



Faculty Of Engineering
Department Of Textile Engineering

Report On
INDUSTRIAL ATTACHMENT
At
SINHA KNIT INDUSTRIES LTD
Chamurkhan, Uttorkhan, Uttara, Dhaka.

Course Title: Industrial Attachment
Course Code: TE 410

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LETTER OF APPROVAL

17thApril ,2018

To

The Head

Department of Textile Engineering

Daffodil International University

102, Shukrabad, Mirpur Road, Dhaka 1207

Subject: Approval of Industrial Attachment of B.Sc. in TE Program

Dear Sir

I am just writing to let you know that this Industrial Attachment report has been prepared by the student bearing ID- 132-23-3621 is completed for final evaluation. The whole report is prepared based on the proper investigation and interruption through critical analysis of empirical data with required belongings. The student was directly involved in his report activities and the report become vital to spark of many valuable information for the readers.

Therefore it will highly be appreciated if you kindly accept this report and consider it for final evaluation.

Yours Sincerely

Md. Mominur Rahman

Assistant Professor

Department of Textile Engineering

Faculty of Engineering

Daffodil International University

DECLARATION

I hereby declare that the work which is being presented in this INDUSTRIAL ATTACHMENT REPORT on, “**SINHA KNIT INDUSTRIES LTD**” is original work of my own which is done under the supervision of **Md. Mominur Rahman, Assistant Professor, Department of Textile Engineering**. It has not been presented for a degree of any other university and all the resources of materials used for this report have been duly acknowledged.

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This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

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ACKNOWLEDGEMENT

I am very thankful to our honorable teacher **MdMominurRahman, Assistant Professor, Department of Textile Engineering., Faculty of Engineering, Daffodil International University** for giving me this opportunity to do my internship and INDUSTRIAL ATTACHMENT report on“**SINHA KNIT INDUSTRIES LTD**”. I manage to complete my report within the time given by our respectable teacher. I also like to thank almighty Allah for giving me the strength to complete this report with the help of my supervisor teacher, our IE manager, Work Study Officers and collected information from industry. I have tried my best to complete this report on the appointed time.

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1.0 Executive Summary

The first step of a student's professional life is report making, especially in technical side. As I am studying BSc in Textile, I have to do my Internship in a Textile related factory. That's why I have done my internship in a renowned KNIT INDUSTRY, which is known as the **SINHA KNIT INDUSTRIES LTD.**

It's a sweater factory. There is a lot of sweater factory in our country. It is one of the biggest knit industry. My supervisor teacher MD Mominur Rahman, Assistant Professor of **Daffodil International University**, forwarded me to this industry under the consultation of IE Manager of SINHA KNIT INDUSTRIES LTD, Md Zahidul Islam Sweet. In the industry everyone was quite helpful about teaching me their works, their way of working and every industrial details. I am thankful to all who supported and helped me for completing my internship with a lot of working experience. I have collected the desired amount of data and information about the IE department and also the information of the whole industries every section. The brief discussion of the industries different section are discussed in the next pages.

2. INFORMATION ABOUT SINHA KNIT INDUSTRIES LTD

2.1 Introduction

“**SINHA KNIT INDUSTRIES LTD**” is a well known knit industry in Bangladesh. It has different factories in different locations. The information which is given in this report they are the information of the factory which is situated in **Chamurkhan, Uttorkhan, Uttara, Dhaka**. It is a sweater factory. The factory has a good IE department, Compliance, Time section, Medicare. The production capability of this factory is good enough. A lot of foreign buyers are ordering a huge amount of sweaters in this factory. The Chairman of this industry is “**MizanurRahmanSinha**”. The factory provides the best quality product by assuring the buyer requirement.

2.2 History of the factory

SINHA FABRICS LIMITED has started its journey early 1997 as 100% export oriented manufacturing company under the umbrella of ACME group, which was incorporated in 1954. We started with only 350 sets flat knitting machine. In 2001 **SINHA KNIT INDUSTRIES LTD** has been added to enhance its existing capacity to render the services to more customers with more volume and now it is running with near about 4 million pieces export per annum with 4000 employees.

2.3 Founder and Directors

The **Founder** and the **Chairman** of the “**SINHA KNIT INDUSTRIES LTD**” is “**MizanurRahmanSinha**”.He established this knit industry.

The “**Managing Director**” of this industry is “**TanveerSinha**”.

The “**Chief Operating Officer**” is “**Mr. S.A.M. FerdousUlAlam**”.

The “**Assistant Manager (Merchandising)**”are “**H.M. SaidulHaque**”and “**Mr. Md.ZahidurRahman (Prince)**”.



Chairman

MIZANUR RAHMAN SINHA



Figure2.3.2: Managing Director

TANVEER SINHA

Figure2.3.1: Founder and

2.4 General Information's

“SINHA KNIT INDUSTRIES LTD” is one of the renowned industry of our country. It is situated in “Chamurkhan, Uttorkhan, Uttara, Dhaka”. It is a sweater factory. The factory has five floors and a underground basement floor. In basement there is the “**Jacquard Section**”. Ground floor is the “**Finishing Section**”, **Office rooms, Merchandisers room, Compliance and medical room**etc. First floor is the “**Linking Section**”. The second and third floor are used for manual knitting process and in the fourth floor there are “sample section”, office and canteen. There is a personal generator at the ground floor for power supply. In the factory there is a good IE department, Compliance and Time section. The factory provides the desired safety of the employees and the workers. It has its own transportation system for any kind shipment or delivery and for the office staffs. The working environment is very safe and everyone is very helpful to each other.

Here is the image of the factory from the North side.



Figure2.4.1: SINHA KNIT INDUSTRIES LTD

2.5 Factory Production Facilities

SINHA KNIT INDUSTRIES Ltd is housed in a state-of-the-art building, having five production floors with each floor having an area of 21,000 square feet. The building is built to accommodate current needs & future growth. A personal generator and transport system is also a big facility for production growth.

2.6 Specialty

The specialty of the factory is to produce good quality sweaters. It produces different styles of winter wear or sweaters according to the buyer's requirements.



