



Daffodil *International* **University**

Industrial attachment

At

ABANTI COLOUR TEX LTD

Shoshonhaon, Enayetnagar, Fattulla, Narayangonj

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Abanti Colour Tex Ltd

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

Declaration

We hereby declare that Industrial attachment Report this has been done by the us under the supervision of Eng. Mr. Mohammad Abdul Baset senior lecture department of textile engineering daffodil International University& Industrial Supervisor: Eng.Golam kibria we also declare that neither this Industrial attachment Report not any part of this report has been submitted elsewhere for award of any degree or Diploma.

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Letter of Approval

6th August 2015

To

The Head

Faculty of textile Engineering

Daffodil International University

102, Sukrabad Mirpur Road

Subject: Approve of Internship Report of B.sc in TE program.

Dear Sir,

I am just writing to let know that ,this internship report is prepared by Md. Khalakul Islam (123-23-3195) Md Fezla Rabbi (123-23-3186) Mst Sharmin Akter (123-23-3121) after accomplishing his two Month Internship at Abanti colour Tex Ltd the Report is now complete for final Evaluation .The Whole report is prepared based on practical information .Those were collected by the students during trainee of internship the student work at attentively worked in the Industry flowing the requirement and the report become vital spark off much valuable information for the reader.

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

Yours Sincerely



Mr. Mohammad Abdul Baset

Senior lecturer

Department of Textile Engineering

Faculty of Engineering

ACKNOWLEDGEMENT

At first we would like to express our deep appreciation to Allah for providing the opportunity to complete our Report on industrial attachment.

We would like to thank our supervising teacher senior lecturer Mr. Mohammad Abdul Baset Department of textile engineering, DIU for his tremendous support and guidance for making our Industrial attachment Report. Being working with him we have not only earned valuable knowledge but also inspired by his innovativeness which helped to enrich our experience to a greater extent. His ideas and way of working was truly remarkable.

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We are indebted to **Md.Shovon Alam** (Assistant Merchandiser), **Md. Asrafi** assistant lab manager for their valuable teaching, advising, supervising and training during our Industrial attachment Report.

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CHAPTER: I

Executive Summary



1.0 Executive Summary

Textile and garments sector is the biggest and fastest growing sector in Bangladesh. It is also the highest foreign currency earning sector in Bangladesh. Among this sector, knit dyeing is growing very rapidly due to smaller investment requirement, greater backward linkage facility & higher profit than woven garments. That's why export of knit dyeing garments has increasing steadily for last few years. Textile education can't be completed without industrial training. Because this industrial training minimizes the gap between theoretical and practical knowledge and make us accustomed to industrial environment. I got an opportunity to complete two month (8 Weeks) Long industrial training in "Abanti Colour Tex Ltd which is a 100% export oriented Composite Knit Dyeing Industry. It has well planned & equipped fabric and Knit dyeing finishing units in addition to facilitate Knit and knitting wear manufacturing. The industrial internship is the process, which builds understanding, skills and attitude of the performer, which improves his knowledge in boosting productivity and services. University education provides us vast theoretical knowledge as well as more practical attachment, in despite of all these industrial attachment helps us to be familiar with technical support of modern machinery, skill about various processing stages. It also provides us sufficient practical knowledge about production management, work study, efficiency, industrial management, purchasing, utility and maintenance of machinery and their operation techniques etc. The above mentioned cannot be achieved successfully by means of theoretical knowledge only. This is why it should be accomplished with practical knowledge in which it is based on. Industrial attachment makes us reliable to be accustomed with the industrial atmosphere and improve courage and inspiration to take self responsibility.

CHAPTER: II



Information About Factory

Location of Abanti Colour Tex Ltd

Address of Abanti colour Tex Ltd.

Address	:	Plot# S.A-646, Shashongaon, Fatullah, Narayongonj
E-mail	:	admin@abanti.net
Corporate Office address	:	House # 365/4, Road # 06(west), Baridhara DOHS ,Dhaka-1206, Bangladesh Tel- 880-2-8415126-27 Fax – 880-2-8412560
Established	:	1994
Production Capacity	:	135000 p garment`s/day (Month)
Production Area	:	392674 Sq Ft

Fire/First Aid Equipment

PARTICULARS	TOTAL
ABC (dry powder)	17
CO2	09
Foam	01
Gas Mask	06
Hand Gloves	05
First Aid Box	06
Water Drum	04
Smoke Detector	17
Total Nos. of Fire Fighter	80
Fire Alarm	06
Blanket	02
Gone Bel	06
Stretcher	01
Helmet	04
F/Biter	01
Bucket Stand	04
F/ Bucket	17
Hose Pipe	03

Production Information

Abanti Colour Tex Ltd. specializes in the manufacture of all types of Knit Garments. Specially T-shirts, Polo-Shirts, Tank Top, Ladies Vest, Trousers, Swimming Costume etc.

Line: 58 Lines for Knit (In operation)

Production lead time: 30-90 days after order confirmation (for FOB orders)

Capacity :

Knitting: 35ton/day

Dyeing:30/day

Printing:120000pcs/day

Embroidery:110 Head

Garments:135000 pcs/day

Main Markets: Europe

Main Buyers: MANGO, KIABI, MGB, TOM TAILOR, H&M,
OKAIDI, GALERIA AND SO ON

.

Factory Area

Function : Knit & Sweater Garments Manufacturer

Production Process Area : 392674 (19th Floors) sqft

Administration Area : 3000 Sqft

Storing Facilities : 23,773 Sq. ft which is fully covered.

Manpower

Total Man power: 6500

Male : 3900

Female : 2600

Designation	Number of employee
Product development	46
Sewing	2854
Cutting	426
Finishing	837
Inspection	438
Sample, Pattern, Embroidery	703
Technical & Maintenance	60
Office Staff & Offer	200
Managerial offices	50
Dyeing knitting store	886
Total employee	6500

Major Buyers

BUYERS

- ☐ MANGO
- ☐ MGB
- ☐ OKAIDI
- ☐ KIABI
- ☐ TOM-TAILOR
- ☐ H&M
- ☐ ADLER
- ☐ PROMOD.



Achievement:

In recognition of the outstanding performance on the quality management the company achieved several international recognition from various organizations.

Achievement:

ISO 9000: 2008 (QMS)

BSCI

SEDEX

OE 100 & OE BLENDED

Oeko-Tex

International Star for Leadership in Quality (Gold category)

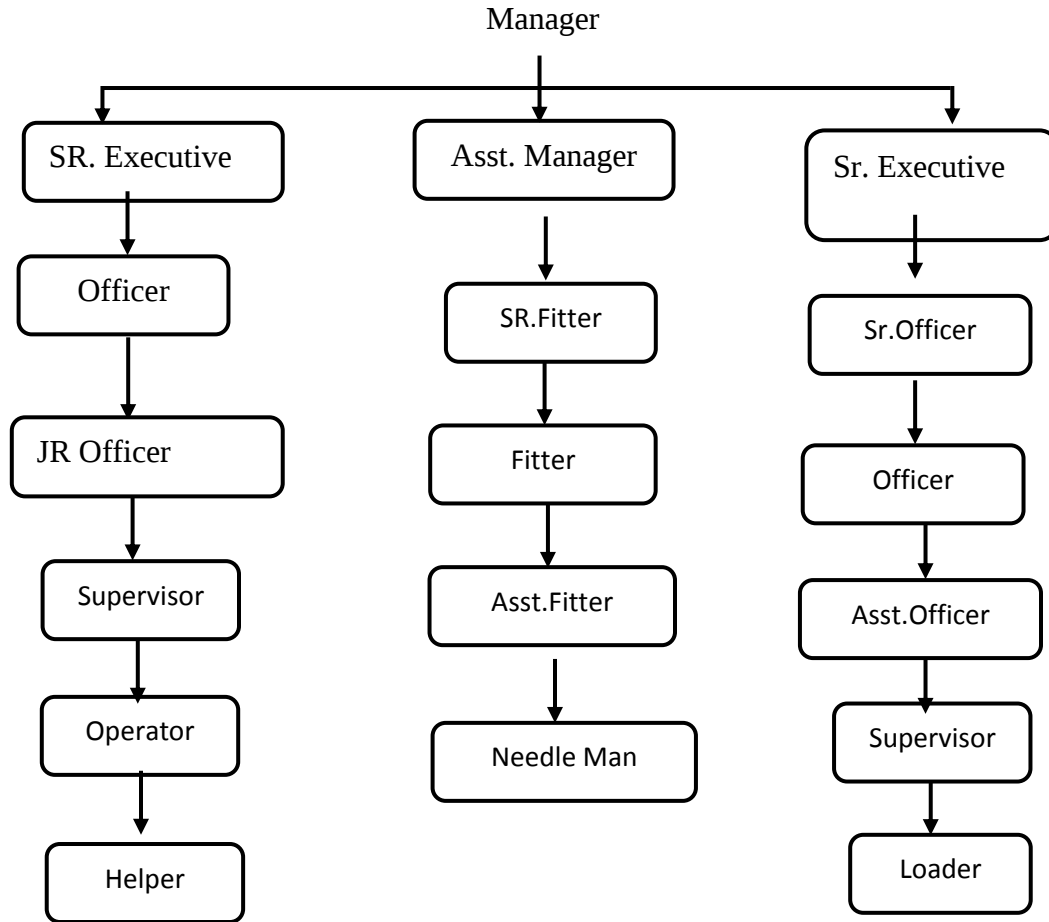
Fair-Trade

CHAPTER: III



Description of Different Section (Knitting)

