



Faculty of Engineering
Department of Textile Engineering

REPORT ON

Industrial Attachment

At



Fakir Knitwear's Ltd.

Fatullah, Kayempur, Narayangonj.

Course Title: Industrial Attachment

Course Code: TE-410

Submitted By

Shyamal Biswas

ID: 093-23-1656

Shamima Nasrin

ID: 102-23-2013

Academic Supervisor
Md. Abdullah Al Mamun
Assistant Professor

This Report Presented in Partial Fulfillment of the
Requirements for the Degree of Bachelor of Science in
Textile Engineering.

Advance in Apparel Manufacturing Technology

Duration: From October 25, 2018 to December 10, 2018

REPORT ON
INDUSTRIAL TRAINING
AT
FAKIR KNITWEARS LTD.

ACADEMIC SUPERVISOR

MOHAMMAD ABDULLAH AL MAMUN
ASSISTANT PROFESSOR DEPT. OF
TEXTILE ENGINEERING DAFFODIL
INTERNATIONAL UNIVERSITY

FACTORY SUPERVISOR

MD. TARIKUL ISLAM
ASSISTANT GENERAL MANAGER
DYEING UNIT
FAKIR KNITWEARS LTD

DEDICATION

TO MY BELOVED & RESPECTED PARENT

DECLARATION

We do hereby declare that, this internship report has been done by us under the supervision of Engr. Md. Abdullah Al Mamun, Assistant Professor, Department of Textile Engineering Daffodil International University. We also declare that neither this project nor any part of this internship report has been submitted elsewhere for award of any degree or diploma.

Shyamal biswas

ID: 093-23-1656

shyamal@diu.edu.bd

Department of Textile Engineering

Daffodil International University

Date:

Shamima nasrin

ID: 102-23-2013

Shamima2013@diu.edu.bd

Department of Textile Engineering

Daffodil International University

Date

ACKNOWLEDGEMENTS

All pleasure goes to the Almighty GOD who has given us the ability and strength to complete our Industrial Attachment.

Our special thanks to our supervisor Engr. Mohammad Abdullah Al Mamun, Assistant Professor, Dept. of Textile Engineering, Daffodil International University to whom we extremely grateful for his tremendous support and guidance throughout our industrial Attachment. While working with his we have not only earned valuable knowledge but was also inspired by his innovativeness which helped to enrich our experience to a great extent. His ideas and way of working was truly remarkable. We believe this report could not be finished if he did not help us continuously.

We would like to thank Professor Dr. Mahabubul Haque, Head, Department of textile engineering, Daffodil International University, for his proper management & taking necessary procedure about our industrial attachment.

We also would like to thank Md. Fakruzzaman, GM of Dyeing, Md Tarikul Islam, AGM of Dyeing.

While preparing the report we have taken help from various references so our cordial thanks to them. Finally we hope that the report will help in understanding all the practical operations in a clear and concise way.

Last but not the least, thanks go to all the people who have assisted, helped and inspired us to complete this task in various stages.



Faculty of Engineering
Department of Textile Engineering

APPROVAL SHEET

This Industrial Attachment prepared and submitted by Shyamal Biswas ,ID:093-23-1656 and Shamima Nasrin, ID:102-23-2013 in partial fulfillment of the requirement for the degree of BACHELOR OF SCIENCE IN TEXTILE ENGINEERING has been examined and hereby recommended for approval and acceptance.

Supervisor

Abdullah Al Mamun

Assistant Professor

Department of Textile Engineering

Faculty of Engineering

Daffodil International University

Table of Contents

DECLARATION.....	i
ACKNOWLEDGEMENTS.....	ii
1. EXECUTIVE SUMMARY.....	1
2.INFORMATION OF THE ORGANIZATION.....	2
2.1 INFORMATION OF THE ORGANIZATION.....	3
2.2 HISTORY OF THE PROJECT DEVELOPMENT.....	4
2.3 LOCATION OF THE FACTORY.....	5
2.4 LAYOUT OF THE FACTORY.....	6
2.5 COMPANY PROFILE.....	7
2.6 BOARD OF DIRECTORIES.....	8
2.7 BANKERS.....	8
2.8 CERTIFIED BY.....	8
2.9 YEARLY TURNOVER.....	9
2.10 RENOWNED FRIENDS (BUYER).....	10
2.11 PRODUCTS.....	11
2.12 AWARDS RECEIVED.....	13
2.13 DEPARTMENTS OF SECTIONS.....	14
2.14 ORGANOGRAM.....	15
2.15 CERTIFICATES.....	16
3. DETAILS OF ATTACHMENT.....	17
3.1. KNITTING SECTION.....	18
3.1.1 LAYOUT OF KNITTING SECTION (UNIT-1).....	18
3.1.2 MAIN PARTS OF CIRCULAR KNITTING MACHINE.....	20
3.1.3: KNITTING MACHINERIES.....	21
3.1.4: PROCESS FLOW CHART OF KNITTING.....	22
3.1.5: KNITING MACHINCE (SPECIFICATION).....	23

3.1.6: Fabric Inspection Machine (Specification).....	26
3.1.7: KNITTING FAULTS.....	26
3.1.8: BATCH CARD INFORMATION (Example).....	30
3.2 Dyeing	31
3.2.1 LAYOUT PLAN OF DYEING SECTION	31
3.2.2: GENERAL INFORMATION OF DYEING SECTION	32
3.2.3 MACHINE DESCRIPTION.....	33
3.2.4 WORKING PROCEDURE IN DYEING	36
3.2.5: BATCH CARD INFORMATION IN DYEING (Example)	37
3.2.6: DYEING FAULTS	38
3.3 SAMPLE SECTION	39
3.3.1: SAMPLE DEPARTMENT	40
3.3.2: DIFFERENT SIZES USED FOR DIFERENT BUYERS	41
3.3.3: SAMPLE SCETION.....	41
3.4 CAD SECTION	42
3.4.1: PATTERN MAKING & GRADING BY MODARIS	42
3.5 CUTTING	43
3.5.1 LAYOUT OF AUTOMATIC CUTTING SECTION	44
3.5.2: GENERAL INFORMATION OF CUTTING SECTION	45
3.5.3: PRODUCTION FLOW CHART OF CUTTING	46
3.5.4: CUTTING DEFECTS	47
3.5.5: QUALITY CONTROL IN CUTTING SECTION (FLOW CHART)	47
3.6: PRINTING	48
3.6.1 MACHINE DESCRIPTION	49
3.6.2 PROCESS FLOW CHART OF PRINTING.....	51

3.7: EMBROIDERY	52
3.7.1:Embroidery Types	53
3.8: SEWING SECTION	55
3.8.1 LAYOUT OF MANUAL SEWING SECTION	56
3.8.2 LAYOUT OF SEWING SECTION (HANGER SYSTEM)	58
3.8.3 MANAGEMENT ORGANOGRAM OF SEWING SECTION	60
3.8.4 MACHINE DESCRIPTION OF SEWING SECTION	61
3.8.5 SOME TRIMS AND ACCESSORIES	62
3.8.6 INDUSTRIAL ENGINEERING	63
3.8.7: MACHINE USED IN SEWING SECTION	64
3.8.8: FLOW CHART FOR SEWING SECTION	65
.....	
3.9: GARMENTS FINISHING	66
3.9.1: FLOW CHART OF WORKING PROCESS	67
3.9.2: MACHINE USED IN GARMENTS FINISHING	70
4. IMPACT OF THE INTERNSHIP	73
4.1: KNITTING.....	72
4.2:DYEING.....	73
4.3: SAMPLE SECTION.....	74
4.4: CAD SECTION.....	74
4.5: CUTTING SECTION.....	74
4.6: PRINTING.....	74
4.7: EMBROIDERY.....	75
4.8: SEWING SECTION.....	75
4.9: GARMENTS FINISHING.....	75
 5.CONCLUSION.....	 76

List of Figure

Number	Name of figure	Page Number
2.1	HISTORY OF THE PROJECT DEVELOPMENT	4
2.2	LOCATIOPN OF THE FACTORY	5
2.3	LAYOUT OF THE FACTORY	6
2.4	MEN'S KNITWER	12
2.5	CHILDREN'S WEAR	13
2.6	AWARD 2011 FROM PRI-MINISTER	13
2.7	CERTIFICATES	16
3.1	LAYOUT OF KNITTING	18
3.2	BATCH CARD	30
3.3	LAYOUT OF DYEING	31
3.4	DYEING MACHINE	32
3.5	BATCH CARD DYEING	37
3.6	SAMPLE TAG	41
3.7	PATTERN MAKING & GRADING BY MODARI	42
3.8	LAYOUT OF AUTOMATIC CUTTING SECTION	44
3.9	CUTTING SECTION	45
3.10	AUTOMATIC PRINTING MACHINE	50
3.11	EMBROIDERY	53
3.12	EMBROIDERY MACHINE	54
3.13	LAYOUT OF MANUAL SEWING SECTION	56
3.14	LAYOUT OF SEWING SECTION (HANGER SYSTEM)	58
3.15	SOME TRIMS AND ACCESSORIES	62
3.16	PRESSING	70
3.17	PACKAGING	71
3.18	DESPATCH	71

List of Tables

Number	Page Number
Table No 1	09
Table No 2	11
Table No 3	21
Table No 4	33
Table No 5	34
Table No 6	34
Table No 7	41
Table No 8	45
Table No 9	49
Table No 10	61
Table No 11	64

1. EXECUTIVE SUMMARY

Industrial Training is an essential part in developing the practical and professional skills required for an Engineer and an aid to prospective employees. Our internship was carried at Fakir Knitwears Ltd. It is a comprehensive manufacturing and exporting company of Bangladesh. It has independent knitting, dyeing, sewing, finishing and packaging with sufficiently supportive backward linkage facilities. In this report we have mainly described about the Garments section of the Fakir Knitwears Ltd.

As it is a knit composite factory we fortunately took the opportunity to learn about other important department of the factory too like Sample Department, Knitting Department, Dyeing Department, Garments Department, Merchandising Department, Quality Department, and IE & Planning Department. Sample section is used to make samples. Sample helps the factory to get a new order for different styles. We also learnt about different samples like development samples, quotation Samples, size-set sample, counter samples, production samples. We tried to have some practical knowledge about CAD and their importance for making pattern, marker and ultimately calculating consumption & costing calculation. We got familiar with different fabrics, their production procedure, major faults during production and ways to get rid from these faults. In dyeing section we tried to learn about pre-treatment, batching, dyeing procedure, finishing after dyeing etc. Garments section is most important for us so we tried to learn about this department as deeply as possible. We applied our best effort to learn about inspection before spreading for cutting, spreading in both manual and automatic, trial cutting, bulk cutting in both manual and automatic methods, quality assurance for cutting, numbering, bundling, inspection before sending cut components, sewing process, machine arrangement for making different styles, INA hanger systems for making different styles, finishing after sewing. After completing our attachment we realized that industrial training makes our knowledge more practical and made us confident to face any problem in our practical and challenging professional life as well.

2. INFORMATION OF THE ORGANIZATION

2.1 INFORMATION OF THE ORGANIZATION

Fakir Knitwears Limited is a comprehensive manufacturing and exporting company of Bangladesh. It comprises the ultra modern plants related to garment industry, such as independent knitting, dyeing, sewing, finishing and packaging with sufficiently supportive backward linkage facilities.

Nowadays, our products sell well all over the world, such as America, Europe & East Asia. Our company sticks to the policy of high quality, developing by credit standing, and gaining the world through honesty. We strongly believe in Fair Trade liabilities and practice in business towards our esteemed clients. Meanwhile we also carry out a strict quality management system in accordance with ISO 9001 requirements.

Fakir Knitwears Limited is fully committed to provide fair wages and good employment opportunities to economically disadvantaged artisans and workers. Fakir Knitwears Limited not only believe in supporting living wages and safe & healthy conditions for workers but also adheres to social criteria and environmental principles adding equitable and sustainable system of production and trade that benefits people and their communities by strategic plans to utilize fair trade funds to achieve Empowering women, Education for Next Generation, Emergency Assistance etc.

Our quality has remained the main feature for our success. Our top notch quality of products with competitive prices makes our offerings irresistible.