Figure 2.6.1: Sweater

2.7 Products

The main item which is produced in this factory is “Sweater” or “Winter Wear Products”.



Figure 2.7.1: Sweater with Hood

2.8 Production Capacity

The production capacity of the factory is daily 8000-10000 pieces of products. It may vary according to the product, style and buyer requirement.

2.9 Major Buyers

The name of the major buyers are given below with their logos-



.CARDIGANFALABELLA



KIK



SRG



RENAISSANCE

2.10 Brief Profile

There are main three sections in the factory-

1. Knitting section

Knitting section is consists of three floors, in which there are two manual knitting section and one auto knitting section floor. There is also a sub auto knitting section outside the factory in another building. There are 144 Jacquard Machines in total auto knitting section. Among them, 67 machine are multi Gauge machines, 63 “12 Gauge machines”, 12 “3 Gauge machines” and there are two machines for sample making. All the machines are used according to the production and style. One operator operates 3 machines at a time. The machines works more than 20 hours a day by shiftwise. There are two persons are in charge for two shifts.

There are 550 manual Knitting machines, 350 operators. There are also 13 supervisors for the operators.

2. Linking section

Linking section consists of a floor including Trimming and mending.

There are 8 linking lines which are controlled by 8 supervisors. In these 8 lines there are 35 linking tables. In this 35 tables there are 210 machines which are operated by 200 operators.

There are 8 Trimming lines which are supervised by a supervisor. There are total 70 trimming workers.

There are 8 Mending lines which are supervised by a supervisor. There are total 31 mending workers.

There are 8 Over lock machines and 8 Burteck machines which are operated by individual operators.

3. Finishing section

There are two lines in finishing section. Each line has its own manpower. Here is the total included employees, supervisors and manpower of the finishing section-

1. APM- 2
2. Incharge- 2
3. Supervisor- 8
4. Light Check Operator- 8
5. Light Check Helper- 2
6. Mending Man- 4
7. AQL QC- 2
8. Sewing Operator- 18
9. Sewing Helper- 8
10. Iron- 32
11. Iron Helper- 6
12. Iron QI- 12
13. Refinal- 20
14. Refinal Helper- 2
15. Mending Man- 4
16. Get Up- 10
17. Get Up Helper- 2
18. Final QC- 2