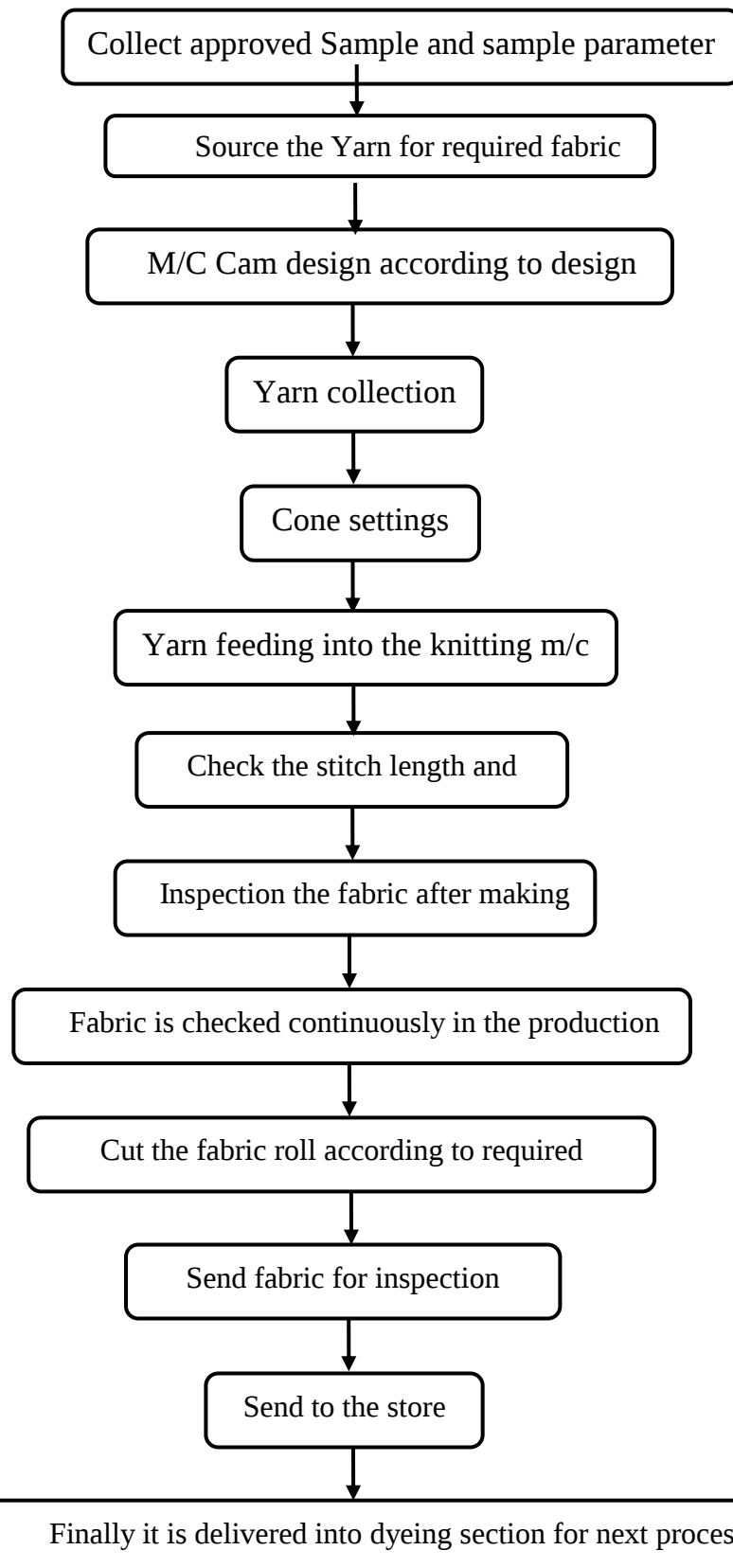
3.0 Organogram of Knitting Section



3.1.1 LAY OUT OF KNITTING SECTION



3.1.2 Process Flow Chart of Knitting



3.1.3 Specification of Circular Knitting Machine

M/c no-01-12

M/c type: Single jersey

Brand name: Jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 42

Needle: 3168

M/c no-13 -16

M/c type: Rib

Brand name: jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 30

M/c no-17

M/c type: Single jersey

Brand name: Jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 26

Needle: 1944

M/c no-18

M/c type: single jersey

Brand name: jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 36

Needle: 2712

M/c no-19

M/c type: Single jersey

Brand name: Jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 24

M/c no-20

M/c type: single jersey

Brand name: jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 30

M/c no-22

M/c type: Single jersey

Brand name: Jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 25

Needle: 1872

M/c no-23

M/c type: single jersey

Brand name: jiunn long

Origin: Taiwan

Gauge: 24

Cylinder dia: 20

M/c no-24

M/C type: Rib

Brand name: Jiunn long

Origin: Taiwan

Cam Box: 82

Cylinder dia: 42

M/c no-25

M/c type: Rib

Brand name: jiunn long

Origin: Taiwan

Cam Box: 90

Cylinder dia:, 22

M/c no-26

M/c type: Single jersey

Brand name: Jiunn long

Origin: Taiwan

Gauge: 18

Cylinder dia: 40

Needle: 2356

M/c no-27

M/c type: Rib

Brand name: jiunn long

Origin: Taiwan

Cam Box: 82

Cylinder dia: 20

M/c no- 28

M/c type: Single jersey

Brand name: Jiunn long

Origin: Taiwan

Gauge: 28

M/c no-29

M/c type: single jersey

Brand name: jiunn long

Origin: Taiwan

Gauge: 28

Cylinder dia: 30

Needle: 2640

M/c no-30

M/C type: Rib

Brand name: Jiunn long

Origin: Taiwan

Gauge: 18

Cylinder dia: 40

Needle: 2256

M/c no-32

M/c type: Auto striper(s/j)

Brand name: Precision Fukuhara

Origin: Japan

Gauge: 24

Feeder: 72

Cylinder dia: 30,

Needle: 2715

Cylinder dia: 30

Needle: 2640

M/c no-31

M/c type: Rib

Brand name: jiunn long

Origin: Taiwan

Gauge: 18

Cylinder dia: 40

Needle: 2356

M/c no-33

M/c type: Auto striper(s/j)

Brand name: Precision Fuku

Origin: Japan

Gauge: 24

Feeders: 72

Cylinder dia: 32

Needle: 2715

M/c no-34

M/c type: Auto striper(s/j)

Brand name: Precision Fukuhara

Origin: Japan

Gauge: 16

Feeder: 72

Cylinder dia: 30

M/c no-35

M/c type: Auto striper(s/j)

Brand name: Precision Fuku

Origin: Japan

Gauge: 16

Feeder: 72

Cylinder dia:32

3.1.4 Type of yarn use:

Different type of yarn which are used to produced knitted fabric

1. Combed yarn.

2. Carded yarn.

3CVC (80%C+20%p)

4. PC yarn (80%P+20%C)

6. Mellange yarn (85%C+15%Viscose)

(Undyed+Dyed)

7. Viscose.

8. Polyester.

3.1.5 Some different kind of sample

Name Of Fabric	Sample
Normal single jersey	
Single Lacoste	
Double Lacoste	
Interlock	
Mesh Fabric	
Fleece	
1*1 Rib	
9*4 Rib	
Slub Fabric	
Waffle	
Lycra Terry Brush	
Double Face Y/D S/j	

3.1.6 Faults May Happen During Knitting:

Fabric Faults Related to Knitting		
Fault Description	Causes	Solutions
❖ Vertical stripes	❖ Defective needles or sinkers.	❖ Checking needle detectors ❖ Use of fabric fault detector
❖ Dropped stitches	❖ Yarn guide not properly set. ❖ Defective needle latch. ❖ Take-down too high. ❖ Wrong yarn threading.	❖ Precise yarn guide resetting ❖ Needle change ❖ Yarn consumption and coultering readjustment ❖ Take-down readjustment ❖ Dial position readjustment
❖ Holes	❖ Presence of knot in yarn ❖ Weak places in yarn. ❖ Yarn tension too high ❖ Yarn too dry ❖ Yarn guide not properly set	❖ Use of flat knots ❖ Yarn regularly control ❖ Yarn consumption and couriering readjustment ❖ Precise yarn guide resetting ❖ Use of fabric fault detector.

3.1.7 Production calculation:

Production /shift in kg at100% efficiency

$\text{RPM} \times \text{No. of Feeder} \times \text{No. of Needle} \times \text{SL (mm)} / 3527.80 \times \text{yarn count}$

Number of needle for single jersey = $3.14 \times D \times G$

Number of needle for rib = $2 \times 3.14 \times D \times G$

Production/shift in meter

$= \text{Course/min} \div \text{Course/cm}$

$= \text{RPM} \times \text{No. of Feeder} \div \text{Course/cm} \times 100$

Fabric Width in meter

$$= \text{Total no. of wales} \div \text{Wales/cm} \times 100$$

$$= \text{Total no. of Needle used in knitting} \div \text{Wales /cm} \times 100$$

Production parameter:

1. Machine Diameter.
2. No.of Feeder in use.
3. Machine Gauge.
4. Count of yarn.
5. Required time (m/c running time).
6. M/c Running efficiency.

Calculation of S.L where yarns count = 24:

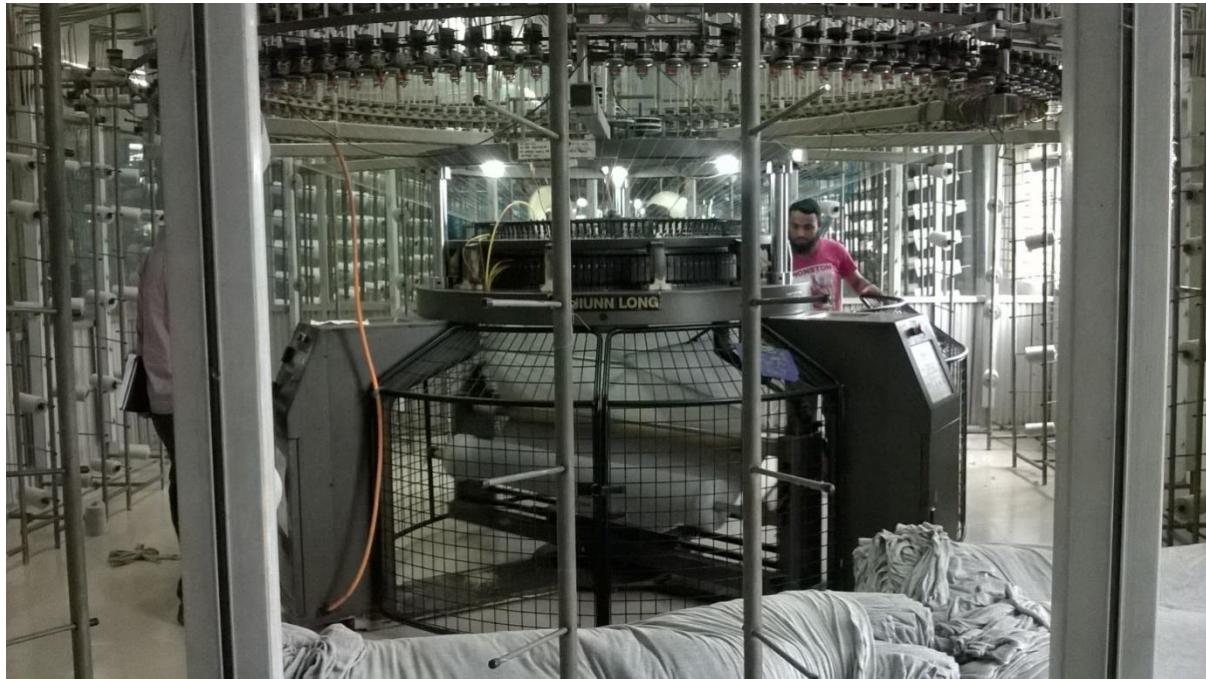
$$\square \text{S.L} = 16.66d$$

$$= 16.66 \times 1 / 28 \sqrt{\text{count}}$$

$$= 16.66$$

$$= 3.08\text{mm}$$

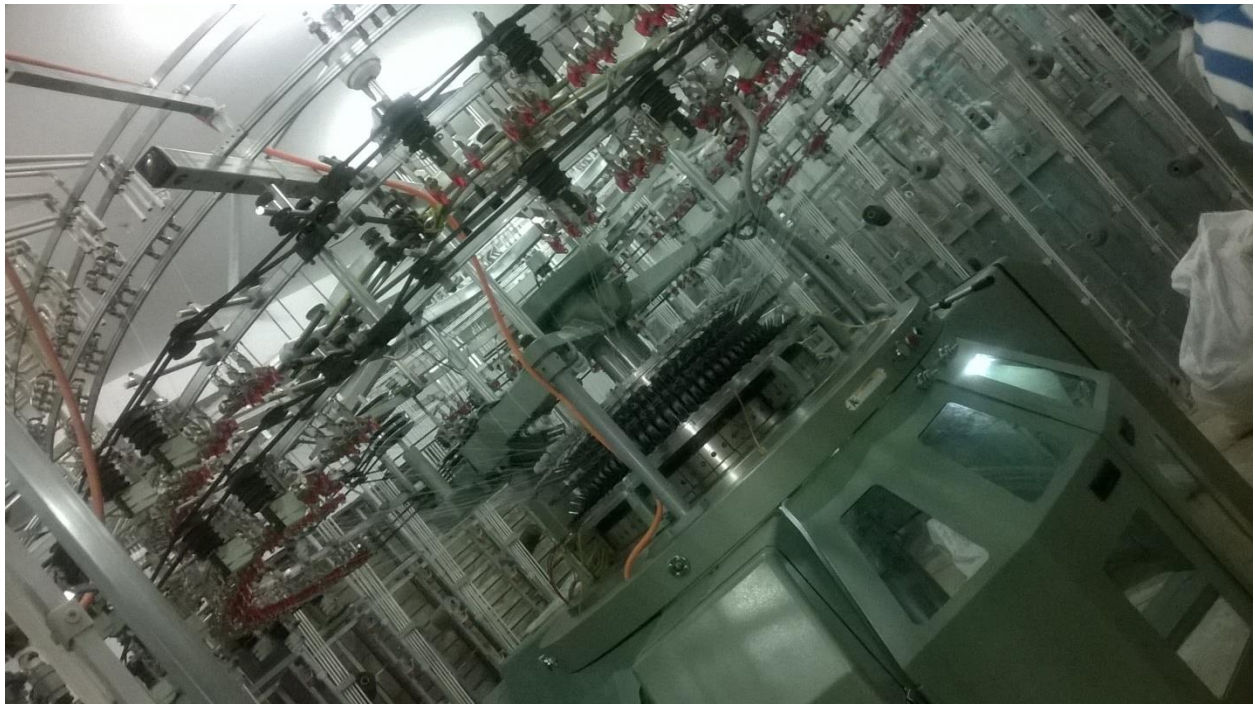
3.1.8 Pictures of knitting machine and it parts of Abanti colour Tex



