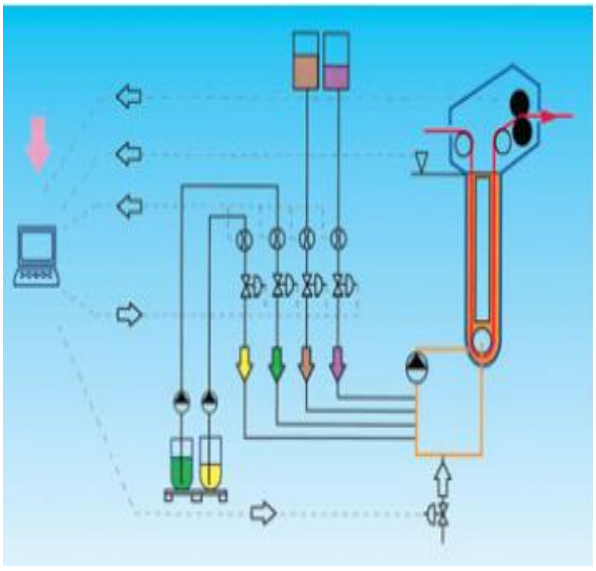


Pre-washing **compartment**

Bleaching Chemical trough: It is to apply the bleaching chemicals uniformly on the fabric.



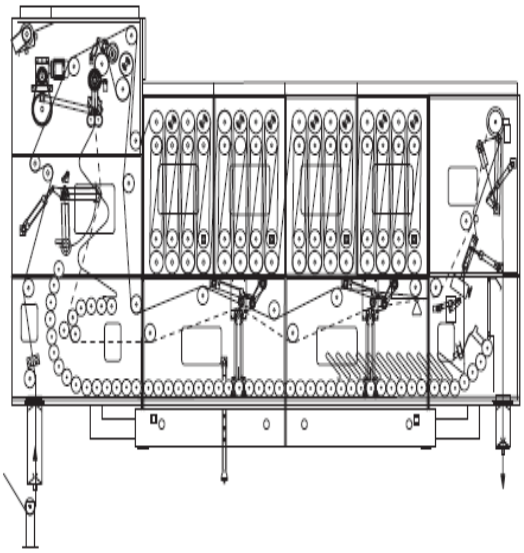
Passage of fabric in chemical trough



Dosing system for each chemicals

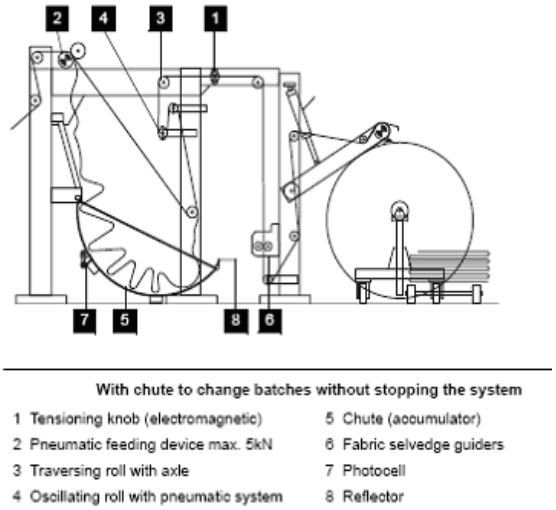
Steamer: - To give reaction time to the fabric with bleaching chemicals at high temperature (95^0C). The Steamer House is mounted with Solid Stainless steel frame, insulated roof, condensation drainage with collecting pipe, hinged windows, and Halogen lamps.

Steamer and Its construction



Neutralizing Compartment: This compartment neutralizes the fabric pH by dosing of mild Acetic acid and washes the excess acid. After this compartment there is a rinsing compartment to wash off the impurities from the fabric.

Outlet unit: To collect the fabric during batch change to avoid machine stoppage and provide perfect out batch of fabric without any crease.



