



Faculty of Engineering

Department Of Textile Engineering

REPORT ON

Industrial Attachment

Urmi Group

235/B, Bir Uttam Mir Shawkat Sarak

Tejgaon Industrial Area ,Dhaka 1208,Bangladesh.

Course Title: Industrial Attachment

Course Code: TE-410

Submitted By

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This Report presented in partial fulfillment of the Requirement for the Degree of Bachelor of Science in Textile Engineering.

Advance in Apparel Manufacturing Technology

Duration: From 31st January 2017 to 30th March 2018



Letter of Approval

April 17, 2018

To

The Head

Department of Textile Engineering

102, Shukrabad, Mirpur Road, Dhaka 1207

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

Dear Sir,

I am just writing to let you know that this Industrial Attachment in “URMI Group Ltd.” has been prepared by the student bearing ID 142-23-3880 is completed for final evaluation. The whole report is prepared based on the proper investigation and information in URMI Group Ltd.

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

Yours Sincerely

.....

Mr. Md. Mominur Rahman

Assistant Professor,

Department of Textile Engineering

Daffodil International University



Declaration

I hereby declare that the work which is being presented in this report entitled, “Industrial Attachment at URMI Group Ltd” Is original work of my own, has not been presented for a degree of any other university and all the resources of collected information for this report have been duly acknowledged.

Name	Id	Signature
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Department of Textile Engineering

Faculty of Engineering

Daffodil International University



Acknowledgement

First of all I am grateful to Allah who gives me sound mind & sound health to accomplish **Industrial Attachment at Urmi Group** successfully.

I am also grateful to my supervisor, **Mr. Md. Mominur Rahman** Assistant Professor, Department of Textile Engineering, Faculty of Engineering, Daffodil international University. His endless patience, scholarly guidance, continual encouragement, energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting these at all stages have made it possible to complete this project.

I would like to give special thanks to the supervisors, technicians, operators and all other staffs of **Urmi Group**, who were most cordial and helpful to us during internship.

I am also thankful to our all teachers, lab assistant, register sir, coordinators and all the employees of Daffodil International University. I am highly delighted to express my regards & gratitude to honorable Head **Prof. Dr. Md. Mahbubul Haque** for providing his best support to me.

Finally, I would like to express a sense of gratitude to my beloved parents and friends for their mental support, strength and assistance throughout completing industrial attachment.



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CHAPTER-01

Executive Summary



1.1 Executive Summary

This report presents a conception of Textile sector especially of a knit industry and tries to clarify the overall processes required to complete a garment. Two months long training is not enough to capture all the information related to but it is possible to overview of all the departments. URMI Garments Ltd. is a part of “URMI Group” in where we try to gather information about all the departments. The factory has a nice system for the internship students that are the training schedule provided by the authority. There are several departments in URMI Garments Ltd among them Cutting, sewing, IE and merchandising are the major ones. There are also other departments those act as supporting of them. It describes about the activities of each departments and the relation among the departments. Training schedule is prepared in such a way that helps a learner to know that to produce a garment which department works first and correspondingly which works at last. This paper includes from where order is received and to where it is supplied and how a large scale of products is produced within a very short period of time. Different types of order are running on the same time on a same floor with different types of garments from several buyers. But there is no miss match of any product except some cases which are removed by inspection. This paper concludes by identifying some important information about different department that help the factory to grow up quickly with large amount of profit with environment friendly technologies. This report may be a guideline for other small industries to become large in size and for students or other people to learn a little about a knit garments industry without visiting. We have started our 2 months internship in 31st January 2018 and have successfully completed in 30th March 2018.



CHAPTER-02

Information about Factory

2.1 Basic information about the factory:



Figure 2.1: URMI Group Ltd.



Over the last three decades, by offering the best blend of quality, efficiency, productivity to the valued customers, Urmi Group have created several benchmarks and established milestones for the forth coming generations.

Urmi Group comprises of Urmi Garments Ltd, Attires Manufacturing Co. Ltd, Fakruddin Textile Mills Ltd, Dots and Marks, Poly Corr Packaging, UHM Ltd, Urmi Shipping Company Ltd.

They have the technology with expertise, products with knowledge and most importantly the right mindset to achieve total customer satisfaction. They are exporting knit garments to world class buyers like Puma, H&M, Marks & Spencer, Next, Primark, S.Oliver, LiDI, Tchibo etc.

2.2 History of the factory:

Urmi Garments was established in 1984. It has expanded dramatically over the past two decades and built a remarkable distinction as exporting giant in this part of world. Urmi has earned unrivaled success in the field of readymade garments, textiles, navigation, shipping etc. Mr. Shamsul Alam is the founder of Urmi Group. He started his business at the age of 40. In the early stages, Mr. Shamsul Alam formed Urmi Garments, a 100% export oriented garments industry. He became a rising entrepreneur by virtue of his dynamic foresight. From 1995 Mr. Asif Ashraf and Mr. Ashfaque Ahmed looks after the Group. They established six more projects within last two decades. By the start of the 1984s the group they had become one of the leading manufacturer and exporter of readymade garments. The company within their control became today's 'Urmi Group'.

2.3 Founder & Directors:

- Mr. Shamsul Alam(Late) - Founder
- Mr. Ashfaque Ahmed- Chairman
- Mr. Asif Ashraf- Managing Director
- Mr. Mir Ashraful Hossain- Chief Operating Officer

2.4 General Information:

2.4.1 Layout:

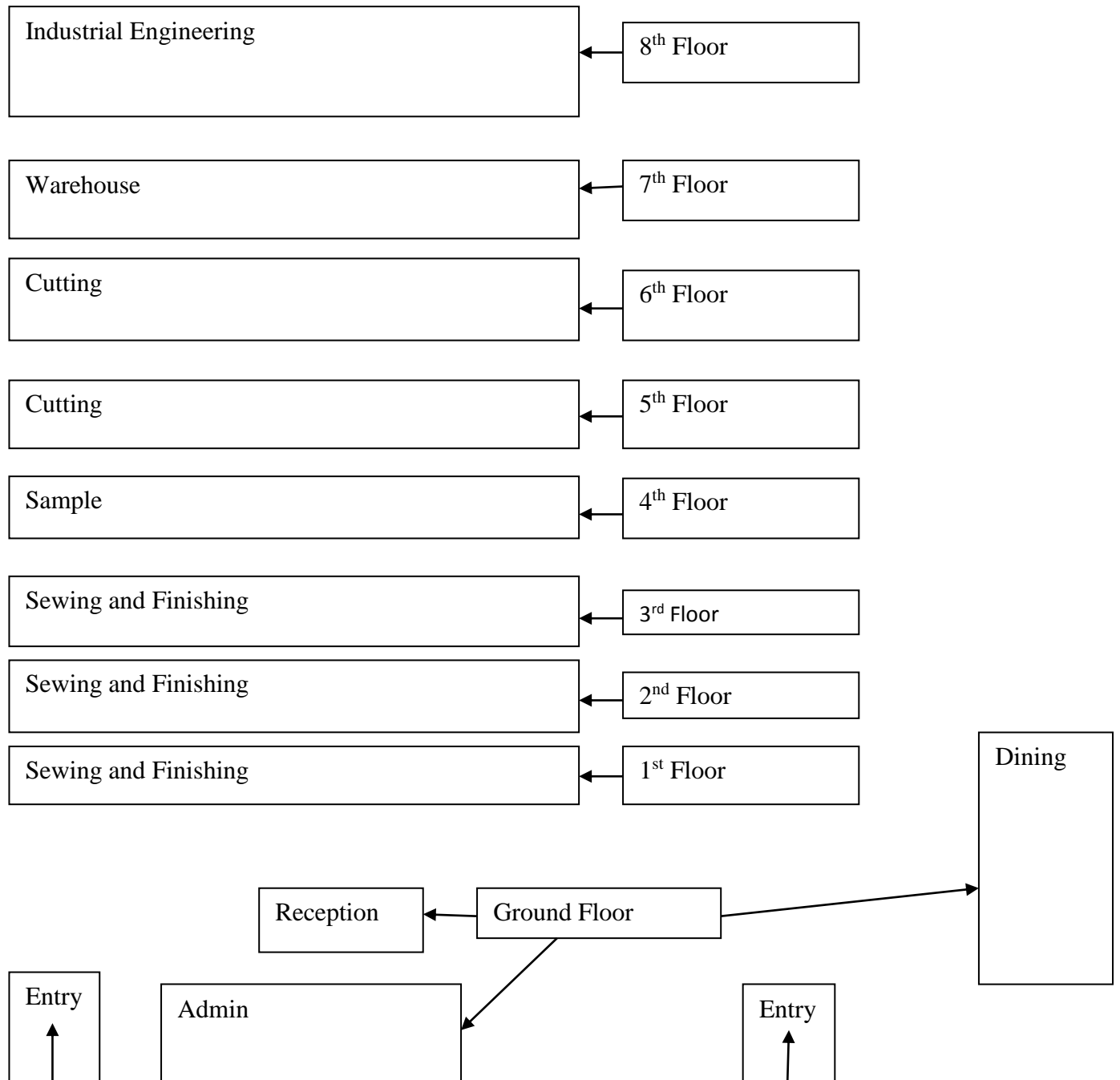
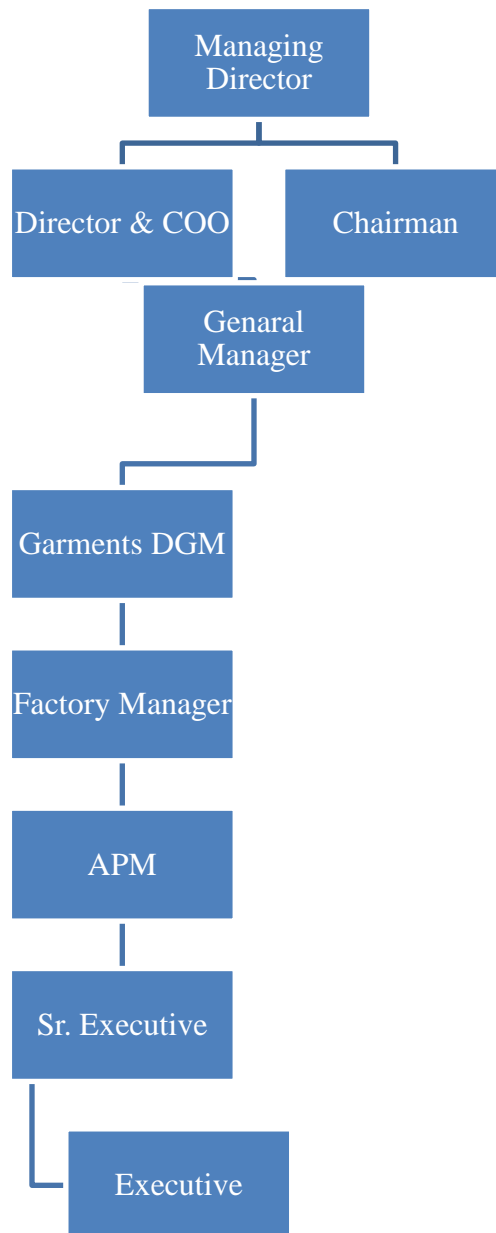


Figure 2.4.1: Layout of the factory

2.4.2 Organogram:



2.4.3 Sister of Concerns:

Fakhruddin Textile Mills Ltd.