2.2 HISTORY OF THE PROJECT DEVELOPMENT



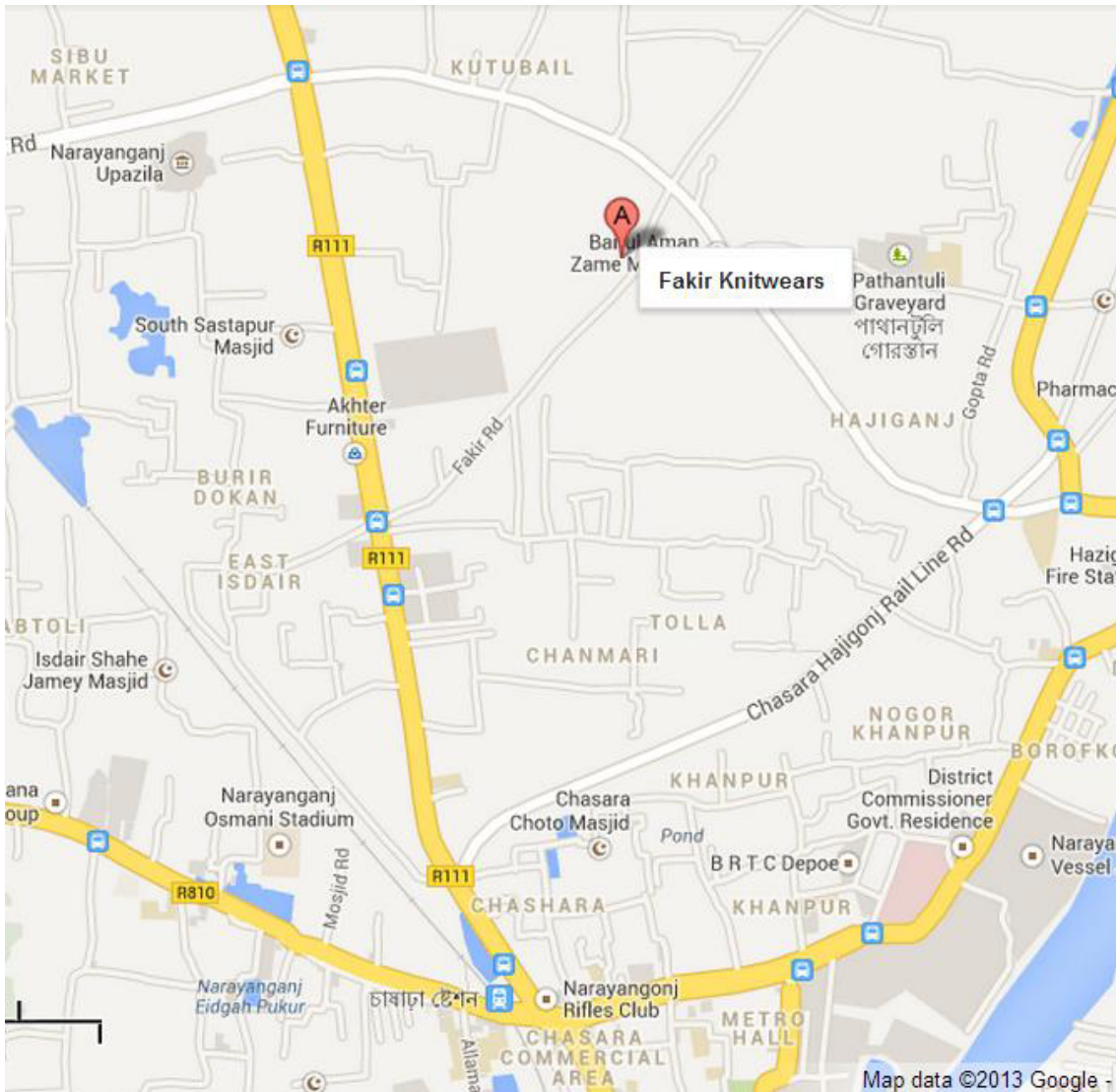
2.1 HISTORY OF THE PROJECT DEVELOPMENT

Fakir Knitwears Ltd, Established in 1988 is engaged in the manufacturing export of knit garments. Today the company has grown into a leading exporter of quality knit garments in Bangladesh.

Since our journey started in the year 1988 in knit garments export, we crossed over a long way and found us as one of the best knitwear manufacturer- exporter of Bangladesh. They have achieved the national trophy for the best exporter in 2007-2008. Our business goals till the first day have remained the same: to give the best they have in prices, production and quality to our customers and that is why we are still here serving the needs of the textile importers worldwide.

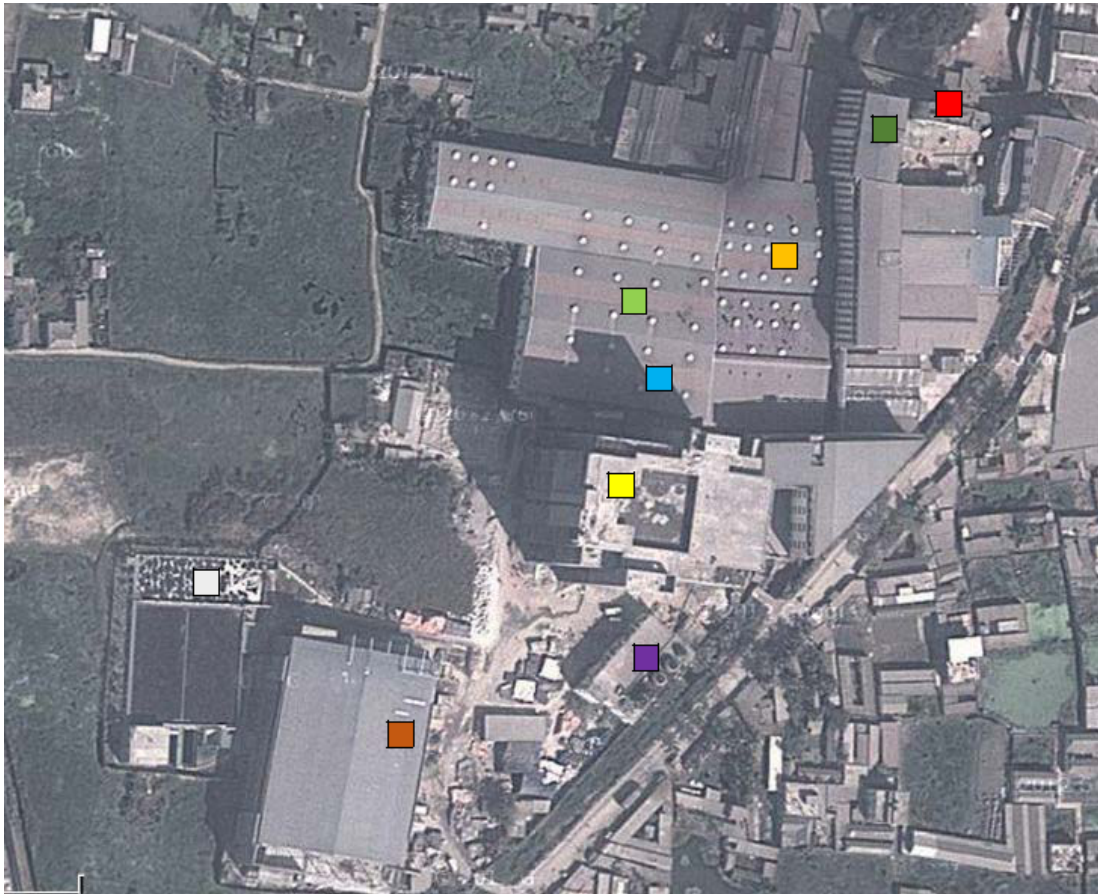
They are certified by OEKO-TEX, ISO 9001-2000, SCR. Fakir Knitwears Limited has become the pick of the bunch and the inevitable to be mentioned while talking about the Textile Industry. The company has established itself as a distinguished and well-recognized name in the RMG sector and a hallmark of high quality, which is a real pride for the company. Extremely thanks to the management team, workers and above all to their buyers in achieving this milestone. Their commitment in cooperation and teamwork made this possible.

2.3 LOCATION OF THE FACTORY



2.2 LOCATION OF THE FACTORY

2.4 LAYOUT OF THE FACTORY



2.3 LAYOUT OF THE FACTORY

- | | |
|---|------------------------------------|
| ■ | Administration Building |
| ■ | 8 Storied garments building (old) |
| ■ | Dyeing Unit-2 |
| ■ | Knitting Unit-1 |
| ■ | Washing unit |
| ■ | 14 storied Garments building (New) |
| ■ | Water treatment Plant |
| ■ | Knitting Unit-2, Inventory |
| ■ | ETP |

2.5 COMPANY PROFILE

Company name	FAKIR KNITWEARS LTD.
Company Slogan	We Knit Your Dreams
Year of Establishment	1988
Nature of Company	Private Limited Company
Nature of Business	100% Export oriented Knit Fabrics & Knit Garments manufacturer
Registered Address	89, Motijheel C/A, Lucky Chamber (1st Floor), Dhaka-1000, Bangladesh
Factory address	Kayempur, Fatullah, Narayanganj-1400
Phone No	Factory Office: 88-02-7641379-80 7643242, 7643271 Fax: - 88-02-7634611 Registered office: 880-2-9861831, 9860445, 8854101 Extn: 128 / 156
E-mail	fkinfo@fakirgroup.com
Website	www.fakirknit.com
Area of Premises	550,000 sqft
Number of Employees	11500-12000
Working Hour	Production: 8 A.M To 5 P.M Office: 9 A.M to 7 P.M
Contacted persons	Md. Fakruzzaman (General Manager, Dyeing) Md. Tarikul Islam (Assistant General Manager, Dyeing)
Production Capacity	Knitting : 55 Tons/Day Dyeing & Finishing: 60 Tons/Day

	Garments	: 3,00,000 pcs /day.
	Printing	: 2,00,000 Pcs/ Day
	Embroidery	: 200 Head
	Cutting	: 3,50,000 pcs/day

2.6 BOARD OF DIRECTORIES

Mrs. Sultana Zaman	Chairman
Fakir Akhteruzzaman (C.I.P)	Managing Director
Fakir Mashrikuzzaman (Neaz)	Deputy Managing Director
Farzana Zaman	Director

2.7 BANKERS

Dutch Bangla Bank Limited	
One Bank Limited	
United Commercial Bank Ltd.	

2.8 CERTIFIED BY

ISO 9001:2008

OEKO-TEX (Fabric)

GOTS

Member of SEDEX (The Suppliers Ethical Data Exchange)

OEKO-TEX (Garment)

BSCI (Business Social Compliance Initiative)

SCR (Social Compliance Requirements)

2.9 YEARLY TURNOVER

Year	USD in Million
2009	65
2010	85
2011	97
2012	108
2013	115
2014	124
2015	137
2016	145
2017	155

Table No 1

2.10 RENOWNED FRIENDS (BUYER)

Brand Name	Country of Origin	Brand Logo
H&M	Sweden	
Primark	United Kingdom	
Tema	Turkey	

Penneys	USA	
Forever21	California, USA	
Peacocks	Warrington, England	
Destination Maternity	Pennsylvania, USA	
Bershka	Arteixo, Spain	
Zara	Arteixo, Spain	
Stradivarius	Barcelona, Spain	
Mexx	Netherlands	

Table No 2

2.11 PRODUCTS

Fakir Knitwears Limited manufactures and export knitwear garments for men's, ladies, children, infant etc. They also produce sportswear, maternity wears as well. Their state of the art Knitwears covers almost all of the fibres available in the market.

Men's Knitwear

Women's Knitwears

Children's Knitwears

Sports Knitwears

Night Wears

Infant Knitwears

Maternity Knitwears

Their specific products include: T-shirts • Pull over • Cardigans • Pyjamas • Ladies dresses • Polo shirts • Boxer shorts • Night wears.



Fig:2.4 Men's Knitwear



Fig: 2.5 Children's wear

2.12 AWARDS RECEIVED

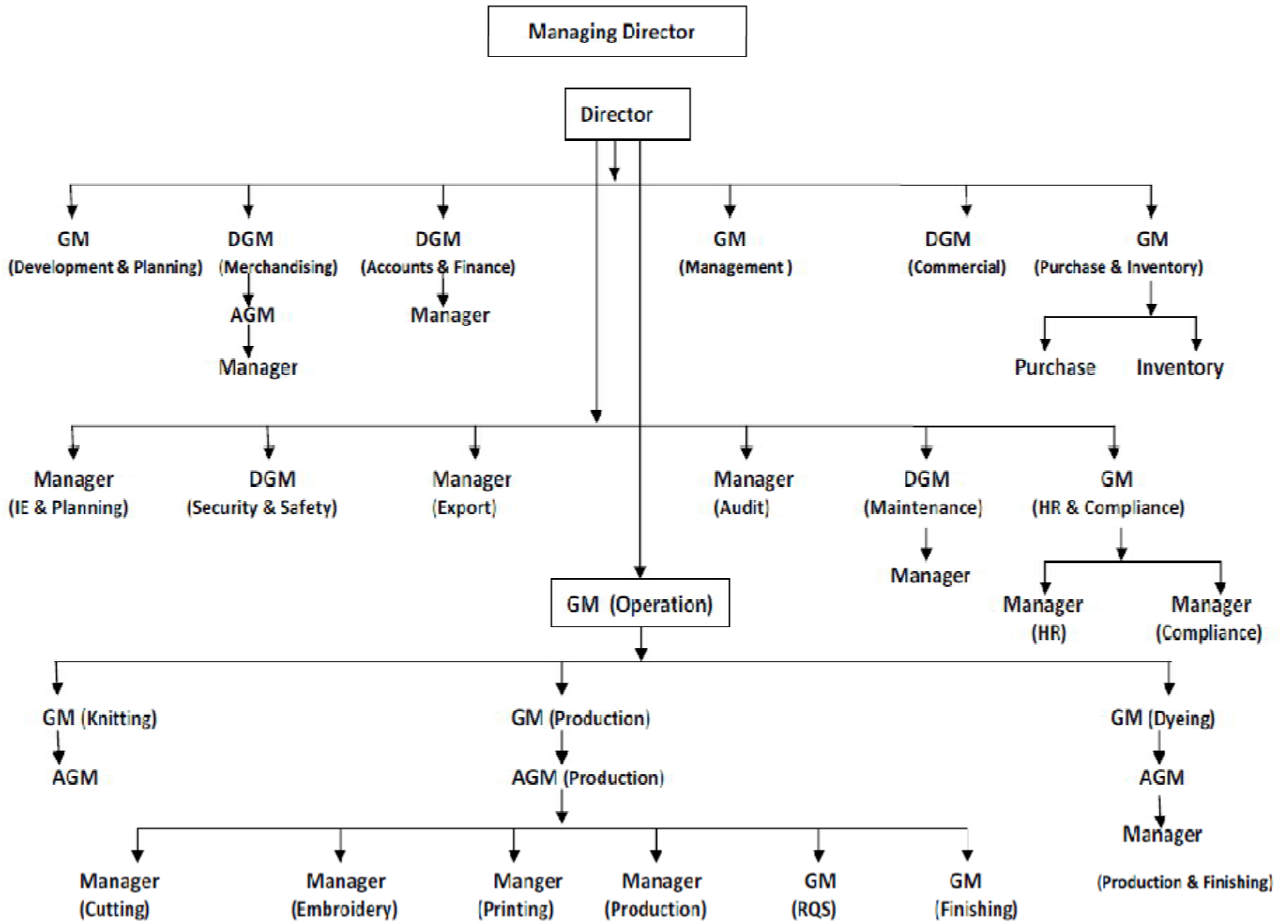


Fig: 2.6 Managing Director Receiving C.I.P Award 2011 from Pri-minister

2.13 DEPARTMENTS OR SECTIONS

Knitting Section
Dyeing Section
Finishing Section
Quality Control Section
Physical Lab
Chemical Lab
Research and Development (R&D)
Merchandizing & Marketing
Garments Section
Maintenance Section
Workshop Section
Utility
IE and Planning Section
Administration
Accounts and Finance
Human Research (HR)
Compliance
IT section
Security Department