Machines-

Washing Machines – 5

Drier Machine – 5

Sewing Machine – 15

Electric Iron Machine – 34

3. Description

Of The Attachment

3.1 Knitting Section

3.1.1 Section Layout

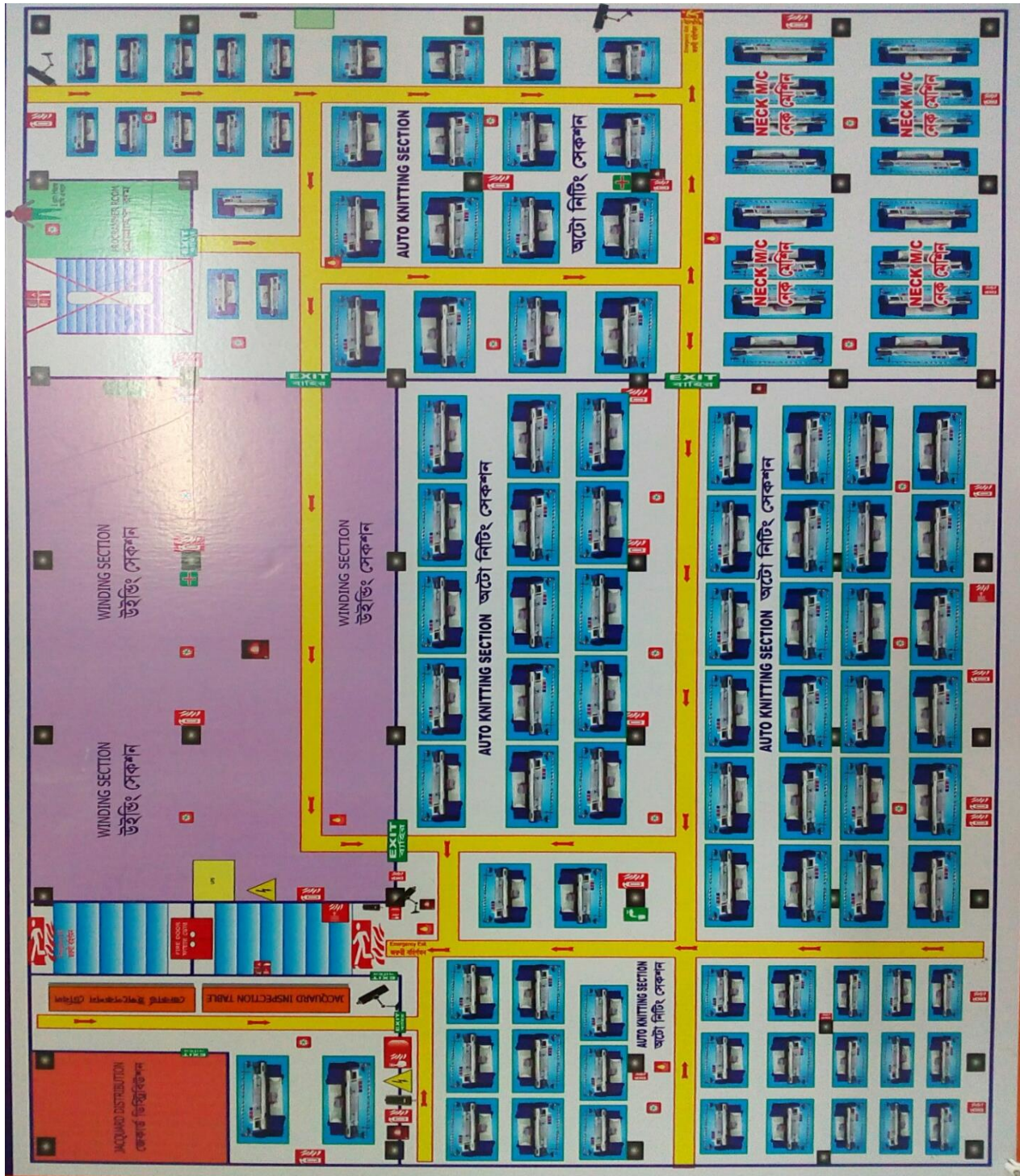
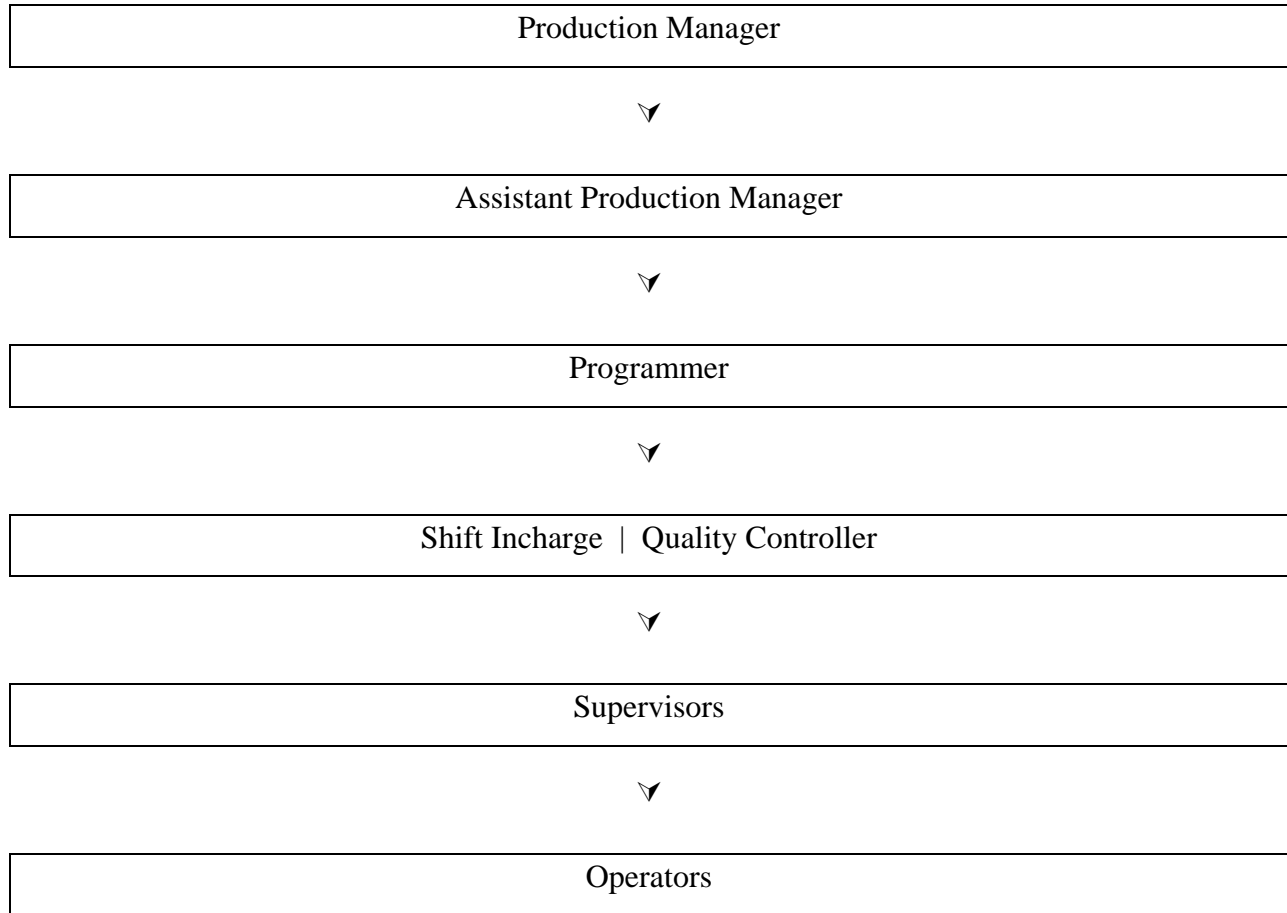


Figure 3.1.1: KNITTING SECTION LAYOUT14

3.1.2 Section Organogram



3.1.3 Process Flow Chart



3.1.4 Machineries

- 13 small winding Machines and 2 big Winding Machines are in Jacquard Section.
- 144 Jacquard Machines in total auto knitting section.
- Among them, 67 machines are multi Gauge machines, 63 machines are “12 Gauge machines”, 12 “3 Gauge machines” and there are two machines for sample making.
- The machines are from China. The 12 Gauge and 3 gauge machines are from China, **CIXING** company and Multi Gauge machines are from China **FENFANG** company.
- There are also 550 manual Knitting machines and 350 operators for them. There are also 13 supervisors for the operators.
- There are 14 Placket Machines and 1 dosing machine.



Figure 3.1.2: JACQUARD MACHINE



Figure 3.1.3 WINDING MACHINE



Figure 3.1.4: MANUAL KNITTING MACHINE

3.1.5 Major Operations

- Yarn is produced from the Hanks by the winding Machines.
- The produced yarns are stored in the yarn distribution.
- From the distribution, the yarns are distributed among the operators by measuring them in Lbs.
- The operators produces different body parts in different machines.
- After producing all the parts they are made as a bundle.
- The bundles are inspected an operator in a light table.
- The faults which are found, those are sent for mending.
- The mending operators fix the faults.
- After all, the produced bundles are stored in the Jacquard distribution.

3.1.6 Quality Control Process

- The quality of the body parts are checked by a operator, supervisor and also the quality control incharge.
- The measurement, body shape, thickness etc are inspected by them.
- The faults done by the operator and the machine problems are determined by them.
- This problem are also sent for the solution which is mending.
- Sometimes the whole body part have to rewind and do the knitting again.

Thus the quality of the knitting section is maintained.