2.4.4 Export Growth by Graph:

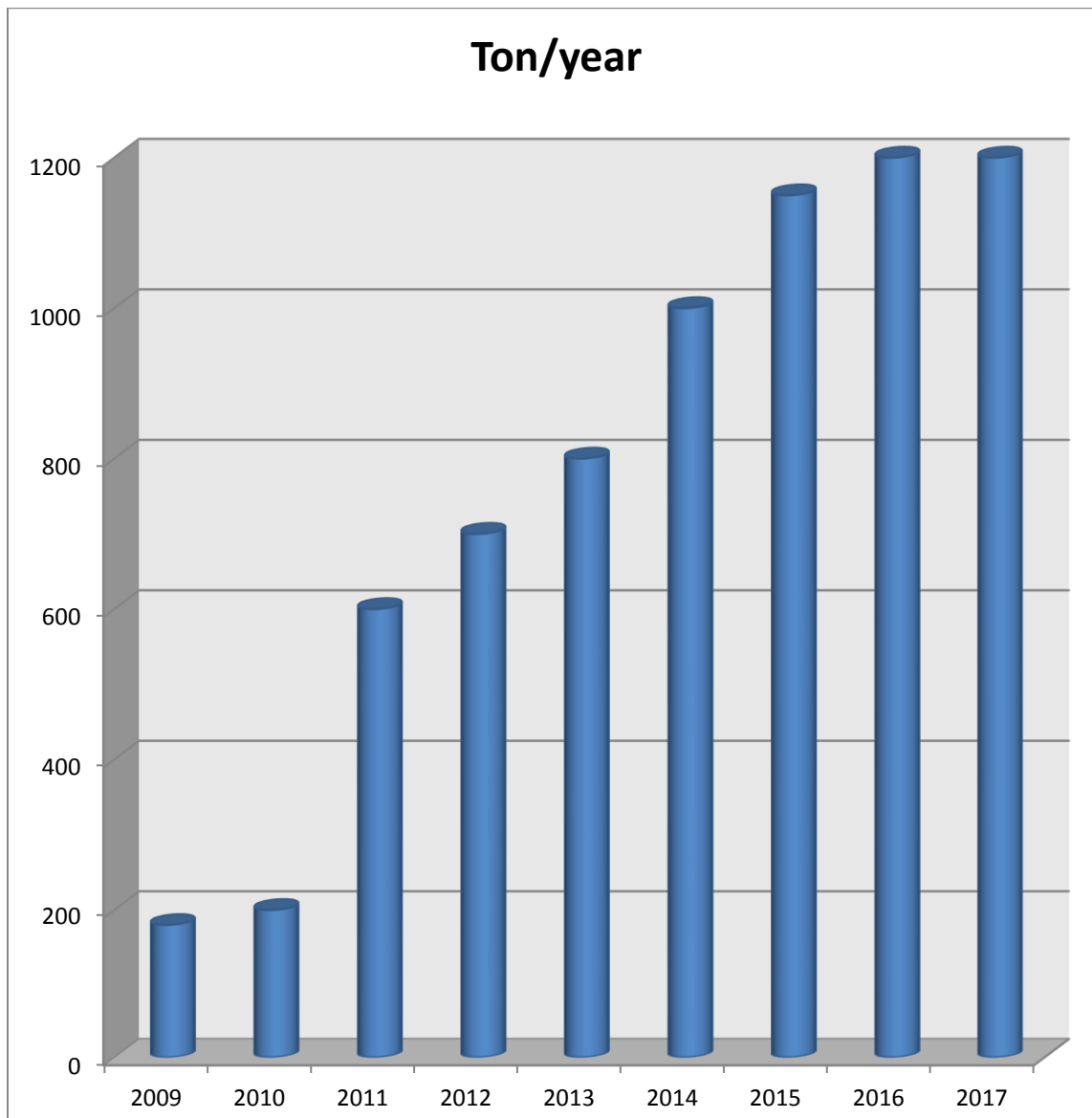


Figure: 2.4.4 Export growth graph



2.4.5 Product Mix:

- T-Shirt
- Polo Shirt
- Trouser
- Pant
- Ladies pant
- Tank top
- Baby item
- Under garments

2.5 Brief Profile:

Total area: Their textile division, which is known as Fakhruddin Textiles, is a state of the art establishment which works as a fundamental production pillar for them. Situated in a facility of 320000 square feet facility.

Urmi Group now operates in a facility of 800,000 square feet in total.

Total workers: More than 8000 people working relentlessly to keep the wheel moving.

Total machineries: They have 2200 units of sewing machine, 160 units of iron, 4 units of boiler and 5 pcs of generator. They also have two leased factories.

Production Capacity: They have a capacity of producing 150000 pcs per day.

2.6 Major buyer with logo:

Buyer name	Logo
MUJI	
PUMA	
M&S	
S.Oliver	

H&M



LIDL



Tchibo



Ernsting's family



Ellos	
La Redoute	
Auchan	
Decathlon	
Full beauty	

Toray International



Kmart



Kaufland



Primark





2.7 Certification:

Urmi Group Ltd realizes the importance of adapting to changes in external environment and keeping the workplace safe and enjoyable for employees to be motivated and productive. Certifications include:

- Oeko-tex
- WRAP
- Gots

Their textile lab is accredited by-

- Marks & Spencer
- PUMA
- DECATHLON

Accord structural Audit rated FTML ‘Green’. They got HSBC Export Excellence Award in 2011. GIZ and Bangladesh Brand and Forum jointly gave them gold winner status on the category of Environmental Achievements beyond Compliance. They have also selected as one of the top ten companies which are worker friendly by knitwear industry in Bangladesh. And also they have won a lot of Global awards in this industry.

Former British prime minister, David Cameron, during his short visit to Bangladesh, visited Urmi Garments Ltd that is partnered with Sudokkho.

Mr Cameron went to Urmi Garments Ltd in Tejgaon, Dhaka on 27 April 2017 to see one of Sudokkho’s industry-based training projects. Sudokkho provides technical assistance to develop the in-factory training system and assists in building capacity of the factory personnel to implement this training system so that workers can be trained as per the factory’s needs.



Figure 2.7: David Cameron visited Urmi Garments



2.8 Mission and Vision:

Vision: To manufacture products comparable to international standards, to be customer-focused and globally competitive through better quality, latest technology and continuous innovation.

Mission:

- To manufacture world-class products of outstanding quality that give our customers a competitive advantage through superior products and value, so we can make every customer smile.
- To encourage people's ownership, empowerment and working under team structure.
- To attain the highest level of efficiency, integrity and honesty.