2.14 ORGANOGRAM



2.15 CERTIFICATES

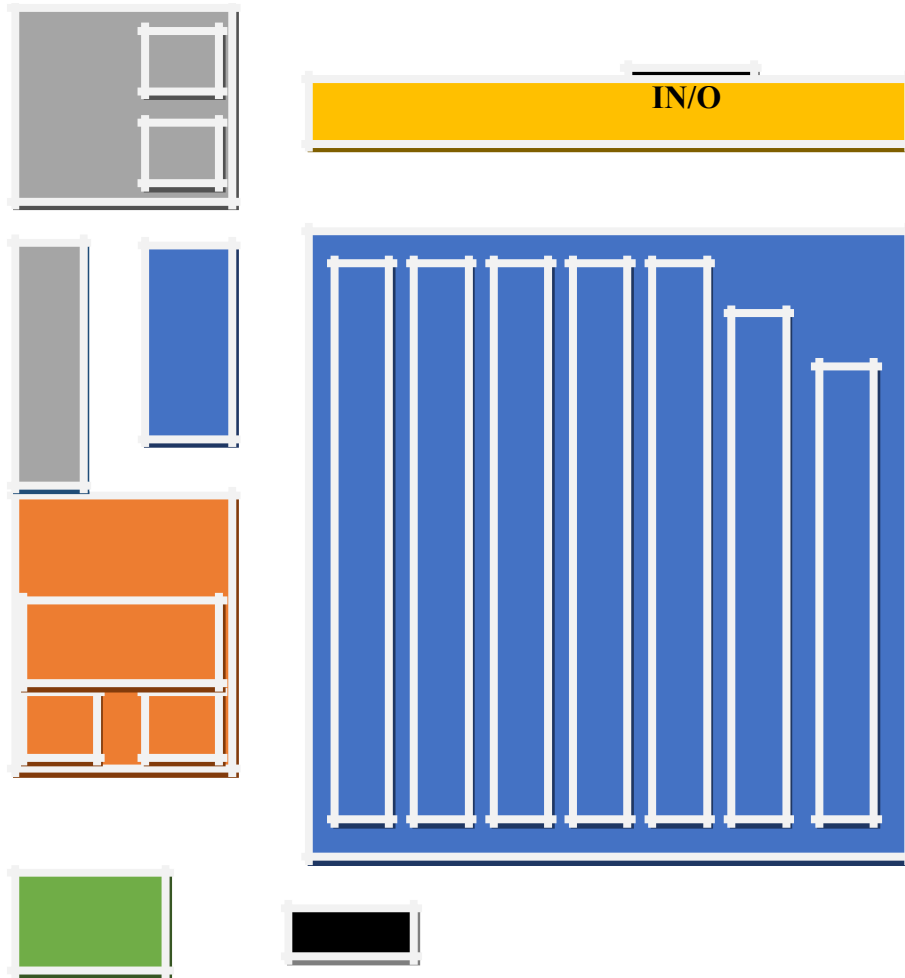


Fig: 2.7 CERTIFICATES

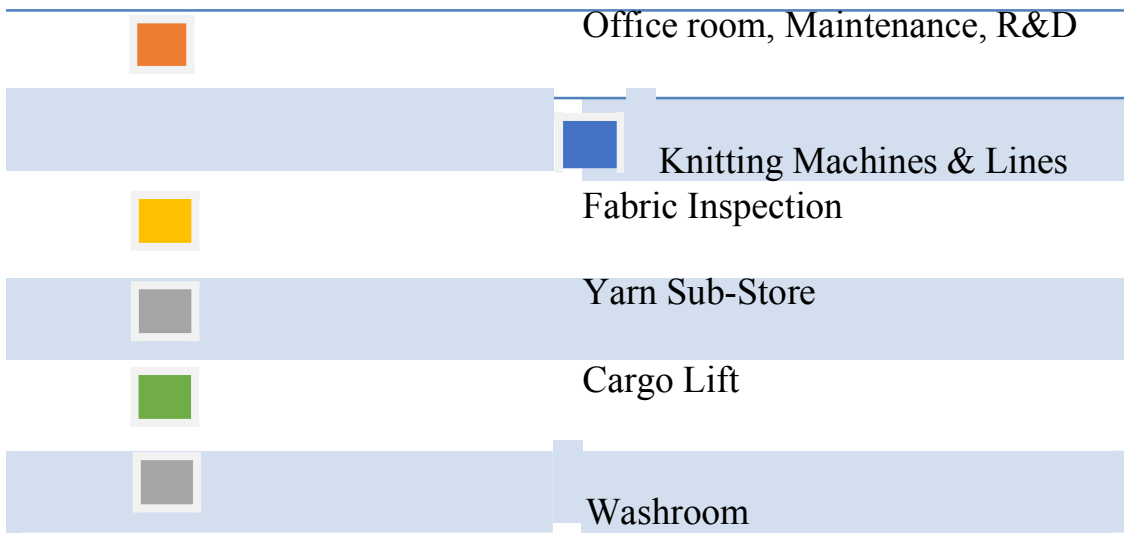
3. DETAILS OF ATTACHMENT

3.1 KNITTING SECTION

3.1.1 LAYOUT OF KNITTING SECTION (UNIT-1)



3.1 LAYOUT OF KNITTING SECTION (UNIT-1)



3.1.2: Main Parts of circular knitting machine:

1. Needle
2. Needle Cam box
3. Sinker cam box.
4. Knife
5. Cylinder
6. Dial
7. Needle cam
8. Sinker cam
9. Feeder
10. Speed roller
11. Take-up roller
12. Fan
13. Sensor
14. Monitor
15. Air & Oil passing Pipe (Lubrication)

3.1.3: KNITTING MACHINERIES

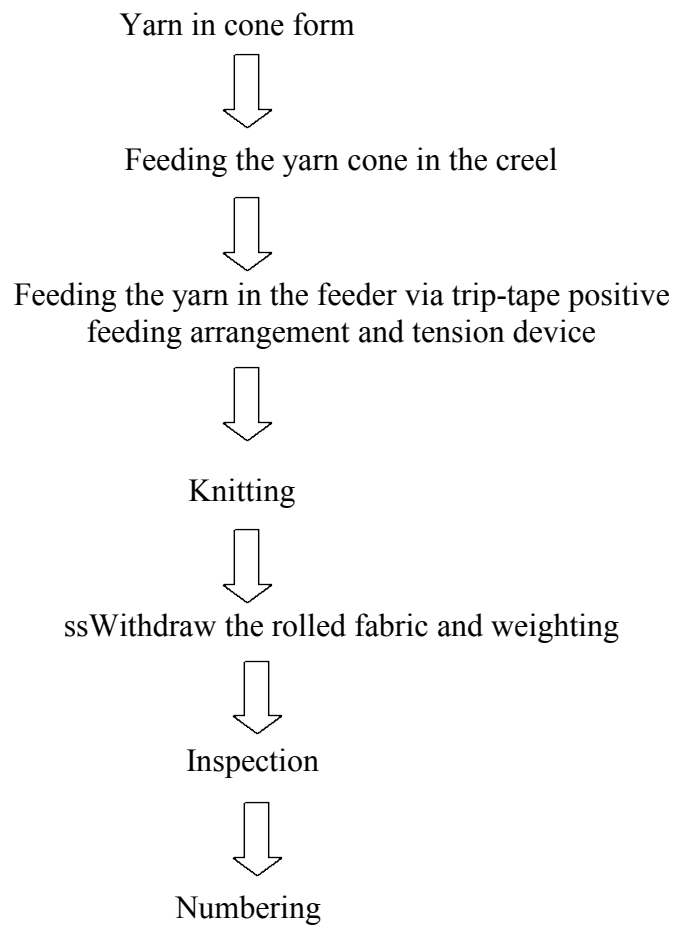
Machine type:

Circular Knitting Machine : Single Jersey, Double Jersey, Auto Stripper & Jacquard.

Circular Knitting Machine	Brand	No's
Single Jersey / Single Jersey Lycra (Open)	Masa + Jiunn Long	14+14= 28
Single Jersey (Tube)	Mayar & CE, Jiunn Long, Quantex, Masa, King Knit, Santec	8+5+10+16+1+1 =41
Single Jersey (Tube)+Jacquard	Santec , Jiunn Long	02
Rib Jersey / Rib Jersey Lycra()	Jiunn Long, Terrot, Masa	12
Interlock	Jiunn Long	14
Auto Stripe (SJ) tube	Fukuhara	05
Pollar Fleece	Sanda	5
3th Fleece	Jiunn Long	02
Auto stripe (rib+interlock)	Fukuhara	03
Relaknit(S/J)(open)	Mayar & CE	10
Total no machines		122
Per day Production/Ton		27
No. Of Lines		11

Table No 3

3.1.4: PROCESS FLOW CHART OF KNITTING:



3.1.5: KNITING MACHINCE (SPECIFICATION)

✓ Machine No: 01

Machine Name : Double jersey circular knitting
Machine(Rib)
Brand Name : JIUNN LONG
Origin : TAIWAN
Model No : JLD30-2*4
No Of Needle : 1488 T
Gauge : 18G
Feeder : 72 F
Diameter : 30”
R.P.M : 16
Fabric Type : Tube
Efficiency :75%

✓ Machine No: 02

Machine Name : Single jersey circular
knitting machine
(CVC &Polyester)
Brand Name : Quantex knitting(Dong HO)
Origin : TAIWAN
Model No : KT-98092
No Of Needle : 1959T
Gauge : 24G
Feeder : 104F
Diameter : 26”
R.P.M : 20
Fabric Type : Tube
Efficiency : 75%

✓ Machine No : 03

Machine Name : Single jersey circular knitting

Machine
Brand Name :JIUNN LONG
Origin : TAIWAN
Model No : JLS-C
No Of Needle : 2712 T
Gauge : 24G

Feeder : 108 F
Diameter : 36"
R.P.M : 20
Fabric Type : Open Width & Tube
Efficiency : 75%

✓ Machine No: 04

Machine Name : Single jersey circular knitting
Machine
Brand Name : MASA
Origin : TAIWAN
Model No : 07130
No Of Needle : 2712 T
Gauge : 24G
Feeder : 108 F
Diameter : 36"
R.P.M : 20
Fabric Type : Open Width & Tube
Efficiency : 75%

✓ Machine No : 05

Machine Name : Single jersey circular knitting
machine (Fleece)
Brand Name : MASA
Origin : TAIWAN
Model No : MS/TS
No Of Needle : 2560T
Gauge : 24G
Feeder : 90F,102 F
Diameter : 34"
R.P.M : above 25
Fabric Type : Tube
Efficiency : 75%

✓ Machine No: 06

Machine Name : Double jersey circular
knitting
machine (Interlock)
Brand Name : JIUNN LONG
Origin : TAIWAN
Model No : -33
No Of Needle : 2712 T
Gauge : 24G
Feeder : 108 F

Diameter : 36"
R.P.M : 12
Fabric Type : Tube
Efficiency : 75%

✓ Machine No: 07

Machine Name : Single jersey circular knitting
machine (Plain & Fleece)

Brand Name : SANDA
Origin : TAIWAN
Model No : 4.0/3.2 II
No Of Needle : 2260 T
Gauge : 24G
Feeder : 60F
Diameter : 30"
R.P.M : 25
Fabric Type : Tube
Efficiency : 75%

✓ Machine No: 08

Machine Name : Single jersey circular knitting

Machine

Brand Name : MAYER & CIE
Origin : Germany
Model No : 3.2 II
No Of Needle : 2712T
Gauge : 24G
Feeder : 114F

3.1.6: Fabric Inspection Machine (Specification):

✓ Machine no :01

Machine name : UZU cloth inspection machine.
Model : UZ-900-31
Company : AATPR industry co., ltd.
Origin : Bangkok, Thailand.

✓ Machine no :02

Machine name : UZU cloth inspection machine.

Model : UZ-900-31
Company : AATPR industry co., ltd.
Origin : Bangkok, Thailand.

✓ Machine no :03

Machine name : UZU cloth inspection machine.
Model : UZ-900-31
Company : AATPR industry co., ltd.
Origin : Bangkok, Thailand

3.1.7: KNITTING FAULTS:

FAULTS & THEIR REMEDIES IN KNITTING:

Faults in circular knitting production can be caused varies ways and quite a few of them can not be related to just one cause. The following explanation is expected to be helpful in Faults & their causes in Knitting:

1. Hole Mark

Causes:

- ✘ Holes are the results of yarn breakage or yarn cracks.

- ✘ During loop formation the yarn breaks in the rejoin of the needle hook.
- ✘ If the yarn count is not correct on regarding structure, gauge, course and density.
- ✘ Badly knot or splicing.
- ✘ Yarn feeder badly set.

Remedies:

- ✘ Yarn strength must be sufficient to withstand the stretch as well as uniform.
- ✘ Use proper count of yarn.
- ✘ Correctly set of yarn feeder.
- ✘ Knot should be given properly.

2. Needle Mark

Causes:

- ✘ When a needle breaks down then needle mark comes along the fabrics.
- ✘ If a needle or needle hook is slightly bends then needle mark comes on the fabrics.

Remedies:

- ✘ Needle should be straight as well as from broken latch.

3. Sinker Mark

Causes:

- ✘ When sinker corrode due to abrasion then some times can not hold a new loop as a result sinker mark comes.
- ✘ If sinker head bend then sinker mark comes.

Remedies:

- ✘ Sinker should be changed.

4. Star

Causes:

- ✘ Yarn tension variation during production.
- ✘ Buckling of the needle latch.
- ✘ Low G.S.M fabric production.

Remedies:

- ✘ Maintain same Yarn tension during production.
- ✘ Use good conditioned needles.

5. Drop Stitches

Causes:

- ✘ Defective needle.