3.7 Machine Parts

Different parts names of Jacquard machine are given below-

1. Top Yarn Tensioner.
2. Side Yarn Tensioner.
3. Yarn Controller.
4. Needle.
5. Needle bed.
6. Jack
7. Spring Needle.
8. Number Jack.
9. Operation Bar.
10. Carriage.
11. Monitor.
12. Yarn Feeder.
13. Safety Cover.
14. Emergency Stop Button.
15. Belt.
16. Roller.
17. Comb.
18. Sensors.
19. Yarn Supplier.
20. Pully.
21. Tubelights.
22. Cam.
23. Chain Cover.
24. Roller Cover.
25. Clumps.

3.8 Machine Problems

There are some common problems found in the machine at the time of production. Which are given below-

1. Comb drop.
2. Needle drop.
3. Needle Break.
4. Jack Break.
5. Roller cover break.
6. Yarn Break.
7. Color shedding.
8. Thick and thin place.
9. Over speed can damage the fabric.
10. Dirt and thicker yarn can break the needles.

3.2 Linking Section

3.2.1 Section Layout

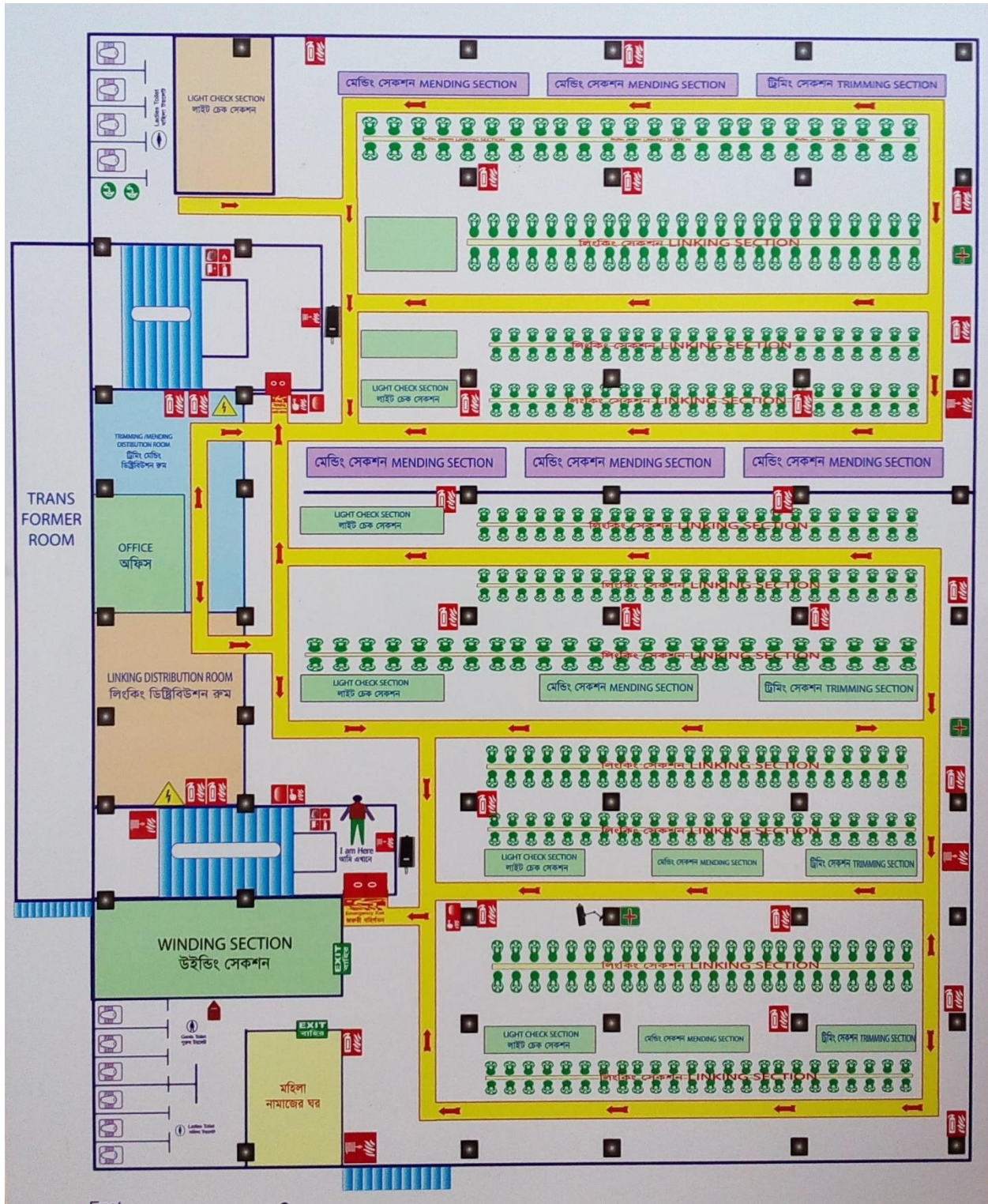
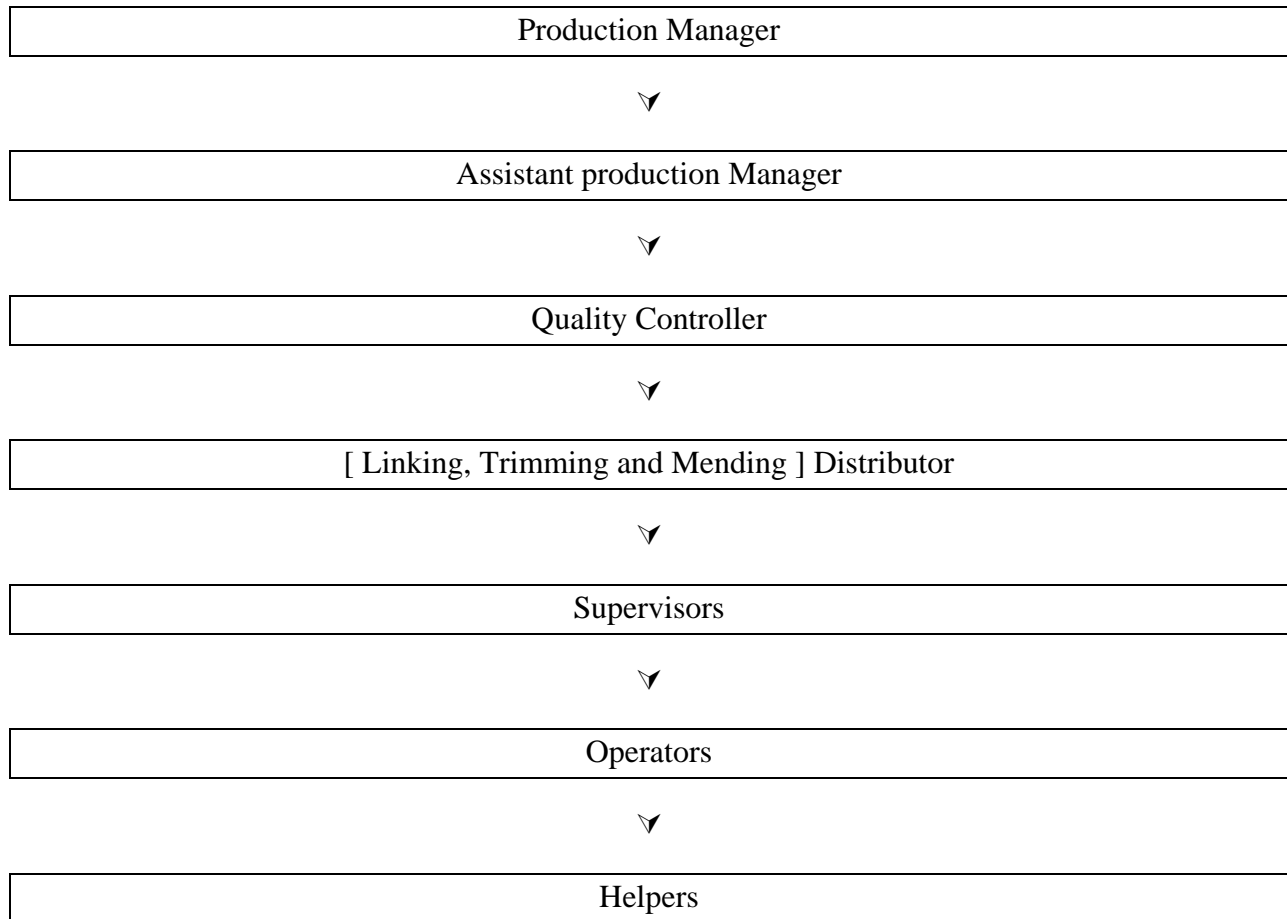