CHAPTER-03

Description of the Attachment

3.1 Store section:

3.1.1 Layout:

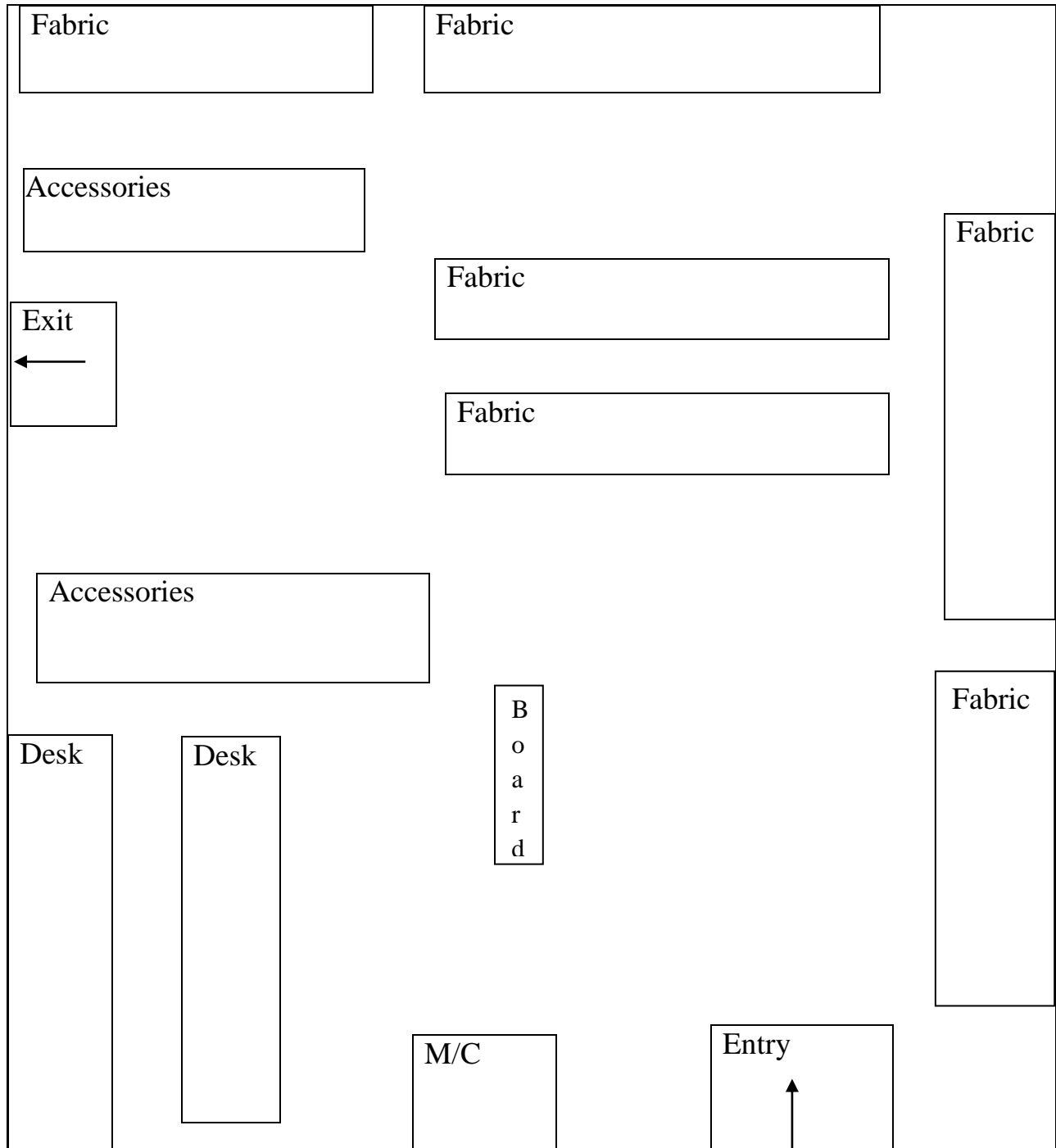
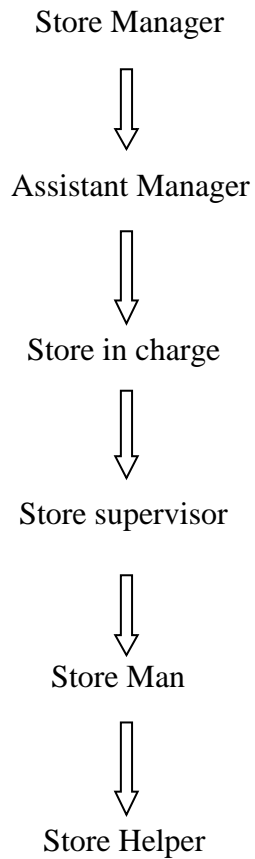
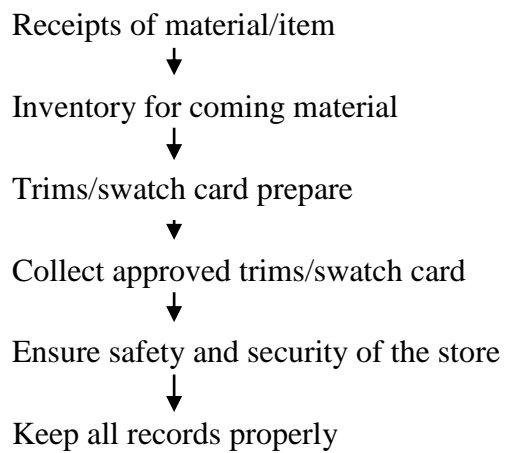


Figure 3.1.1: Layout of store section

3.1.2 Organogram of store section:



3.1.3 Process Flow chart of store section:



3.1.4 Machineries of store:

- GSM cutter
- Digital balance

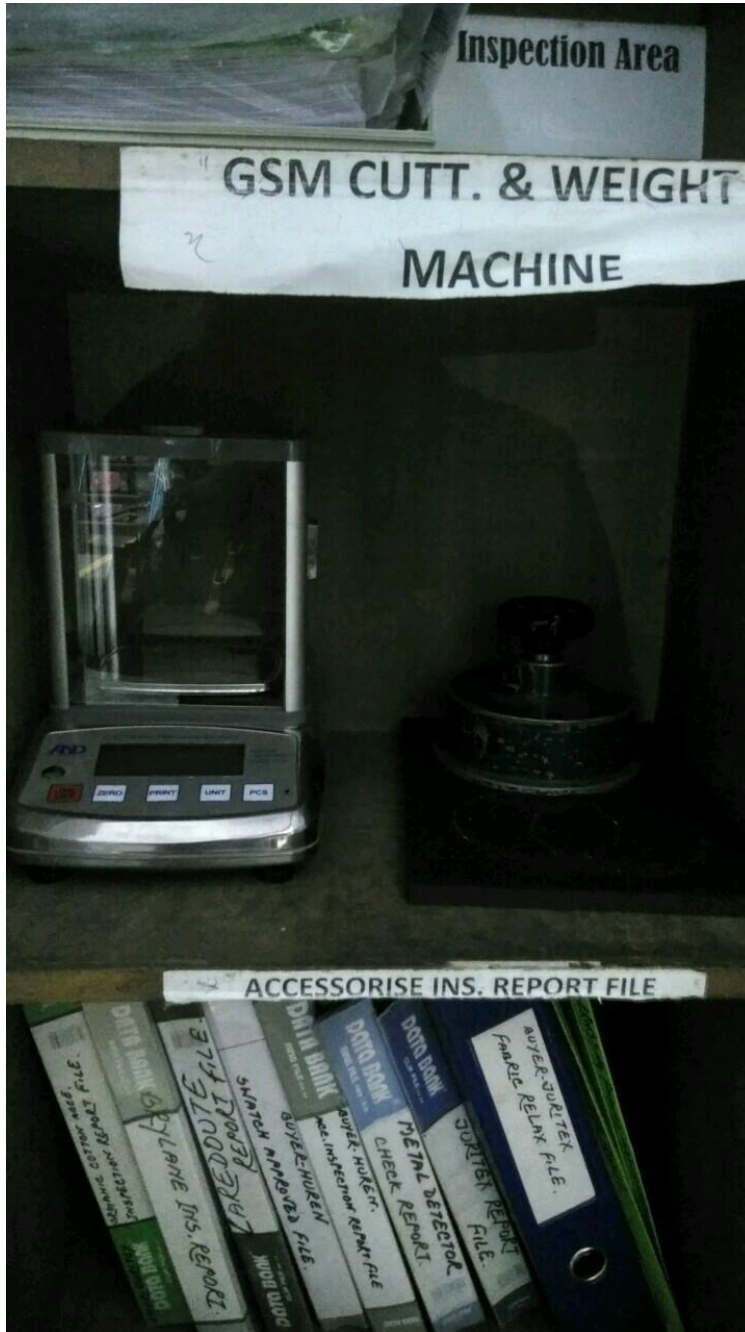


Figure 3.1.4: GSM cutter machine

3.1.5 Operations carried out by this section:

- Store the materials for order
- Issue and supply the materials to production unit
- Prepare Inventory report
- After receiving fabric for each order then numbering different shade of color of the fabric role.
- Locally and Imported fabric is stored.
- Mostly imported fabric comes from India.
- Different types of fabric like 100% cotton single jersey, Terry, Fleece & spandex etc.



Figure 3.1.5(a): Fabric store

Different Types of Accessories

➤ Main label	➤ Elastic
➤ Care label	➤ Zipper
➤ Size label	➤ Hit seal label
➤ Threads	➤ Carton
➤ Twill tape	➤ Poly
➤ Hanger sizer	➤ Rope
➤ Hanger loop	➤ Button
➤ Price sticker	➤ Garment Marking Chalk
➤ Tissue paper	➤ Lock pin
➤ Snap button	➤ Poly sticker
➤ Hang tag	➤ Gum tape
➤ Hanger	➤ Eyelet