With chute to change batches without stopping the system

1 Tensioning knob (electromagnetic)
2 Pneumatic feeding device max. 5kN
3 Traversing roll with axle
4 Oscillating roll with pneumatic system
5 Chute (accumulator)
6 Fabric selvedge guiders
7 Photocell
8 Reflector

6. Operating of continuous bleaching machine:

- Understand and follow the instruction from lot card and programme book.
- Switch On power and open compressed air, water valve and steam

Finding out the exact batch & lot card

Placing the selected batch in the machine

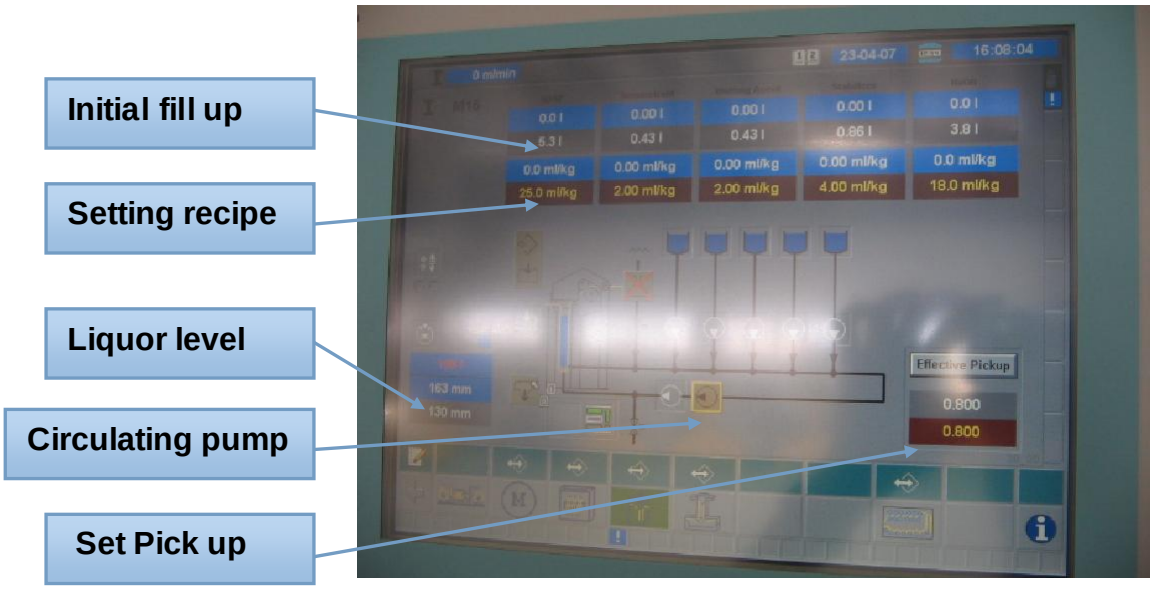
Switch ON the Main power

Open the steam, air and water valve

- Check the quality and lot number of the fabric before putting on the machine by checking the label.
- Transport the fabric to be run, to the inlet feeding unit of continues bleaching range machine using hydraulic hand puller.
- Stitch the two ends without crease, (ie) one end of the fabric is to be bleached and the other leader fabric in the machine.

