



Daffodil
International
University

Faculty of Engineering
Department of Textile Engineering

REPORT ON
Industrial Attachment
At
KC Washing Plant, Nipa Group
Course Title: Industrial
Attachment Course Code:
TE-431

Submitted By

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

Advance in Apparel Manufacturing Technology

Duration: From September 25, 2018 to November 20, 2018

Acknowledgement

At first my gratefulness goes to Almighty Allah to give me strength and ability to complete the industrial training and this report. You have made my life more bountiful. May you name be exalted, honored and glorified.

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My gratitude also goes to all the employees of **KC Washing Plant Ltd.** for their sincere co-operation, support and valuable advice which they have provided us during the training period.



LETTER OF APPROVAL

To
The Head
Department of Textile Engineering
Daffodil International University
102, Shukrabad, Mirpur Road, Dhaka 1207

Subject: Approval of Project Report of B.Sc. in Textile Engineering Program

Dear Sir

I am just writing to let you know that this report title as “**Industrial Attachment**” has been prepared by the students bearing ID 151-23-4097, 151-23-4206 and 151-23-4245 here is completed for final evaluation. The Whole report is prepared based on the proper investigation and interruption through critical analysis of empirical data with required belongings. The students were directly involved in their Industrial Attachment activities and the report become vital to spark of many valuable information for the readers.

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

Yours Sincerely

Mohammad Abdul Baset
Assistant Professor
Department Of Textile Engineering
Faculty of Engineering
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DECLARATION

We hereby declare that, this project has been done by us under the supervision of Mohammad Abdul Baset, Assistant Professor, Department of Textile Engineering, Faculty of Engineering, Daffodil International University. We also declare that, neither this Industrial Attachment nor any part of this Industrial Attachment has been submitted elsewhere for award of any degree or diploma.

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CHAPTER-1

EXECUTIVE SUMMARY



1. Executive Summary

Industrial attachment is the first step to professional life of student, especially of technical Side. It's an indispensable part of study a practically running processing technology of an industrial unit for a student .In our university , processing machines are not in continuous running condition, so it would only provide demonstration of mechanical features & processing technology of the material in accomplishment of the theory there of but not of the situational variables to achieve practical knowledge. So two months industrial attachment program in a dyeing mill was arranged for us.

Textile education can't be completed without industrial training. Because this industrial attachment program minimizes the gap between theoretical and practical knowledge and make me accustomed to industrial environment. I got an opportunity to complete two month long industrial training in **KC Washing Plant** a sister concern of **Nipa Group**. It has well planned & equipped Washing and Knit dyeing, finishing units in addition to facilitate Knitting and Knit wear manufacturing.

The rationale behind the existing structure and future expansion of **KC Washing Plant** is to capture value-added at each stage of the textile finishing process.