Table: 3.1.5 Different Types of Accessories



Figure 3.1.5 (b): Accessories store



Figure 3.1.5 (c): Fabric swatch card



Figure 3.1.5 (d): Accessories swatch card

3.2 Sample Section:

3.2.1 Layout:

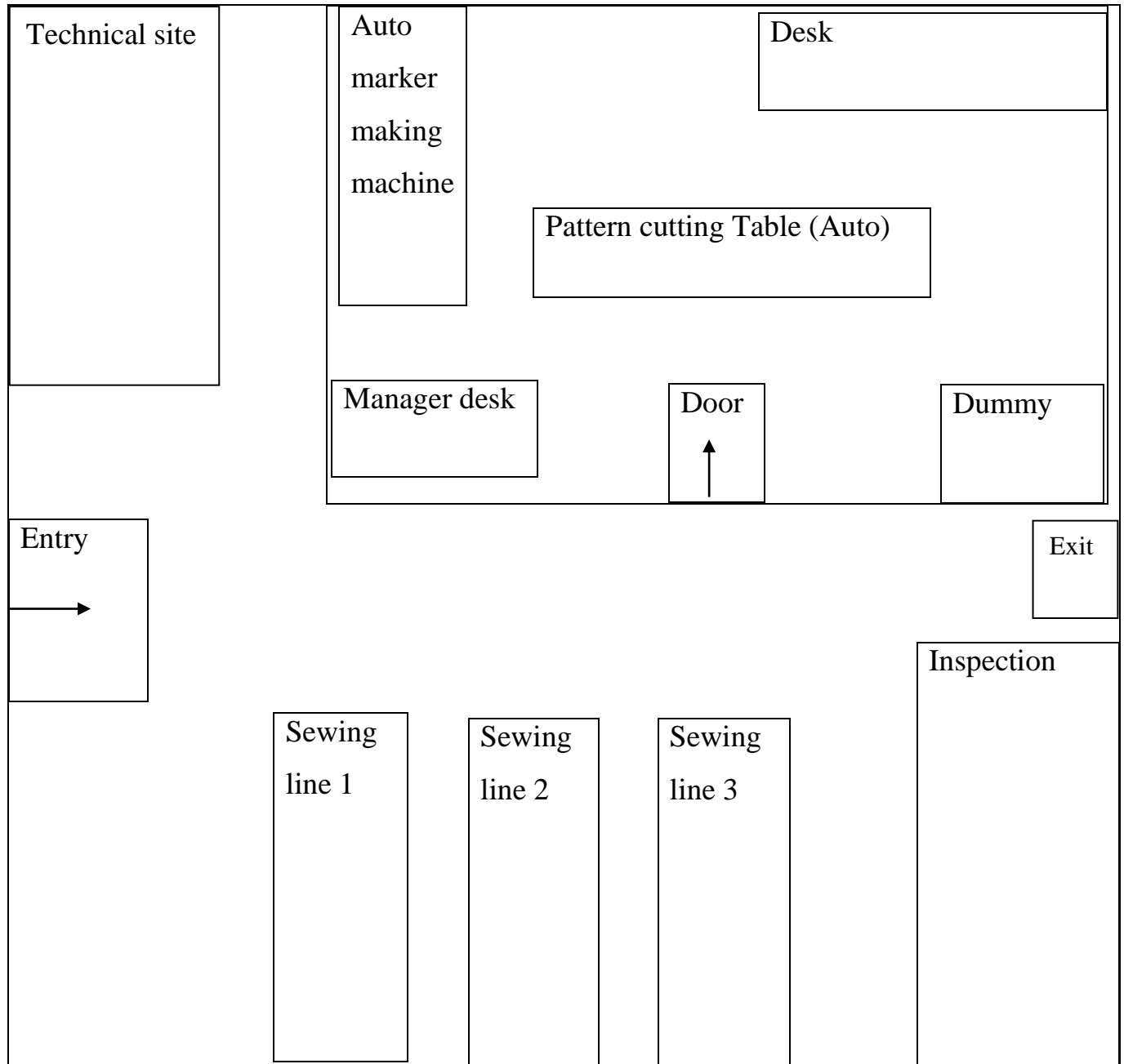
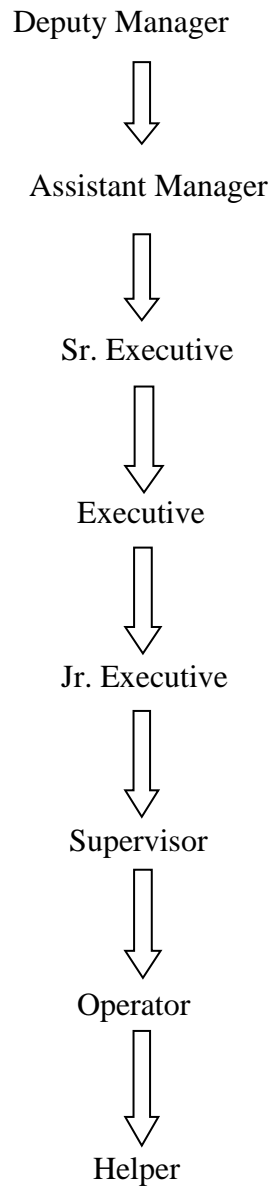


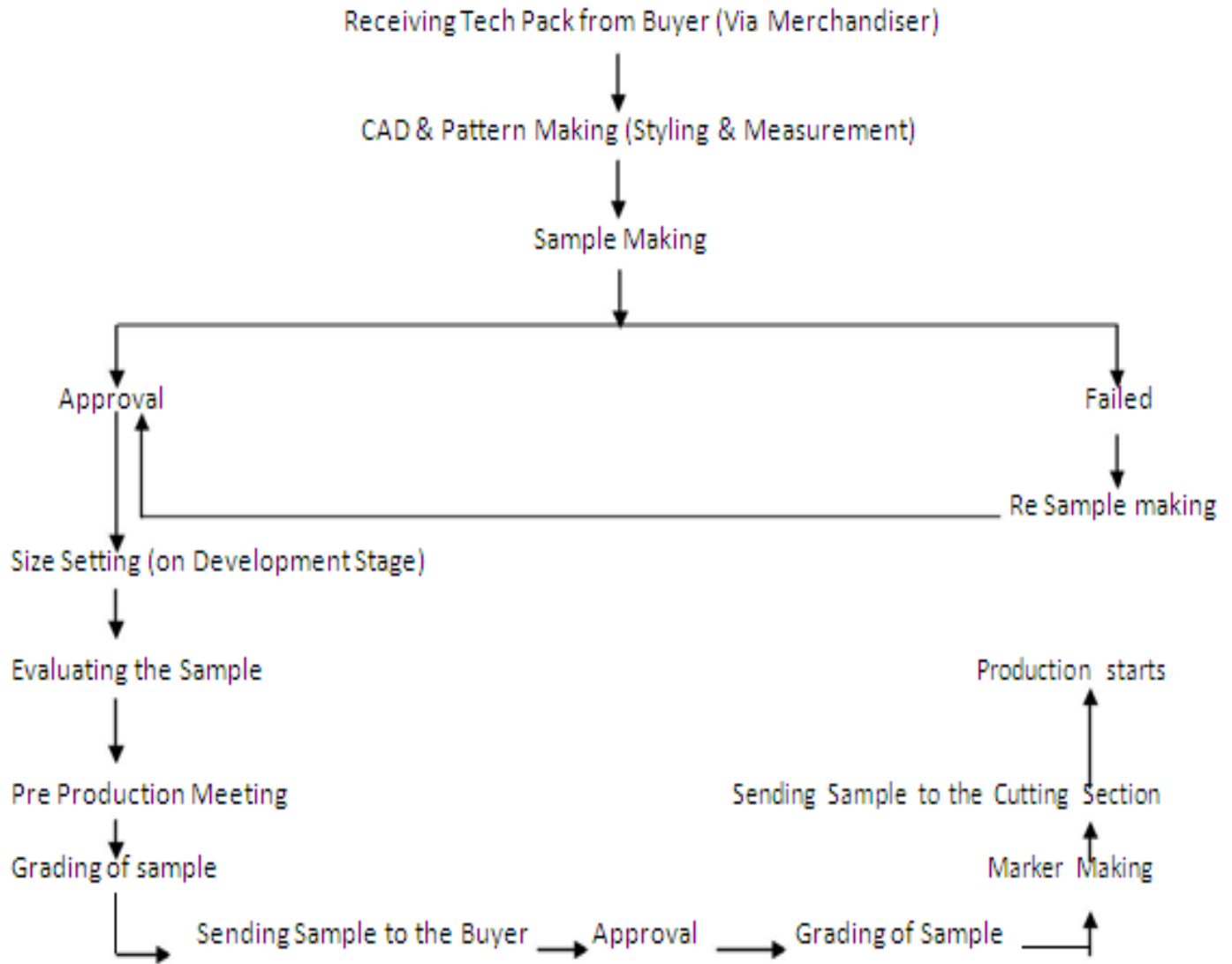
Figure 3.2.1: Sample section layout.



3.2.2 Organogram of sample section:



3.2.3 Process flow chart of sample section:



3.2.4 Machineries of sample section:

- Plain machine
- Overlock machine
- Flatlock machine
- Button hole machine

3.2.5 Functions of CAD room:

- Producing pattern
- Marker making
- Calculate marker consumption



Figure 3.2.5: Marker Machine



Brand name: Lectra Alys

Manufacturer:

Software and cutting equipment manufacturing

Origin: UK

- Maximum marker width 72”
- Marker efficiency should be minimum 85%, minimum 80%.
- Marker efficiency depend on wastage during cutting

Software

For marker making Lectra software is used.

Key factors during marker making

- Fabric width must be higher than marker width
- Fabric length must be higher than marker length
- Allowance must give in end and selvedge minimum 1”
- Grain line must be parallel to the line Wales in knitted fabric.

3.2.6 Function of sample section

- Working pattern making

Pattern which is used to make sample garment. Working pattern used as a base for manipulation when generating design pattern.

- Size set sample making



Figure 3.2.6 (a): Pattern cutting table (auto)