Single jersey machine



Gsm cutter



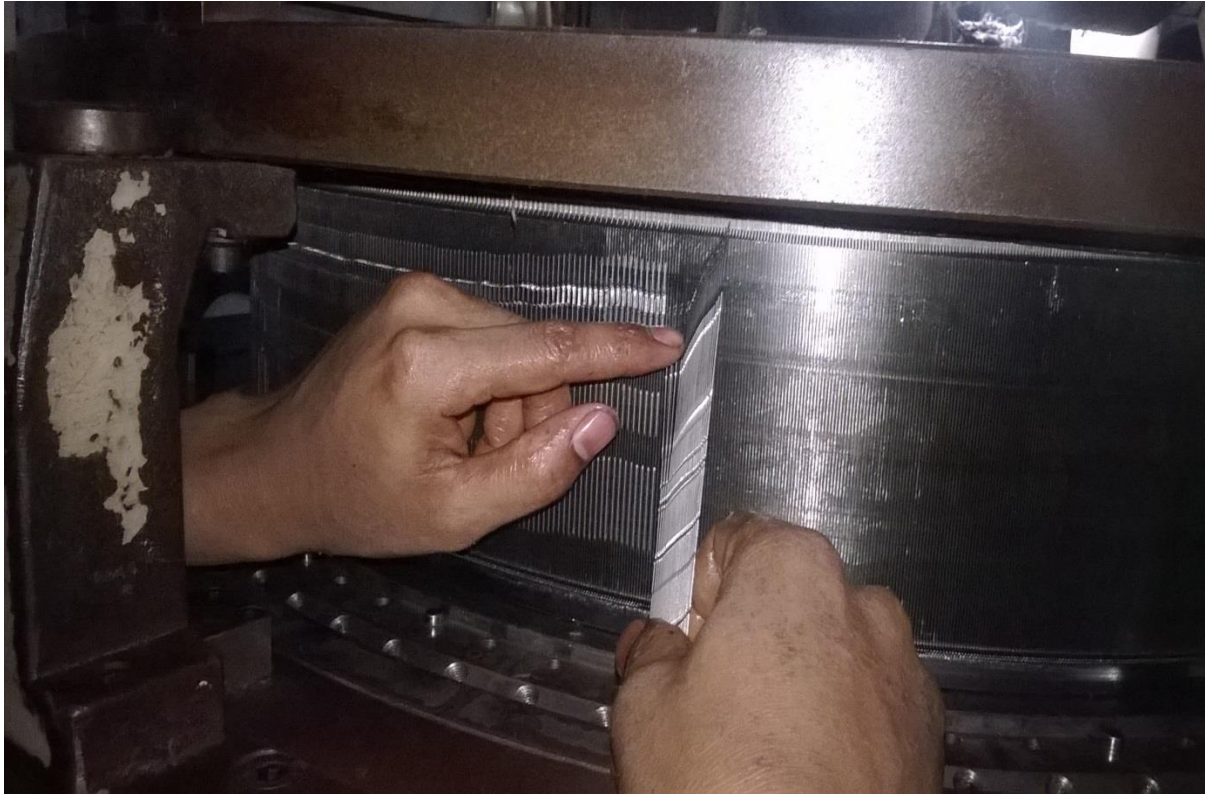
Single jersey strip Machine



Creel and Yarn Bobbin



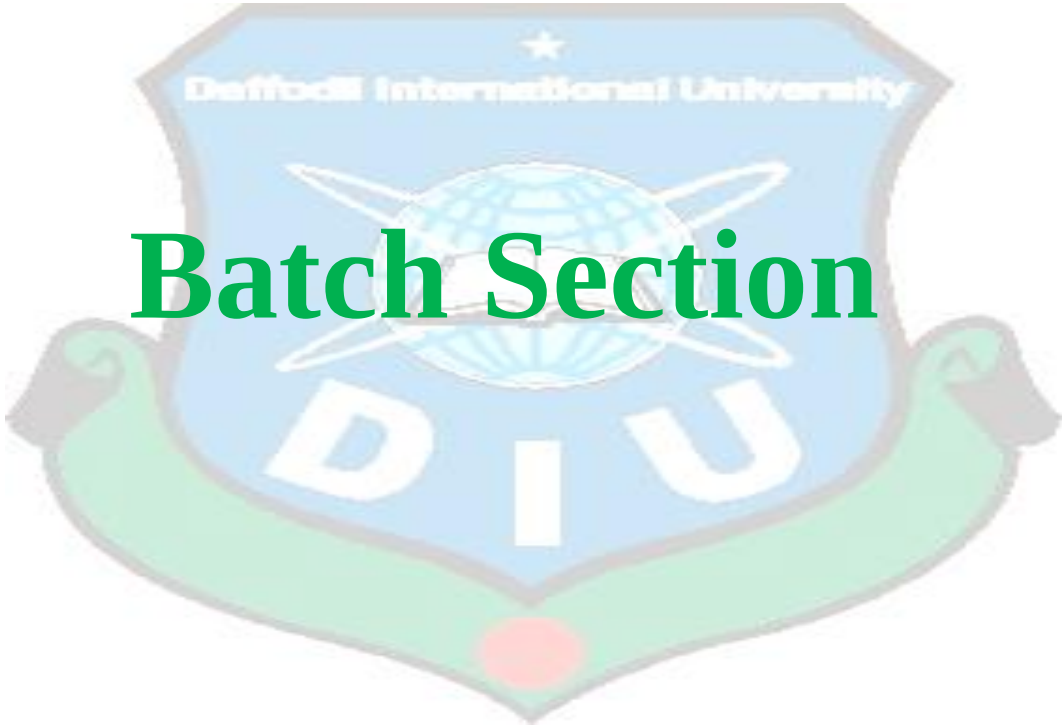
Cam box



Needle and Cylinder



Needle

The logo of Daffodil International University is a shield-shaped emblem. At the top, a small white star is positioned above the university's name, "Daffodil International University", which is written in a white serif font. The center of the shield features a stylized globe with white latitude and longitude lines, surrounded by three white orbital paths. Below the globe, the letters "DIU" are prominently displayed in a large, white, serif font. The shield itself has a light blue background, and a green banner with a red circular detail at its base wraps around the bottom and sides of the shield.

Batch Section

3.1.9 **Batch:**

Bathing is the Process to get ready the fabric which should be dyed and process for a particular lot of a particular order.

Function or purpose of Batch Section

- To receive the grey fabric roll from knitting section or other source.
- Turn the grey fabric if required.
- To prepare the batch of fabric for dyeing according to the following criteria-

Order sheet (Received from buyer)

Dyeing shade (color or white, light or dark)

M/c Capacity

M/c available

Type of fabric

Emergency

- To send the grey fabric to the dyeing floor with batch card.
- To keep Records for every previous dyeing.

3.1.10 Machine in batch section:

M/c Specification:

Machine Name: Air Turning m/c

M/c No : 01

Brand Name : Dong Nam Industrial Co. Ltd

Origin : Korea

Model : 400

Machine Name: Air Turning m/c

M/c No : 02

Brand Name : Dong Nam Industrial Co. Ltd

Origin : Korea

Model : 400

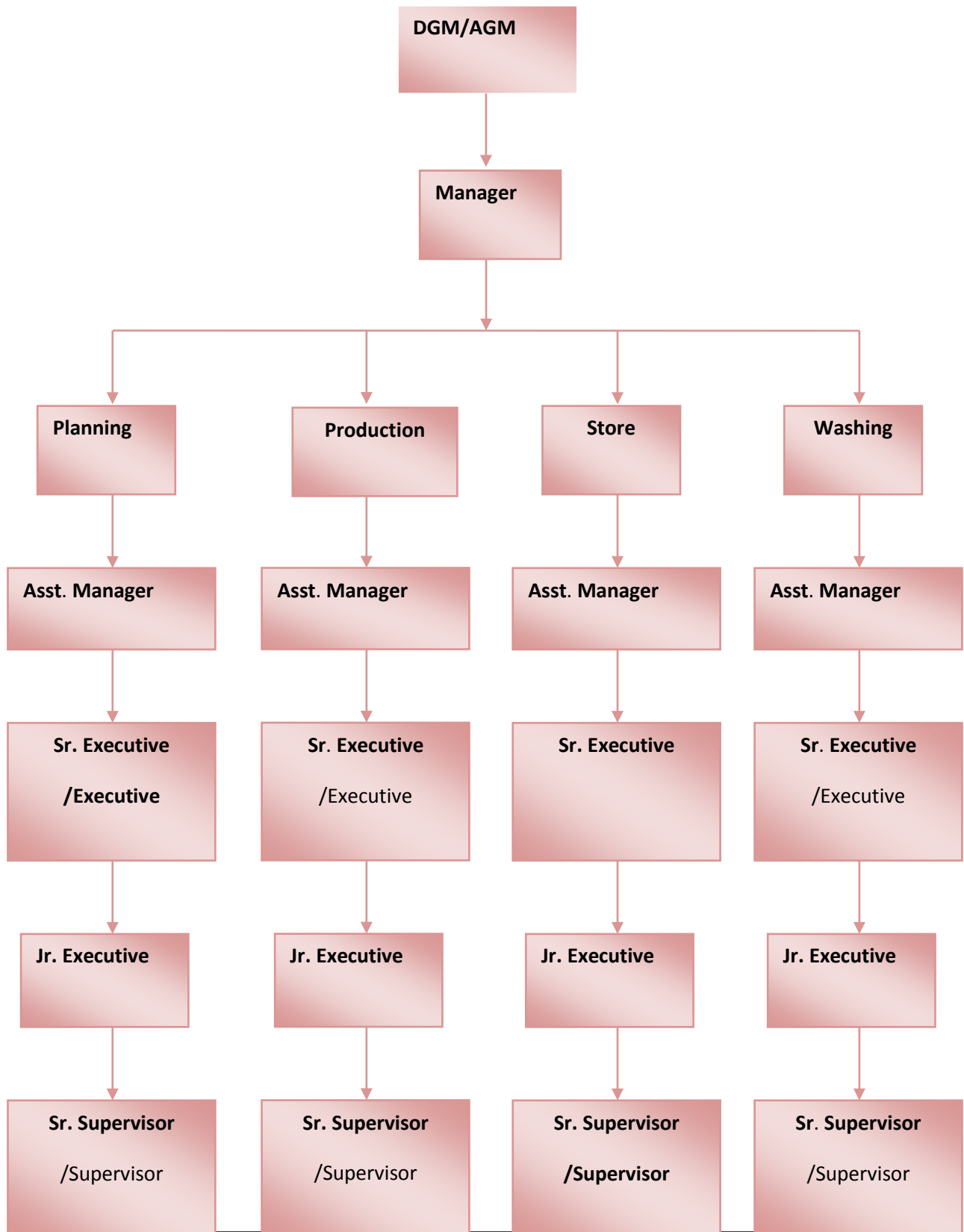
Dyeing section



3.2.1 LAY OUT OF DYEING FLOOR



3.2.2 Organogram



3.2.3 Dyeing machine capacity for sample

High temperature sample dyeing machine =1pcs

Total capacity of sample machine = 50kg

Low temperature of sample machine = 7pic

Total capacity of sample machine = 570kg

Bangla sample Machine = 5pic

Total capacity of machine= 255kg

3.2.4Dyeing machine capacity for production

High temperature production machine = 3pic

Total capacity of sample machine = 1995kg

Low temperature of production machine = 6pic

Total capacity of production machine = 5400kg

5.4Specification of Sample Dyeing Machine:

No of machine 1

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

Capacity=180

No of machine 2

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

Capacity=50

No of machine 3

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

Capacity=20

No of machine 4

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by thyiyan

Capacity=20kg

No of machine 5

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

Capacity=20kg

No of machine 6

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

Capacity=200kg

No of machine 7

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

Capacity=100kg

No of Machine 8

Bangla sample machine

Made by Bangladesh

Capacity=50kg

No of Machine 9

Bangla sample machine

Made by Bangladesh

Capacity=50kg

No of Machine 10

Bangla sample machine

Made by Bangladesh

Capacity=50kg

No of Machine 11

Bangla sample machine

Made by Bangladesh

Capacity=50kg

No of Machine=12

Bangla sample machine

Made by Bangladesh

Capacity=50kg

No of Machine=13

Made by Turkey

Dilmener Machine

Capacity=50kg

3.2.6 Production Machine Specification

No of machine 1

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by thyiyan

6-Bar machine

Capacity=1200kg

No of machine 2

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

6-Bar machine

Capacity=1200kg

No of machine 3

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

4-Bar machine

Capacity=800kg

No of machine 4

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

3-Bar machine

Capacity=600kg

No of machine 5

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

2-Bar machine

Capacity=400kg

No of machine 6

AK Dyeing machine

Asia kingdom Machinery Industry LTD

Made by Thyiyan

6-Bar machine

Capacity=1200kg

No of Machine=1

Made by Turkey

Dilmener Machine

2-Bar

Capacity=450kg

No of Machine=2

Made by Turkey

Dilmener Machine

2-Bar

Capacity=600kg

No of Machine=3

Made by Turkey

Dilmener Machine

3-Bar

Capacity=900kg

3.2.7 Raw Material for Dyeing:

Raw Materials used in the dyeing section are:

1. Grey fabric.
2. Dyes.
3. Chemical.

Grey fabric:

Following type of grey fabric are dyed

- Single jersey.
- Single jersey with Lycia.
- Single Lacoste.
- Double Lacoste.
- Fleece.
- Terry Fleece.
- Rib.
- Rib with Lycra.
- Different type collar &Cuff.

3.2.8 Different type of Dyes used in Abanti color Tex

SL Name	Name of dye for Reactive dye(cotton& poly)
1	Dyes-Biozol blue RR (1-13) cotton
2	Novacron blue FN-R
3	Novacron olive NC
4	Novacron Red-win
5	Novacron Super Black G
6	Novacron red 4c
7	Novacron Navy Blue S-GI
8	Novacron Super Black M
9	Novacron Yellow FN-2R
10	Setazol Blue NG
11	Setazol Blue NG
12	Setazol Blue BB
13	Setazol Red SX
14	Tarasil Navy W-PES
15	Tarasil Turquoise W XN
16	Tarasil Black W NS
17	Tarasil Red WEL
18	Tarasil Red SD
19	Tarasil Yellow SD
20	UvitexFMI
21	Dutex BHT Liq
22	Dutex
23	Uvitex EDB
24	Uvitex

3.2.9 Different type of chemical used in Abanti color Tex

Chemical(TRADE NAME)	Chemical name
SET WASH CONZ	Wetting agent
INVATEX CS	Sequestering agent
ALBAFUID C	Anti-creasing agent
CAUSTIC	Basic chemical
SODA ASH	Basic chemical
HYDROGEN PEROIDE	Universal bleaching agent
CLARITE CBB	Peroxide killer
UVTEX BTV	Bright agent
OPTIC ACID	Acid
COTTONENSE-BT2	Enzyme
SETA LAN GLN	Leveling agent
GLOBAR SALT	Salt
SAPAMINE CSN	Softener
ERIPON R LIQ	Soaping agent

3.2.10 Different parameters in dyeing:

A. pH

During peroxide bleaching & scouring 9-11

During enzyme treatment 4.5-5

Before addition of leveling agent 6-6.5

Before addition of color softener 6-6.5

Before addition of white softener 4.5-5

Softener at stenter& de-watering 5.5-6

Silicon softener 5.5-6

Reactive dyeing 10.5-12

B. Temperature

For cotton scouring 95-100°C

For cotton bleaching 50-60°C

For cotton hot wash 70-80°C

For cotton acid wash 60-70°C

For cotton dyeing 80°C (For hot brand)/60°C (For cold brand)

C. Time

For scouring and bleaching 60-90 min

For reactive dyeing 60-90 min

3.3.1 Cotton dyeing steps

Required amount of water was taken into the machine

The fabric was loaded and run for 5-10 minutes in normal temperature

Demineralization 60 C were added at a time for 20 minutes

Caustic was added at normal temperature for 5 minutes

Temperature increased at 60°C

Hydrogen peroxide (H₂O₂) was added for 5 minutes

Temperature increased at 95°C and continue for 1 hour

Sample check

Cold wash at 75°C for 5-10 minutes

Hot wash at 90°C for 5-10 minutes

Required amount of water was loaded

Enzyme (BT2) was added

Acetic acid was added

Temperature increased at 55°C for 60 minutes

Temperature increased at 80°C for 5-10 minutes

Cold wash at 40°C and drain

Leveling agent is added

Temperature increased at 60°C

Run time 10 minutes

Salt dosing

Temperature increased at 60°C

Run for 10 min

Color addition

Dosing time 30 min

Temperature increase at 60°C for 5 min

Run for 10 min

Soda Ash

60°C for 40 min dosing

Shade check (Shade match/BD)

Rinsing

Wash

Acetic acid was added for neutralization for 10 min

40°C temperature

Washing agent

Hot wash at 90°C for 90 min

Fixing agent

90°C temperature for 10 min dosing

Run time 10min

Cold wash

Drain

Softener

40°C for 20 min

Fabric Unload

3.3.2 Dyeing Procedure of polyester/cotton blend fabrics:

Required amount of water filled

Fabric was loaded and run for 10 min.

Demineralization 60 C were added at a time for 20 minutes

Run for 10 min. at 78^o C

Rinse for 10 min.

Drain

Required amount of water filled

Leveling agent added

Check P_H at 4.5

Color/Dyes added for 15 min.

Temperature increased at 80^o C Run for 15 min.

Temperature increase at 130^o C

Run for 45 min.

Cooling at 80^o C

Shade check (ok)

Rinsing for 15 min.

Drain

Required amount of water filled

Temperature increased at 60^o C

Run for 20 min.

Add caustic soda

Temperature increased at 70° C

Add H₂O₂ and temperature increased at 98° C

For light color run 60 min, for deep color run 40 min

Sample check (absorbency)

OK

Check PH

Add enzyme at 60° C temperature

Run 40 min

Add leveling agent

Add salt

Add color at same temperature

Run 10 min

Add Soda and run 35 min

Shade check (ok)

Hot wash

Cold wash

Softeners add and run 30 min

Drain

Fabric upload

3.3.3 Common faults and their remedies in knit dyeing:

1. Crack, rope & crease marks:

Causes:

- ☐ Poor opening of the fabric rope.
- ☐ Shock cooling of synthetic material.
- ☐ Incorrect process procedure.
- ☐ Higher fabric speed.

Remedies:

- ☐ Pre-Heat setting.
- ☐ Lower rate rising and cooling the temperature.
- ☐ reducing the m/c load.
- ☐ Higher liquor ratio.
- ☐ running at a slightly higher nozzle pressure.

2. Fabric distortion and increase in width:

Causes.

- ☐ Too high material speed.
- ☐ Low liquor ratio.

Remedies:

- ☐ By decreasing both nozzle pressure & winch speed.

3. Pilling:

Causes:

- ☐ Too high mechanical stress on the surface of the fabric.
- ☐ Excess speed during processing.

- ☐ Excess foam formation in the dye bath.

Remedies:

- ☐ By using of a suitable chemical lubricant.
- ☐ By using antifoaming agent.
- ☐ By turn reversing the Fabric before dyeing.

4. Uneven dyeing:

Causes:

- ☐ Uneven pretreatment (uneven scouring, bleaching & mercerizing).
- ☐ Uneven heat-setting in case of synthetic fibers.
- ☐ Quick addition of dyes and chemicals.
- ☐ Lack of control of dyeing m/c.

Remedies:

- ☐ By ensuring even pretreatment.
- ☐ By ensuring even heat-setting in case of synthetic fibers.
- ☐ By slow addition of dyes and chemicals.
- ☐ Proper controlling of dyeing m/c.

5. Shade variation (Batch to batch):

Batch to batch shade variation is common in exhaust dyeing which is not.

completely avoidable. Even though, to ensure a consistent batch to batch production of shade the following matters should be controlled carefully-

- ☐ Use standard dyes and chemicals.
- ☐ Maintain the same liquor ratio.
- ☐ Follow the standard pretreatment procedure.

- ☐ Maintain the same dyeing cycle.
- ☐ Identical dyeing procedure should be followed for the same depth of the shade
- ☐ Make sure that the operators add the right bulk chemicals at the same time and temperature in the process.
- ☐ The P^H, hardness and sodium carbonate content of supply water should check daily.

6. Dye spot:

Causes:

- ☐ Improper mixing of dyestuff in the solution, in right amount of water, at the temperature.

Remedies:

- ☐ We should pass the dissolved dyestuff through a fine stainless steel mesh strainer when adding it to the chemical tank, so that the large un-dissolved particles are removed.

7. Patchy dyeing:

Causes:

- ☐ Uneven heat in the machine.
- ☐ Improper impregnation of dye liquor due to the low wetting property of the fabric.
- ☐ Dye migration during intermediate dyeing.

Remedies:

- ☐ By proper pretreatment.
- ☐ By adding extra wetting agent.
- ☐ Heat should be same throughout the dye liquor.

8. Specky dyeing:

Causes:

- ☐ Excessive foam in the dye bath.
- ☐ Fall of water droplets on fabric surface before or after dyeing.
- ☐ In sufficient after treatment.

Remedies:

- ☐ By using antifoaming agent.
- ☐ Sufficient after treatment.
- ☐ By using a good wetting agent in the dye bath.

9.Roll to roll variation or Meter to Meter variation:

Causes:

- ☐ Poor migration property of dyes.
- ☐ Improper dyes solubility.
- ☐ Hardness of water.
- ☐ Faulty m/c speed, etc.

Remedies:

- ☐ Use standard dyes and chemicals.
- ☐ Proper m/c speed.
- ☐ Use of soft water

Crease mark:

Causes:

- ☐ Poor opening of the fabric rope
- ☐ Shock cooling of synthetic material
- ☐ If pump pressure & reel speed is not equal

- ☐ Due to high speed m/c running

Remedies:

- ☐ maintaining proper reel speed & pump speed.
- ☐ Lower rate rising and cooling the temperature.
- ☐ Reducing the m/c load.
- ☐ Higher liquor.

3.3.4 Photo Gallery of dyeing Sample& Production



Dilmener Machine



AK dyeing machine

The logo of Daffodil International University (DIU) is a shield-shaped emblem. At the top, a small white star is positioned above the text "Daffodil International University" in a white serif font. The center of the shield features a blue globe with white latitude and longitude lines, overlaid with a white atomic symbol consisting of three elliptical orbits. Below the globe, the letters "DIU" are written in a large, white, bold, sans-serif font. The shield is bordered by a green ribbon-like shape at the bottom, which has a small red circular dot at its center. The entire logo is rendered in a light, semi-transparent style.

