



**Daffodil**  
*International*  
**University**

Faculty of Engineering  
Department of Textile Engineering

**REPORT ON**  
**Industrial Attachment**  
**At**

**Hypoid Composite knit Ltd.**  
176, South Krishnapur, rajashan, Saver, Dhaka Bangladesh  
Course title: Industrial Attachment

Course code: TE-431

**Submitted by:**

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A thesis submitted in partial fulfillment of the requirements for the degree of  
**Bachelor of Science in Textile Engineering**

Advance in Apparel Manufacturing Technology

Duration: From February 1<sup>st</sup> to April 31<sup>st</sup>, 2018

## DECLARATION

I certify that this work contains no material which has been accepted of any degree or diploma in our name in any university or other institution and to the best of my knowledge and belief contains no material previously published or written by another person except where due reference had been made in the note. The addition I certify that no work will in the future, be used in a submission in our name for any other degree or diploma in any university or other institution without the prior approval of the Daffodil International University.

.....

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.....

## Letter of Approval

15 December, 2018

The Head

Department of Textile Engineering

102, Shukrabad, Mirpur Road, Dhaka 1207

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

Dear Sir,

I am just writing to let you know that the Attachment in “**Hypoid Composite Knit Ltd**” has been prepared by the student bearing ID 133-23-205 is completed for final evaluation. The whole report is prepared based on investigation and information in Hypoid Composite Knit Ltd. The student were directly involved in their industrial attachment report activities.

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

Yours Sincerely

.....

**Dr. Md. Mahbubul Haque**

**Professor and Head**

Department of Textile Engineering

Daffodil International University

## ACKNOWLEDGEMENT

All thanks to the Almighty Allah to give us strength and ability to complete our three months long industrial attachment Hypoid Composite Knit Ltd. It was a great opportunity for me to complete the industrial attachment with the assistance of persons employed in Hypoid Composite Knit Ltd. I am feeling gratefully to our academic supervisor Mohammad Abdul Baset , Assistant professor Department of Textile Engineering ,Faculty of Engineering ,Daffodil international University as well as to **S.M Sayeedur Rahman (Raju)**,G.M(Dyeing),Hypoid Composite Knit Ltd for his nice cooperation .Our factory supervisor for their continuously guiding us about the development and preparation of this training report .I would like to express our thanks to **Prof .Dr. Md. Mahbubul Haque** ,Head, Department of Textile Engineering ,Faculty of Engineering ,Daffodil International University for his kind help to finish our training report .I also grateful to the supervisors, technicians, and all other staffs of Hypoid Composite Knit Ltd ,I am also thankful Fatah fazle Faruke Munna as a senior audit officer of Hypoid Composite knit Ltd. who I remodel cordial and helpful to us during the training of internship.

At last, I would like to express as enough of gratitude to our beloved parents and friends for their mental support, strength and assistance throughout writing the training report.

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**CHAPTER - 01**  
**EXECUTIVE SUMMARY**

## 1.1 EXECUTIVE SUMMARY

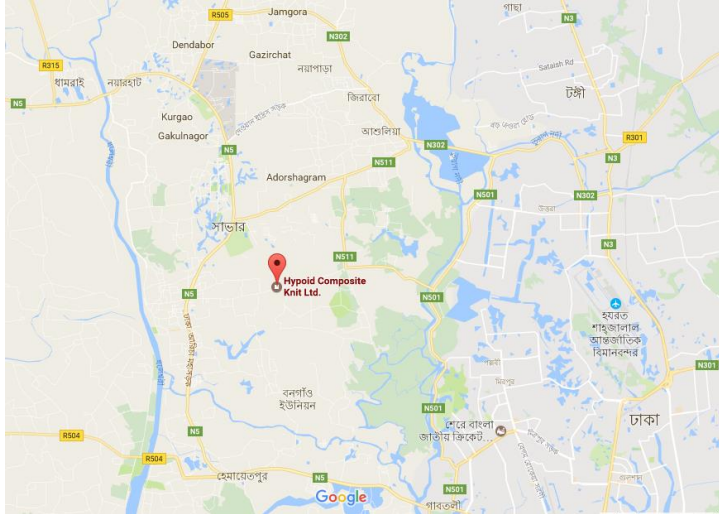
Textile is any object woven from natural or synthetic fibers. This also includes fabrics are made by the interlacing of yarns or threads by knitting, braiding, netting or felting. The primary natural fibers are from also sources (wool, silk and hair), vegetable sources (cotton, flax, and hemp) and, less commonly animals source (asbestos). Synthetic fibers have been under development from the late 19th century. The first synthetic fibers are known as regenerated fibers and were of natural origin, suchness cotton or wood pulp, dissolved in a solvent and extruded as a filament. Rayon was first produced in the 1920s and is one of the important early natural based synthetics. A fiber is defined as a unit of matter with a minimum length of 100 times its diameter, flexible, and capable of being woven. Within the militaries 'collecting field, the term textile generally means clothing such as jackets, shirts and head wear, but can also include some foot wear, web equipment, insignia, maps, flags, and banners. From fiber to fabric, Hypoid Composite Knit Ltd. is truly integrated under taking. The hypoid composite Knit Ltd. has the capability to offer complete product range for export textile markets. The goal of Hypoid Composite Knit Ltd. is to become the preferred partner for sourcing high quality fabrics and clothing from Bangladesh with highly advanced technology and an emphasis on developing local human sources. Hypoid Composite knit Ltd. Has the potential to make an important contribution to the nation's growing readymade garments exports sector.

## **CHAPTER-02**

### **GENERAL INFORMATION OF THE COMPANY**

## 2. GENERAL INFORMATION OF THE COMPANY

### 2.1 LOCATION MAP



## 2.2 COMPAN

### PROFILE

#### Company profile:

Company Name: Hypoid Composite Knit Ltd.

Type of Business: Manufacturer and

Exporter Legal Status: Private Limited Company

Year of Establishment: 2005

Corporate Office: House No.: 21/13, BabarRoad,Mohammadpur,  
Dhaka-1205,Bangladesh

Phone: +88-02-81238Fax :+88-02-9E-mail:hypoidck@yahoo.com

Address Factory: 176, South, Krishnapur, Rajashan,Savar, Dhaka  
P.OSouth krisnopor,  
Savar  
Phone:+88-02-  
7713933  
Fax:+088-02-7713899  
Bank:SouthEastBankLtd.2, KawranBazar,Dhaka-1215,  
Bangladesh

ProductionCapacity: Garments:27,000Pcs.perday(with18lines)  
Knitting:04Tonsperday  
DyeingCapacity:05Tonsperday  
Finishing:08Tonsperday  
Intimate:29,000PcsPerday(with16lines)

Factory Space: 6Acres

Turnover: US\$20.00million(RMG+Intimate)

TotalManpower: 2365No's

## **2.3 ABOUT HCK LTD**

Hypoid Composite Knit LTD is one of the most new generation manufacturer and exporter of knit wear garments. Our product range includes all inner&Outer wearing Knits. We started exporting from 2007 and since then, have expanded our business to various regions in North America (US, Canada etc., EU Countries UK, Germany, Norway etc.) and South Asian Countries. Since day one, company motto is to establish themselves as a reputable apparel manufacturer whose committed to customer's satisfaction, by producing high quality products, making on time shipment and delivering efficient & Quality services.

To achieve this place great emphasis on giving special attention to each of their client to accurately determine their individual requirements. Products and services are customized to meet the needs of each client.

## **2.4 ROOTS OF HCK LTD**

Hypoid composite our management is held together due to its highly roots, which is the relationship between the management & the employees. Our management has vast experience in various industries which involve coordination of people and work process. Some of our associate industries include Al-hajj Karim spinning mills, Golden line transport ltd. and fashion Universal. Hypoid composite employees are considered as an integral part of the company, which in turn strengthens our operation. Our Employees work with "Ownership"

## **2.5 VISION**

Hypoid Composite Kit Ltd is one of the up growing leading sustainable textile company by producing quality full products and observing highest social, economic and environmental standards. Its aim's to deliver the highest quality products and prompt services to our customers.

### **HCKL VISION IS THREE-FOLD**

Lead the textile industry in Bangladesh  
Observe highest social, economic and environmental standards  
Maintain a committed and satisfied clientele.

**HYPOID COMPOSITE KNIT LTD WISH TO**

Manufacture high quality yarn to withstand high levels of competitiveness.

Design, manufacture and sell high quality and affordable apparels and accessories.

To use latest technologies in manufacturing process.

To provide a safe working environment for the employees.

To operate the business with high motivation and deep commitment.

Erving and supporting the society in which we work.