Figure3.2.6 (b): Sample section

3.3 Cutting Section:

3.3.1 Cutting Section Layout:

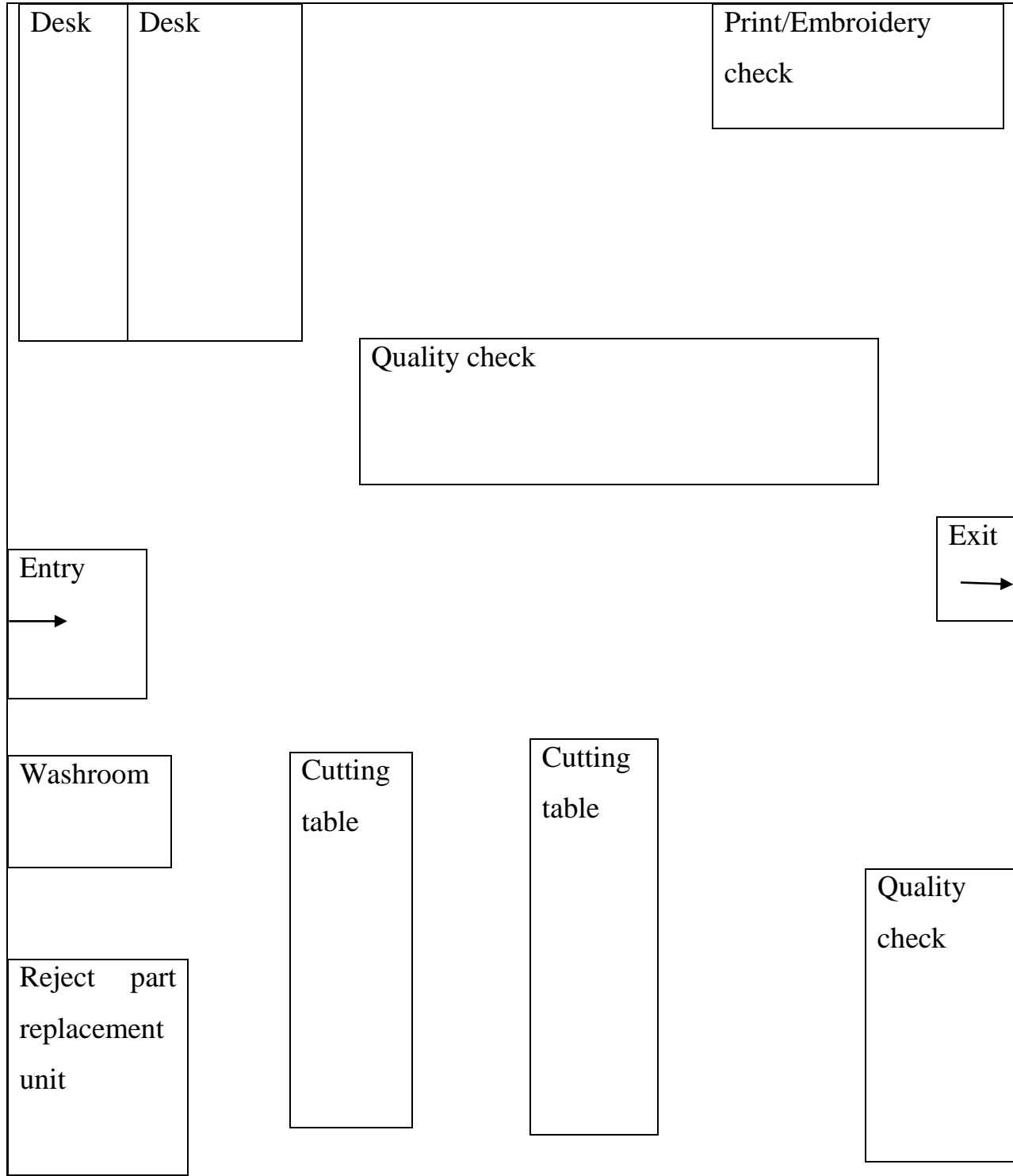
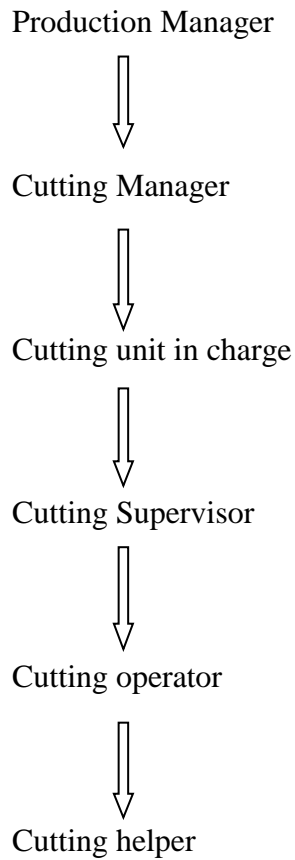
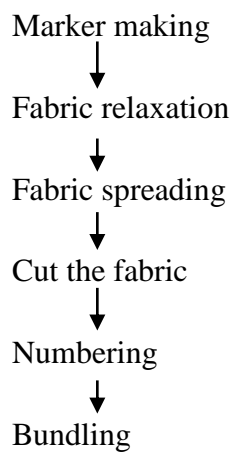


Figure 3.3.1: Layout of cutting section

3.3.2 Organogram of cutting section:



3.3.3 Process Flow chart of cutting section:



3.3.4 Machineries of cutting section:

Machine name	Cutting machine
Specification	Model: BLUE STREAK II Manufacturer: Eastman machine company Type: Straight knife Origin: USA Blade Length: 12” Blade Width: 1.5 cm Blade Thickness: .5 mm
Function	Used for cutting fabric layer according to maker.

Table: 3.3.4 Fabric cutting machine specification



Figure 3.3.4: Fabric cutting machine

3.3.5 Points Should Concern in Fabric Cutting

- During Cutting operator must be used metal gloves.
- Precision in cut i.e. the dimension of pattern and fabric parts is cut should be same.
- The cut edge must be cleaned.
- Infused edge.
- Consistency in fabric cutting.
- Support of lay.
- Drill hole and size should be appropriate and it will be placed in its right place. If it is too large it would be seen after sewing. But if it is too small then it can be blocked easily.
- Should position the pattern pieces on the fold or on the grain line as indicated.
- Without shoe operator should not use cutting machine.
- Mask must be used during cutting.

3.3.6 Cutting Table Specification

- Total Cutting Table: 5 pcs
- Table Height: 33”
- Table Width: 97.5”
- Table Length: 840”



Figure 3.3.6 (a): Cutting table



Figure 3.3.6 (b): Fabric Spreading

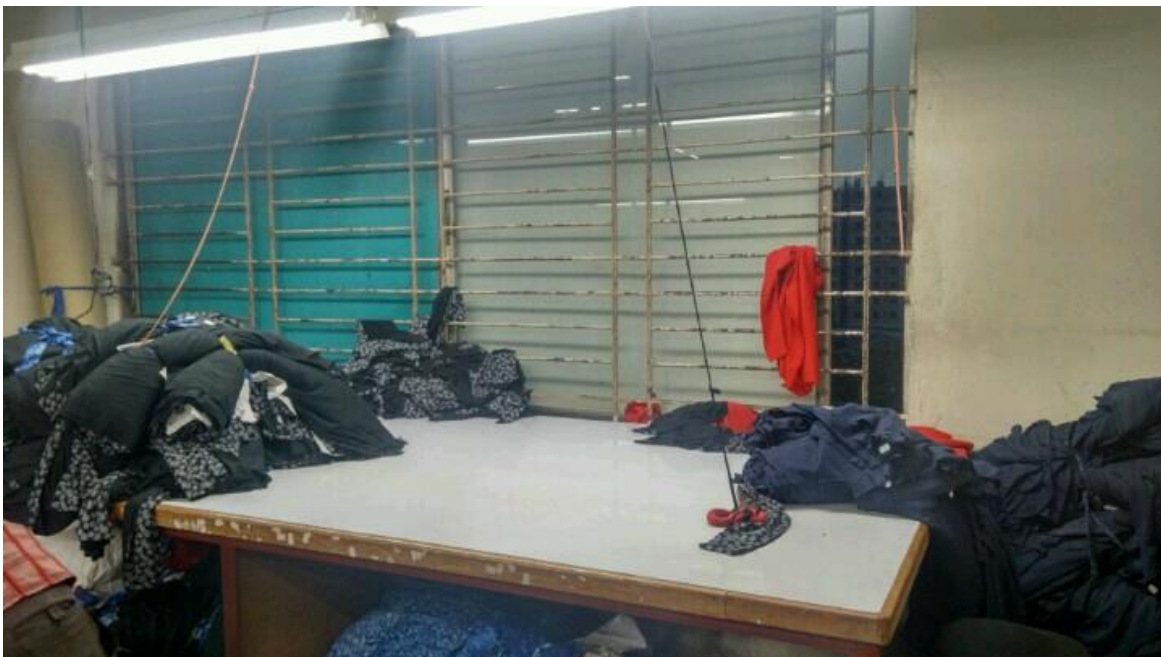


Figure 3.3.6 (c): Reject parts replacement

Reject parts of fabric after cutting replaced here manually.

3.3.7 Wastage during Cutting

- Ends of ply losses.
- Selvedge loss.
- Loss of fabric in roll.
- Loss for fabric defect.

3.3.8 Quality control in cutting:

After receiving fabric from store they check the hole fabric to find out fabric faults like fabric holes, color shading and any other defects on fabric.

After cutting they check cutting fabric quality. If the quality is better, then they send the cutting fabric to the sewing section.