Figure 3.2.1: LINKING SECTION LAYOUT

3.2.2 Section Organogram



3.2.3 Process Flow Chart

Bundle



Distribution of the Bundle



Linking



Inspection



Over lock



Burteck



Trimming



Mending



Light Check



Distribution

3.2.4 Machineries

There are 8 linking lines which are controlled by 8 supervisors. There are-

- 35 linking tables.
- In this 35 tables there are 210 machines.
- These machines are operated by 200 operators.
- 8 Over lock machines.
- 8 Burteck machines which are operated by individual operators.



Figure 3.2.2: LINKING MACHINE



Figure 3.2.3: BURTECK MACHINE



Figure 3.2.4: OVERLOCK MACHINE

3.2.5 Major Operations

- All the body parts are joined together by linking machine.
- Extra yarns and fabrics are removed by scissors and needles in trimming.
- The joining gaps, needle drops, small holes are recovered by mending process.
- Products are tucked if needed.
- After joining, fabric edges are locked by over lock machine.
- Some areas of the body are given burteck by burteck machines.

3.2.6 Quality Control Process

The quality control of this section is carried out by the quality controllers. There is a quality controller team which inspects the produced products and finds out the faults. If any faults are found, they mark the fault with a arrow sticker and sent it again to the operator for mending.

There is also quality is ensured by light check. The products are put in a light dummy and the operator observes the products.

Thus the quality control of this section is maintained.



Figure 3.2.5: LIGHT CHECK PROCESS

3.7 Machine Specifications

Linking machine-

- These machines are from China, HI TECH Machineries company.
- Each linking table has one motor which produces 8.5 KW power and 1200 RPM.
- The Over lock machines are from China JUKI company.
- The Burteck Machines are also from China Juki Company.

3.8 Machine Parts

There are some visual parts names of linking machine are given below-

1. Lobar.
2. Needle.
3. Yarn Tensioner.
4. Cam.
5. Cam bearing.
6. Connecting rod.
7. Penium.
8. Bush Cam.
9. Dyle.
10. Motor.
11. Belt.
12. Dyle needles.