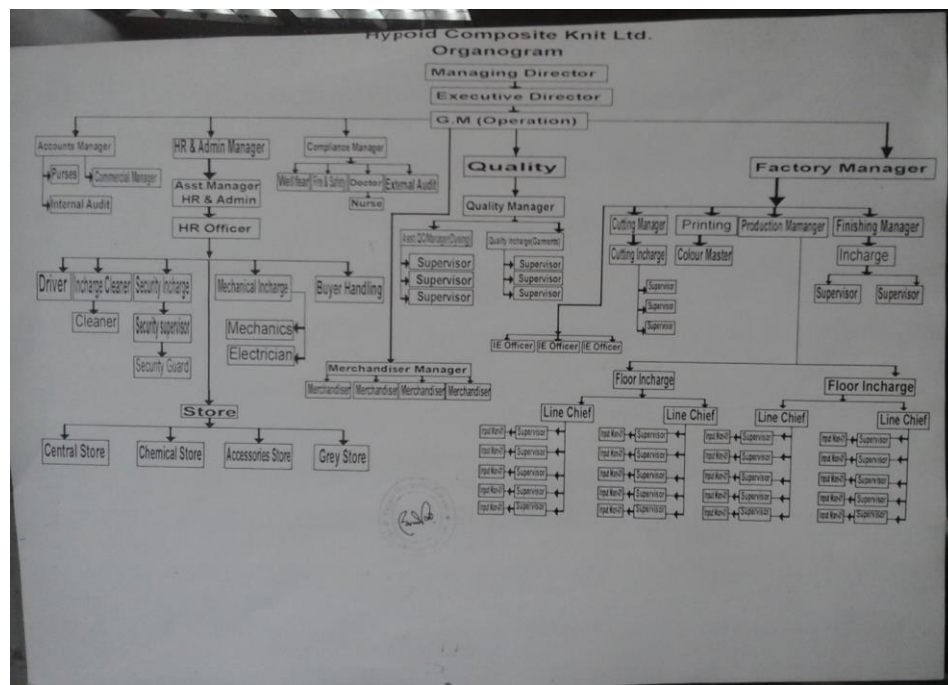
## AIMS&OBJECTIVESOFHCKL

To build up Hypoid Composite Knit Ltd as a one of the up growing and leading textile industry in Bangladesh up to five years.

To build up the Hypoid Composite Knit Ltd as international standard quality export.

To follow the all kinds of laws about labor, worker, human right, WTP,ETP, social compliance.

## 2.6 MANAGEMENT PROCESS IN HCKL



## **2.9 CERTIFICATION**

Being duly certified from leading brands and organizations in

ISO 9001:2000

WRAP, certification No 10628

OEKOTEX: Standard, Test no08, ID: HBD.61520

BSCI Certified

Guts Certified

Wall-mart evaluated. Supplier ID: 28084998

BGMEA, Registration No: 4977

BKMEA, Registration No: 979-A/2006

## **2.10 ACHIEVMENT**

BSCI 1<sup>st</sup> audit the Hypoid Composite Knit Ltd, DBID: 20609

Guts certificate wastaken.ID: 28084998

HCKL found OEKI-TEX certificate of Standard Composite Knit Mill in Bangladesh which ID NO is HBD.61520, Test No 08

## **2.11 EXTRA FACILITIES THAT PROVIDED BY HCKL**

Competitive Price

Highest quality level than other factory

On time delivery system

Shortest lead time

Maintain social commitments

Always Customer satisfaction

Meeting Buyers compliances

## **2.12 MAIN BUYERS**

1. N.T.D
2. KAPPA
3. Gore
4. Wall mart
5. ZARA etc.

**CHAPTER-03**  
**DESCRIPTION OF THE ATTACHMENT**

### **3.1 RAW MATERIAL**

The Raw material plays a vital role in continuous production and for high quality fabric. It is a unique substance in any production oriented textile industry.

#### **3.1.1 TYPES OF RAW MATERIAL**

1. Yarn
2. Fabric
3. Dyestuff
4. Chemical and auxiliaries

#### **3.1.2 SOURCE OF RAW MATERIAL**

##### **Yarn:**

All the yarns used from Al Haj Karim Spinning Mills Ltd. Also collected from Iraq Spinning

Mills, Salek spinning Mills, Korotoya Spinning Mills.

**Lycra:** Lycra and Spandex from Taiwan.

### **3.2 KNITTING SECTION**

#### **3.2.1 Knitting:**

The process of in which fabrics are produced by set of connected loops from a series of yarns is called knitting.

##### **Types of knitting:**

- Warp knitting.
- Weft knitting

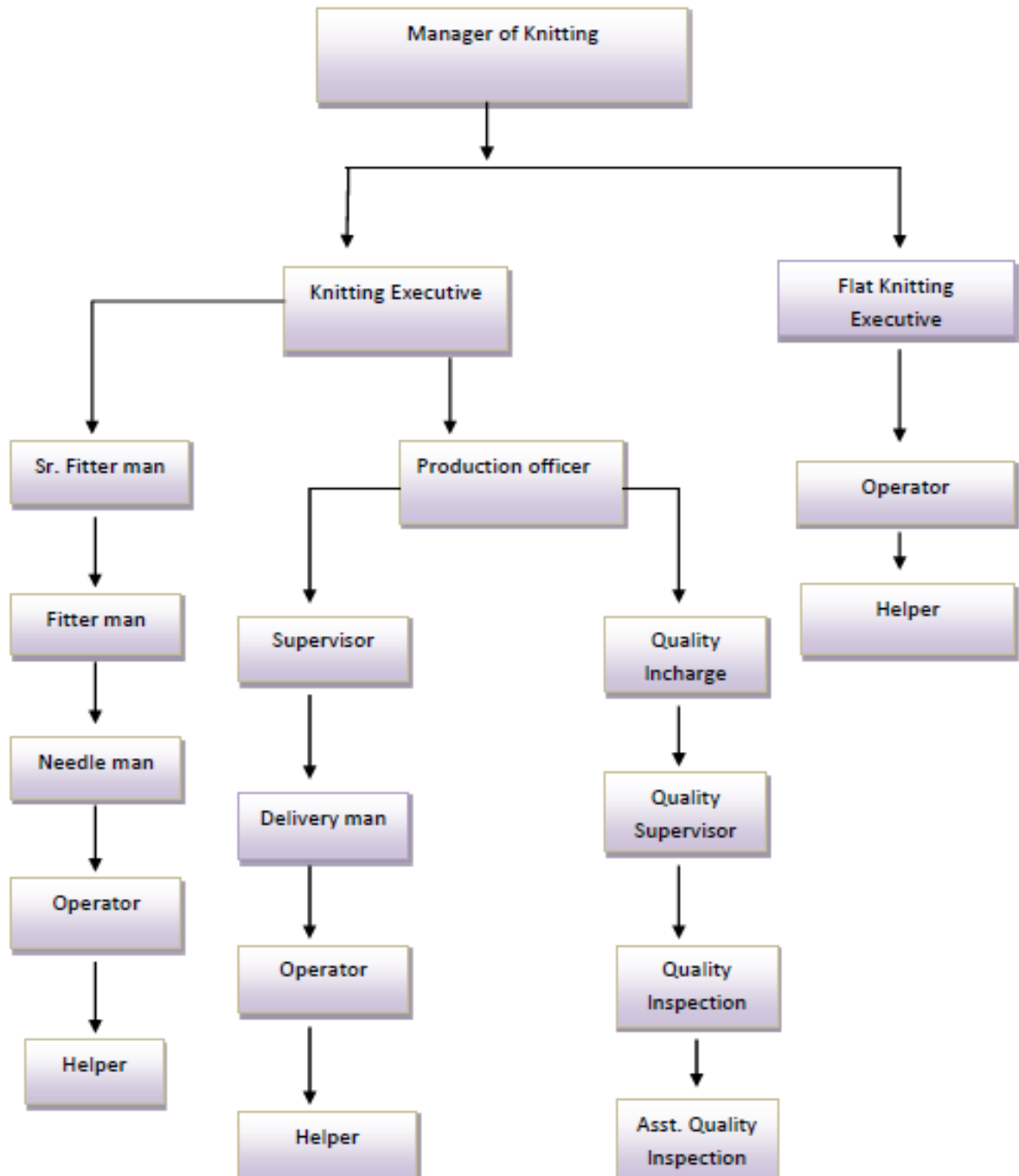
### 3.2.2 FOLLOWING ARE THE YARNS THAT ARE USED FOR KNITTING PROCESS

| Type of yarn                    | Count   |
|---------------------------------|---|
| Cotton                          | 16 <sup>S</sup> , 20 <sup>S</sup> , 24 <sup>S</sup> , 26 <sup>S</sup> , 28 <sup>S</sup> , 30 <sup>S</sup> , 34 <sup>S</sup> , 40 <sup>S</sup> |
| Spandex yarn                    | 20D, 40D  |
| Grey Mélange (C-90% V-10%)      | 24 <sup>S</sup> , 26 <sup>S</sup>   |
| PC (65% Polyester & 35% cotton) | 24 <sup>S</sup> , 26 <sup>S</sup> , 28 <sup>S</sup> , 30 <sup>S</sup>   |