CHAPTER-2

INFORMATION ABOUT THE FACTORY

2.0 Basic Information

2.1 Company Profile

Name of the company: KC Washing Plant, NIPA Group

Company Type: Washing Plant

Year of Establishment: January 2017

2.2 Address

Location : Raturi, Katchkura, Uttarkhan, Uttara Dhaka (North)-1230

Email: info@nipagroup.net

Website: www.nipagroup.com.bd

Telephone: (+88 02) 8924022, 8950493, 8911475, 8953510

2.3 Head Office

slam Bag, Holand Road, Dhakhinkhan Uttara, Dhaka-1230

2.4 Location Map

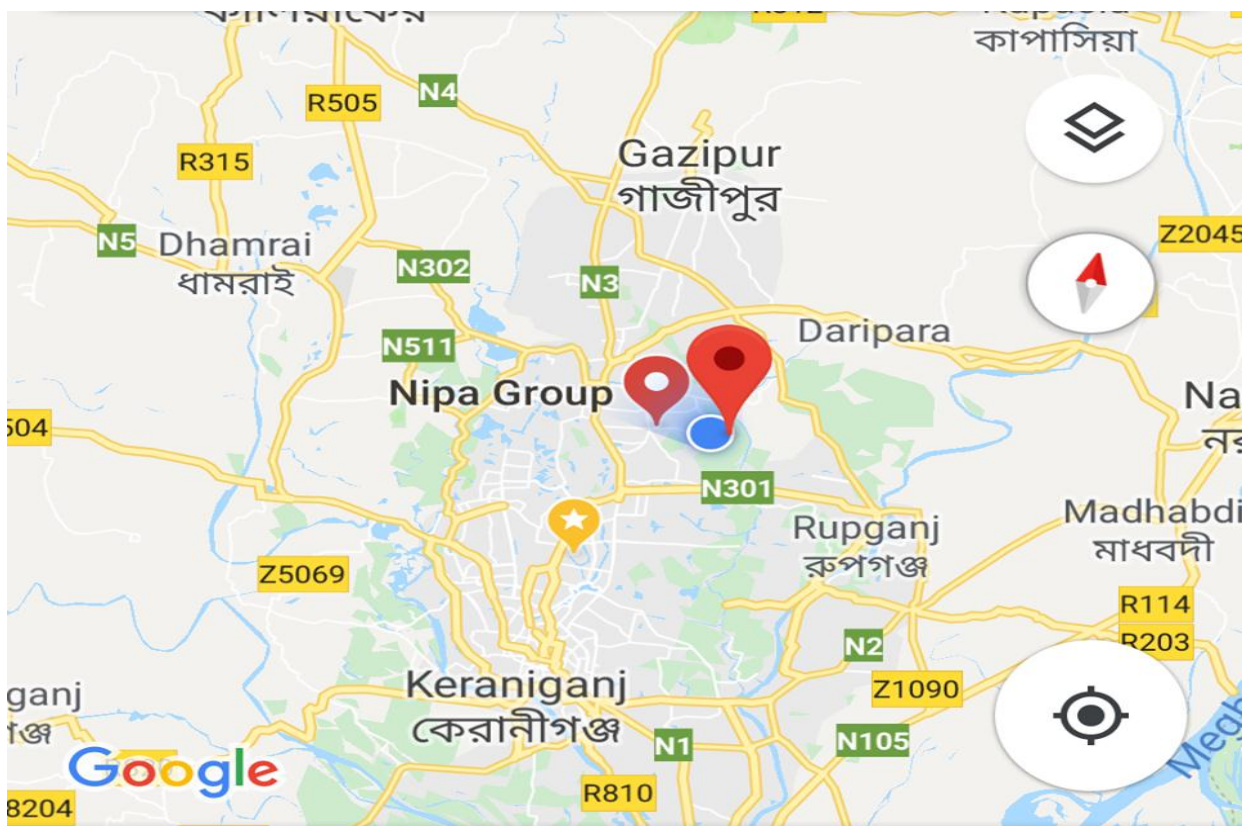


Fig: Location of KC Washing Plant, NIPA Group



2.5 History

KC Washing Plant established **January 2017** Washing plant with state of the art finishing Facilities and highly skilled washing experts From renowned worldwide washing facilities, This ensures consistently quality which can Provide customers satisfaction according to Customers' requirements. We used specialized machines to achieve various dry process effects and specialized detailed design. Our objective is not just to meet the growing demand in industry but our aim is to provide a quality services to the garment industry that continuously goes beyond this. We focus on building a long term partnership with our customers providing them not only with the highest levels of service but also continuously working with them to develop their creativity in terms of developing design according to customers' requirements. Our washing plant certified by GOTS,GRS. We have WTP,ETP for refining our water and refresh water from effluent.

2.6 Objectives of KC Washing Plant

Our objective is not just to meet the growing demand in industry but our aim is to provide a quality services to the garment industry that continuously goes beyond this. We focus on building a long term partnership with our customers providing them not only with the highest levels of service but also continuously working with them to develop their creativity in terms of developing design according to customers' requirements.