3.3 Finishing Section

3.3.1 Section Layout

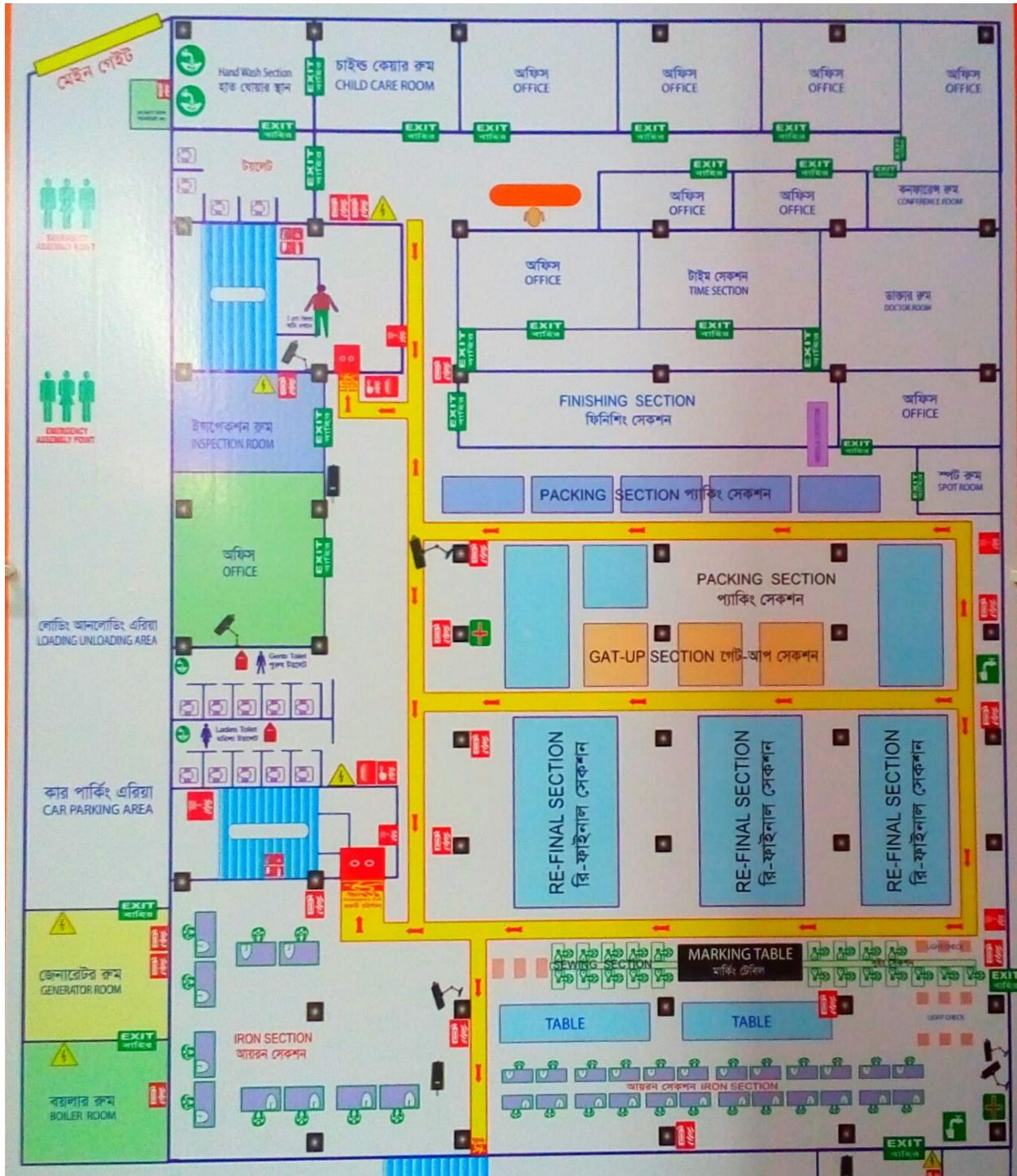
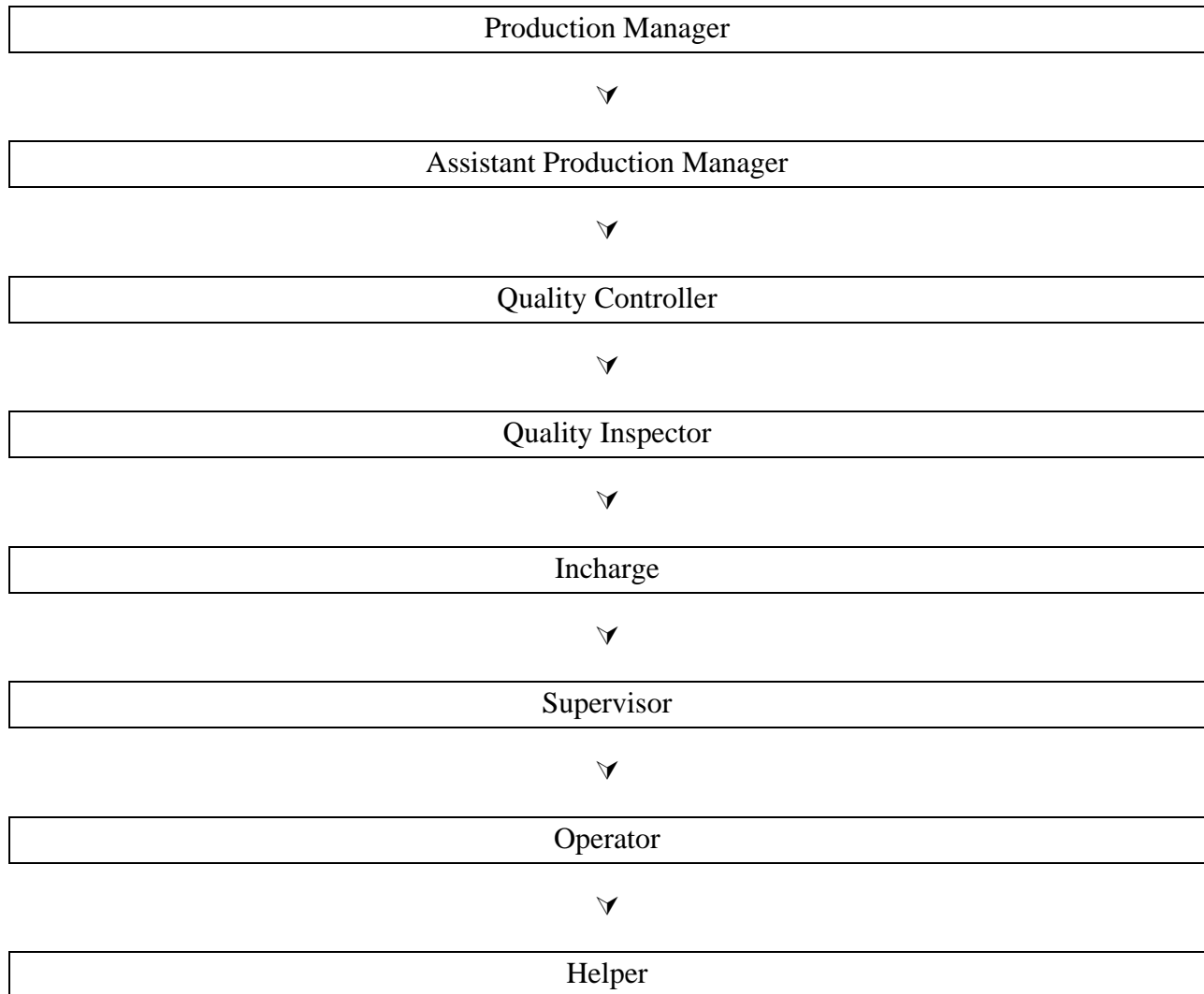
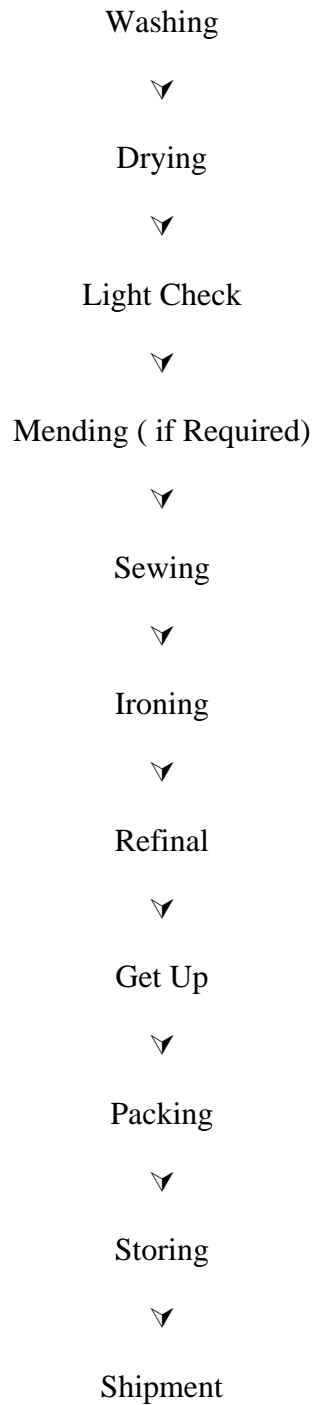