### 3.2.3 LAYOUT OF KNITTING SECTION



### 3.2.4 MANAGEMENT ORGANOGRAM OF KNITTING SECTION



### 3.2.5 MACHINE DESCRIPTION OF KNITTING SECTION

|                           |                               |
|---------------------------|-------------------------------|
| Circular Knitting Machine | : Single Jersey, DoubleJersey |
| Single Jersey             | : 07                          |
| DoubleJersey              | : 05                          |
| Total no of M/C           | : 12                          |
| No. offline               | : 03                          |

### 3.2.6 MANPOWER OF KNITTINGSECTION

| Section            | No. of Person |
|--------------------|---------------|
| Manager            | 01            |
| Production officer | 02            |
| Quality Section    | 03            |
| Knitting Master    | 03            |
| Fitter man         | 03            |
| Needleman          | 02            |
| Supervisor         | 02            |
| Operator           | 12            |
| Helper             | 10            |
| Total              | 38            |

#### 3.2.6 Types of Fabric:

The following types of fabric are available in knit concern group

- Single Jersey
- Double Jersey
- Single Jersey with Lycra
- Drop Needle Single Jersey
- Single Lacoste

- Double Lacoste
- Pique
- Pique with Lycra
- 1x1, 2x2, 2x1, 4x2, 4x4 Rib
- Drop Rib
- Rib with Lycra
- Interlock
- Waffle
- Terry
- Fleece

### **3.2.7 MACHINE SPECIFICATION**

#### **MachineNo:1, 2 &3 (Rib**

#### **Machine)Technical Data:**

|                   |    |
|-------------------|----|
| Machine Diameter: | 30 |
| Machine Gauge:    | 18 |
| No of Feeders:    | 60 |
| No of Cam:        | 61 |

**Origin:** Made in Taiwan

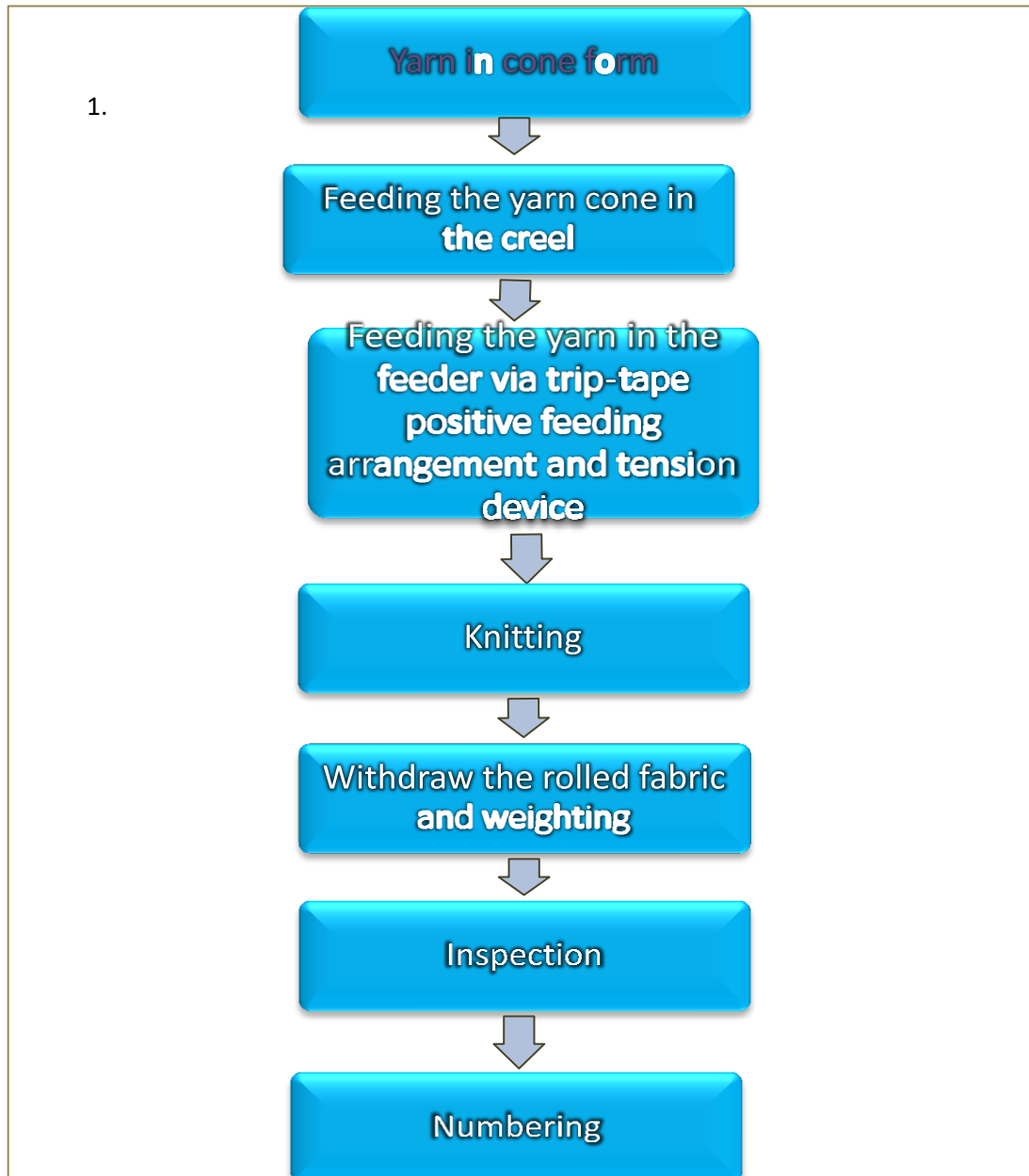
**Brand Name:** LKM

#### **MachineNo:4, 5 &6 Jersey machine:**

|                   |    |
|-------------------|----|
| Machine Diameter: | 30 |
| Machine Gauge:    | 24 |
| No offenders:     | 90 |
| No ofCam:         | 30 |

**Origin:** Made in Taiwan **Brand name :**LKM

### **3.2.8 PROCESS FLOW CHART OF KNITTING**



### **3.3 LAB DIP DEVELOPMENT**

#### **3.3.1 DEFINITION**

Lab Dip Development means the sample which is dyed according to buyer's requirements (similar shade and soon). Depending on lab dip development sample dyeing and bulk production dyeing planning done.

### 3.3.2 OBJECTIVE OF LAB DIP

The main objectives in lab dip are as follows:

To calculate the recipe for sample dyeing.


To compare dyed sample with swatch by light box or Spectroflash.

To calculate revised recipe for sample dyeing.


Finally approved Lab Dip (Grade: A BC)

### 3.3.3 MACHINERIES USED FOR LAB DIP IN HYPOID

#### **Machine no. :01**

 Name of machine: Lab dyeing machine

 Company: Xiamen Rapid Company Ltd.


 Model: H-24SF

 Origin: China


#### **Machine no: 02**

 Name of machine: Lab dyeing machine


 Brand: SDLATAS

 Origin: UK

#### **Machine no: 03**

 Name of machine: Light box

 Brand: VERIVIDE

 Type of light: 5 types

1. TL83
2. TL84
3. D65
4. Florescent
5. UV

#### **Machine no: 04**

 Name of machine: Data color machine

✚ Brand : SAV

✚ Origin: USA

✚ **Machine No: 05**

✚ Machine Name: Digital Balance

✚ Origin: USA

✚ Maximum capacity: 150 gm

✚ Readability: 0.01 gm

✚ Hem No: AR1530

### 3.3.4 STOCK SOLUTION PREPARATION

| SHADE %      | STOCK SOLUTION % |
|--------------|------------------|
| 0.0001-0.009 | 0.1              |
| 0.10-0.99    | 0.5              |
| 1-1.99       | 1                |
| 2-3.99       | 2                |
| 4 TOMORE     | 4                |

## 3.4 DYEING SECTION

### 3.4.1 DYEING

Dyeing is usually among the last of the long line of manufacturing operations which lead to the end product.

### 3.4.2 AUXILIARY SUBSTANCE OF DYEING

- Sequester engaging
- Defoaming agent.(without defaming agent dyeing may be uneven)
- Wetting agent

- Ant creasing agent
- Ant pilling agent
- Levelling agent
- Emulsifier

### **3.4.3 RAW MATERIALS FOR DYEING**

The raw materials used for production are-

1. Grey Fabric
2. Dyes and Chemicals

### **3.4.4 GREY FABRIC:**

Following types of grey fabrics are dyed:

Single Jersey.

Lycra Single jersey.