2.7 Main Buyers

Brand Name	Country of origin	Brand Logo
Walmart	USA	
Next	United Kingdom	
Primark	Ireland	
Jcpenny	USA	
Lidl	Germany	

2.8 Vision

We instigated our journey 1993 with a vision of becoming the most recognized woven & knit manufacturer of the country as well as global clothing leader to a new high by offering the best quality and efficiency. We have expanded capacity, developed a skilled management team, workforce and integrated sophisticated technologies in order to become globally competitive. Our painstaking efforts to reengineer each steps of our value chain like-procurement, production process, planning, productivity, technologies. And turned them into centralized to get maximum outcome. Focusing solely in woven & knit apparel lines, we have adopted a structure by rearranging its value chain to deliver high quality products in shorter lead time with flexibility in order size. Moreover, having endless efforts to ensure internationally accepted employment practice, our clients recognize us as a partner to protect their value system and images among final consumers. It is a moment of celebrate for NIPAGROUP to introduce ourselves to our clients and patrons. We believe whatever we have achieved; its credits should be directed toward our clients.




2.9 Bankers

Bank Name	Bank Logo
South East Bank Limited	
NCC Bank	

2.10 Certification

ISO 9001:2000
GOTS Certified
GRS Certified
BSCI Certified

2.11 Products

Product Name	Image
Denim Pant	
Non Denim Pant	
Jacket	

2.12 Other Information of KC Washing Plant

1. Fire Extinguisher -81
2. Fire house point-4
3. Fire alarm Bell-6
4. Fire Alarm Switch-8
5. Emergency Light-46
6. Emergency Light con. WITH IPS-yes
7. Fire Fighters-72
8. Trained Fire Fighters FSCD-40
9. First aid Box-3
10. First Aiders-8
11. Fire Bucket-12
12. Fire Water Bucket-12
13. Fire Blanket-6

14. Fire Gas Mask-6
15. Fire Hook-8
16. Lock Cutter-2
17. Lock Bitter-8
18. Stretcher-2
19. Toilets(male)-14
20. Toilet(women)-8

2.13 Machine Information

1. Industrial Washer (Production)(Tonello)-6
2. Industrial Washer (Production) (Belly)-5
3. Industrial Washer (sample) (belly)-1
4. Industrial Washer (sample) Tonello-2
5. Centrifugal Hydro-extractor(Production)-5
6. Centrifugal Hydro-Extractor(Sample)-3
7. Industrial Steam Dryer(Production)-10
8. Industrial Steam Dryer(Sample)-1
9. Gas Dryer(Production)-3
10. Full Crinkle Machine with steam and heat-4
11. Plastic Attaching Machine-5
12. Fabric Grinding Machine (local Made)-5
13. Hand Sanding Machine(Local Made)-20
14. Diesel Generator-1
15. Air Compressor-1
16. Vertical Centrifugal Pump-1
17. Centrifugal Water Pump(Extra Pump)-2
18. Submergible Water Pump-2 -1
19. Jute Boiler-1
20. Shaper Machine-1
21. Heavy Duty Drill Machine-1
22. Heavy Duty Bench Grinder-1
23. ETP-1