Figure 3.3.1: FINISHING SECTION LAYOUT

3.3.2 Section Organogram



3.3.3 Process Flow Chart



3.3.4 Machineries

Washing Machines – 5

Drier Machine – 5

Sewing Machine – 15

Electric Iron Machine – 34



Figure 3.3.2: IRONING PROCESS



Figure 3.3.3: WASHING MACHINES

3.3.5 Major Operations

- The finished products from linking are washed in the washing section.
- The washed products are dried in a drier.
- The main label, care label, hanger loops are attached with the products by sewing machines.
- Products are ironed with steam by electric iron machines.
- The products appearance is checked by the operators.
- Different stickers are added according to the buyer requirement.
- The products are packed in a plastic bag and then in a curtain like a bundle.

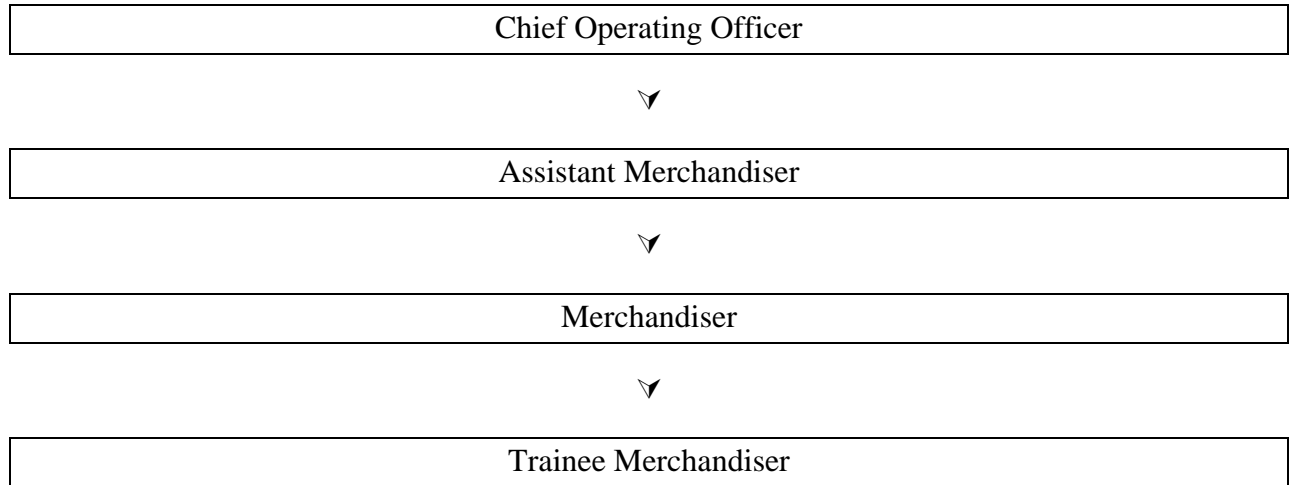
3.3.6 Quality Control Process

The quality of the finished product is always under inspection of the Refinal and get up lines. The whole process is done under the supervision of the quality inspector and quality controller. There are also a line for light check which inspects the whole product and find out if there are any mistakes or not.

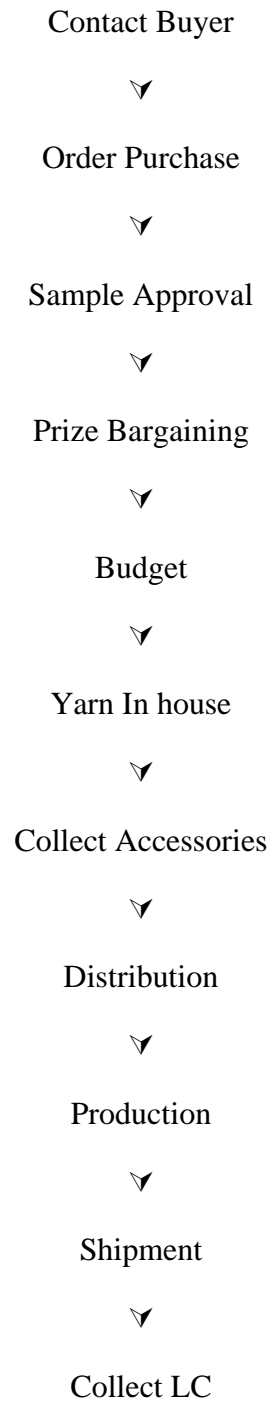
Thus the quality is ensured in the finishing section.