Slab Single jersey.

Interlock.

Lacoste. Pique.

Rib.

Lycra Rib.

1×1 Rib

2×1 Rib

2×2 Rib & others

### **3.4.5 MOST COMMON AND USABLE DYES ARE:**

1. Reactive Dyes (Cotton Dyeing).
2. Disperse Dyes (Polyester Dyeing)

### **3.4.6 INFLUENCING FACTORS FOR DYEING:**

The PH of the bath

The temperature of bath

The concentration of the electrolyte

The time of dyeing

The liquor ratio

### 3.4.7 DYEING PARAMETERS:

|     |   |            |
|-----|---|------------|
| 1.  | Initial Bath $p^H$                                  | 6.5~7.0.   |
| 2.  | Before Enzyme, bath $p^H$                           | 4.5~4.7.   |
| 3.  | After Enzyme & Aquachoron, $p^H$                    | 5.5~6.0.   |
| 4.  | Before Scouring & Bleaching, $p^H$ (With Enzyme)    | 5.5~5.8.   |
| 5.  | Before Scouring & Bleaching, $p^H$ (Without Enzyme) | 5.5~5.8.   |
| 6.  | Scouring & Bleaching, bath $p^H$                    | 10.0~10.5. |
| 7.  | After Scouring & Bleaching, $p^H$                   | 8.5~9.0.   |
| 8.  | Before Leveling Chemicals, $p^H$                    | 6.5~7.0.   |
| 9.  | After Leveling Chemicals, $p^H$                     | 6.7~7.0    |
| 10. | After Adding Dyes, $p^H$                            | 6.2~6.35   |
| 11. | After Addition of Salt, $p^H$                       | 7.5~8.0.   |
| 12. | After Addition of soda $p^H$                        | 10.5~11.0. |
| 13. | Before Hot Wash, Bath $p^H$                         | 6.8~7.2.   |
| 14. | Hot Wash, bath $p^H$                                | 8.5~8.7.   |

### 3.4.8 DYEING SEQUENCE WITH RECIPES

Light Color Process 100% Cotton :

Machine Wash:

Hydrous (2g/L)+Caustic(2g/L) +Foaming Agent(0.5g/L)

30 min at 90°C



Machine Wash

A. Acid  
(0.7g/L)  
↓  
20min at  
70<sup>0</sup>c

M/C Neutralized **Demineralization:**  
↓

Detergent (1g/L) Sequestering Agent(.5 g/L) Ant  
creasing Agent (.5 g/L)

20min at 80<sup>0</sup>c

**Scouring & Bleaching:**



Detergent (1g/L)  
Sequestering Agent (.5 g/L)  
Stabilizer (.8 g/L)  
Caustic (3 g/L)  
H2O2 (3g/L)  
60min at 98<sup>0</sup>c



**Neutralizations (Scouring & Bleaching):**

H2O2 Killer (.8g/L)

A. Acid (1g/L)

20min at 80<sup>0</sup>c



**Enzyme Wash:**

A. Acid(1 g/L)

Enzyme

(1%)



55min at 50°c, PH =4.5

**Dyeing:** Ant creasing Agent (.5g/L) Leveling Agent(1g/L)

A. Acid (.2g/L)

Dyes (According to shade %)

G. Salt (According to shade %)

Soda Ash (According to shade%)

60min

at 50°c



**Neutralization: (Dyeing)**

A. Acid (1g/L)

10min at 40-

50°c



**Soaping:**

Soaping Agent

(.5g/L)

20min at 70-80°c



**Fixing & Softening:**

Fixing Agent (.5g/l)

15min at 40°c



A. Acid (.5g/L)

Softener

(1.5g/L)

20min at 40°c



Drain the bath

### 3.4.9 MACHINES USED IN DYEING SECTION

#### Machine No: 01

**Name of m/c** : Which dyeing machine.  
**Brand** : Tong Gong  
**Origin** : Taiwan.  
**Capacity** : 50 Kg  
**Temperature** : Up to 140°C

#### Machine No :02Nameofmachine : Winch dyeing machine

**Brand** : Tong Gong  
**Origin** : Taiwan  
**Capacity** : 200kg  
**Temperature** : Up to 140C

#### Machine No :03

**Name of machine** : Winch dyeing machine  
**Brand** : Tong Gong  
**Origin** : Taiwan  
**Capacity** : 400kg  
**Temperature** : Up to 140C