- ✘ If yarn is not properly fed during loop formation i.e. not properly laid on to the needle hook.
- ✘ Take-down mechanism too loose.
- ✘ Insufficient yarn tension.
- ✘ Badly set yarn feeder.

Remedies:

- ✘ Needle should be straight & well.
- ✘ Proper feeding of yarn during loop formation.
- ✘ Correct take up of the fabric & correct fabric tension.
- ✘ Yarn tension should be properly.

6. Oil stain

Causes:

- ✘ When oil lick through the needle trick then it pass on the fabrics and make a line.

Remedies:

- ✘ Ensure that oil does not pass on the fabrics.
- ✘ Well maintenance as well as proper oiling.

7. Rust stain

Causes:

- ✘ If any rust on the machine parts.

Remedies:

- ✘ If any rust on the machine parts then clean it.
- ✘ Proper maintenance as well as proper oiling.

8. Pin hole

Causes:

- ✘ Due to break down or bend of the latch, pin hole may come in the fabric.

Remedies:

- ✘ Change the needle.

9. Grease stain

Causes:

- ✘ Improper greasing
- ✘ Excess greasing

Remedies:

- ✘ Proper greasing as well as proper maintenance

10. Cloth fall- out

Causes:

- ✘ Cloth fall- out can occur after a drop stitch especially when an empty needle with an empty needle with closed latch runs into the yarn feeder and remove the yarn out of the hook of the following needles.
- ✘ Make sure all the latches of needle are closed with feeding yarn after a drop stitch.

11. Barre: A fault in weft knitted fabric appearing as light or dark course wise (width wise) stripe(s).

Causes:

- ✘ This fault comes from yarn fault.
- ✘ If different micronaire value or count of fiber content in yarn.
- ✘ Different lustier, dye affinity of fiber content in yarn.
- ✘ During spinning different similar classes of fiber is mixed specially in carded yarn & these fibers have similar characteristics.
- ✘ In draw frame different similar classes sliver is mixed and make one sliver.

Remedies:

- ✘ We can use this fabric in white color.

12. Fly:

Causes:

- ✘ In knitting section too much lint is flying to and fro that are created from yarn due to low twist as well as yarn friction. This lint may adhere or attaches to the fabric surface tightly during knit fabric production.

Remedies:

- ✘ Blowing air for cleaning and different parts after a certain period of time.
- ✘ By cleaning the floor continuously.
- ✘ By using ducting system for cleaning too much lint in the floor.
- ✘ Over all ensure that lint does not attach to the fabric.

13. Yarn contamination

Causes:

- ✘ If yarn contains foreign fiber then it remains in the fabric even after finishing,
- ✘ If lot, count mixing occurs.

Remedies:

- ✘ By avoiding lot, count mixing.
- ✘ Fault less spinning.

3.1.8: BATCH CARD

(Example)



CARD INFORMATION

PRDK/3/004
ISSUE #1
PAGE 1 OF 1

(AN ISO 9001:2008, SCR, BSCI, SEDEX, GOTS & OEKO-TEX CERTIFIED COMPANY)

KNITTING PROGRAM CARD

MC NO.: 01
R NO.:
#5896J

DATE: 10.04.13
T.O.D: 17.04.13

BUYER	: H&M	
ORDER NO.	: 588-235	
DIA-GG-SHAPE	: 36-24	
DES. OF. YARN	: 95% Cotton, 5%Lycra	
LOT/BATCH	: 01	
GGSM/S.L	: 140	F.G.S.M:
FABRICS TYPE	: SJFF Lycra	COLOR: Sea Green
REQ. QTY	: 500kg	

.....

.....

Fig : 3.2 BATCH CARD

3.2 Dyeing

3.2.1 LAYOUT PLAN OF DYEING SECTION

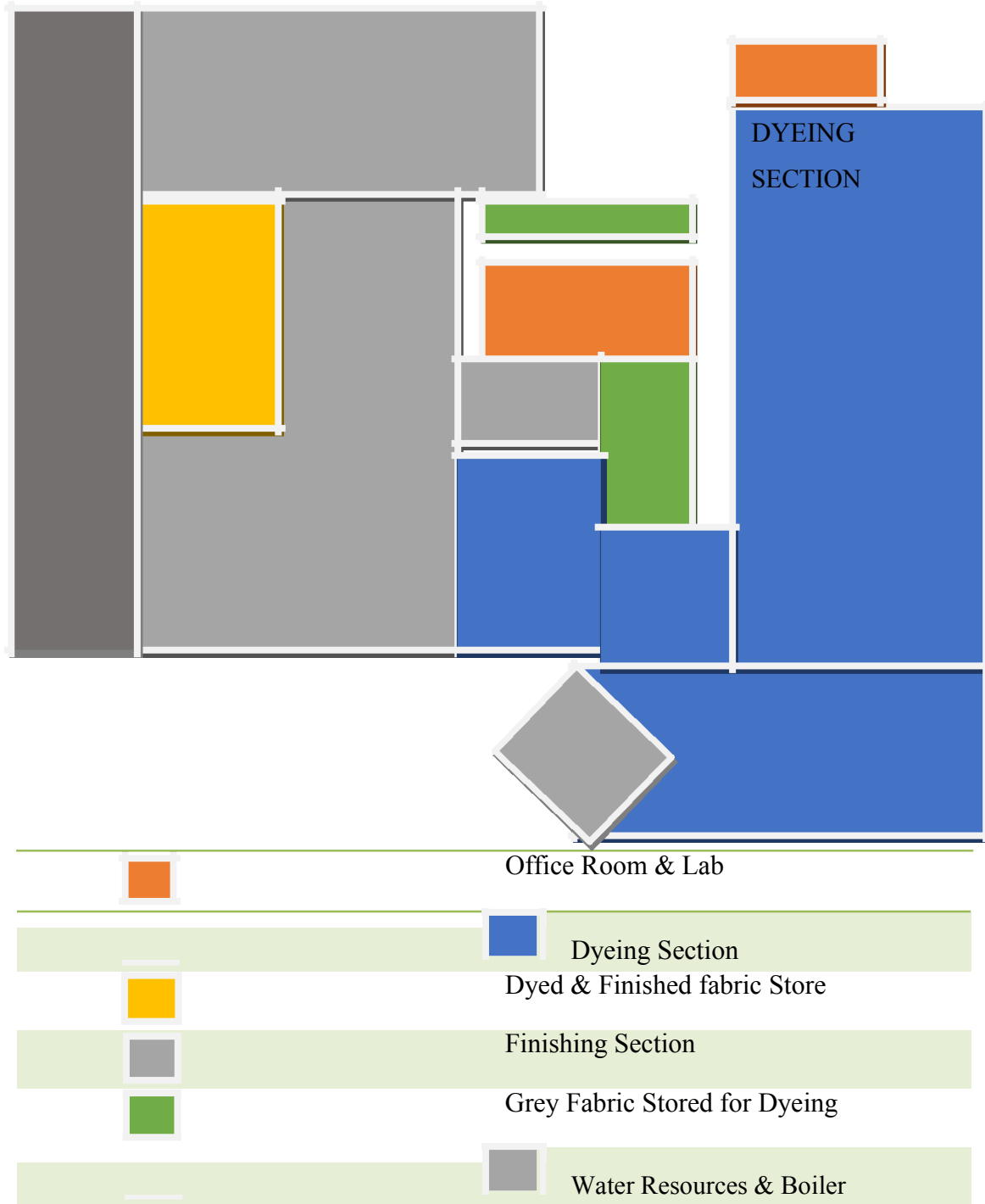


Fig: 3.3 LAYOUT PLAN OF DYEING SECTION

3.2.2: GENERAL INFORMATION OF DYEING SECTION

Head of the Section	Md. Fakruzzaman (GM)
No. of Units	1
Total Shift	2
Total Production Capacity	60 tons/day
Total no. Of Machineries	84



Stentering



Fabrics to be deyed

Fig : 3.4 dyeing machine

3.2.3 MACHINE DESCRIPTION

SAMPLE DYEING M/C

Sl. No	Machine Name	Brand	Country of Origin	Capacity/day	No's
1	Winch	Fongs	Hong Kong	30 kg	05
2	Winch	Fongs		60 kg	08
3	Winch	Fongs		120 kg	02
4	Winch	Fongs		40 kg	03
5	Winch	Fongs		100 kg	03
Total No of Machines					21

Table No 4

DYEING M/Cs FOR PRODUCTION

Sl. No	Machine Name	Brand	Country Origin	Capacity/day	No's
1	Winch	Fongs	Hong Kong	200 kg	03
2	Winch	Fongs		400 kg	02
3	Winch	Fongs		500 kg	03
4	Winch	Acme	Taiwan	500 kg	02
5	Winch	Fongs	Hong Kong	600 kg	02
6	Winch	Fongs		750 kg	02

7	Winch	Pmm	Turkey	800 kg	03
8	Winch	Fongs		1000 kg	03
9	Winch	Fongs	Hong Kong	1200 kg	03
10	Winch	Fongs		1500 kg	04
11	Winch	Sclavos	(Greece)	1500 kg	02
12	Winch	Fongs		1000 kg	02
13	Winch	Fongs	Hong Kong	750 kg	01
Total No of Machines					32

Table No 5

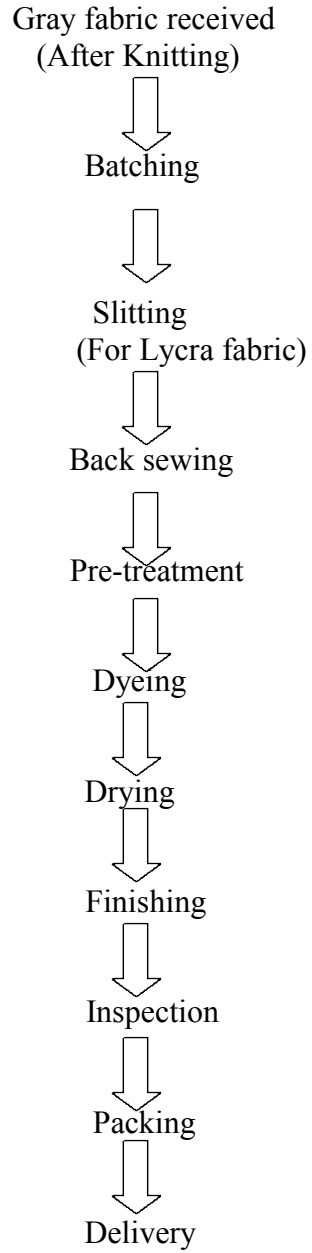
DYEING FINISHING SECTION M/C

Sl. No	Machine Name	Brand	Country	No's
1	Stenter	Bruckner	Germany	03
2	Stenter	ACC	Turkey	01
3	Stenter	Chengfu	Taiwan	01
4	Open Compactor	Lafer	Italy	03
5	Open Compactor	Ferraro	Italy	01
6	Slitting	Bianco	Italy	02
7	Slitting	EL	Italy	02
8	Bag Sewing	MTG	Italy	03
9	Singeing	Osthoff	Germany	01
10	Sueded M/C	Lafr (Has)	Turkey	01
11	Combing	I kuang	Taiwan	01
12	Shearing	I Kuang	Taiwan	01
13	Squeezer	AB Calator	Sweden	02
14	Squeezer	AKAB	Sweden	01
15	Squeezer	Kromson	Turkey	01
16	Tube Compactor	Fab-Con	U.S.A	01
17	Tube Compactor	Spectorimar	Italy	01

18	Calender	Ferraro	Italy	01
19	Dryer	AMS	Turkey	01
20	Dryer	Obermaier	France	01
21	Dryer	Dilmier	Turkey	01
22	Tube Compactor	Lafer (Has)	Turkey	01
Total No of Machines				31

Table No 6

3.2.4: WORKING PROCEDURE IN DYEING:



3.2.5: BATCH CARD INFORMATION IN DYEING (Example)

no:-16PRDD/3/003

Date:-08-05-2013



Batch No:-

7426

B A T C H C A R D

(Dyeing Division)

Yarn Test	Photo Sample	Quotation Sample	Counter Sample	Bulk Production	Short Quantity
-----------	--------------	------------------	----------------	-----------------	----------------

	Fre h	Reproc ess
Loading		
Unloading		

Buyers Name	H & M
Order/Department No	LS-Stretch Scoop NK
Buyer Lot No	(3A)
Color Code	Chocolate
Fabrication	S/J Lycra
Yarn Count	40/1, Sudhan Com 20D (Creora)
Yarn Supplier & Lot	904
Machine Gauge	24
Stitch length	2.94
Grey GSM	
Required Finished GSM	160
Gray Fabrics Weight	KG=1019 Roll=40
Special Requirements	Loading Date:-
	Un Loading:-

Reversing	Yes	No
Heat Setting	Yes	No
Bag Sewing	Yes	No
Enzyme	Yes	No
Fixing	Yes	No
Softening	Normal	Silicon
Finishing	Compect	Stener
Tumbel Dry	Yes	No
Slating	Yes	No
Peach Finishing	Yes	No
Singeing	Yes	No
Raising	Yes	No
Brushing	Yes	No
Shearing	Yes	No

Loss Time		
Actual Time		
Reason of Reprocess		
Roll to Roll Shade	Yes	No
Running Shade	Yes	No
Assessment	Pass	Fail
Comments		
GSM-Range		

