GUJARAT TECHNOLOGICAL UNIVERSITY

SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLOGY

A
Report on
Industrial Visit to:

EAGLE SILK MILLS PVT. LTD.

Plot 185, S.K. Industrial Society Part-2, Opposite Shanidev Temple,
Near Sosyo Circle Udhana, Magdalla Road,
Surat, Gujarat, 395007, India

DIRECTORS:
Dharmeshkumar Kantilal Patel
Naimeshkumar Kantibhai Patel

Department of Textile Technology arranged industrial visit for B.E. II (TT) students at Eagle Silk Mills Pvt. Ltd., Surat on 03/02/2018. Prof. Shweta Doctor & Prof. J. S. Khan from the department led the students during visit. Mr. Satish Patel and Mr. Subhash Jagyasi being lab technicians also joined willingly for the visit to update their knowledge.

The visited industry is one of the Surat's local industries. But the working style is little modern than the other industries. The directors are keen to higher the educated staff to run and expand their business. They believe that educated personals grasp the industrial environment in very less time span. They also have employed many of our students at their place with good pay off. The directors themselves paid proper attention to guide students in appropriate way. They basically deal with weaving at the extreme in their visited unit. This includes various winding machines, rapier machines, water jets, etc. Maximum they have varieties of Rapier looms.

Here is the brief description of various machineries available in the Eagle Silk Mills.

WINDING MACHINE:

Winding is a process in which yarn from ring bobbins are wound into convenient form of package. Transferring a yarn from one type of package, more suitable for subsequent process is also called winding.

No. of Machines:-4

TFO (Two-For-One Twisters) **MACHINE:**

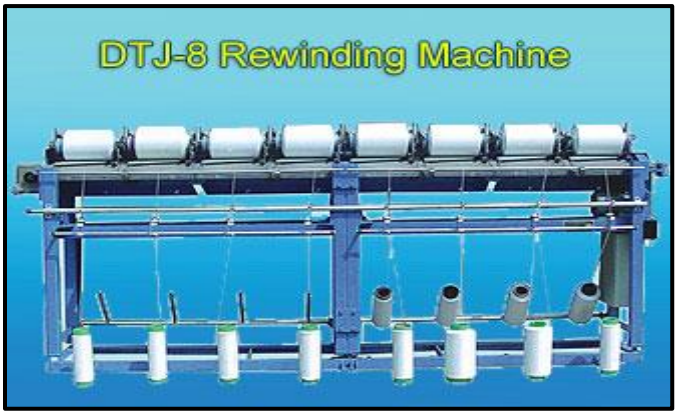
It is used for ply twisting of both spun yarn and filament yarn sectors mainly.

No. of Machines:-15

REWINDING MACHINE:

This machine is used to make a package of bigger size from smaller size packages i.e., there will be no wastage of yarn.

No. of Machines:-2



PIRN WINDING MACHINE:

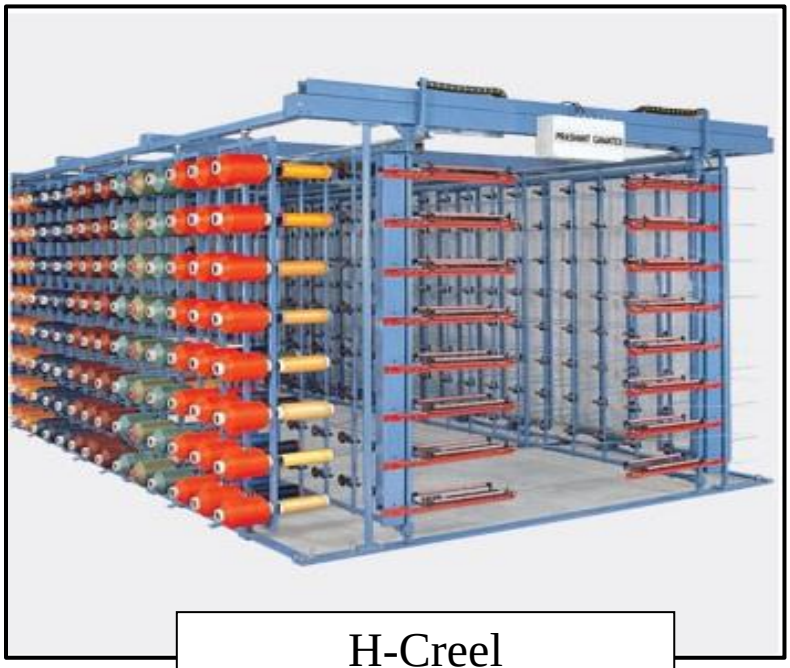
A pirn or quill is a weft bobbin that is placed inside a shuttle in shuttle weaving. As the shuttle travels back and forth across the width of the shuttle loom, the weft yarn is unwound from the pirn through the eye (for ordinary shuttle) or slot (for automatic shuttle) of the shuttle and lay in the shed. The yarn on the quill is tapered at one end such that the yarn with drawl takes place continuously without entanglement.

No. of Machines:-6

CREEL:

Independently of the warping system, the threads are fed from bobbins placed on creels. The creels are simply metallic frames on which the feeding bobbins are fitted; they are equipped with yarn tensioning devices, which in modern machines are provided with automatic control and centralized tension variation. Moreover the creels are equipped with yarn breakage monitoring systems.

No. of Creels:-6



H-Creel

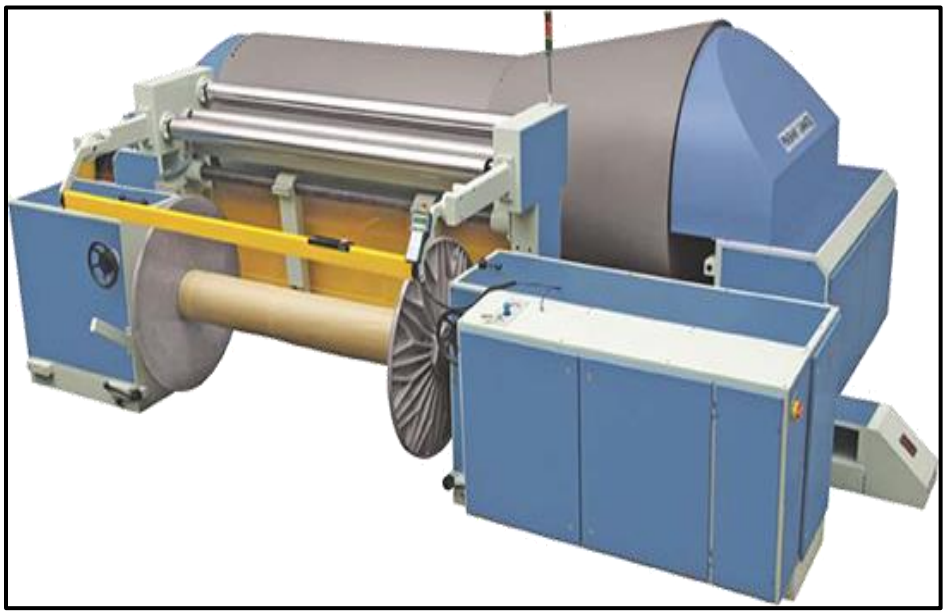
Table Creel

WARPING MACHINE:

Warping is the process of transferring a number of yarns from a creel of single end packages, forming a parallel sheet on to a beam. Sectional warping consists of winding of warping of number of sections, each wound with a (narrow) sheet of uniformly spaced, predetermined number of ends of equal length side by side. on collecting ends from all sections, we get required number of ends required for weaving. Beaming consists of winding sheet, obtained by collecting ends from all sections, on

weaver’s beam. Thus, at the end of the process, we get weaver’s beam which may be sent to loom or for drawing-in.