Laboratory Section

3.3.5 Quality Assurance System:

The Quality Assurance Department is assigned to maintain consistently uniform quality of the material in process and various stages of its manufacturing.

3.3.6 Objects of quality Control:

1. Research.
2. Selection of raw materials.
3. Process control.
4. Process development.
5. Product testing.
6. Specification test.

3.3.7 Quality Assurance at different stage:

Abanti colour Tex ltd assures the quality of the products of dyeing section in the following three steps:

1. In laboratory
2. In dyeing section &
3. In finishing section

3.3.8 Procedures are described below:

In laboratory:

1. Swatch card from buyer according to their requirement
2. Recipe prediction for sample dyeing
3. Sample dyeing until matching with swatch card
4. Fastness & other tests of the fabric or yarn are done here.

In dyeing section:

1. According to the buyer's sample, sample dyeing is done in sample dyeing machine in dyeing shed & again matched with the approved sample.
2. If result is OK, then bulk production.
3. During dyeing, samples are taken until accurate shade matching. The interval may be 30-40 minutes.
4. After dyeing sample is collected after softening matching is done.
5. Last of all, sample is collected after fixation & matched.
6. Then allowed the fabrics to be finished.

In finishing section:

By using a series of finishing machines correct width, softness & appearance are maintained According to requirements.

Then sampling is done for several times to test GSM, Shrinkage & fastness properties.

Finally fabric is inspected & prepared for delivery.

3.3.9 List of Equipment:

In the quality assurance Department the followings equipment's are used-

- ☐ Electronics Balance.
- ☐ Iron.
- ☐ Dip Dyeing Machine.
- ☐ Rota Wash.
- ☐ Crock Meter.

- ☐ Spectrophotometer with software (Data Color)
- ☐ P^H meter

Light box

3.3.10 Different Quality Test Method:

Different types of fastness tests of the dyed fabric are done in quality control department of the Abanti colour Tex ltd Different types of method (Standard or buyer's recommended) are followed for different types of tests.

There are two types of tests are done in Quality Assurance department. They are-

1. Physical Tests.
2. Chemical Test.

Physical Tests:

- ☐ GSM Test.
- ☐ Shrinkage test.
- ☐ Pilling resistance.

Chemical Tests:

- ☐ Fastness to washing.
- ☐ Fastness to rubbing

The inspection of fabric is a procedure by which the defects of fabric are identified and fabric is classified according to degree or intensity of defects. The fabric inspection is done for both Grey and finished fabric.

3.4.1 Grey Fabric Inspections:

Grey fabric inspection is performed according to 4-point system.

6.8 Finished Fabric Inspection:

4 point numbering system is followed for finished fabric inspection. Defects found in the final inspection.

- i. Uneven shade.
- ii. Oil spot.
- iii. Naps.
- iv. Crease mark.

Machine Stoppage mark

- v. Listing.
- vi. Line mark.
- vii. Pick missing.
- viii. Double yarn.
- ix. Dead cotton.
- x. Bowing.
- xi. Fly yarn contamination.

3.4.2 Color Fastness to wash Test procedure:

Colorfastness:

The “color fastness” of a colored textile is defined as its resistance to these changes when subjected to particulars of conditions. It follows that color fastness must be specified in terms of these changes and expressed in terms to the magnitude.

Required materials:

- 1. Sample size 40 x 100 mm.
- 2. Multifiber at 40 x 100 mm.
- 3. ECE detergent (WOB)-4g/L.

4. Sodium Perborate ($\text{Na}_2\text{BO}_3 \cdot \text{H}_2\text{O}_2$ -1g/L)-1g/L.

5. Distilled water.

6. Normal cold water.

7. Steel balls.

Procedure:

1. Cut sample & Multifibre at 40 x 100 mm

2. 50 ml ECE detergent (WOB) & 50 ml Sodium per borate is taken with the sample.

For marks & Spencer, the solution is taken by the following formula: (Sample fabric + Multifibre weight) x 50 ml.

3. The sample is kept in 600C for 30 minutes in Rota Wash Machine.

4. Rinse the sample twice with cold water.

5. Dry at 600C by hanging or by Flat iron press but temperature should not be more than 1500C.

Report:

Dry the specimen and the change of shade & degree of staining is measured by Grey Scale & Staining Scale.

Color fastness to rubbing (Dry & Wet) Test:

Sample:

☐ Dyed fabric -15 cm x 5 cm.

☐ White Test Cloth -5 cm x 5 cm.

Procedure:

☐ White test cloth is put on to the grating and stag by steel wire.

- ☐ The sample is run twenty times manually for ten seconds. And the rubbing fastness of the sample cloth and degree of staining is accessed.
- ☐ For rubbing fastness (Wet), the rubbing cloth is placed in the water and soaked and squeeze. The wet rubbing cloth is placed on to the grating and stag with Stainless steel wire and run ten times manually then assesses the attaining on to the rubbing cloth and the rubbing fastness of the sample cloth is accessed.

Report:

- ☐ Change of shade of the sample is measured with grey scale and degree of staining of the white test cloth is measured by Staining Scale.
- ☐ There are also some tests are done in the lab. And the process is described below:

Measuring dimensional stability (Shrinkage & spirality):

Sample:

- ☐ Two piece of 50 cm x 50 cm fabric is taken for test.

Procedure :

- ☐ Conditioning: Put the sample in the table for 4 hours for conditioning before

Starting test.

- ☐ Cut the sample 50 x 50 cm & benchmark should be 35 x 35 cm. Stitch the Sample (3 sides) by over lock sewing machine.
- ☐ Put sample in washing machine and run according to buyer's choice.
- ☐ Drying: All Buyers' requirement is tumble Dry except Echo Scouring is flat dry.

Shrinkage test calculation:

Shrinkage % (Percentage) =

Before wash

Before wash - After Wash

Spirality test calculation

$$S = (S_1 + S_2) / 2$$

$$\text{Spirality} = (S + S \times L) / 100.$$

Suppose,

S_1 = The right side distance of the specimen from the stitch line wash.

S_2 = The left side distance of the specimen from the stitch line after wash.

L = Length before wash.

Pilling Test: Generally, pilling test is applicable for fabric with synthetic fabric. This test is carried out in pilling box. A Sample of 10 cm x 10 cm is sewn round a rubber tube. Then the tube in the Pilling box and the door of it is closed. Then the meter is set for 10600 cycles. After the cycle is completed, the fabric is assessed by a special grey scale. The grey scale is provided Pilling box.

Light fastness test:

Purpose: Light fastness is the test design to evaluate the laundering fastness test of dyeing,

Pigment which re to be made in comparison of result obtained on many test pieces treated under light.

Method: ISO

Apparatus:

1. Light fastness tester & blue scale

2. Scale.
3. Scissor.
4. Hard paper.
5. 11cm X 4.5 cm.

Procedure: At first, we took the blue woolen cloth & test sample. The blue woolen clothes were dyed with acid blue, 104, 109 etc. Then we cut the woolen cloth & sample according to Template. The blue woolen cloth is cut to make standard & sample is cut to test light fastness. Then we put the holder of woolen cloth and sample in the set of machine and set the time, which was 24 hour.

Result: The test result of light fastness test is equivalent to the class of standard 6. So we can say that the color fastness of dyed fabric is average.

Color Fastness to Perspiration:

Purpose: To assess the degree of change of shade or cross staining due to Perspiration.

Method: ISO

Reagent: Alkaline Solution:

L Histadine monohydrochloride monohydrate 0.5 g/l.

NaCl.

Di – Sodium Orthophosphate dehydrate 0.5 g/l.

(Dilute the Solutions in one liter distill water).

pH 8 ± 0.05 with 0.1 mol/ltr. (0/1N) NaOH.

Test Specimen: Fabric (4x 10) cm

Procedure: (Alkaline Perspiration)

Keep the specimen in contact with S.D.C multifibre stripe of (4x10) cm

Liquor Ratio of 50: 1

Allow the Specimen to soak for 30 min

Place the specimen glass slide and lightly scrap of with a glass rod.

Place the specimen indicator for hrs at 37° C. Then remove from incubator open out keep Sometime in open air.

Repeat the same process with another specimen using the acid solution.

Assessment: Assess the change in color of each specimen and the staining of the multifibre strip using the grey scale.

Report: Record the change in color of each specimen and & the staining of the individual Components of the multifibre adjacent fabric separately for both the acid alkaline test.

p^H Check:

Purpose: To fulfill the buyer requirements to keep the pH of the fabric as per standard.

Method: ISO

Procedure:

☑Take 3 Pieces of 2 gm. sample

Take 100ml of distilled water (pH – 5.5 to 7.5) in three Conical Flack.

Shake them for 1 hour in normal temperature.

Finally measures the pH by average them.

Standard pH range for colored fabric 6 to 8

Standard pH range for colored fabric 5 to 8

G S M Test: G S M is the most important factor. There is a G S M Cutter. The

Sample cut by this weighted in the electronic balance. The reading (in gm.) from the balance

Multiplied by 100 to get Value of G S M.

3.4.3 Machine with photo



Machine name Yarn Evenness Tester

Brand Name SDL ATLAS

Origin USA



Machine name Auto piling Tester

Brand Name SDL ATLAS

Origin USA



Machine name	Martindale Abrasion & Piling Tester
Brand Name	SDL ATLAS
Origin	USA



Machine name	Color fastness
Brand Name	SDL ATLAS
Origin	USA



Machine name Rubbing fastness Tester

Brand Name SDL ATLAS

Origin USA



Machine name Bursting tester

Brand Name SDL ATLAS

Origin USA



Machine name wrap Reel Tester

Brand Name SDL ATLAS

Origin USA



Machine name Incubator

Brand Name SDL ATLAS

Origin USA



Machine name Digital p^H Tester

Brand Name SDL ATLAS

Origin USA



Machine name Yarn twist Tester

Brand Name SDL ATLAS

Origin USA



Finishing Section

3.4.4 Finishing Section

Finishing:

The final processing of the fabric to increase the nature properties or attractiveness before the fabric is cut into apparel or made into any articles of textile is called finishing.

Objective of finishing

- To improve the attractiveness and service ability of textile material.
- TO increase life & durability of the textile material.
- To set dyes and chemicals in to the textile material.
- To meet up specific and uses
- E.T.C

Tow type of Finishing:

1 .Mechanical:

- Calendaring.
- Brushing.
- Dolly press.
- Tunnel press.

2. Chemical:

- Ant-creasing.
- Softening.
- Stiffing.
- Ant-static.
- Ant-bacterial.
- Resin finishing.
- Fiber retardant.
-

Inspection in Finishing Section

Step of inspection:

1st step-shade check

2nd step- running Shade check

3rd step- Dia check

4thstep-Fault&GSm check

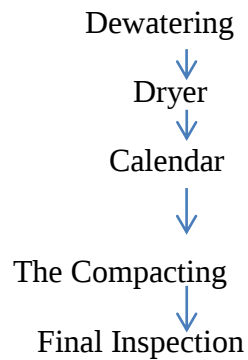
Measurement of Fabric Faults:

Four point System

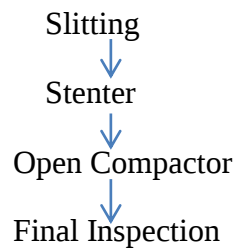
Defect Length	Assigned point
0-3''	1 point
3.1-6''	2 point
6.1-9'' 3 point	3 point
>9.1''	4 point

3.4.5 Finishing process In Abanti colour Tex

1. Tub Finish:



2. Open Finish:



3.4.6 Total M/c of Finishing Section

M/c Name	Number of M/c
• Dewatering	2
• Slitting	2
• Dryer	2
• Open Compactor	2
• Tube Compactor	1
• Stenter	1
• Peach	1
• Brushing	1

Function of dewatering/c

- Reduce water content.
- Apply chemical.
- Apply overfeed to give some compaction.
- Open the fabric from the rope from.