Fig: 3.5 BATCH CARD OF DYEING

3.2.6: DYEING FAULTS

Faults

Uneven dyeing

Batch to Batch Shade variation

Roll to roll variation or meter to Meter variation

Crease mark

Dye Spot

Wrinkle Mark

Softener Mark

3.3 Sample Section

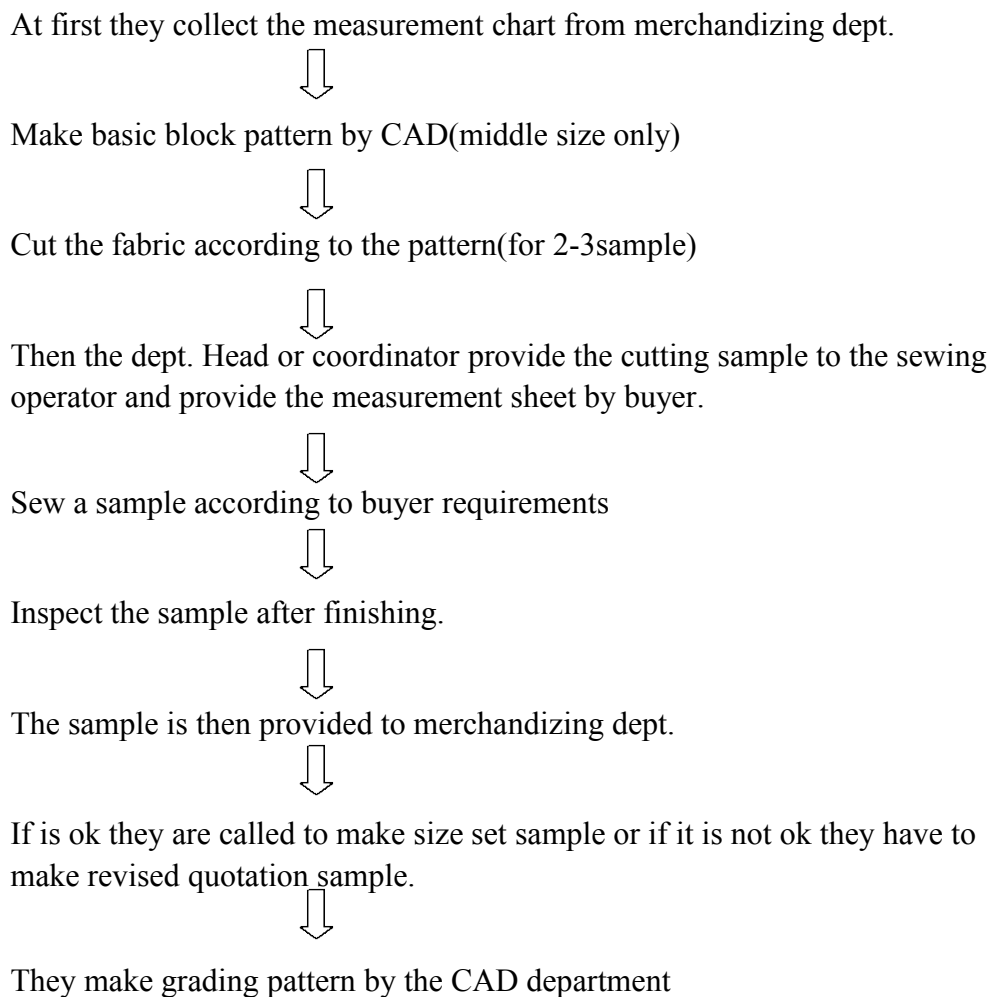
3.3.1: SAMPLE DEPARTMENT:

Sample is the prototype or model of the garment, upon what the buyer can decide on how and whether to confirm the order or not.

It makes for buyer approval and before a bulk of production to minimize faults and errors and also find the easy process for bulk production.

In Fakir Knitwears Ltd. the important job of product development is also performed by sample section.

OPERATIONAL FLOW OF SAMPLE DEPARTMENT:



3.3.2: DIFFERENT SIZES USED FOR DIFERENT BUYERS

Size Set	Sizes	Buyer
1	XS, S, M, L, XL, XXL	H&M, PRIMARK, PENNEYS,
2	8, 10, 12, 14, 16, 18, 20	Primark, Penneys, Zara, Forever21
3	36, 38, 40, 42, 44, 46	Primark, Penneys, Zara, Forever21
4	7/8, 9/10, 31/32, 33/34	Primark, Penneys H&M, Peacock, Tema
5	14,16,18,20,22,24,26,28	Primark, Penneys Peacock, Tema

Table No 7

3.3.3: Sample Tag:

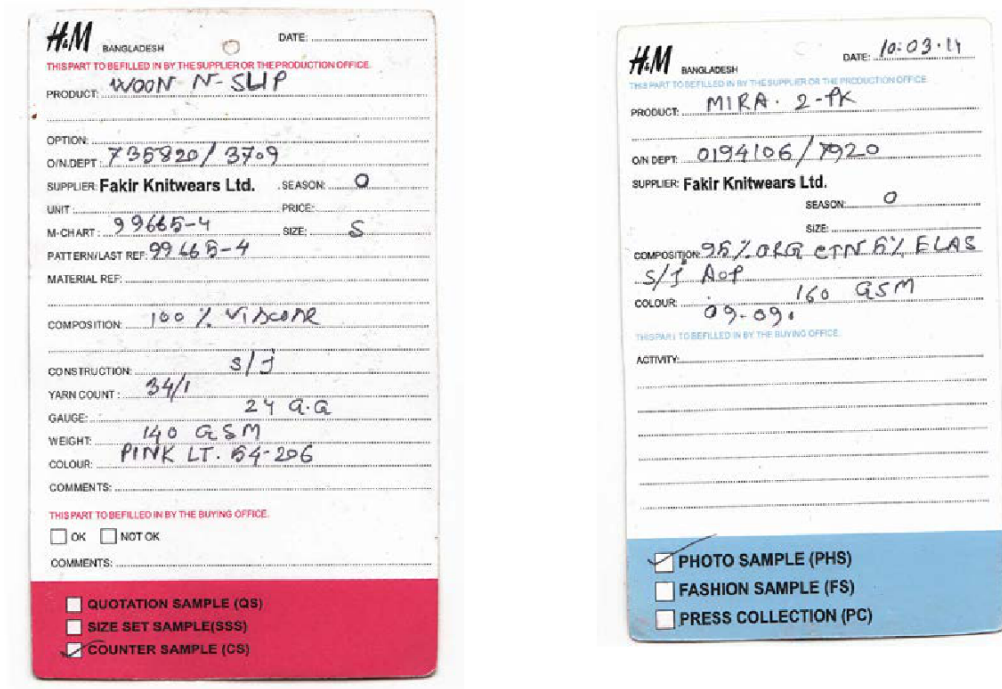
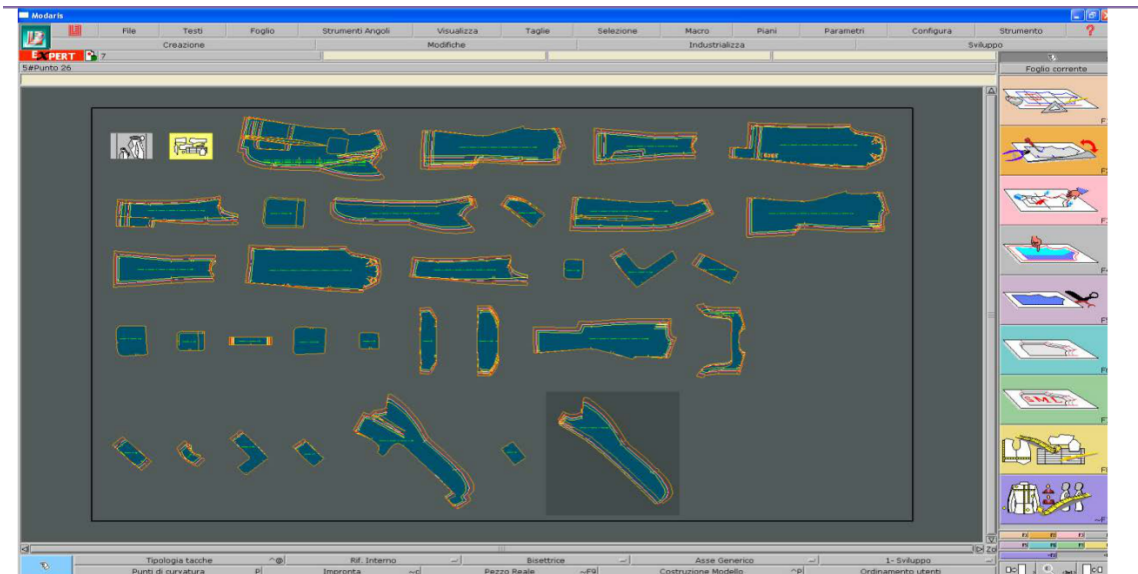


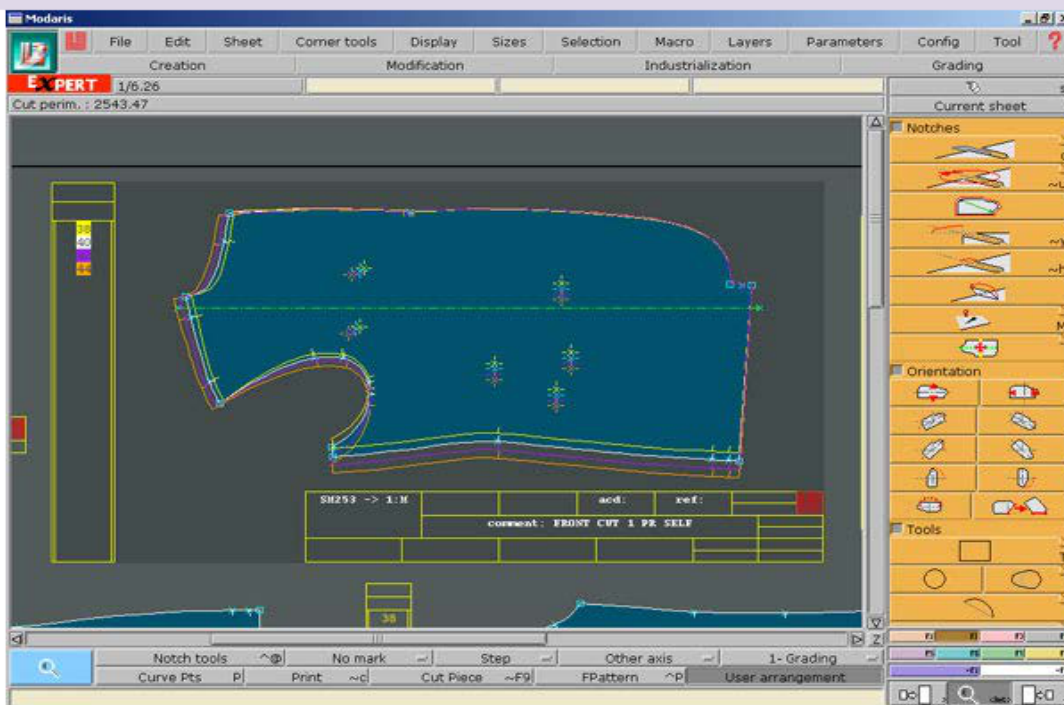
Fig: 3.6 Sample Tag

3.4: CAD SECTION

3.4.1: PATTERN MAKING & GRADING BY MODARIS



Pattern Making by Modaris



Pattern Grading by Pattern grading

FIG: 3.7 PATTERN MAKING & GRADING

3.5 CUTTING

3.5.1 LAYOUT OF AUTOMATIC CUTTING SECTION

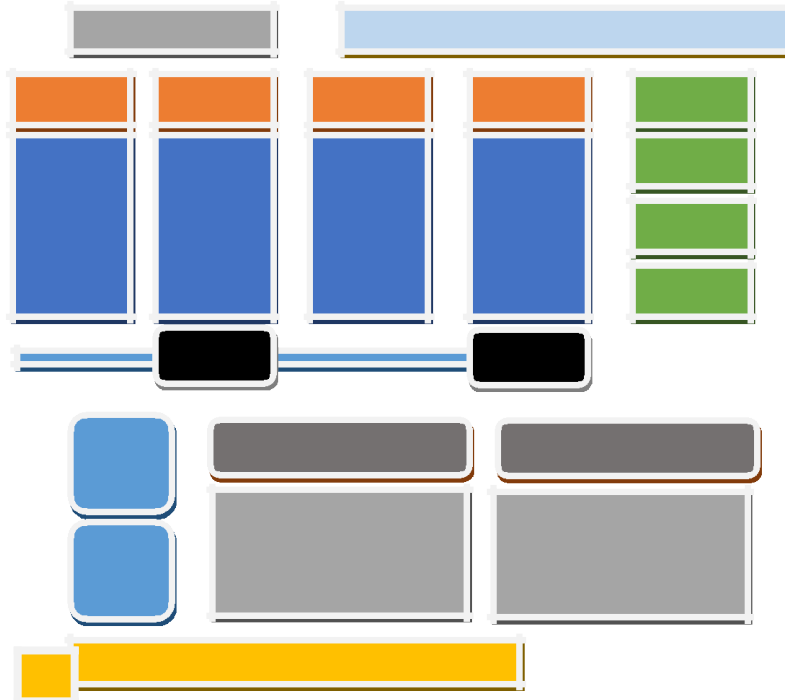
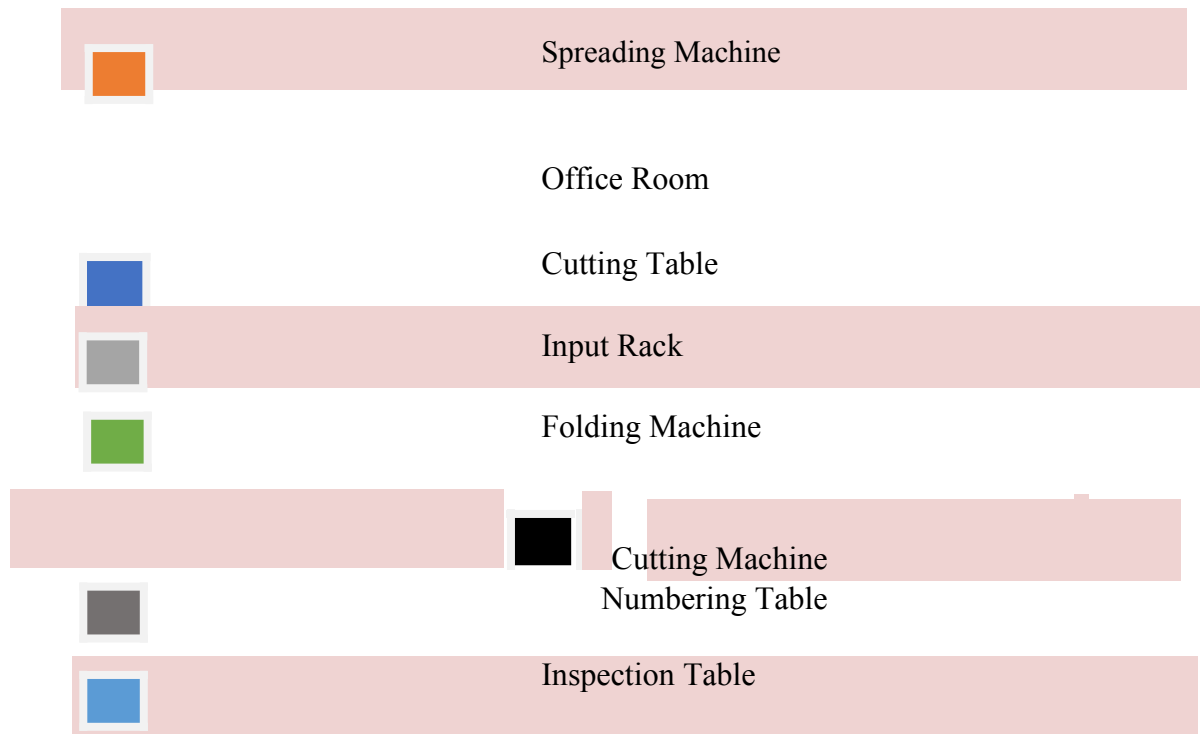