2.14 Machine Information of KC Washing Plant (Industrial Data)

Machine Information: Washing			
MACHINE'S NAME	MODEL	CAPACITY	M/C'S QNTY.
Industrial Washer (Production)(Tonelo)	420 LW2	150 kg	06 Units
Industrial Washer (Production)(Belly)	A/W-450(S)	250 kg	05 Units
Industrial Washer (Production)(Belly)	A/W-450(S)	120 kg	01 Units
Industrial Washer (Sample)(Belly)	A/W-30 (S)	25 kg	01 Units
Industrial Washer (Sample)(Belly)	A/W-30 (S)	50 kg	01 Units
Industrial Washer (Sample)(Tonelo)	A/W-100 (S)	50 Kg	01 Units
Industrial Washer (Sample)(Tonelo)	A/W-100 (S)	25 Kg	01 Units
Hydro - Extractor			
Centrifugal Hydro-Extractor(Production)	SHE-42	145 kg	03 Units
Centrifugal Hydro-Extractor(Sample)	SHE-25	35 Kg	02 Units
Centrifugal Hydro-Extractor(Sample)	SHE-25	30 Kg	01 Unit
Drayer			
Industrial Steam Drier (Production)	LDS-300	136 Kg	5 Units
Industrial Steam Drier (Sample)	LDS-250	100Kg	1 Units
Gas drier (Production)		76 pcs	03 Units
Crinkle M/C			
Full Crinkle Machine With Steam &Heat	CFCM	500 Pcs/8 hrs.	
Plastic Staple Attaching Machine	ST9000/ST2-600a	Depends on design	
Grinding m/c			
Fabric Grinding Machine (Local Made)	FGM(LM)	Depends on design	05 Units
Hand Sanding m/c			
Hand Sanding Machine(Local Made)			20 Units
Generator			
Diesel Generator	P300	450 KW	01 Units
Air Compressor			
Air Compressor	GA75 AP	245.7 Ltr./s	01 Units
Water Pump			
Vertical Centrifugal Pump	DPVF 65– 40	18.0 Ltr./s	
Centrifugal Water Pump (Extra-pump)	MEGA G 80–250	50 m ³ /hr.	

2.14.1 Picture of Machine



Figure-1: Belly Machine



Figure-2: Tonello Machine (Washing)



Figure-3: Hydro-extractor



Figure-4: Dryer (Bangla)



Figure -5: Dryer Machine (Triveneta)



Figure-6: Destroyer



Figure-7: Tagging Machine



Figure-8: Whisker



Figure-9: PP Spray



Figure-10: 3D Crinkle



Figure-11: Grinder



2.15 Shift of Washing Plant

Working Schedule: Shift - A		
Starting Time:		8:00 AM
Break / Lunch Time:		1:00 PM - 2:00 PM
Finish Time:	Normal Finish Time	Normal Overtime Hours
	8:00:00 Hrs.	2:00 Hrs.
Starting Time:		8:00 PM
Break / Dinner Time		1:00 AM - 2:00 PM
	Normal Finish Time	Normal Overtime Hours
	8:00 Hrs.	2:00 Hrs
Working Schedule: General Shift (If Applicable)		
Starting Time: 08 : 00 AM		
Break / Lunch Time : 01 - 02 PM		
Finish Time : 05: 00 PM	Normal Finish Time	Normal Overtime Hours
	8:00 Hrs.	2:00 Hrs.