Figure 3.3.8: Quality check in cutting

3.4 Sewing section:

3.4.1 Layout of sewing section:

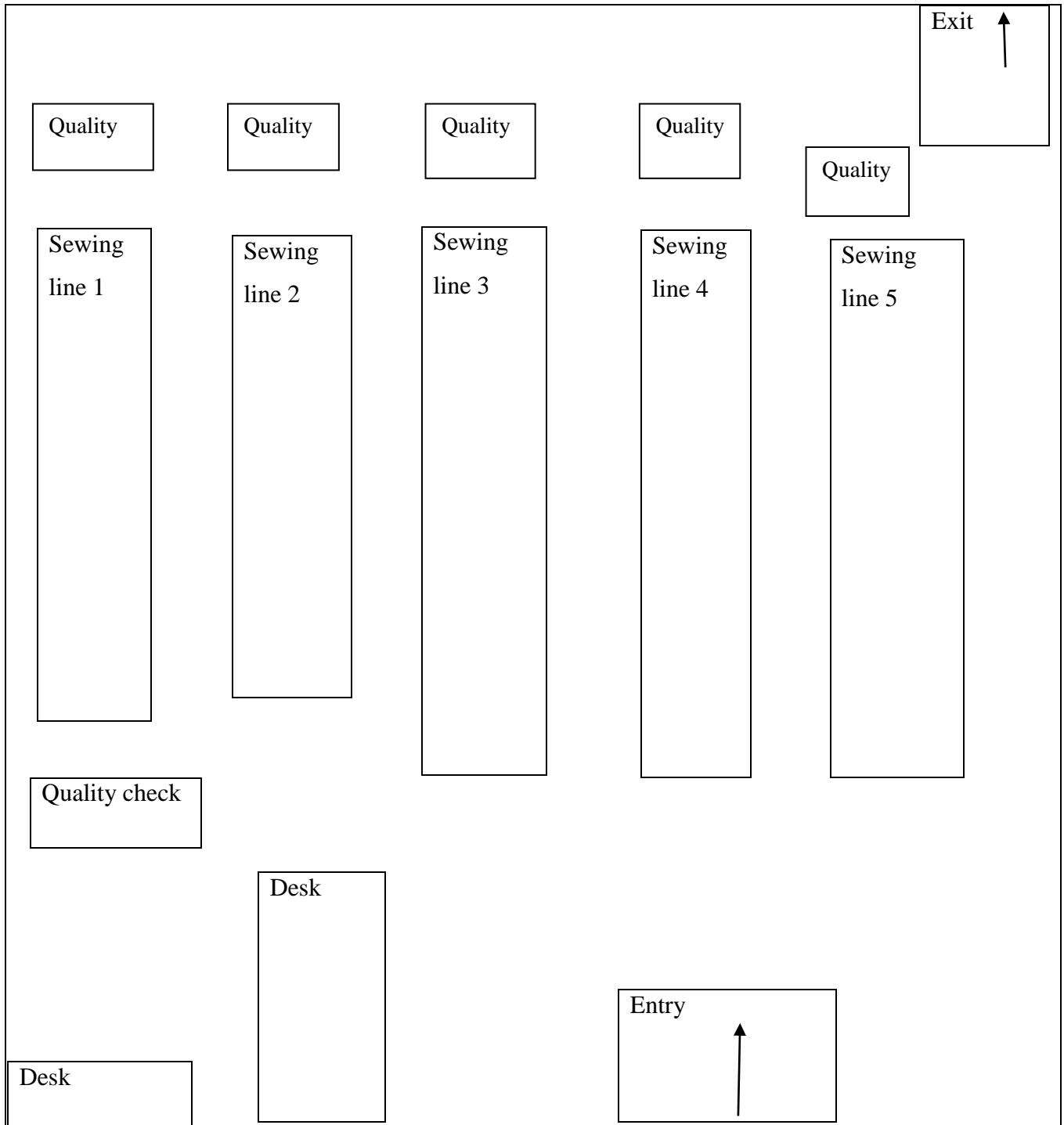
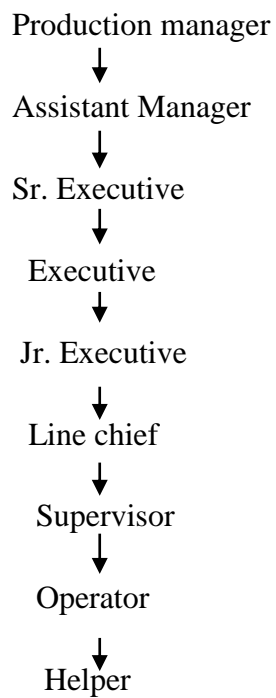


Figure 3.4.1: Layout of sewing section



3.4.2 Organogram of sewing section:



3.4.3 Process flow chart:

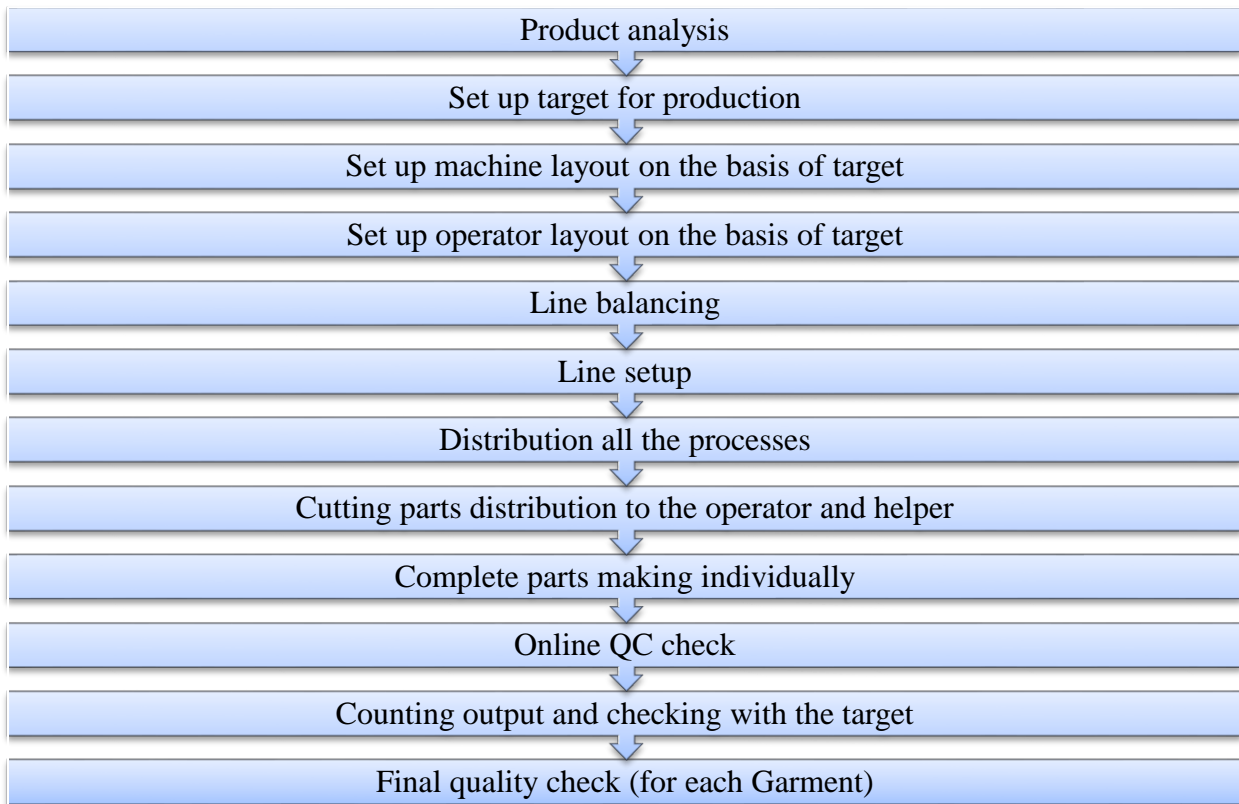


Figure 3.4.3: Sewing floor

3.4.4 Machineries:



Figure: 3.4.4 (a) Plain machine

Application:

- Bottom hemming
- Belt making
- Loop tack stitch
- Pocket joint stitch
- Zipper joint
- Neck top stitch etc.



Figure: 3.4.4 (b) Over lock machine

Application:

- Neck piping
- Sleeve piping
- Sleeve joint
- Side seam etc.



Figure: 3.4.4 (c) Flat bed machine

Application:

- Belt top seam



Figure: 3.4.4 (e) Button attaching machine

Application:

To attached button in garment



Figure: 3.4.4 (g) Flat lock raw edge cutter machine

Application:

For body hem.



•

Figure: 3.4.4 (d) Button Hole machine

Application:

To create a hole for button



Figure: 3.4.4 (f) Bar tack machine

Application:

Bar tack stitch



Figure: 3.4.4 (h) Rib Cuttermachine

Application:

To cut the rib.

3.4.5 Quality control:

- After every 5 operations they check the product quality.
- If any fault found then again send to sewing line.

- Finally check the total garments.



Figure 3.4.5 (a): Quality checking

Sewing defects

- Needle damage
- Skipped stitch
- Seam pucker
- Wrong stitch density
- Uneven stitch
- Defected stitch
- Oil spot

Seaming defects

- Uneven width
- Uneven seam line

- Not secured by back stitch
- No matching of check or stripe
- No matching of seam
- 4 point check

They have needle detector machine which helps to find out if there is any harmful objects present in garments.



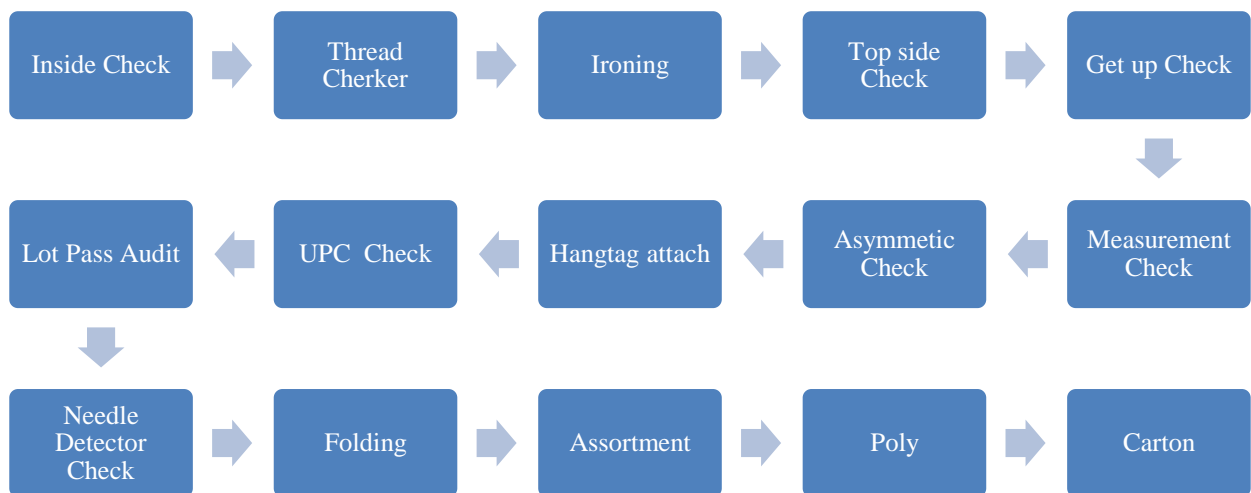
Figure 3.4.5 (b): Needle detector machine.