FIG: 3.8 LAYOUT OF AUTOMATIC CUTTING SECTION



3.5.2: GENERAL INFORMATION OF CUTTING SECTION

Head of the Section	Md. Mujibur Rahman (GM Garments)
No. of Units	5
Total Shift	2
Total Cutting Capacity	3,50,00PCS/ Day
Cutting machine Capacity	2,00,000 PCS/Day

Table No 8



FIG: 3.9 CUTTING SECTION

3.5.3: PRODUCTION FLOW CHART OF CUTTING



3.5.4: CUTTING DEFECTS

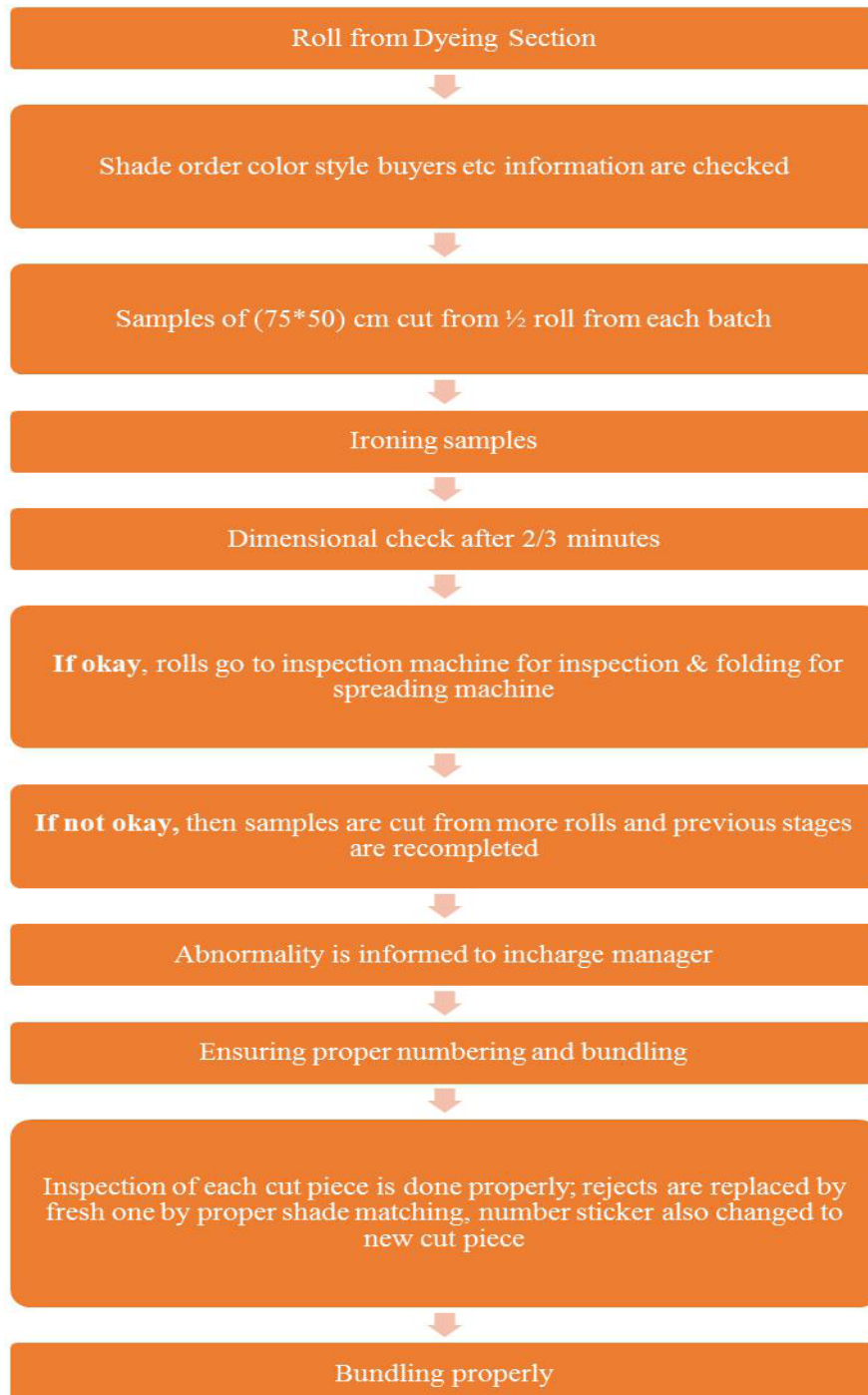
Shade variation

Tension variation

Wrong pattern Cutting

Uneven Cutting

3.5.5: QUALITY CONTROL IN CUTTING SECTION (FLOW CHART)



3.6 PRINTING

3.6: PRINTING

Printing unit is well equipped with necessary equipments including Auto Print Machine. They are capable to print various types including flock, discharge, emboss, and sugar print, all types of stone and studs heat transfer and many special types of printing. 200000 pcs can be printed per day.

3.6.1: MACHINE DESCRIPTION

Machinery of Printing Sections

Sl. No.	Machine Name	Total no's
1	Auto Screen Printing Machine	5
2	Manual Revolving Printing Machine	10
3	Manual Flat bed Printing	20 Lines
4	Flock Machines	8
5	Dryer	6
6	Expose Machine	5
7	Heat Press Machines	5
8	Fusing Conveyor	2

Table No 9

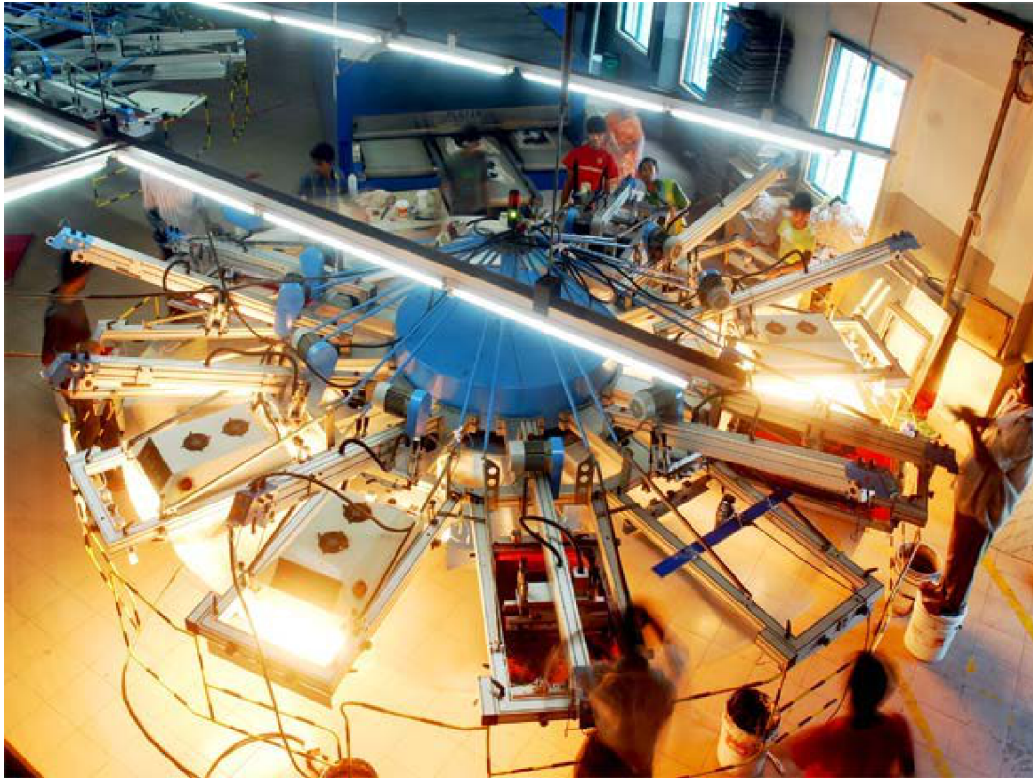
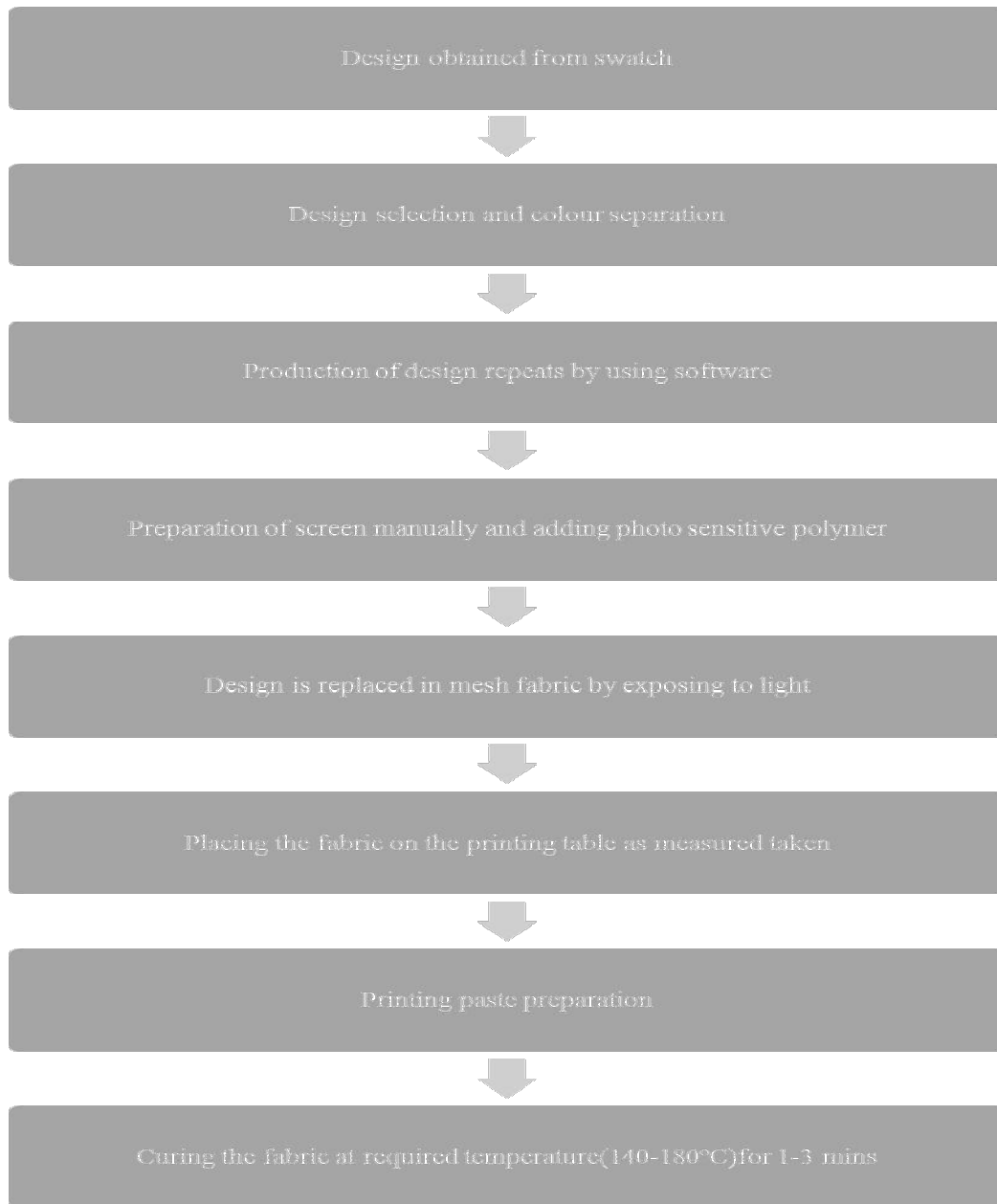


Fig:3.10 Automatic Screen Printing & Curing/Ageing

3.6.2 PROCESS FLOW CHART OF PRINTING



3.7 EMBROIDERY

3.7: Embroidery:

Embroidery refers to the use of threads and stitches To decorate the surface of a fabric. It can be carried out by Hand or by machine

There are different types of hand embroidery but they are all time consuming to do. If hand embroidery is done on a product to be sold in the shops this can add to the costs and consist.

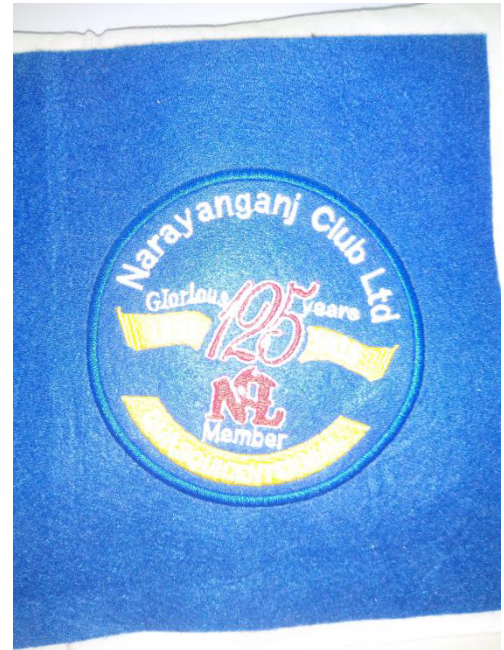


Fig: 3.11 Embroidery

3.7.1: Embroidery Types

There are mainly two type Embroidery:

1. Manual Embroidery and
2. Computerized Embroidery

- Computerized Embroidery:

Textile Industry used are mainly computerized embroidery.