#### Machine No :04

**Name of machine** : Winch dyeing machine  
**Brand** : Tong Gong  
**Origin** : Taiwan

**Capacity** : 600kg

**Temperature** : Up to 140C

**Machine No :05**

**Name of machine** : Winch dyeing machine

**Brand** : Tong Gong

**Origin** : Taiwan

**Capacity** : 800kg

**Temperature** : Up to 98C

**MachineNo:06**

**Name of machine** : Winch dyeing machine

**Brand** : Tong Gong

**Origin** : Taiwan

**Capacity** : 400kg

**Temperature** : Up to 98C

**Machine No : 07**

**Name of machine** : Winch dyeing machine

**Brand** : Tong Gong

**Origin** : Taiwan

**Capacity** : 200kg

**Temperature** : Up to 98C

**Machine No :08**

**Name of machine** : slitting machine

**Brand** : ACC

**Origin** : turkey

**Capacity** : 8tons/day

**Temperature** : Up to 140C

**Machine No: 09**

**Name of machine** : Stentor Machine

**Brand** : ACC

**Model:** TPG 2400-6

**Origin** : turkey **Heater type:** gas

**No. of chamber** : 06

**Power:** 152kw

**Volt:** 380 v.

**Air pressure** : 6 Atm

**Heater pressure** : 100

**Capacity** : 8 tons/day

**Machine No :10**

**Name of machine**  
: Fabric inspection Machine

**Brand** : OSHIMA

**Model** : CCS- 2400

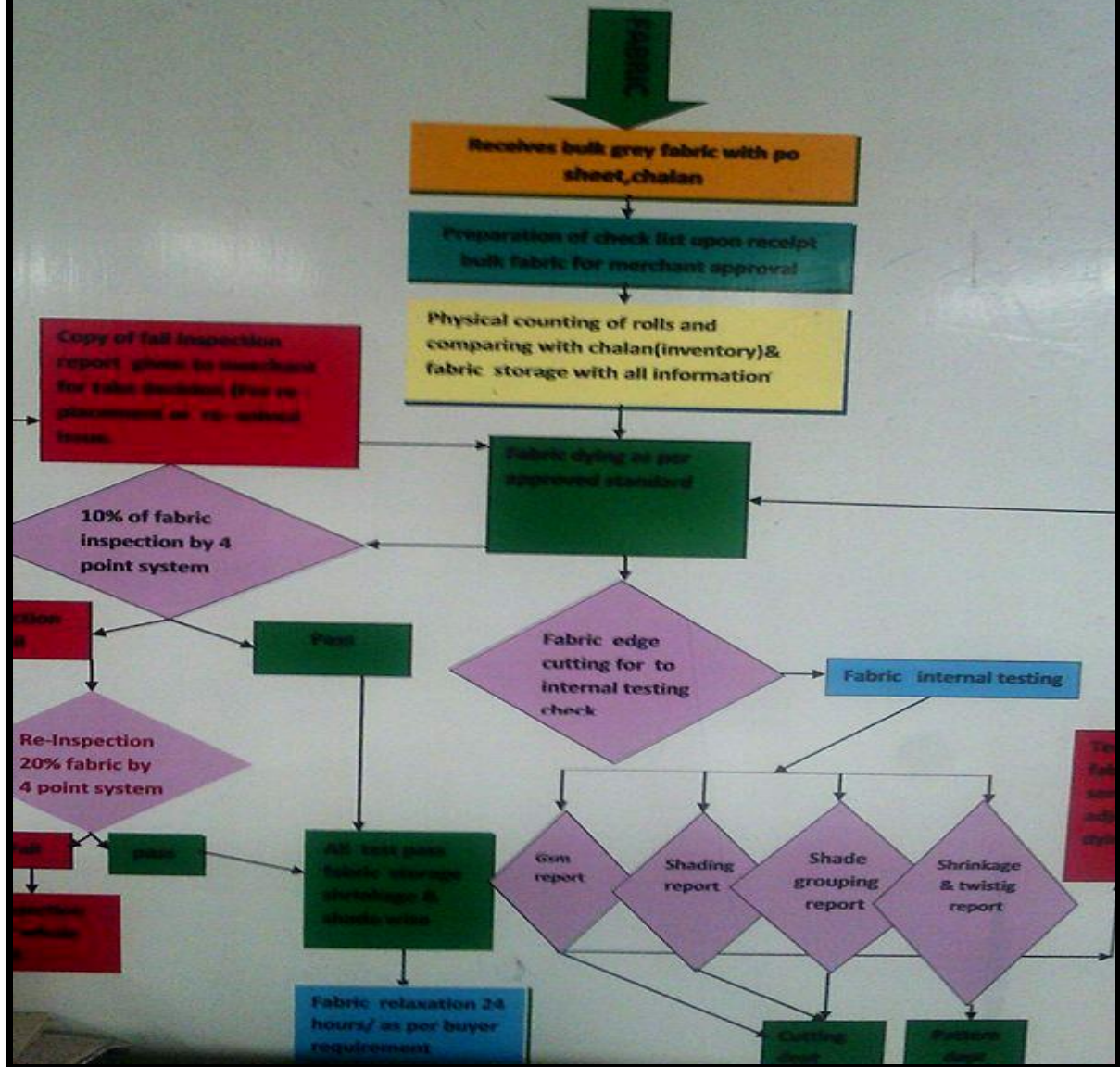
**Origin** : Taiwan

**3.4. FLOW CHART OF DYEING SECTION**

# Hypoid Composite Knit Ltd

## FABRIC WAREHOUSE & DYEING

### Process Flow Chart



### 3.4.11 PHOTO GALLERY OF DYEING SECTION

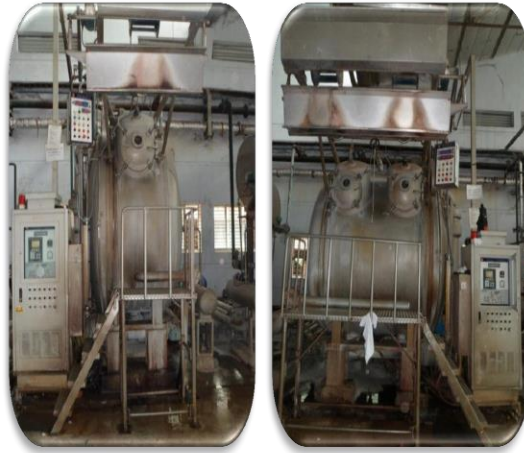
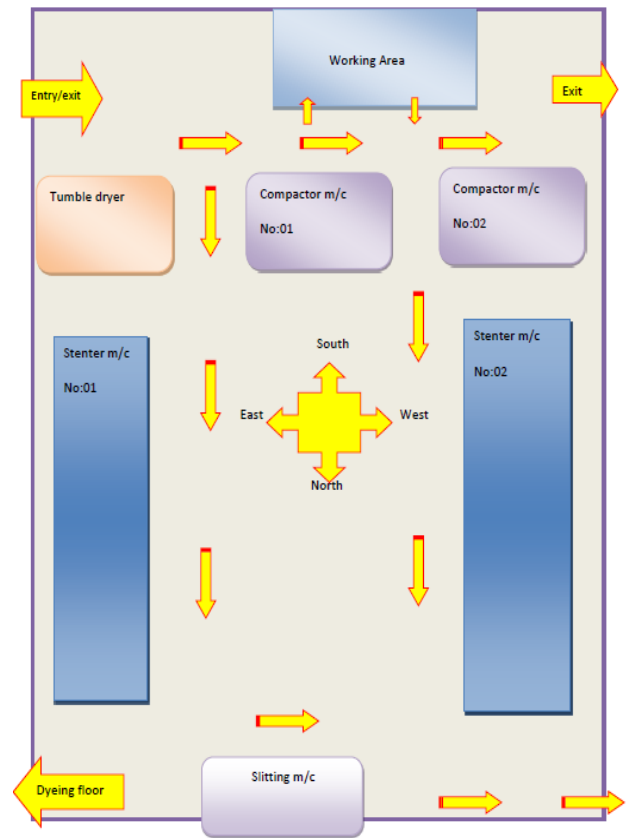


Fig: Winch dyeing m/c(1nozzle)

Fig: Winch dyeing m/c(2 nozzles')

## 3.5 FINISHING SECTION

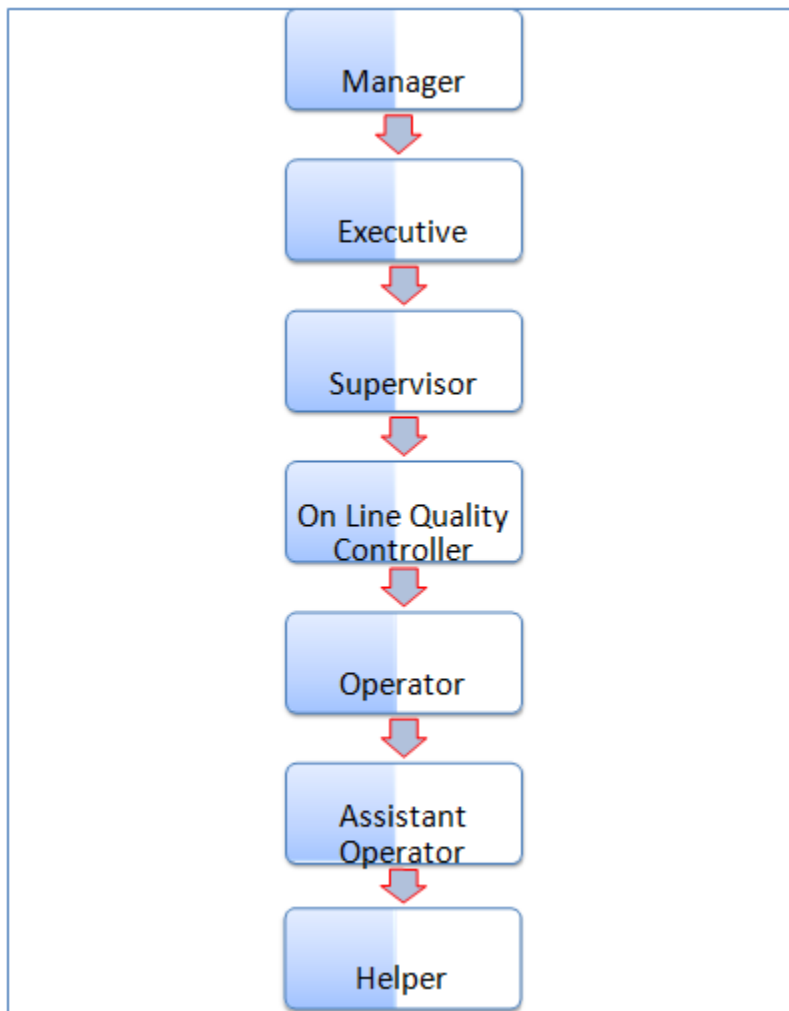
### 3.5.1 LAYOUT OF FINISHING SECTION



## Garment section



### 3.5.2 MANAGEMENT ORANOGRAM OF FINISHING SECTION



### 3.5.3 FUNCTION OF THE MACHINE:

Used to remove excess water after pretreatment and dyeing

To slit the tube fabric by the knife for opening of the fabric and ready for  
stuttering

### 3.5.4 STENTER MACHINE

**Brand name:**

Platinum. Country:

KOREA. Other

**specification:**

Speed range: Max: 110m/min. Use: 10-45 m/min.

Temperature range Max: 500 C

Use: 180 C-190C (For half feeder)

190C-200C (For full feeder)

No of motor in drying unit: 06

Total no of motor: 06

Max dia: 295cm.

Min dia: 95cm.



Steam pressure: 2 bar

Air pressure: 10 bar

Applied for: Open width fabric

### 3.5.5 FUNCTIONS OF STENTER MACHINES:

1. Heat set: Heat setting is done by the setter for synthetic fabric and blended fabric.
2. Finishing chemical: Finishing chemical apply on fabric by the stented.
3. Loop control: Loop control of the knit fabric is controlled.
4. Moisture: Moisture of the fabrics controlled by the stented.
5. Spatiality: Spirally controlled by the stented.
6. Drying: Fabrics dried by the tendering process.

7. Shrinkage: Shrinkage property of the fabric is controlled.

### **3.5.9 COMPACTOR MACHINE**

**Machine specification:**

Brand name: FERRARO

Type/model no: COMPTEx-RE

2800. Comply: ITALY.

No of motor: 17

Over feed =Max+35%, Min-35%.

Machine speed =Max32m/min, Min

4m/min. Temperature range: 100-200<sup>0</sup>C

Maximum width

=240cm Minimum

width =100cm Applied

for: Open fabric

Left overfeed:-20%+20%

Right overfeed:-20%+60%

High production:-20%+60%

Front overfeeding cylinder:-20%+60%

Middle belt:-20%+60%

### **3.5.10 FUNCTION OF THE MACHINE**

1. To compact the fabric
2. To control the shrinkage
3. To maintain proper width and G.S.M

## 3.6 STORE AND INVENTORY CONTROL

### 3.6.1 STORE & INVENTORY CONTROL

Inventory is planning and execution involves participation by most of the fundamental segment of business sales, production, purchase, finance and accounting.