3.4.7 Finishing Machine Specification & there photo



Machine name open compactor

Brand name Lafer

Origin Italy



Slitting m/c

Brand Name Corino

Country Name Italy



Santex machine



Stenter Machine

Brand Name BRUCKNER

Origin Germany

Chamber 7



Soft Calendar Machine

Origin Korea



Tube Tex

America textile Association

Made by USA

Function of Stenter

- GSM Control
- Drying
- Shrinkage control
- Heat seating
- Width control finishing chemical
- Moisture control

Fabric type	GSM	Dia	Tem	Over feed	Padder Pressure	Speed	Blower rpm
Single jersey	115-150	2+	110-140	40-45%	2bar	30-35	1100-1300
Single jersey	160-220	2+	120-170	40-45%	2.5bar	25-30	1200-1400
Lycra Single jersey	160-200	4+	130-160	50%	2bar	25-30	1200-1400
Lycra Single jersey	200-250	4+	140-160	50%	2bar	24-28	1200-1400
Pique	160-200	3+	130-160	40-45%	1.5-2bar	25-30	1200-1400
Lycra Pique	190-220	4+	130-160	50%	2bar	20-25	1200-1400
Fleece/Terry	260-300	4+	140-170	40-45%	2bar	24-28	1200-1400
1 × 1 rib	160-220	2+	130-160	45%	2bar	20-25	1300-1400
2 × 2 rib	190-220	2+	140-160	45%	2bar	20-25	1200-1400
Interlock	190-220	3+	130-160	50%	2bar	20-25	1200-1400
					2bar		

3.4.9 Standard operating parameter for different chemical application



Garments Section

3.4.10 LAY OUT CUTTING



3.5.1 Introduction of Cutting

Fabric cutting means to cut out the garment piece of the lays from of fabric with the help of cutting template or marker. It is the previous step of sewing. Fabric Cutting department is the one which plays a key role in production. It is the beginning of the production. So the fabric cutting has the most efficient professionals working in it .The fabric cutting department should work as fast as possible because the more the unloading of bundles can take place the more the production can take place.In Garments Trade Cutting room is a room where the fabric is spreading, Laying, Marking, Cutting, Numbering, Bundling, and Embellishment of the fabric

3.5.2 Objectives of Cutting Department:

- To get the accurate shape of the components of garments.
- To make the garments parts ready for sewing.
- Prepare fabrics for RMG (Ready Made Garment).
- Cut fabrics according to design and pattern.
- Prepare fabrics for sewing and also for printing and embroidery.

3.5.3 Process sequence of Garments Section

Fabric from wet section



GSM Check



Spreading



Marker Spreading



Cutting



Different part of Numbering



Bundling



Sewing



Different part of Add



Leveling



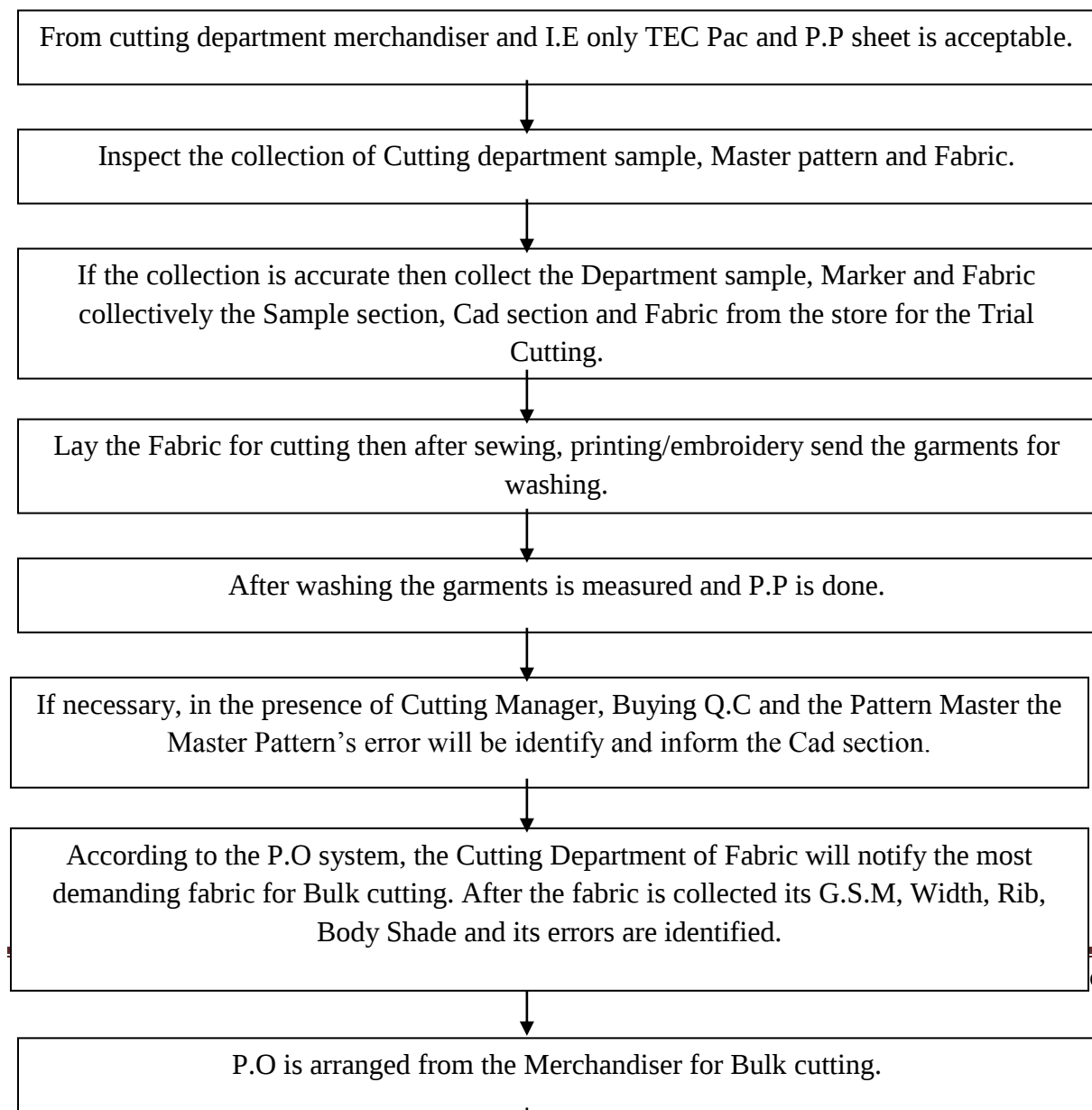
Inspection

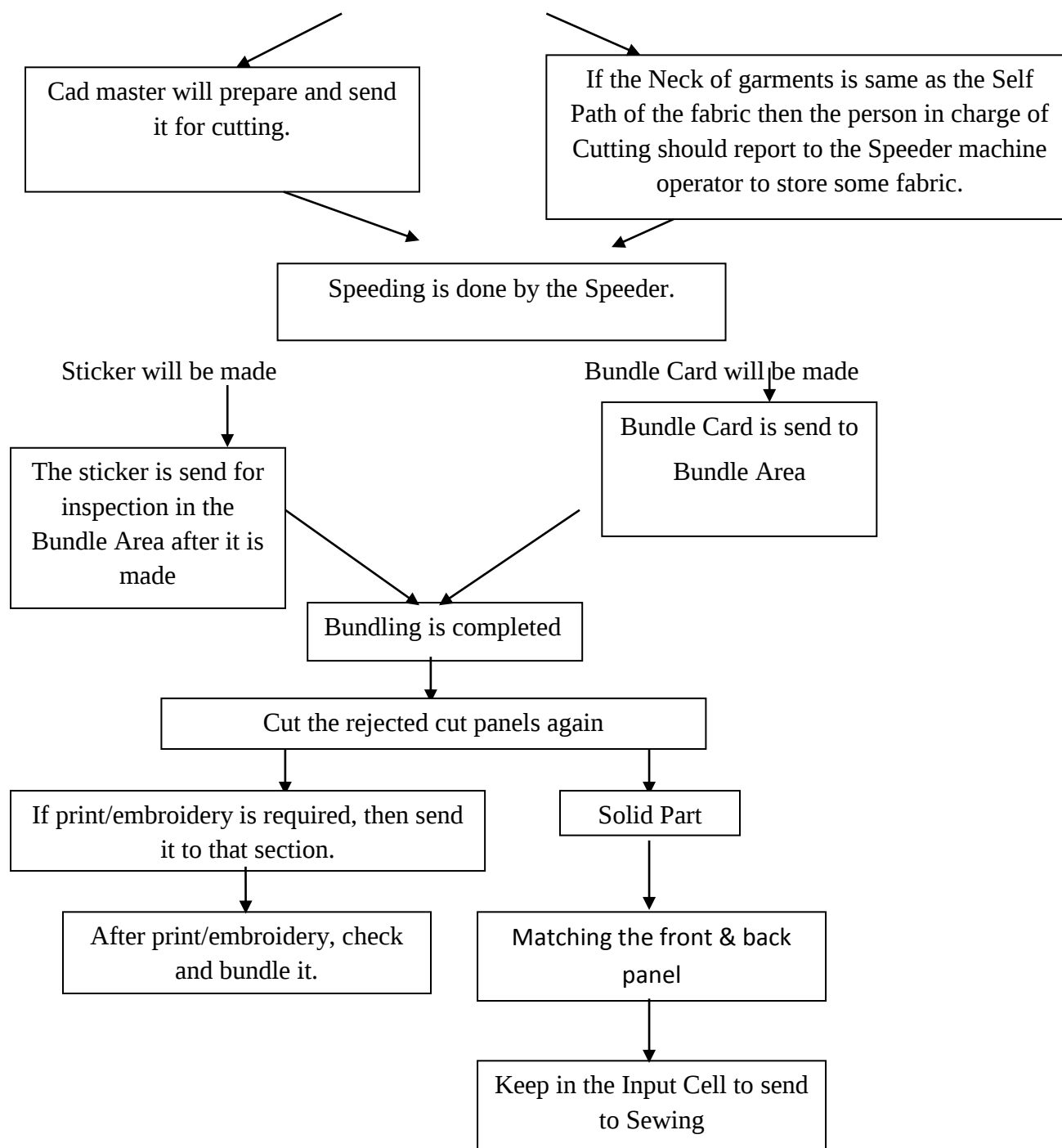


If Ok Delivery

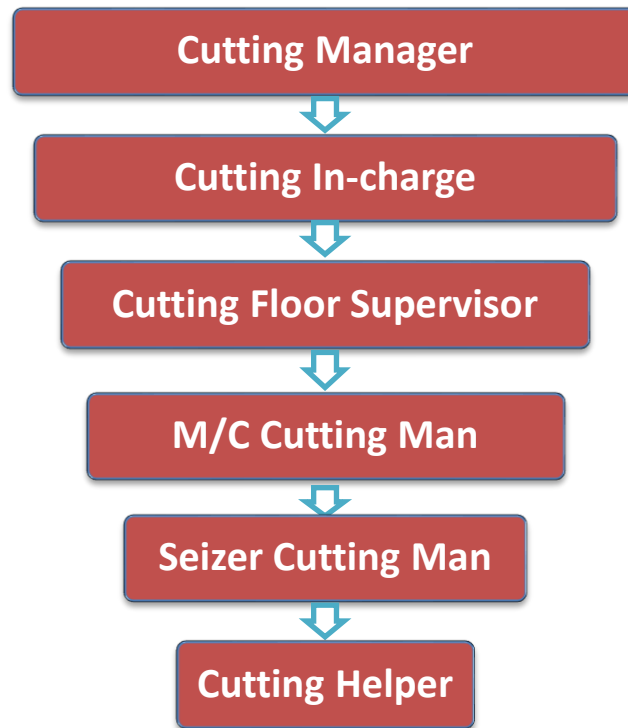
3.5.4 Flow Chart of Cutting Section

Standard Operating Procedure for Cutting





3.5.5 Below Shown the Organogram of Cutting Section:



3.5.6 Machine Specification

Auto Spreader (2)