Others Embroidery

Learn about the different types of embroidery, including surface embroidery, drawn thread, pulled thread, hardanger, cutwork, crewel embroidery and much more.

Surface Embroidery

Surface embroidery refers to any embroidery stitch that is worked on the surface of the cloth.

Candlewick Embroidery

Candlewicking is a type of whitework having designs made of groups Colonial knots arranged in intricate patterns.



Embroidery Machine

FIG: 3.12 Embroidery Machine

3.8 SEWING

3.8.1 LAYOUT OF MANUAL SEWING SECTION

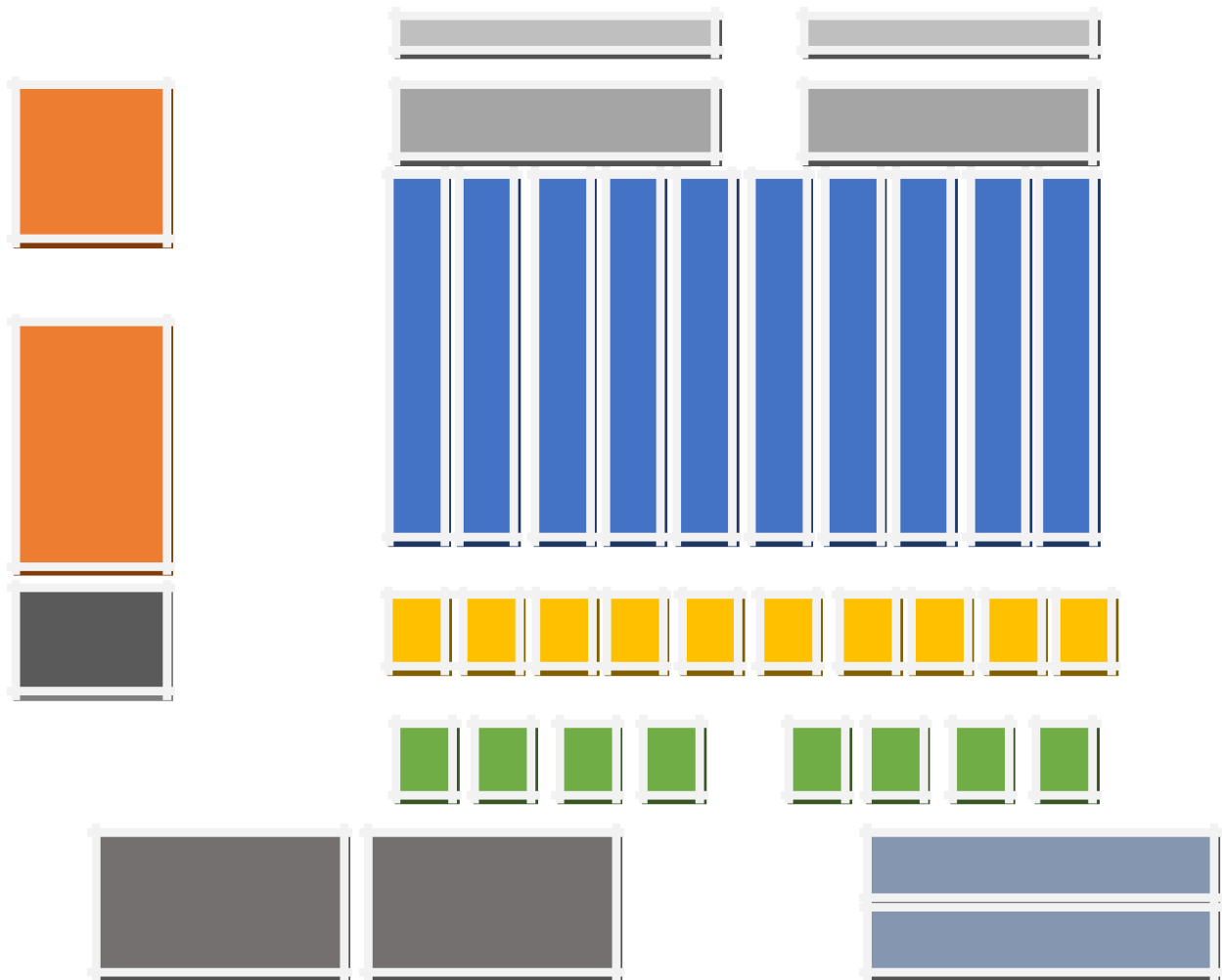
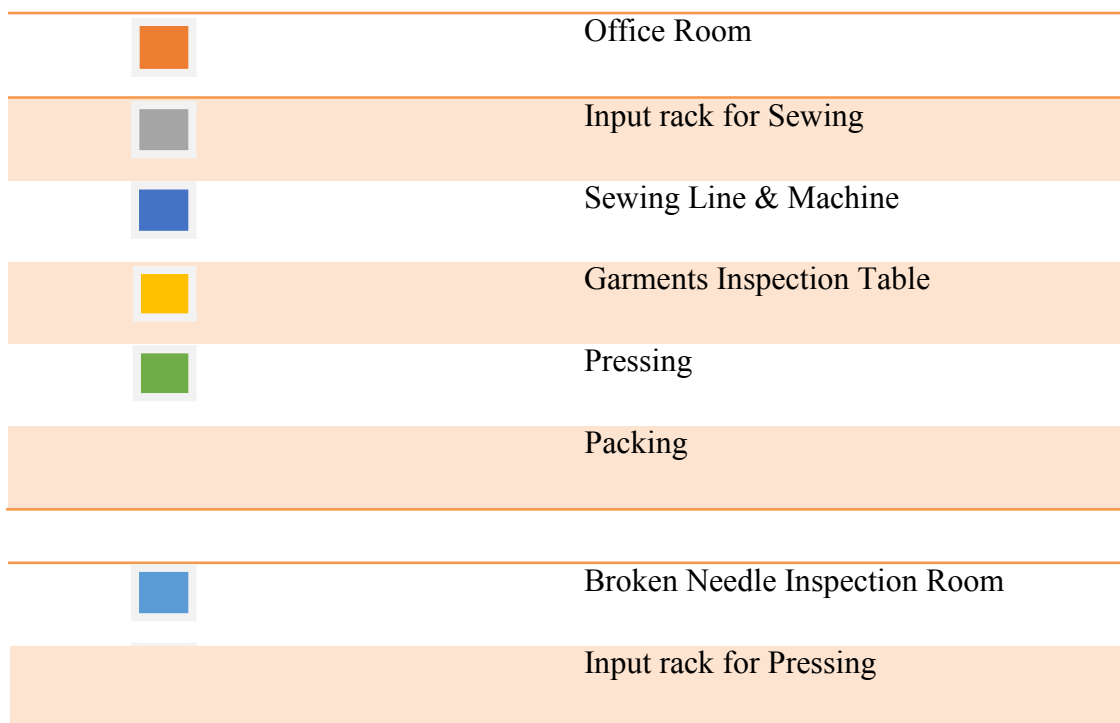


FIG: 3.13 MANUAL SEWING



3.8.2 LAYOUT OF SEWING SECTION (HANGER SYSTEM)

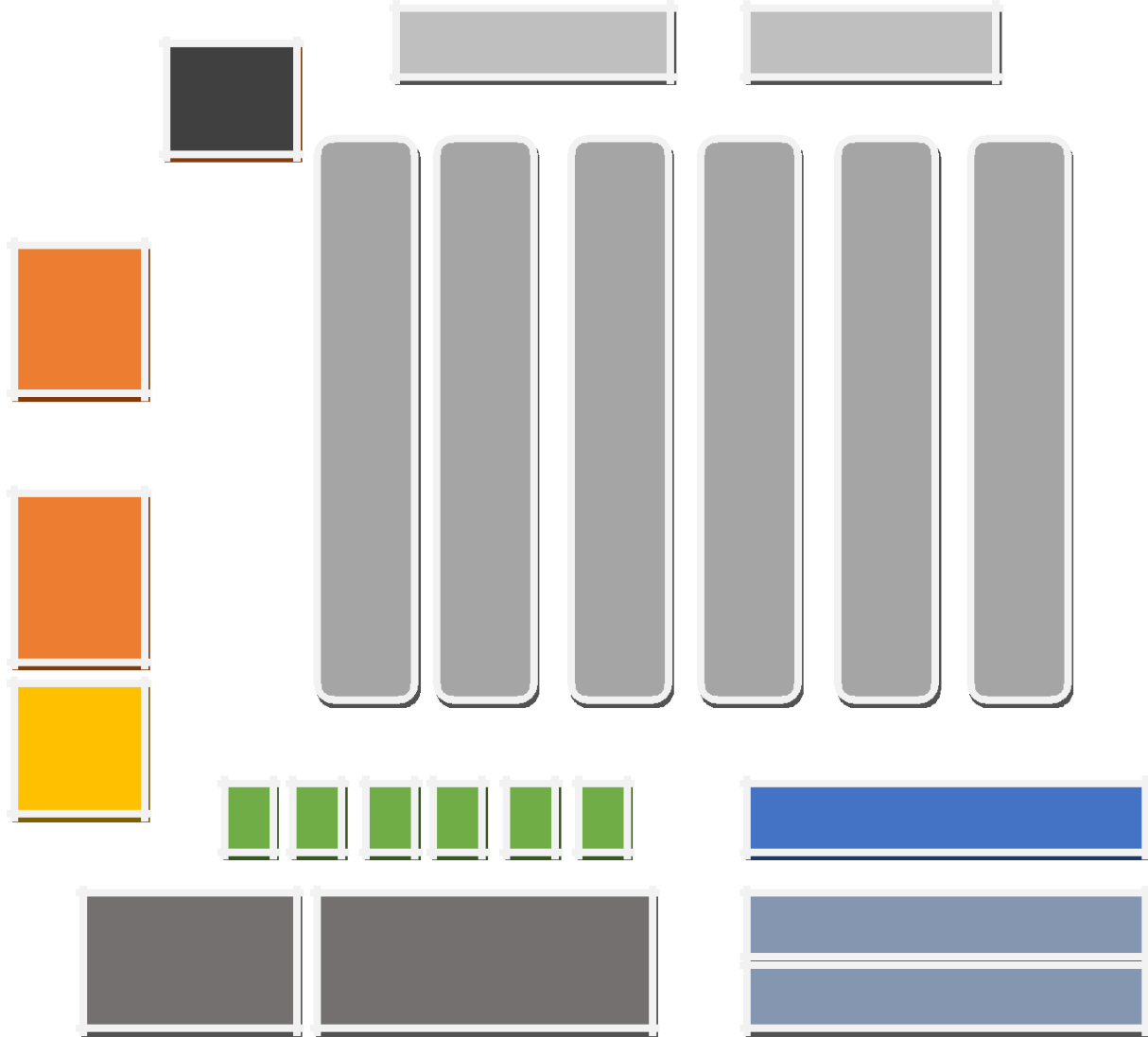
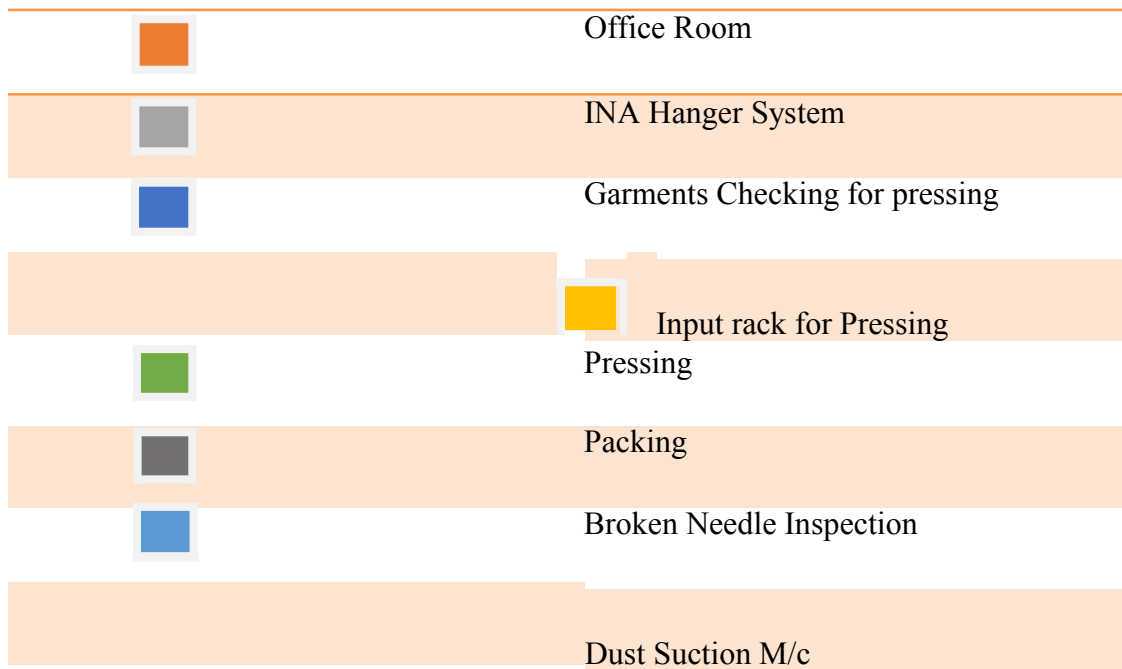
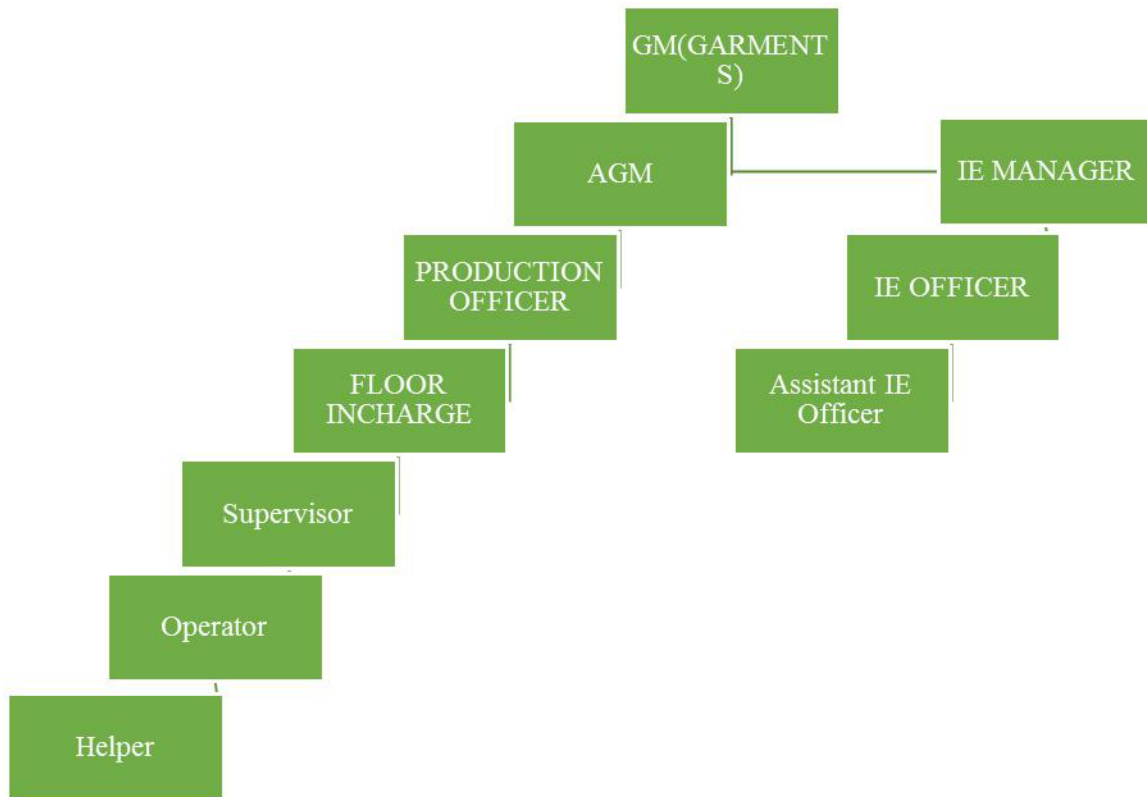