3.4 Merchandising Section

3.4.1Section Organogram



3.4.2 Process Flow Chart

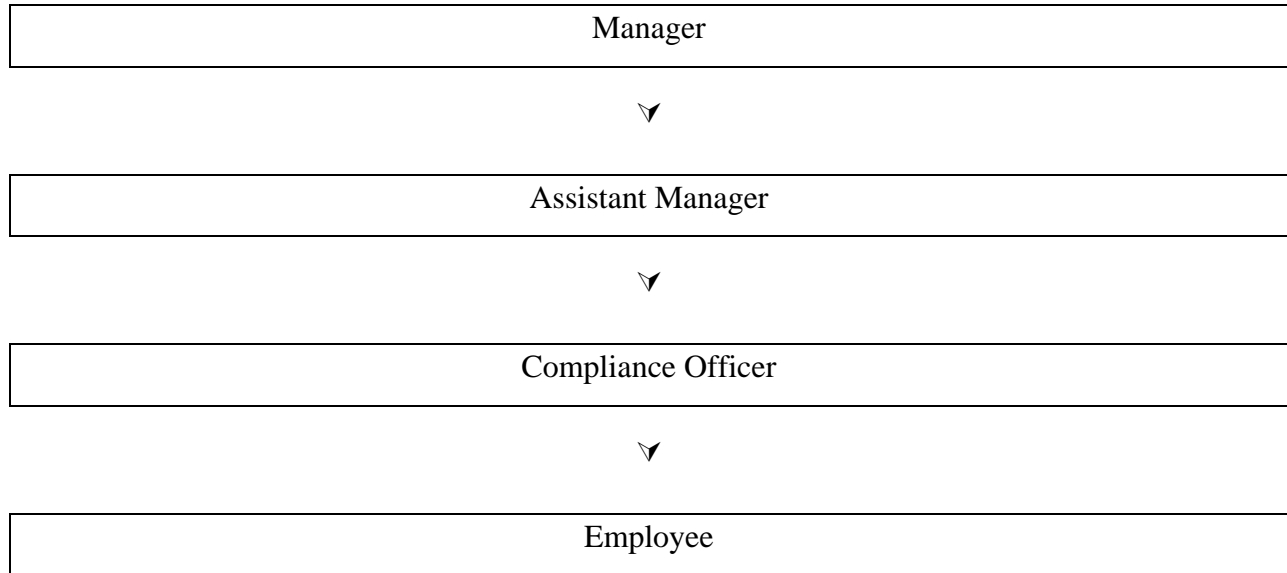


3.4.3 Major Operations

- Contacting with new buyer and keep good relations with them.
- Purchasing order from the Buyers.
- Sample Inspection and approving.
- Making budget for the whole production.
- Collecting yarn, accessories and other wanted things according to the buyer requirement.
- Assuring the whole production quantity before the shipment.
- Shipment on the appointed date.
- Collecting Letter of Credit from the Buyer.

3.5 Compliance Section

3.5.1 Section Organogram



3.5.2 Major Operations

- Assuring the safety of the workers.
- Checking the safety equipments.
- Providing Primary Medical support.
- Assuring the healthy working environment for the workers.
- Providing the right wages among the workers.
- Assuring there are no child labor.

3.5.3 Working Procedure

- Walking in different floors and observing the working environment.
- Checking the safety equipments at least once in a month.
- Giving primary medical support in any kind of emergency.
- Providing salary before the 10th day of the new month.

4. Impact Of Internship

4.1 Knitting Section

- I have learnt the whole production process of knitting section.
- Generally for producing sweater acrylic fibers are used.
- I have learn the winding process.
- I have learnt how to run the machine and make a complete body part.
- If sometimes machine stops, why the machine stopped and how to start it again I have also learnt that.
- I have learnt how to detect problems.
- I have also known the different parts names of the Jacquard Machine.
- I have learnt the Machine problems, their remedies.

4.2 Linking Section

- I have learnt how the linking machine runs.
- I have learnt the joining processes of different parts.
- I have learnt how to make the per hour production monitoring report.
- I have learnt the way of taking manpower and making target.
- I have learnt the machine parts names.
- I have learnt the trimming process.
- I have known which yarns , fabric edges should be removed.
- I have learnt the mending process in which the needle drops, joint miss are recovered.
- I have known the work flow process of the whole linking section.

4.3 Finishing Section

- I have learnt how the washing machine works.
- I have learnt the chemical used in washing.
- I have learnt how the drying process done.
- I have learnt the sewing process.
- I have learnt the ironing process.
- I have learnt how to inspect a finished product in refinal and get up.
- I have learnt the packing process of the products.

4.4 Merchandising Section

- I have learnt the Working procedure of the merchandisers.
- I have learnt how they provide the necessary raw materials to the factory.
- I have learnt how they make the accessories report.
- I have learnt how the inspect the sample.

4.5 Compliance Section

- I have learnt how they assure the safety of the workers.
- I have learnt how the check the safety equipments.
- I have learnt how they give primary medical support.
- I have learnt how they make salary sheet and provide the salary.

5. Conclusion

5.1 Conclusion

Twenty five days of internship program in SINHA KNIT INDUSTRIES LTD was the concluding part of the BSc in textile engineering course which was to comprehend my theoretical knowledge along with practical knowledge. It enables me to orientate myself with the practical environment where I am going to work in future. During the training period, the whole 25 days were segmented and scheduled by a systematic routine. There were different sides of operation in sweater manufacturing process. For producing a quality product above all export quality it is desirable that the processes should be highly standard. For this purpose SINHA KNIT INDUSTRIES LTD has high skilled operators and hard working official management and department. The sweater manufacturing process of this industry is quite impressive. In order to maintain the work flow they have a good IE department. Last of all I want to thank all the officers who helped me by co-operation and gave information to me. I am lucky because I have completed my internship in a well-known industry which will help me to build up my career in Textile sector.