### 3.6.2 INVENTORY SYSTEMS

For

Raw Materials:

In this factory, HYPOID COMPOSITE KNIT LTD. Raw material sari yarn of different type, different count and of different spinning mills of home and abroad.

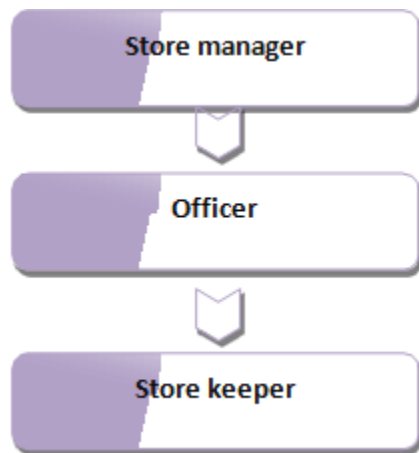
For

Spare:

Different spares parts of knitting machines and other equipment's are kept in store as in that there are no time and money losses while it is being used. Here is the list of spare parts as inventory:

- |                               |                       |
|-------------------------------|-----------------------|
| 1) Needle detector            | 13) Inverter          |
| 2) Fan                        | 14) Yarn Guide feeder |
| 3) Air gun                    | 15) Oil Nozzle        |
| 4) MP Fbelt tensioning device | 16) Cam box           |
| 5) Air nozzle                 | 17) Magnet            |
| 6) Fabric spreader            | 18) VDQ pulley        |
| 7) Fabric light               | 19) Fan broker        |
| 8) Compressor line pipe       | 20) Oil Meter cover   |
| 9) Air blower                 | 21) Oil plutonic      |
| 10) Hemminge                  | 22) Air meter cover   |
| 11) Oil Tanks                 | 23) Knot catcher      |
| 12) Fabric roller             | 24) Feed erring boll  |

### 3.6.3 ORGANOGRAM OF STORE:



### 3.6.4 TYPES OF STORE

In Hypoid Composite Knit Ltd there is found five kinds of store.

They are: 🚧 General store

🚧 Yarn Store

🚧 Grey Store

🚧 Dyes, Chemical and Auxiliaries Store

🚧 Finished Store

🚧 Accessories

### 3.6.5 GENERAL STORE

In general store different kinds and types of material are kept. In here different kinds of machines, machine parts, materials used in industry floor are kept.

### 3.6.6 YARN STORE

In yarn store only yarn are stored. In Hypoid Composite Knit Ltd yarn store the following count of yarn are stored.

34 count

32 count

30 count

28 count

24 count.

### **3.6.7 GREY FABRIC STORE**

All the grey fabrics are stored in the fabric store near the batch section .Different types of fabric are listed in the sheet according to fabric types, quantity and consumer's requirement.

### **3.6.8 FINISHED STORE**

In finished store the finished fabric of Hypoid Composite Knit Ltd is stored.In HCKL finished product are as follow:

- Basic T -Shirt
- Tank Top
- Long Sleeve T-Shirt
- Polo Shirt
- Shorts
- Pajama Set
- Ladies and Kids Knitwear
- All kinds of Knit garments and knit fabrics

### **3.6.9 ACCESSORIES STORE**

Inaccessoriesstoreallkindsofaccessoriesarestored.Thefollowingaccessoriesarefoundin HCKL accessories store:

- Sewing Thread
- Main Level
- Care Level
- Size Level
- Heat Transfer Level
- Polythene
- Photo board
- Bard cud Sticker
- Gum tape
- Dusting
- Taping
- Tissue
- Button
- Zipper
- Twill Tape
- Hanger
- Size
- Cartoon
- Mobil on tape

### **Equipment's used in Dyes & Chemical**

Hand Gloves and Apron, Long Boot Shoe and goggles

#### **3.6.10 REMARKS**

Proper inventory control of raw materials, semi-finished goods, finished goods and other miscellaneous goods lead smooth production. As HYPOID COMPOSITE KNIT LTD. follow the correct way of inventory control system, it can have a good and huge production as it demands.

#### **3.6.11 PHOTO GALLERY**



Pic: Finished Goods Store



Pic: Grey Fabric Store

## 3.7 GARMENTS SECTION

### 3.7.1 MARKER MAKING

Marker is a thin paper which contains all the pattern pieces of a garment. It is made just before cutting and its purpose is to minimize the wastages. The width of a marker is equal to the width of the fabric and it should not be greater than the width of the fabric i.e. the width of the marker is kept less than or equal to the width of the fabric.

The pattern pieces should be placed very carefully in such a way that it will obviously minimize wastages.

### 3.7.2 OBJECTIVES OF MARKER MAKING

- a) To reduce cost;
- b) To improve the quality of the garments;
- c) To reduce the cutting time;
- d) To facilitate large scale production.

### 3.7.3 GOOD MARKER PLAN DEPENDS ON

Skill of marker man or operator,

Fabric length and width; if fabric length or table length is high marker efficiency is also high,

Type of garments,

Garments design,

Attentiveness of marker man or operator,

Fabric characteristic,

Quality of garments etc.

So, good marker plan minimizes the wastage of fabric. Therefore, good marker plan is very important.

#### **3.7.4 CONSIDERABLE POINTS BEFORE MARKER MAKING:**

Fabric width (1/2) higher than marker width

Fabric length higher than marker length (1”+1”)

The grain line should be parallel to the line of Wales in knit fabrics.

All the pattern pieces of garments should be along the same direction when laid on an asymmetric fabric.

#### **3.7.5 FACTORS RELATED TO MARKER EFFICIENCY:**

Marker planer

Size of garments

Marker length

Pattern engineering

Fabric Characteristics

Marker making method

Marker width.

#### **3.7.6 MARKER EFFICIENCY**

Marker efficiency means the ratio of the all pattern on the marker paper to total area of the marker and it is expressed as percentage (%) is called marker efficiency.

All pattern on the marker

$$\text{Marker Efficiency} = \frac{\text{All pattern on the marker}}{\text{Total area of the marker}} \times 100\%$$

If marker efficiency is more than fabric wastage% is low. If marker efficiency is low then fabric wastage% is more.

#### **3.7.7 FACTORS AFFECTING MARKER EFFICIENCY**

Manufacturers of the marker;

Size of pattern pieces;

Length of the marker;

Pattern Engineering;

Nature of the fabric;

Method of marker making;

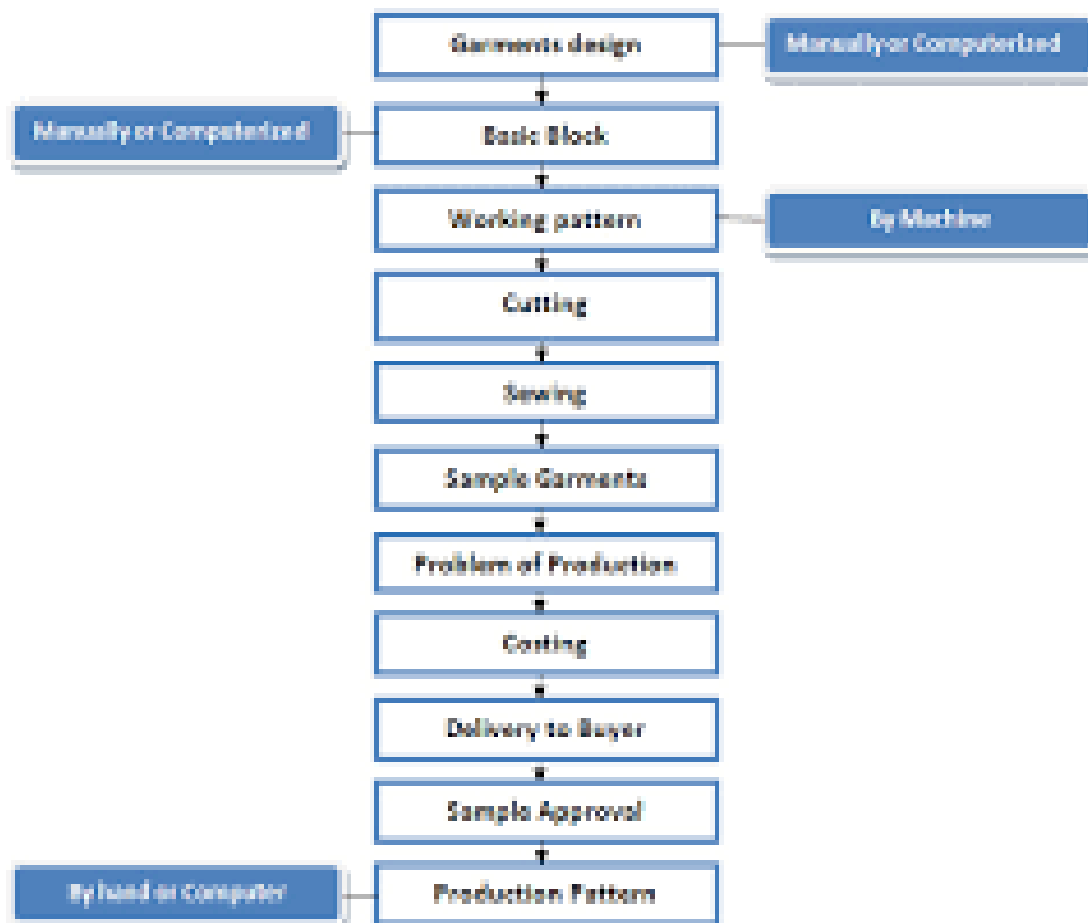


Fig: fabric spreading & cutting

### 3.7.8 SAMPLE SECTION

This section include “designing to Pattern making the main function of this is to make Approved sample

### 3.7.9 FLOW CHART OF GARMENT MANUFACTURING



### **1. Design/ Sketch:**

For the production of knit garments, or woven garments a sketch of a particular garment including its design features is essential to produce on paper so that after manufacturing of that garment could be verified or checked whether it could be done manually or with the help of computer.