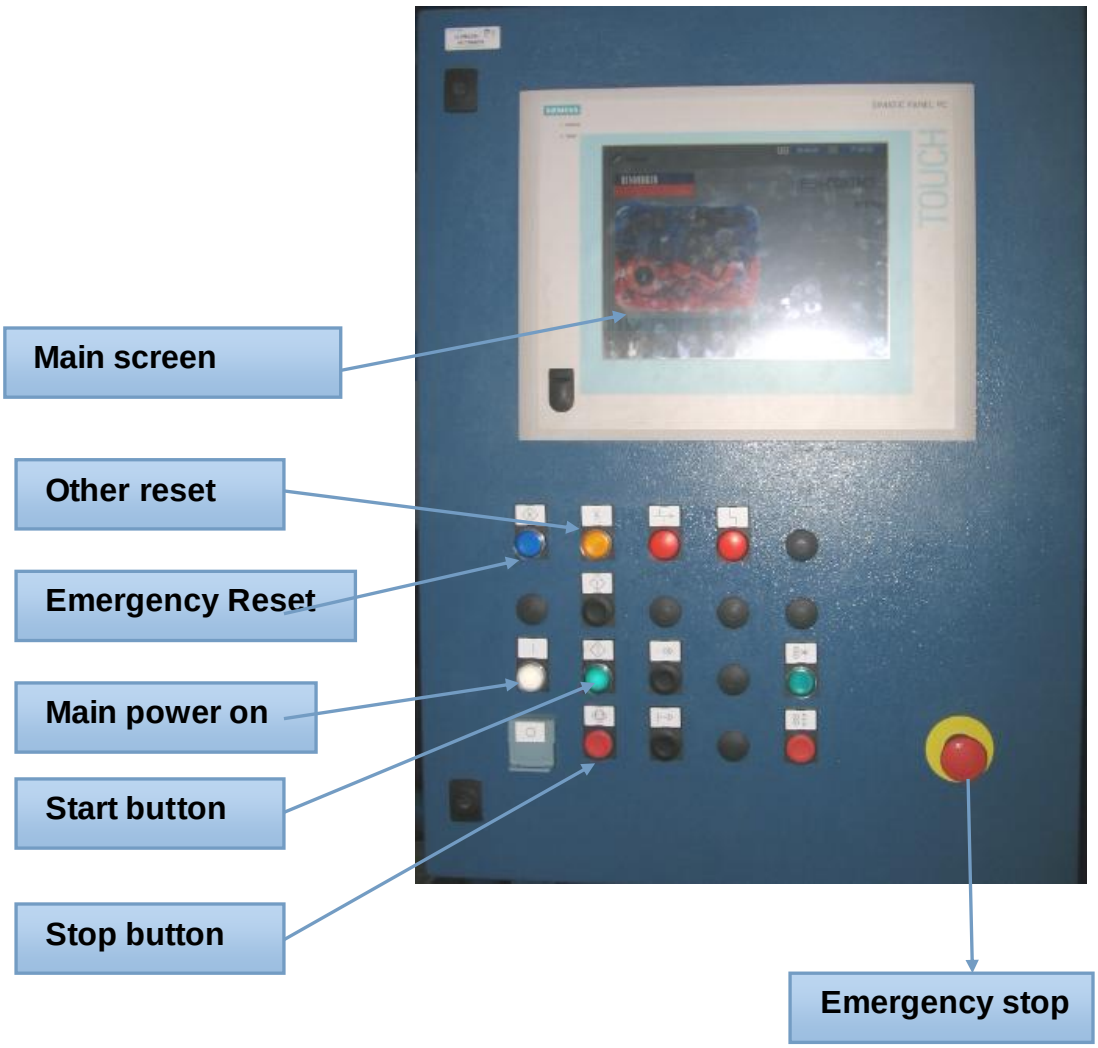
- Ensure straightness of fabric without crease.
- Fill the water in all the washers and set the temperature of all washing units.
- Set the recipe and other parameters like speed of the machine, chemical recipe and steamer temperature and steamer dwell time etc as specified by supervisor.