FIG: 3.14 SEWING SECTION (HANGER SYSTEM)



3.8.3 MANAGEMENT ORGANOGRAM OF SEWING SECTION



3.8.4:MACHINE DESCRIPTION OF SEWING SECTION (Basic machines):

SI no.	Name of the m/c	Brand/ Origin
01	Single Needle Lock Stitch	Brother, Japan
02	Over Lock Machine	Pegasus Japan
03	Flat Lock Machine	Pegasus Japan
04	Feed of the Arm	Japan
05	Snap Button Machine	Prime
06	Button Hole Machine	Brother, Japan
07	Button attaching Machine	Brother, Japan
08	Bar take Machine	Brother, Japan
09	Back tape Machine	Pegasus, Japan
10	One stop Zik machine	Brother, Japan

Table No 10

3.8.4: SOME TRIMS AND ACCESSORIES WHICH ARE USED IN GARMENTS



Flag Label



Country Label



Sewing Thread



Size Label



Price Tag



Care Label



4 hole button

FIG:3.15 SOME TRIMS AND ACCESSORIES

3.8.6:INDUSTRIAL ENGINEERING

INDUSTRIAL ENGINEERING:

Industrial engineering is a branch of engineering concerned with the development, improvement, implementation and evaluation of integrated systems of people, money, knowledge, information, equipment, material and process. Industrial engineering draws upon the principles and methods of engineering analysis and synthesis as well as mathematical, physical and social sciences together with the principles and methods of engineering analysis and design to specify, predict and evaluate the results to be obtained from such systems. In lean manufacturing systems, industrial engineers work to eliminate wastes of time, money, materials, energy, and other resources.

CONCERN OF IE:

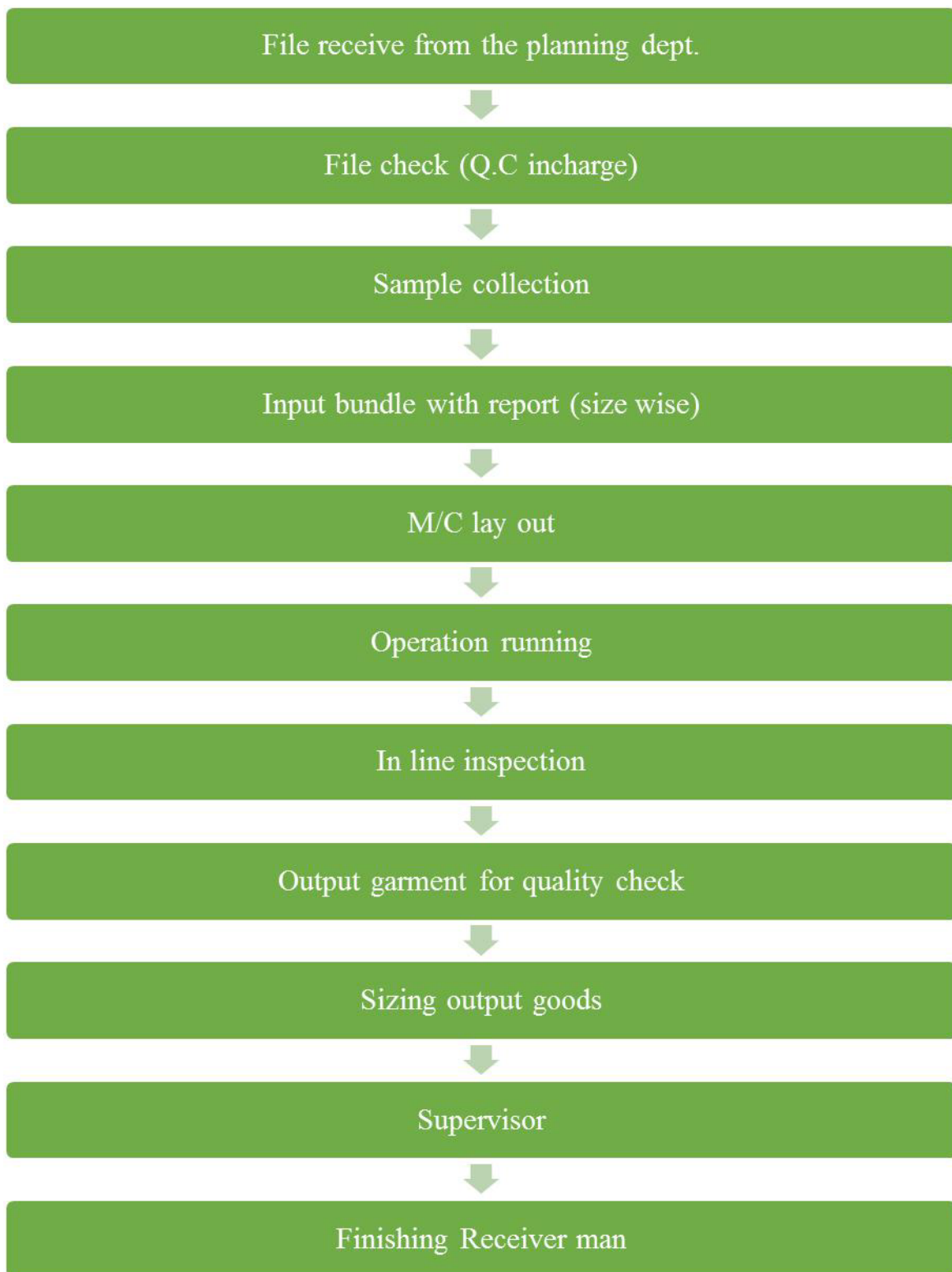
- By Time Study determining the capacity of operators & planning improvements.
- Preparing worker's skill matrix & monitor production.
- Preparing Operation Breakdown/Layout & calculate manpower & Machinery
- Monitor the work floor for maximum utilization of man & machine.
- Keeping updated with all the information of the area assigned & maintain daily IE related reports.
- Maintain liaison with Production, Quality, Merchandising & other respective departments.

3.8.7: MACHINE USED IN SEWING SECTION

Machine Name	Machine Type	Total no's
Plain Machine	Single needle	400
	Double needle	50
Over Lock	03 thread	40
	04 Thread	400
	05 Thread	70
	Gathering over lock	30
Flat Lock	Cylinder bed normal	80
	Cylinder bed computerized	200
	Cylinder bed small singling	60
	Cylinder bed auto trimmer	200
General Category	Flat bed	250
	Button Hole	30
	Button Stitch	30
	Kansal special	40
	Bar-tack	30
	Snap button	30
	Picot	20
Cocot	20	
Smoke	12 needle	10
	33 needle	10
	Zig-Zag	50
Feed of the Arm	02 needle	10
	04 needle	15
	Back tape	30
	Binding Cutter	50
	Blind Stitch	50
	Latus Stitch	60
	Rib Cutter Machine	30
Chain Stitch	Single needle	30
	Double needle	30
	Fusing	20
	H & E	10
	Elastic join flat lock	60
	Placko Stitch	20
	Elastic join Over Lock	60
Total No. Of Machine		2525

Table No 11

3.8.8: FLOW CHART FOR SEWING SECTION



3.9 GARMENTS FINISHING

3.9: Garments Finishing

Any operation (other than preparation and coloring) that improves the Appearance and/or usefulness of fabric after it leaves the loom or knitting machine. crease, and crinkle are removed with the view of increasing smoothness brightness, and beauty of the garments is called finishing.

3.9.1: Flow chart of working processes in finishing section

Inside quality control

(To checked inside of a garments)



Get up quality control

(To checked all processes of garments making)



Ironing

(To iron the garments)



Measurement checking

(To measure all parts of the garments for accuracy)



Waistic

(To attach Waistic)



Button attach

(To attach button)



Re-ironing

(To iron the garments again)



Again checking

(To check again)



Hand tagging

(To attach hand tag)



Folding/ hanging

(To Folding/ hanging according to buyer requirement)

Shading

(To separate various shade of garments)



Packing

(To pack in the poly bag)



Cartoning

(To keep the carton on buyer requirement)

3.9.2: Machine use in garments finishing

Tag gun machine

Sewing machine

Blow air machine

Button attach machine

Eyelet hole machine

Iron machine

Mattel Detector

Sucking machine

Pressing

After passing through the inspection table, each garment is normally ironed/ pressed to remove unwanted crease and to improve the smoothness, so that the garments looks nice to the customer



Fig:3.16 Pressing

Packaging

After final inspection, the garments are poly-packed, dozen-wise, color wise, size ratio wise, bundled and packed in the cartoon. The cartoon is marked with important information in printed form which is seen from outside the cartoon easily.



Fig:3.17 Packaging

Despatch

The cartoons of the manufactured garments are delivered or placed in the dispatch department or finished product store room, from where the garments lot is delivered for shipment.



Fig:3.18 Despatch

4.IMPACT OF INTERSHIP

4. IMPACT OF THE INTERNSHIP

The main purpose for taking internship is to gain knowledge practically. This industrial training has helped us to learn about textile sector at great extent and made a significant impact on our personal and professional life.

4.1: Knitting-

- Different types of knit fabric.
- Knitting faults.
- Knitting machine.
- Work culture.
- Operation of machine.

4.2:Dyeing-

- Different dyeing process.
- Faults in dyeing.
- Different dyeing machine.
- Mechanism of the machine.
- Work culture.

4.3: Sample section-

- Types of sample.
- Pattern & marker.
- Work culture.
- Different sample tag.
- Production procedure.

4.4: CAD section-

- Machine used .
- Operation of the machine.
- Work culture.
- Objective of CAD system.
- Process flow chart.

4.5: Cutting section-

- Cutting machine.
- Cutting defects.
- Operation of the machine.
- Work culture.

4.6: Printing-

- Machine description.
- Types of Printing.
- Screen preparation for printing.
- Work culture.
- Problems in printing.

4.7: Embroidery-

- Machine used.
- Operation of machine.
- Work culture.
- Faults.

4.8: Sewing section-

- Different machine in use.
- Machine layout.
- Work culture.
- Sewing faults.
- Trims & accessories

4.9: Garments finishing-

- Finishing machine.
- Work culture.
- Packaging.
- Faults in finishing.
- Operation of the machine.

5.CONCLUSION

CONCLUSION

There is large difference between the theoretical knowledge and practical experiences. This is more true in case of the study of Textile Technology. Industrial attachment or, Industrial training is an essential part for textile education because it minimizes the gap between theoretical and practical knowledge.

This Industrial training increase our though a lot about textile technology. It also helps us to know a lot about industrial production process, machineries, industrial management and made us suitable for industrial life. Besides it gives us the first opportunity to work in industry. So we can say industrial attachment prepare us for the expected destiny of practical life.

We have completed my industrial attachment from FAKIR KNITWEARS LTD. mills.

It has very well educated and technically experienced manpower to get rid of any defect in production process. It has also a good organizational hierarchy. We would like to thanks Fakir Knitwears Ltd. as we all assume the knowledge We gathered from this training will of course be the assets for our future life.

During my two-month long industrial training at FAKIR KNITWEARS LTD. I got the impression that this factory is one of the modern export oriented composite knit garments industry of our country.

This factory does not compromise in case of quality. So, they have established on-line and off-line quality control of each product. Besides, they also use the good quality yarn, dyes and chemicals in their production process. Due to this, it have earned a “very good reputation” in foreign market for its quality product over many other export oriented textile