### **2. Pattern design**

Hard paper copy of each component of the garment of exact dimension of each component is called pattern. The patterns also include seam allowance, trimming allowance, darts, and pleats, ease allowance, any's special designed details. Pattern design could also be done manually or with the help of computer.

### **3. Sample Making:**

The patterns are used to cut the fabric. Then the garment components in fabric form are used to sew/assemble the garment. Sample garment manufacturing is to be done by a very efficient and technically sound person.

### **4. Production Pattern:**

The patterns of the approved sample garment are used for making production pattern. During production pattern making, sometimes it may be necessary to modify patterns design if buyer or appropriate authority suggests any minor modification.

### **5. Grading:**

Normally for large scale garments production of any style needs different sizes to produce from a set of particular size of patterns, the patterns of different sizes are produced by using grade rule which is called grading.

## **3.7.10 SAMPLE TYPES**

The garments, which are required for bulk Production are called sample.

- Approve sample.
- Counter sample.
- Photo sample.
- Preproduction sample, etc.



### 3.7.11 SAMPLING PROCESS FLOWCHART

Receiving the show as from buyer (by Merchandiser)

↓  
Pattern making

↓  
Cutting the fabrics by pattern

↓  
Sewing

↓  
Quality inspection

↓  
Packing

↓  
Send sample to the buyer (by Merchandiser)

### **Fabric Spreading:**

It is the process of arranging fabric on the spreading table as per length and width of the marker in stack form. Normally height of the lay/fabric is limited unto maximum six inches high. But 4 inch to 5 inch height of the lay is safe.



### **3.7.12 EQUIPEMENT OF FABRIC SPREADING**

Spreading equipment consists of:

- Spreading surface.
- Spreading machines.
- Fabric controlling device.
- Fabric cutting devices.

### **3.7.13 OBJECTS OF FABRIC SPREADING**

- To place the number of plies of fabric to the length of the marker plan correctly aligned as to length and with and without tension.
- To cut the garments in bulk and saving in cutting time per garment that result from cutting many plies at the same time.

### **3.7.14 METHOD OF SPREADING**

1. Manual method.

2. Mechanical method.

- a) Semi - automatic
- b) Full-automatic.

### **3.7.15 REQUIREMENTS OF SPREADING**

1. Alignment of fabric ply.
2. Correct ply tension
3. Fabric must be flat.
4. Elimination of fabric flaws.
5. Correct ply recti on and stability.
6. Elimination of static electricity.
7. Matching checks and stripes.
8. Easiest parathion of cut lay into bundles.
9. Avoidance of fusion of plies during cutting.
10. Avoidance of dist.

### **3.7.16 CUTTING**

On the fabric lay/spread the marker paper is placed carefully and accurately ,and pinned with the fabric to avoid unwanted movement or displacement of the marker paper .Normally straight knife cutting machine is used to cut out the garments component as per exact dimension of each patterns in stack form ,care must be taken to avoid cutting defects.

### **3.7.17 OBJECTS OF CUTTING**

The object to cutting is to separate fabric parts from the spread of lay according to the dimension of the marker for the purpose of garments making according to the pattern pieces.

### **3.7.18 REQUIREMENTS OF FABRIC CUTTING**

The objective of cutting is to separate fabric parts as replicas of the pieces in the marker plan. Achieving this objective, certain requirements must be fulfilled.

- Precision of cut.
- Clean edges.
- Unscathed, infused edges.
- Support of the lay
- Consistent cutting

### **3.7.19 METHODS OF CUTTING**

There are mainly three methods of cutting. They are

1. Completely by manual
2. Manual operated
  - a) Straight Knife
  - b) Band  
knife

c) Die

Cutter

d) Notched

**STRAIGHTKNIFE CUTTER:** This machine salvia label for cutting material slake cotton, wool enemy, silk, chemical fiber, sponge other etc.thismachinehas8inchstraightknife. Powerful motor can bestartedbycentrifugalswitch.Itisequippedwithautomaticknifegrinding device and lubrication system. It has feature so first table run, convene into operation sand powerful cutting ability.

Working principle of straight knife is cutting accessories:

Firstly, switch on this cutting machine.

Then, place the cutting machine at any corner of the table

Then switch on the blade

Then the operator moves the machine by hand through the stationary fabric layers

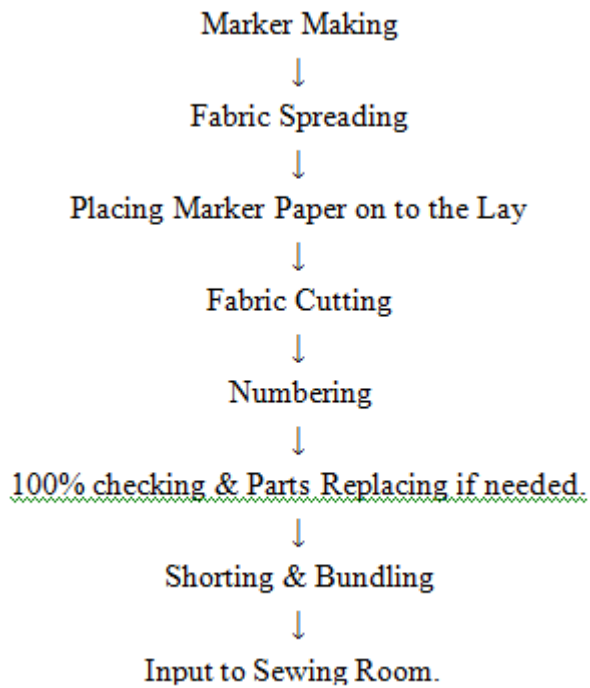
And cut along marker lines until finish the marker.

Some excellent features of this cutter make this popular to garments industry all over the world. Though now a day many factories are using computerized method for saving manpower and time, also better quality.

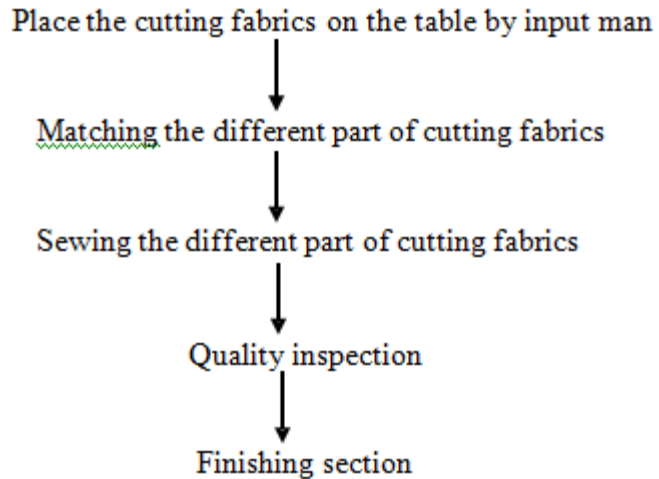
### 3.7.20 SORTING AND BUNDLING

Sorting and bundling is done after cutting .here the fabric parts are separated after cutting according to the roll of fabric and serial number is given with help of labeling .It is done so that ,during sewing shade variation cannot be occurred .Bundle number is given to all the bundles for better matching the garments parts .For numbering purpose ,a labeling machine is usedtoaddstickerongarments.Allpartsofgarmentswouldbegivensamenumber so that, during sewing,.Sewingpersonnelcanrecognizetheindividualgarmentpartseasily.Thisisdone for avoiding shade variation or any kind of mass matching.