Machine No-01

Brand Name-kuris

Country-Germany

Machine no: 02

Brand Name: Kuris

Country: Germany

Hand Cutter (15)

Brand Name: Mack

Country: Japan

Speed: 3000/3600m

Frequency: 50/60Hz

Volt: 220

Phase: 1

Blade: Straight bar blade



Made By Germany

Auto spreader machine



Hand cutting M/c

Brand Name: Mack

Country: Japan

Sewing section Machine specification & picture



Machine	Over lock
Brand Name	Pegasus
Origin	japan



Machine	plain
Brand Name	Brother
Origin	Japan



Machine	Flat lock
Brand Name	Pegasus
Origin	Japan



Machine	Button hole
Brand Name	Brother
Origin	Japan



Machine Button attach

Brand Name Brother

Origin Japan

Garments finishing Section:

3.5.7 Process sequence of garments finishing:

Garments Receive



Steam iron



Folding Garments



Final Inspection



Attach label in Garments



Packing with, tissue board hanger in poly bag



Matel Inspection



Cartooning the Garments



Store in the wire house



Shipment



Printing Section

3.5.8 LAY OUT OF PRINTING MACHINE



3.5.11 Type of printing are available in Abanti Color Tex

- Pigment printing.
- Rubber printing.
- Discharge printing.
- High density printing.
- Crack printing.
- Pup Printing.
- Foil printing.
- Water printing.
- Plastic printing.

3.6.1 Curing Temp:

- Pigment 160-170⁰c
- Rubber 150-170⁰c
- Discharge 200⁰c
- High density 180⁰c

3.6.2 Screen preparation

Mesh fabric tight with frame



Applied chemical TXR on the mesh & dried 8 min in air



Placed design paper under the mesh



Light passes through the design paper & mesh fabric for 3-4%



Remove the colored TXR from the design are by water spraying

3.6.3 Sequence of printing

Count the garments part



Screen preparation



Printing paste preparation



Applied garments part on the printing bed gum in the marked portion



Printing the garments part by using screen



Drying the printing portion by hard dryer applying hot air flow



Curing the printing portion by passing through the conveyor dryer at 160⁰-180⁰c



Inspection the quality

3.6.4 Foil printing

Temp 1500c

Pressure 100psi

Time 6sec

Pressing 2time

3.6.5 Process for foil printing

Add adhesive on the require design by screen



Place the fabric part on the pressing m/c



Pressing the upper part of the m/c at 100 psi tem 100⁰c for -6sec



Brand name diamond Red chili

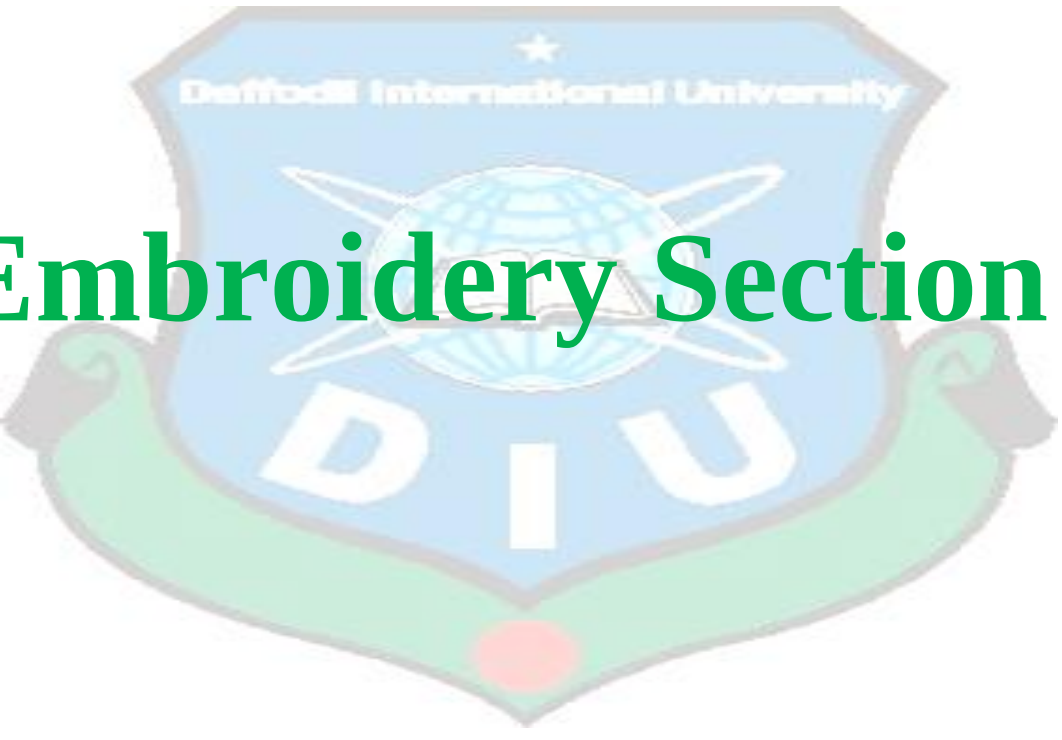
Origin USA

No of Head 12

Drying heat 2

3.6.6 Sample of printed Fabric

Printing fabric	Printing sample
Pigment Printing	
Rubber printing	
Puff printing	
Foil printing	
Apson Rubber print	
Flock printing	
Reflective printing	

The logo of Daffodil International University (DIU) is a shield-shaped emblem. At the top, a small white star is positioned above the text "Daffodil International University" in a white serif font. The center of the shield features a stylized globe with white latitude and longitude lines, overlaid with a white atomic symbol consisting of three intersecting elliptical orbits. Below the globe, the letters "DIU" are prominently displayed in a large, white, bold, sans-serif font. The shield's background is a light blue gradient, and its border is a darker blue. A green banner with a red circular detail at its base curves around the bottom of the shield.

Embroidery Section

3.6.7 Embroidery stitching type

Run stitch

Motif stitch

Tatami stitch

Shirting stitch



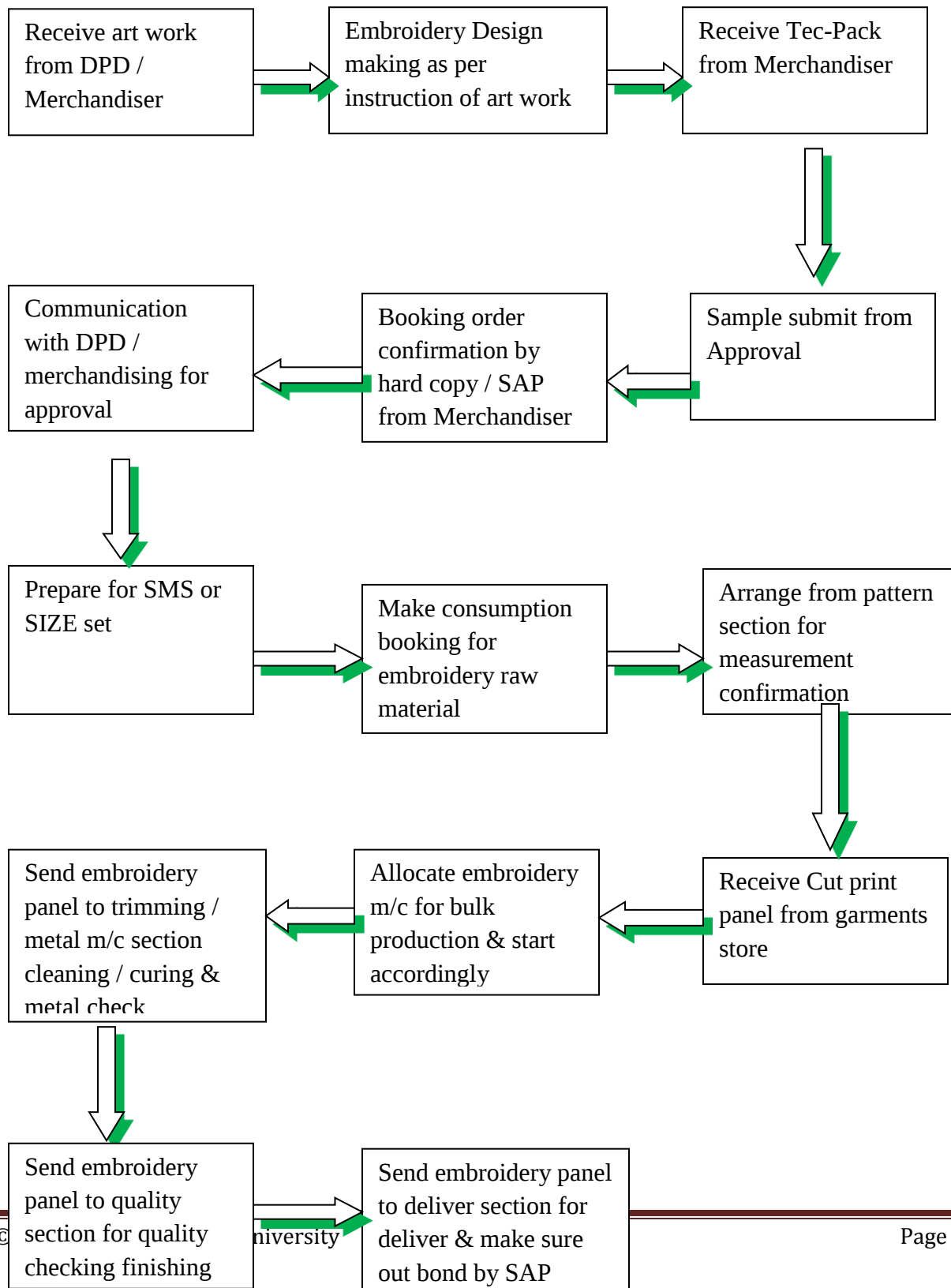
Brand name Tajima

Origin Japan

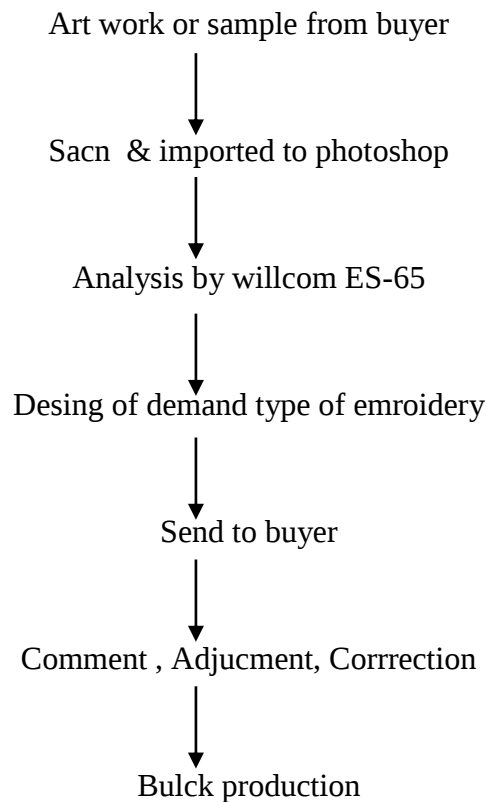
No of head 20

No of Needle per head 9

3.6.8 Process Flowchart



3.6.9 Design Analysis Flow chart



Defects of Embroidery

- ✓ Broken stitch
- ✓ Out stitch
- ✓ Embroidery appliqué slinked
- ✓ Double stitch
- ✓ Needle hole
- ✓ Appliqué raw edge
- ✓ False stitch
- ✓ Loose thread
- ✓ Needle mark
- ✓ Bobbin thread loose

- ✓ Frame spot mark
- ✓ Thread mistake
- ✓ Wrong design

Maintenance Section



3.6.10 Definition:

Machine, Buildings and other facilities are subjected to deterioration due to their use and exposure to environmental condition process of deterioration, if unchecked, culminates in rendering these service facilities unserviceable and brings them to a standstill. In Industry, Therefore has no choice to attend them from time to time to repair and recondition them so as to elongate their life to the extent it is economically and physically possible to do so.