3.5 Finishing section:







Figure 3.5: Finishing





3.5.1 Process flow chart:





3.5.2 Process and Their Function:

Process	Function	View
Inside Check	<p>Check defect in inner part of garments.</p> <p>Like missed stitch, uneven seam.</p>	
Thread checker	<p>Remove loose thread from garments part.</p>	
Ironing	<p>Create a shape of garments.</p>	
Top side Check	<p>Check defect in top part of garments</p> <p>Like, Uncut thread, Skipped stitch, Open seam</p>	

<p>Get-up check</p>	<ul style="list-style-type: none"> ➤ Check Cutting small thread ➤ Check Whether color shade is right or not ➤ Check Spot in garments 	
<p>Measurement check</p>	<p>Check measurement according to buyer requirement</p>	
<p>Asymmetric check</p>	<p>Check uneven parts of garments.</p>	
<p>Hang tag attach</p>	<p>Hang tags are attached with a garment, such as,</p> <ul style="list-style-type: none"> a) Price tag b) Tag of garment type <p>These hang tags are attached with garment either by hand or by hang tag machine.</p>	

<p>Lot pass audit</p>	<p>In here takes number sample from a lot then check all faults. If faults are found greater than the acceptable range then the lot is rework.</p>	
<p>Needle detector check</p>	<p>It identifies needles in garments if have.</p>	
<p>Folding</p>	<p>Pressed garments are folded in a specific dimension. This work is usually done by women labors.</p>	
<p>Assortment</p>	<p>In this section garments are assorted in different size and color in a ratio.</p>	
<p>Poly</p>	<p>In this section garments are packed in poly.</p>	

		
<p>Carton</p>	<p>Poly is filled in carton.</p>	

3.5.3 Final Inspection

Garments are inspected by AQL. In this system samples are collected inspected by statistically from the lot size and will decide the lot of garments to be granted or rejected. AQL is mainly used in final inspection after garment making.

Defect Classification

The client defines the AQL and the maximum number of defective goods allowed in the sample size. Defects detected during visual inspection are usually classified within 3 categories: “Critical”, “Major” and “Minor”

3.6 Industrial Engineering Department:

3.6.1 Layout:

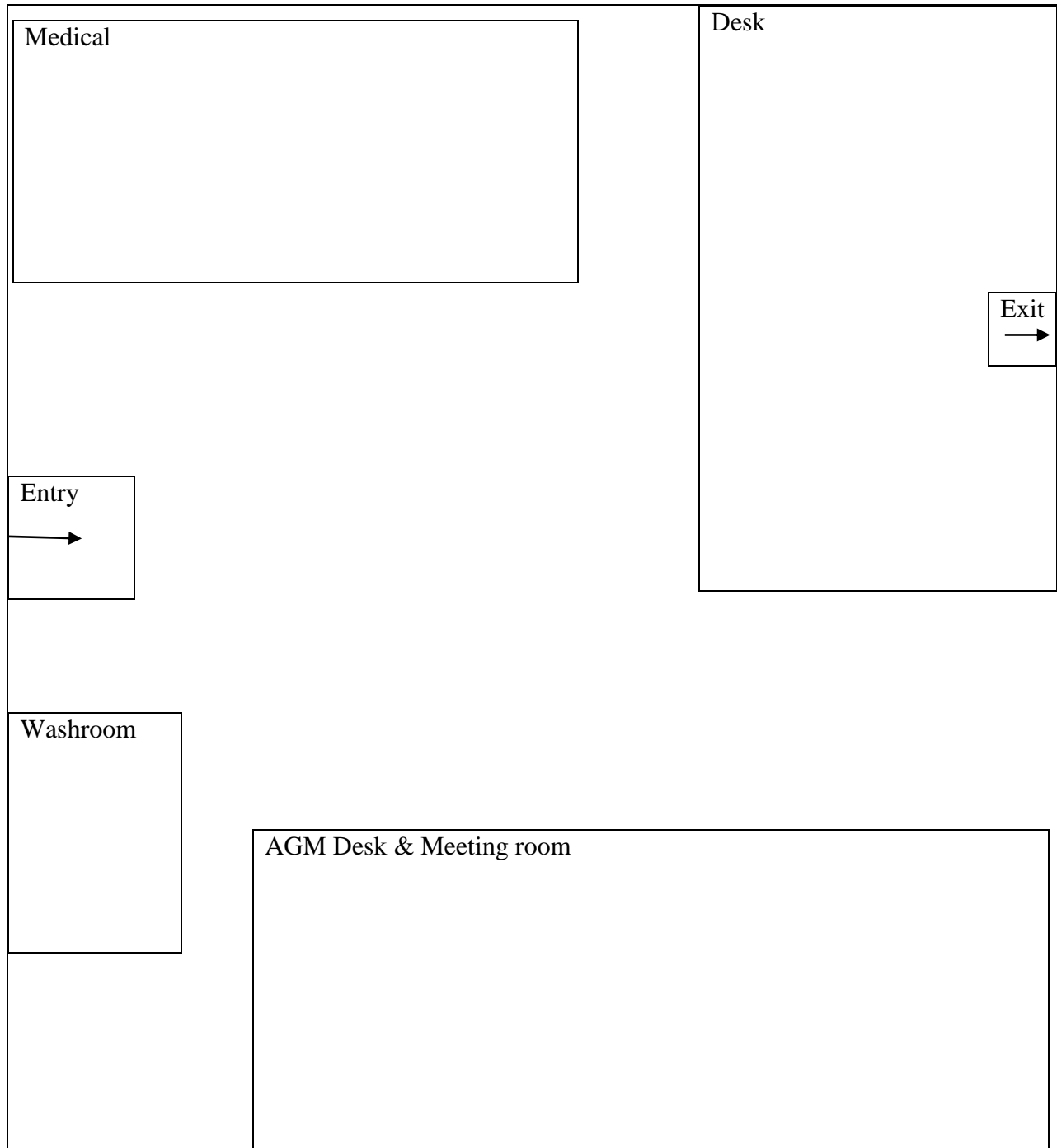
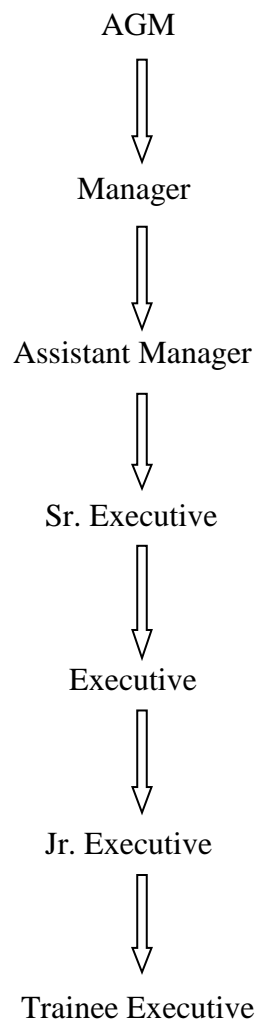
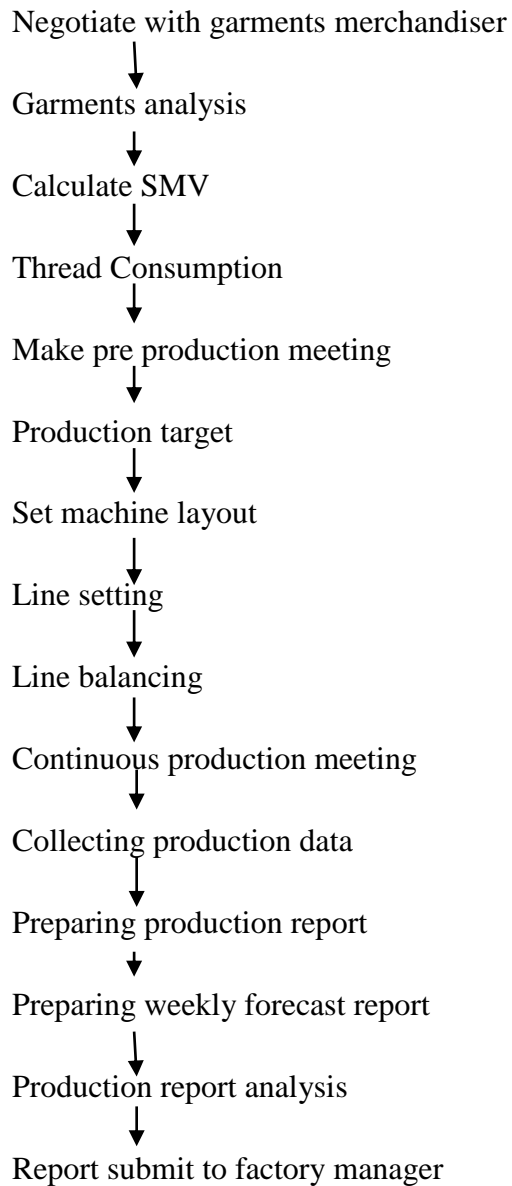


Figure 3.6.1: Layout of IE department

3.6.2 Organogram of IE:



3.6.3 Process Flow Chart:



3.6.4 Operations done by IE department:

- This factory is SMV based factory. All the activities are done according to SMV including total employees and workers salary. And this SMV is calculated by IE department.
- Thread consumption of garments calculated by them.
- They give proper line balancing.
- By method study they improve work place condition and they also concern about workers safety.
- They also make operators increment based on over time working.