### 3.7.21 SEQUENCE IN CUTTING ROOM



### 3.7.23 FLOW CHART OF SEWING SECTION



### 3.7.24 MANPOWER

General Manager: 01  
Production Manager: 01  
Assist. Production Manager:01  
Line Chief: 05  
Supervisor: 10  
Operator: 110  
OperatorAssistance:115  
Iron ssssssman: 15  
StoreIn-charge:01  
Store Assistance: 03

### 3.7.25 EQUIPMENT

Plain Machine: 95 set

4 Thread Overclock: 56 set

3 Needle Flat Lock: 42 set

4 Needle Flat Lock: 03 set

Auto controlled 1 Needle Lock stitch : 02set

Elastic Attaching Machine : 03 set

Button attaching Machine : 02 set

Button Hole machine : 02 set

Backstop Machine : 03 set

Bar Tack Machine : 02 set

2 Thread Over Edge for Butt and sewing : 02 set

Kansai Special : 07 set

Dino Automatic Rib Cutter : 02 set

Oshima Needle Detector : 01

UZU Thread Sucking Machine : 01 set

### 3.7.26 MACHINES DETAILS IN SEWING UNIT OF HCKL

| Machine                  | Brand Name | Country of Origin | Sets | Total Quantity |
|--------------------------|------------|-------------------|------|----------------|
| Plain Machine            | Siruba     | Japan             | 20   | 95             |
|                          | Juki       | Japan             | 62   |                |
|                          | Sunsir     | Japan             | 13   |                |
| Over Lock Machine        | Siruba     | Japan             | 7    | 56             |
|                          | Juki       | Japan             | 44   |                |
|                          | Yamata     | Japan             | 5    |                |
|                          |            |                   |      |                |
| Flat Lock cylinder Bed   | Siruba     | Japan             | 4    | 20             |
|                          | Juki       | Japan             | 13   |                |
|                          | Sunsir     | Japan             | 3    |                |
|                          |            |                   |      |                |
| Flat Lock Flat Bed       | Siruba     | Japan             | 4    | 25             |
|                          | Jiki       | Japan             | 14   |                |
|                          | Yamata     | Japan             | 3    |                |
|                          | Gemsey     | Japan             | 4    |                |
| Back Tap Machine         | Siruba     | Japan             | 3    | 3              |
| Kansai Special           | Kansai     | Japan             | 7    | 7              |
| Button Attaching Machine | Siruba     | Japan             | 1    | 2              |

### 3.7.27 SEWING FAULT

There are various types of sewing problems founding sewing floor. Among the problems the following are the main –

Problem of formation: It has four types as follows \_

#### **Supplied stitch**

Causes:

- Loop size of needle is small
- Bent needle

Tension variation of lopper and needle thread

#### **Staggered stitch** (Stitch line is not parallel

with seam line) Causes:

- Bent needle
- Wrong needle point
- Improper needle adjust

**Unbalanced stitch**(If bobbin thread doesn't work, it produces hole forms this stitch) Causes:

- Incorrect tension  
of sewing thread

### 3.7.28 SEWING SEQUENCE OF T-SHIRT IS DONE AS THE FOLLOWING

Number matching front 2 black pant (beckon pant on upper side)

Solder stitching (By over lock m/c)

Neck rib truck (By plain m/c)

Neck rib sewing by plain m/c

Neck rib joins with body part

Neck top  
sin

Solder to solder back tip

Size label  
sewing

Solder to solder back top sin

Sleeve marking ad number matching with body parts.

Sleeve tuck with body part (Sleeve mark point& solder mark point)

Sleeve joint with the body part

Side sewing and care label joint

Bottom hem tuck (at the end side)

Bottom hem sewing

Arm bottom hem joint

Inspection

### **3.7.29 SEWING INSPECTION:**

Each and every garment after sewing passes through the inspection table/point, where the garments are thoroughly and carefully checked to detect/find any defect if present in the garment. The defects maybe for example variation of measurement, sewing defect, fabric defects, spots etc. if the defects possible to overcome, then the garmentissentto the respective

personfor correction.Ifthedefectisnotcorrectionable,thenthegarmentis separatedas wastage.



### 3.7.30 FINISHING SECTION

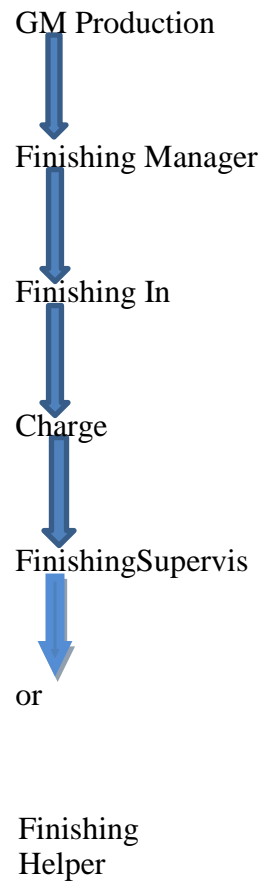
This section includes process from Ironing to send to buyer. After making, it should be treated by steam ultimately make the garments attractive as per buyers approved sample.

The process by which unwanted crease and crinkle are removed with the use of ironing, the smoothness, brightness and beauty of the garments is called finishing. In the garment industries it is called ironing. This process plays an important role to grow attractiveness to the buyers.

### 3.7.31 MANPOWER

|                   |      |
|-------------------|------|
| In Charge         | : 01 |
| Supervisor        | : 02 |
| Iron Man          | : 14 |
| Folding Man       | : 10 |
| Packing Man       | : 04 |
| Quality Inspector | : 20 |

### 3.7.32 ORGANOGRAM OF FINISHING SECTION



### 3.7.33 LIST OF ACCESSORIES USED IN FINISHING

Main Level  
Size Level  
Care Level  
Hang Tag  
Barcode Sticker  
Poly Bag  
Tag Pin  
Carton  
Hang Tag String  
Clip  
Paper Gum Tape  
Silica Jell

### **3.7.34 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 look nice to the customer. Folding of the garment is also done here for poly packing of the garments as per required dimension.



Fig: Ironing

### **3.7.35 OBJECTIVE OF IRONING:**

1. Remove of unwanted creases and crinkles.
2. To apply creases where necessary.
3. Shaping.
4. Under pressing.
5. Under pressing.
6. Final pressing.

### **3.7.36 FINAL INSPECTION:**

It is the last stage of the manufactured garments on behalf of the garment manufacturing organization, to detect any defective garments before packing.



### 3.7.37 CHEMICAL USED TO REMOVE SPOT

- |                  |                    |
|------------------|--------------------|
| 1. Dyeing Spot   | :Lifter            |
| 2. Cutting Spot  | : Thinner          |
| 3. Printing Spot | : Thinner          |
| 4. Oil Spot      | : Thinner or Power |
| 5. Sewing Spot   | :Lifter            |

**THINNER:** Thinner is used to remove this oil spot, color spot, dust and dirty spot, etc. Lifter: Lifter is used to remove the oil spot, soil spot, sewing spot etc. Water: Water is used to remove the dirty spot, ink color, etc.

### 3.7.38 PACKING:

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

-----

Fig: Garments  
Packing

### 3.7.39CARTOON

Generally there are three types of carton. They are,

#### 1. Depend on Stitching:

Stitching Carton.

Non-Stitching Carton.

#### 2. Depend on ply:

3 Ply Carton

5 ply Carton

7 ply Caron

#### 3. Depend on Size:

Master Carton.

Inner Carton.

## **CHAPTER 4**

### **IMPACT OF INTERNSHIP**

## **4.1 Sample Section**

In Sample Section we have learnt about various kinds of sample and also function of sample. Cleared the conception about different types of sample are required to produce a garment.

## **4.2 Pattern & Marker Section**

In CAD & Marker Section we have learnt about making pattern and marker, grading by manually or by computer.

## **4.3 Sewing Section**

In sewing section, we practically saw different types of sewing machine. We saw the workers activities, their work culture, time table and their work efficiency which is calculated by their performance.



Fig:sewing section

## **CHAPTER-5**

## **CONCLUSION**

## **5.1 Conclusion:**

Industrial training is an important and essential part of education as through this training we learn all the cementations of the processes which we have studied theoretically. It give opportunity to compare the theoretical knowledge with practical fact sand thus develop our knowledgeandskills.Thisindustrialtrainingalsogivesusanopportunity to enlarge our knowledge of textile administration, production planning, procurement system, production process, and machineries and teach us to adjust with the industrial life.

We have found ourselves fortunate to have our industrial training at HCK Ltd. It has a capacity with a very efficient production team .HCK Ltd has a very good, well equipped and modern laboratories and producing a wide range of color. During my training period we have noticed that HCK is very concern about their quality and they rarely com plain. The management of HCK Ltd is very organized, pre-active and co-operative.

At the end of the day we realized that industrial training make our knowledge's application practically and make us confident to face any problem of our job sector.