Objective of Maintenance:

1. To keep the factory plants, equipment's, machine tools in an optimum working condition.
2. To ensure specified accuracy to product and time schedule of delivery to customer.
3. To keep me downtime of machines to me minimum must to have control over me production program.
4. To keep the production cycle within the stipulated range.
5. To modify the machine tools to meet the need for production.

3.7.1 Types of Maintenance:

Preventive maintenance:

Preventive maintenance is a predetermined routine actively to ensure on time inspection/

Checking of facilities to uncover conditions that may lead to production break downs or Harmful description.

Break down maintenance:

In this case, repairs are made after the equipment is out of order and it cannot perform its Normal functions.

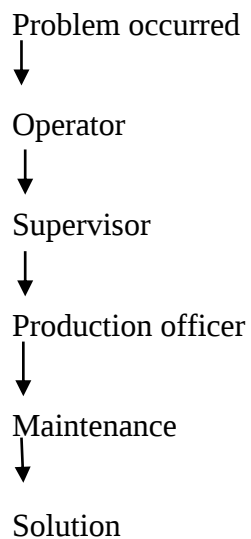
Routine Maintenance:

Maintenance of different machines are prepared by expert engineer of maintenance Department. Normally in case of dyeing machine maintenance after 30 days complete Checking of different important parts is done.

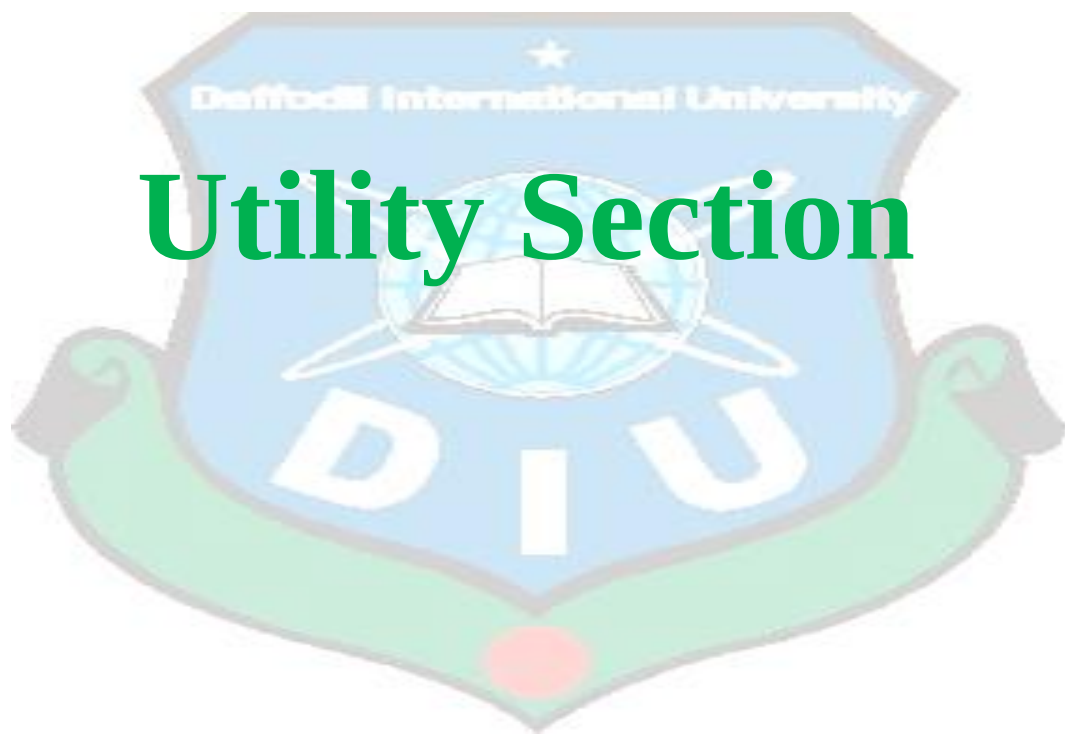
Manpower setup for maintenance:

- ☐ A Shift 7 AM 2 PM
- ☐ B Shift 7 PM 10 AM
- ☐ General Shift 10 AM 7 PM

3.7.2 Flow chart of Maintenance



Utility Section



3.7.3 Utility Service:

Here the following utility services are available-

1. Water.
2. Electricity.
3. Steam.
4. Gas.
5. Compress air.

Boiler: Steam generator or boiler is usually a closed vessel made of steel. There is one boiler in Abanti colour Tex Ltd.

Function: Boiler function is to the heat produced by the combustion of fuel (Gas) to water and ultimately to generator steam. The steam produced may be supplied in wet processing

Department for –

- Heating cylinder dryer
- Steaming during dyeing

Classification of boiler

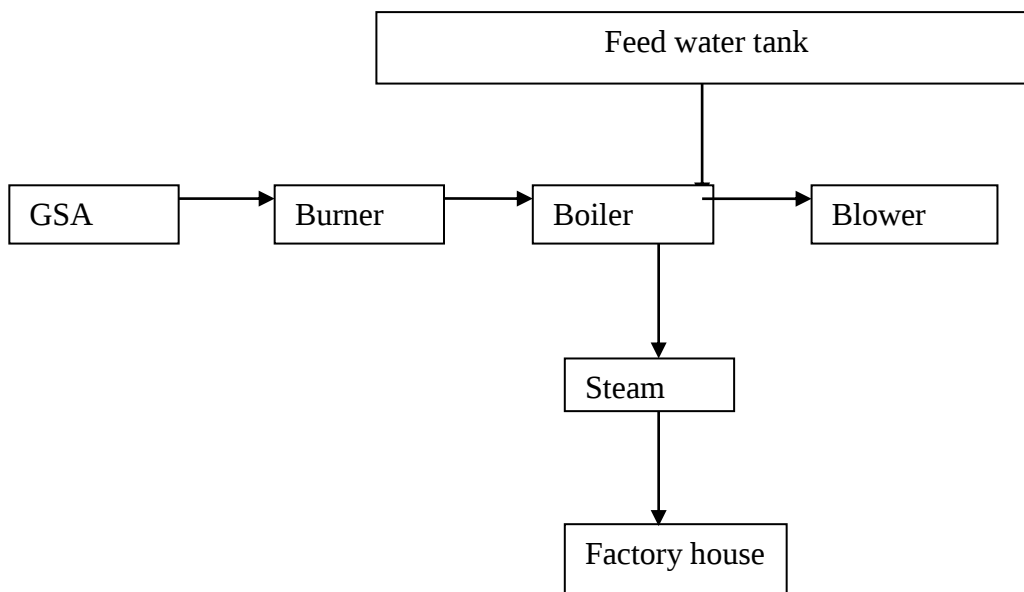
- Fire tube boiler
- Water tube boiler

Generally fire tube boiler is used

In boiler houses steam is produce at high temperature & pressure. This produce steam is supplied by the steam line in different section.

3.7.4 Working principal

The gas is fed through the front side to the furnace where fire created by electric park the blower move the fire into the flue pipe compress air and then flue gases enter through the combustion chamber which is lined with bricks on the outer wall of boiler .the hot gages passing through the horizontal smoke tube give their heat to the water and convert water into steam .



3.7.5 Picture of Boiler M/C



Boiler machine

Brand name

Cochran



Boiler machine

Brand Name

Thermax



3.7.6 EFFLUENT TREATMENT PLANT (ETP)

In textile industries, Effluent Treatment Plant used to remove the color particles & chemicals that are present in the water discharged from various wet processing stages.

The major steps of liquid discharge are:

- » Scouring.
- » Bleaching.
- » Dyeing.
- » Washing

After scouring, the water contains:

- » Detergent particles
- » Soap solution.
- » Other auxiliaries used with them.

After bleaching, the water contains:

- » Dilute hypochlorite solution.
- » H₂O₂
- » Other auxiliaries used with bleach.

After bleaching, the water contains:

- » Various dye molecules.
- » Acetic acid.
- » Soda Ash.
- » Stabilizer.
- » Other auxiliaries used along with dyes.

3.7.7 TYPES OF ETP

Depending upon Water treatment Method, ETP can be classified into three categories.

1. Biological ETP (Biochemical)
2. Physico- Chemical ETP
3. Physico-Chemical & Biological ETP (Combined)

The ETP used in Abanti Colour Tex Ltd is Biochemical in type.

BIOCHEMICAL ETP: Here, Bacteria is used to treat the contaminated water and Chemicals used to control the process as well as the growth of bacteria. As chemical and biological process is combined into one for treating water, the ETP type is named so.

3.7.8 Controlling Parameters

The characteristics of wastewater assumed at Abanti Colour Tex Ltd are as follows:

- » pH = 11
- » BOD = 300 mg/L
- » COD=200 mg/L
- » Suspended solid (SS) = 200 mg/L
- » Color = dark reddish.

Final treated Quality of Abanti Colour Tex Ltd discharge is:

- » pH = 6-9 (disposable limit 6-9)
- » BOD = 37 mg/ L (disposable limit 50 mg/L)
- » COD = 147 mg / L (disposable limit 200 mg/L)
- » Suspended solid = 51 mg/L (disposable limit 150 mg/L)
- » Color = color less.

CHAPTER IV

Impact of Internship



4. Impact of Internship

Knitting section:

We learn about how to arrange cam in circular knitting machine.

We identify fabric construction & fabric name.

We learn about production calculation & stitch length calculation from count.

We learn about GSM calculation.

Dyeing section:

We learn about different type of fabric dyeing.

We learn about polyester & cotton dyeing process.

We learn about different type of machine capacity & there name.

We learn about shade & how to match the shade in dyeing process.

Finishing Section:

We learn about Finishing Machine purpose.

We learn about Dewatering, Heat Setting, Softening, Calendaring, GSM, Dia , Length Width, Control.

We learn about Peach & Brush Finishing.

Lab Section:

We learn about Physical & Chemical Test.

We learn about physical test such as, Rubbing Fastness, Color Fastness, Yarn Evenness, Yarn Twist Tester, Bursting Test, Abrasion Test & Pilling Tester.

We learn about chemical test such as, percentage of chemical for Shade Matching, Fabric Dip Process.

Cutting Section

We learn about Fabric Spreading, Ply Thickness.

We learn about bias angle during Cutting .

We learn about Hand Cutting M/C Specification & how to maintain during Cutting.

Sewing Section

We learn about how many operations are present in T-shirt, polo shirt

Get idea about SMV & line balancing.

Printing Section

Gets idea about different kind of Fabric Printing,

Identify the print from Fabric

At long last we get average about Boiler &ETP.

CHAPTER V



Conclusion

CONCLUSION

Industrial attachment program send us to the expected destiny of practical life. Through The Completion of Two Month industrial attachment at Abanti Colour Tex Ltd. We have got the impression that the factory is one of the most knit dyeing projects In Bangladesh. It has earned very good reputation for its best performance over any other knit dyeing project. During our Industrial Attachment program, we had tried our best to done our duty. Our Supervisor also satisfied to us & offer co-operation in every steps. It is completely a new experience in our life, which will be very effective in our service life. During our training period we realized that practical experience is valuable for service life.