No. of Machines:-5

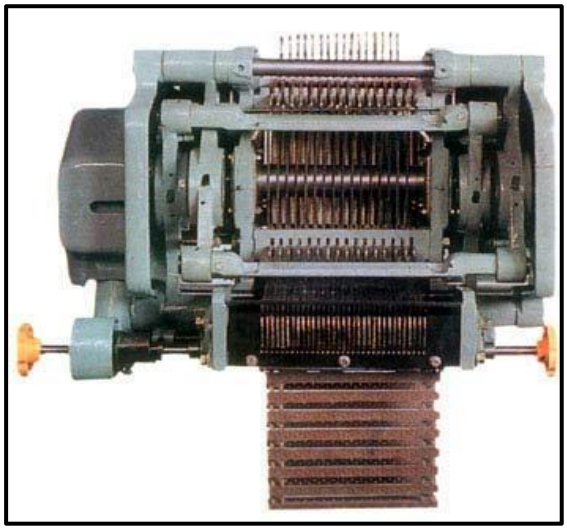


PLAIN POWER LOOM WITH DOBBY:

The process of producing a fabric by interlacing warp and weft threads is known as weaving. The machine used for weaving is known as weaving machine or loom. Different fabrics are produced in Weaving Industry. These fabrics are weaved by using various looms and related machines.

CONVENTIONAL DOBBY:

In conventional dobby, knives and hooks cause movement in the baulk and as a result, the heald is raised. The lowering of heald is done by the reversing motion. However, the upward and downward movements of the healds are completely controlled by the positive dobby.
Speed:-130rpm



MODERN DOBBY:

Rotary dobby converts the rotational movement to linear movement, which is required for lifting and lowering of healds. Rotary dobby can operate at high speed up to 1500 rpm. The cam shaft rotates by 180° and then stops momentarily and thus the motion is called as irregular rotary motion. The cam unit is mounted on the cam shaft but not fixed on it. The pawl, which is placed on the outside of the cam, connects it with the driver and then the cam rotates by 180° causing the movement to the heald shaft.
Speed:-1500rpm

RAPIER LOOMS:

A **rapier loom** is a shuttle-less weaving loom in which the filling yarn is carried through the shed of warp yarns to the other side of the loom by finger-like carriers called rapiers.

A stationary package of yarn is used to supply the weft yarns in the rapier machine. One end of a rapier, a rod or steel tape, carries the weft yarn. The other end of the rapier is connected to the control system. The rapier moves across the width of the fabric, carrying the weft yarn across through the shed to the opposite side. The rapier is then retracted, leaving the new pick in place.

In some versions of the loom, two rapiers are used, each half the width of the fabric in size. One rapier carries the yarn to the centre of the shed, where the opposing rapier picks up the yarn and carries it the remainder of the way across the shed. The double rapier is used more frequently than the single rapier due to its increased pick insertion speed and ability to weave wider widths of fabric.

Speed:-1000rpm

GREY INSPECTION:

The process of observing and locating different types of faults in gray fabric is known as inspection of gray fabric.

Types of faults in the gray fabric:

- Broken picks
- Broken ends
- Cut weft (pinhole in fabric due to cut r breakage of pick)
- Neps, peels, and cracks
- Missing of interlacement of pick and end
- Yarn contamination
- Floating or protruding fibers

PRODUCTS:

- Viscose cotton mix pattern
- Viscose georgette
- Viscose crape
- Sushi voil butti
- Sushi voil stripe

The visit was ended with the personal interaction of Director – Mr. Dharmeshbhai and his son Mr. Dhruv. The feedback form was asked to be filled by individuals for their betterment of the industry. The facility of high-tea was provided to all before leaving the industry. The photos captured at the industry are shown below:

Outside the Eagle Silk Mills Pvt. Ltd. Industry

Staff members and students after visit with Mr. Dhameshbhai and his son Dhruv – alumni of SCET, TT

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