Parameters setting in Panel Board



Operating main dosing system

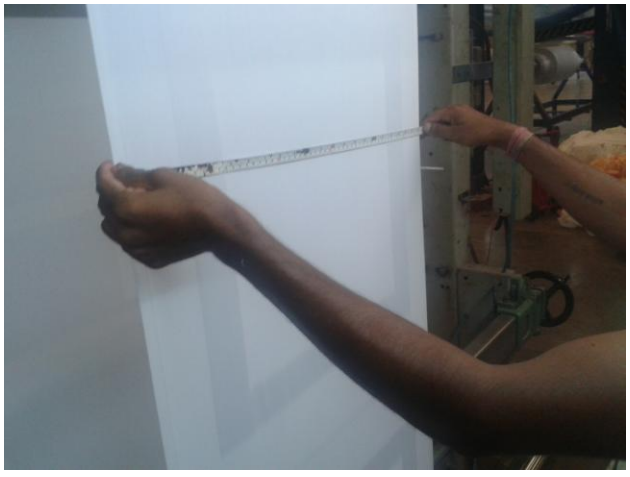
Main operating panel:



- Observe the defect in the fabric before and during the process and report to the shift in-charge if any irregularities observed.
- Set the Speed of the machine as specified by supervisor. (For normal bleaching operation 50-70 m/min (meters per min) and it varies depends upon the quality).
- Check actual flow rate of each chemical from flow meter as well as operating monitor.
- Keep the chemical ready for entire process and when starting the machine switch on circulating pump

Dosing chemicals and its arrangements

- Check the exit width of the fabric at every 1000 meters
- Check the steamer temperature and dwell time. Ensure proper passage of fabric in steamer unit.
- Check for any process damages in the finished fabric like stains – dust, chemicals, rust, handling stains, crease, water dropping, oil, grease, etc.
- If the machine stops for long time, leader fabric to be put on the machine and steamer unit to be cooled immediately without delay.



Checking fabric width

Storage of Out batch without crease

Routine Cleaning & Waste disposal

- Remove regularly the accumulated dust and dirt from the machine.
- Clean all the rollers with dry fabric while starting and at the end of every programme.
- Clean the entire washer and its filter once in a day.
- Padding mangle to be cleaned properly and chemical trough to be washed.
- Collect all the waste and dispose in a systematic way.
- The collected waste to be stored in a proper place and transport to designated place

6. Instructions during shift changing:

Taking charge of duties while starting of shift:

- Come at least 10 - 15 minutes earlier to the work place.
- Bring the necessary operational tools to the department.
- Meet the previous shift operator and discuss regarding the issues faced by them with respect to the quality or production or spare or safety or any other specific instructions etc.
- Understand the fabric being processed & process running on the machine.
- Ensure the technical details are mentioned on the job card & displayed on the machine.
- Check for the availability of the spare trolley for unloading the fabric.
- Check the next batch to be processed is ready near the machine.
- Check the cleanliness of the machines & other work areas.
- Question the previous shift operator for any deviation in the above and bring the same to the knowledge of the shift supervisor.

Handing over charge at the end of shift:

- Properly hand over the shift to the incoming operator.
- Provide the details regarding fabric quality & the process running on the machine.
- Provide all relevant information regarding the stoppages or breakdown in the machine, any damage to the fabric or machine.
- Ensure the empty trolley is near the machine for unloading the fabric.
- Ensure the next lot to be processed is ready near the machine already stitched & arranged properly.
- Get clearance from the incoming counterpart before leaving the work spot.
- Report to the shift supervisor in case the incoming shift operator do not report for duty.
- Report to the shift supervisor about the quality / production / safety issues/ any other issue faced in the shift and leave the department only after getting concurrence for the same from superiors.
- Collect the wastes from waste bags, weigh them & transport to storage area.

7. Importance of Health and Safety:

- Use and maintain personal protective equipment such as Hand Gloves, Gum Boots, head cap etc., as specified.
- Never handle chemicals with bare hands
- Report any service malfunctions in the machine, that cannot be rectified to the supervisor.
- Store materials and equipment at their designated places.
- Minimize health and safety risks to self and others due to own actions.
- Monitor the workplace and work processes for potential risks.

- ❖ Do not carry any metallic parts during machine running as there are chances of fire and damage to machine parts.
- ❖ Take action based on instructions in the event of fire, emergencies or accidents, and participate in mock drills/ evacuation procedures organized at the workplace as per the organization procedures.