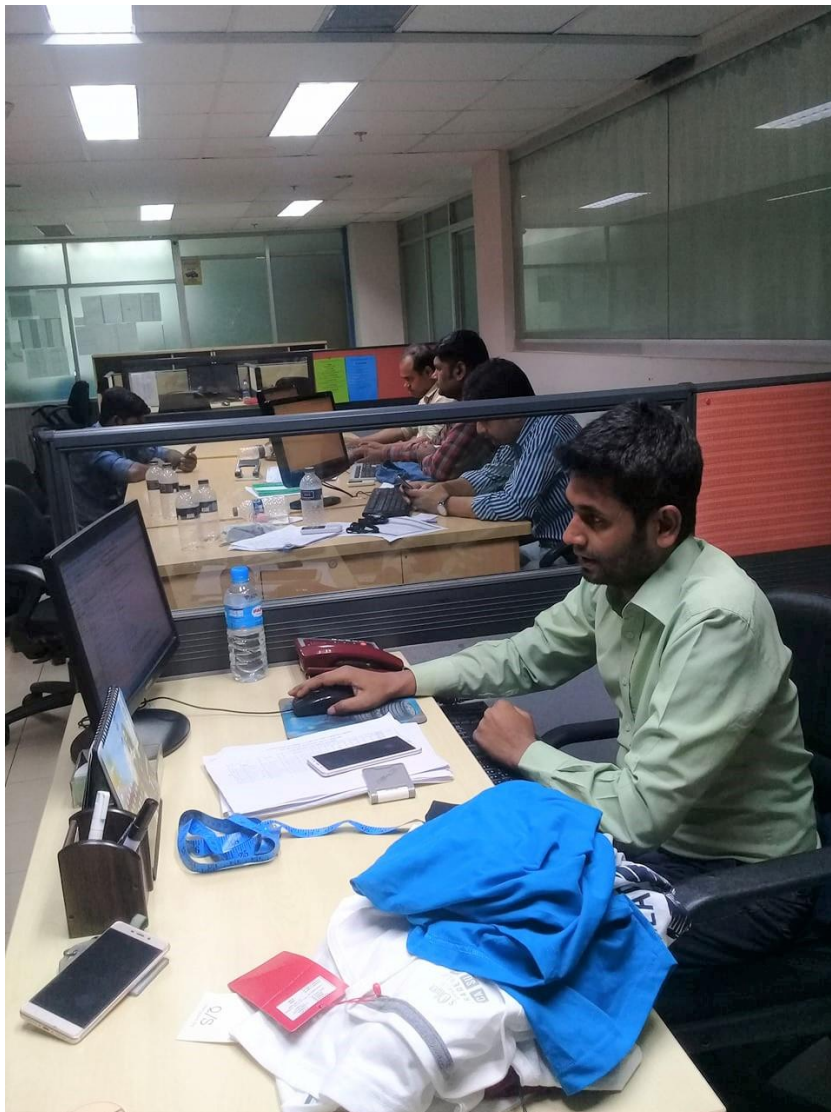


Figure 3.6.4: IE department

3.7 Merchandising Department

Merchandising is the department which mediates marketing and production departments. Sometimes, merchandising department will also have to do costing and pricing.



Figure 3.7: Merchandising department

3.7.1 Work Done by Merchandiser

- Buyer searching
- Costing and consumption
- Order receive
- Sample approval
- Prepare TNA
- Fabric and accessories booking
- Follow up lead time
- Production follow up
- Delivered good at right time and right quantity

3.7.2 Calculation of Knit Fabric Consumption (T-shirt)

Body fabric consumption per dozen, (all measurements in cm)

$$= \frac{(\text{Bodylength} + \text{Sleevelength} + \text{Allowance}) * \left(\frac{1}{2} \text{ chest} + \text{allowance}\right) * 2 * \text{GSM} * 12}{10000 * 1000} + \text{Wastage}\%$$

Neck Rib Consumption:

Width = Neck width x 2 + 2 cm (Round)

Total Height = Rib Height X 2 + Allowance

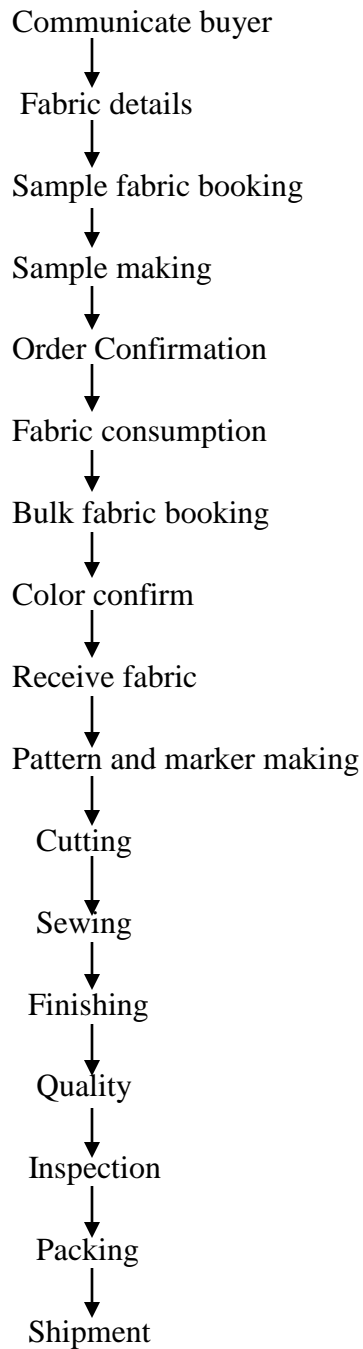
3.7.3 Points for consumption

- Types of fabric and fabric GSM will be confirmed by the buyer.
- For body length and sleeve length, approximate sewing allowance should be needed at body hem, shoulder joint, sleeve hem and armhole joint.
- For chest width, approximate sewing allowance should be needed at both side.
- And approximate fabric wastage in various stages is 5 to 15%.

3.7.4 More about Merchandising Department:

I have completed merchandising part under M&S (Marks and Spencer) and PUMA.

Process flow chart of merchandiser:



Sample requirements:

M&S wants-

- Fit sample/Buying sample
- CS sample or PP sample

PUMA wants one more sample. That is-

- RS sample/Rack sample.

They want it for TV ad.

PUMA buyer merchandiser works with all printed garments.

Printing types:

- **Rubber print:**



Figure 3.7.4 (a): Rubber Printing

- **Pigment Print:**



Figure 3.7.4 (b): Pigment printing

- **Pearlescent Print:**



Figure 3.7.4 (c): Pearlescent printing

- **Photo print:**

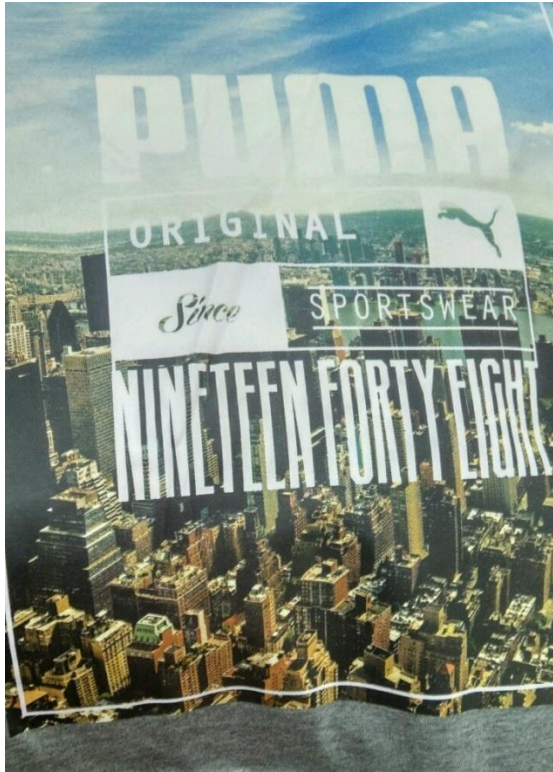


Figure 3.7.4 (d): Photo print

- **Puff print:**



Figure 3.7.4 (e): Puff printing

- **Reflective Print:**



Figure 3.7.4 (f): Reflective printing

- **Semi rubber print:**



Figure 3.7.4 (g): Semi rubber printing

PUMA works on a new project. That is the seamless garments.



Figure 3.7.4 (h): Seamless garments (front part)



Figure 3.7.4 (i): Seamless garments (Side view)

- This garments have no seam in it. Only for neck and sleeve joining seam is needed.
- It's very costly.
- The garments produced in tube form also the dyeing is done on tube form.
- For making this garments circular knitting machine is used.



- Machine name is Santoriny
- The design of fabric is Jackward
- It's too much comfortable to wear. Because the fabric is wicking finished. For this sweat can be absorbed.
- For sportswear this garments are used.
- But in producing this garment too much wastage has found. Because in cutting 20% extra fabric need to be cut.
- Its production is lower. Because too much time is needed in producing this.



CHAPTER-04

Impact of Internship



4.1 Store section:

In store section I have learned-

- The fabric storing system.
- The accessories storing system
- About GSM cutter and by this how fabric weight is measured.
- The fabric relaxation process
- Swatch card of fabrics and accessories
- And also I have seen different types of accessories.

4.2 Sample section:

In sample section I have learned:

- The marker making system
- About LECTRA software
- The pattern making system
- About different types of sample

4.3 Cutting section:

In cutting section I have learned:

- The fabric spreading system
- Fabric cutting method
- I have seen the cutting machine
- Also learn about auto and manual cutting system
- About reject part replacement system



4.4 Sewing section:

In sewing section I have learned:

- The process sequence of different types of garments production.
- The operation breakdown of different styles.
- Also learn about different types of machineries used in sewing section
- The quality of garments checking system.
- I have seen needle detector machine.

4.5 Finishing section:

In finishing section I have learned:

- The ironing system of garments
- The folding system
- The packing procedure
- And also seen the cartooning procedure

4.6 Industrial Engineering Department:

In IE department I have learned:

- About the SMV of any garments
- The line balancing system
- I have learned about method study and time study
- The increment system of operators
- Operators skill matrix system
- And production monitoring system



4.7 Merchandising department:

In merchandising department I have learned:

- About responsibilities of a merchandiser
- The price negotiation system
- About TNA
- About tech pack
- About different types of sample
- About different types of printing
- And I also learn about the seamless garments.



CHAPTER-05

Conclusion



5.1 Conclusion

Industrial attachment is a most important and essential part for completing B.Sc. program in textile engineering. Actually there is large difference between theoretical knowledge and practical knowledge. Industrial training is an essential part for textile education because it minimizes the gap between theoretical and practical knowledge. This industrial training increases our knowledge though a lot about textile technology. It also helps us to know a lot about industrial production process, machineries, industrial management etc. It made us suitable for industrial life. It is also gives some experience to prepare us for the expected or destiny in future.

Overall we can say industrial training would be helpful in future progress.

5.2 Limitations

- Two months is not enough time to complete industrial attachment. If we get more time we will know lot and complete it more effectively.
- In here garments section is so small.
- Some operation is controlled of garments section by head office. Like the seamless project. We cannot see the working procedure of it. Because they don't give us permission.
- All operators cannot provide full or right information.
- It is not possible to reporting full information for some limitation. So, we try our best to summarize all the information.