2.16 Layout of KC Washing Plant

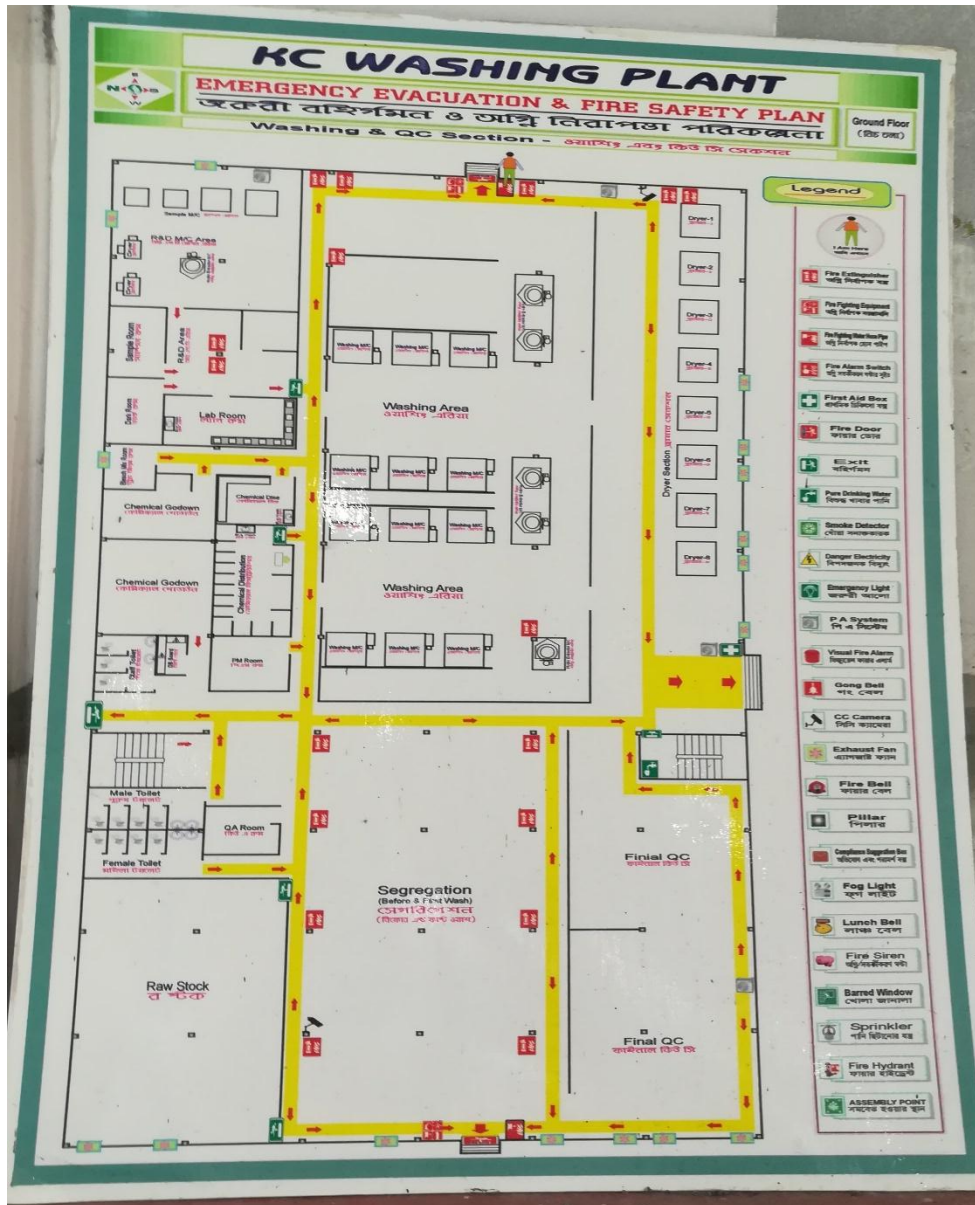
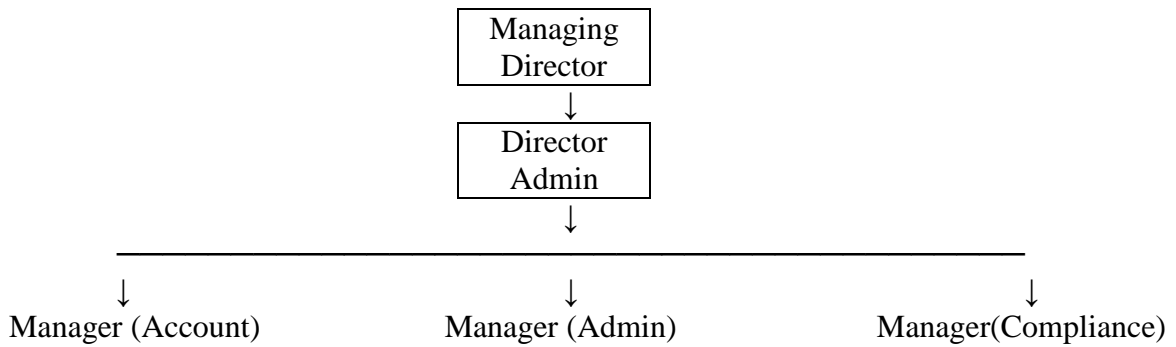


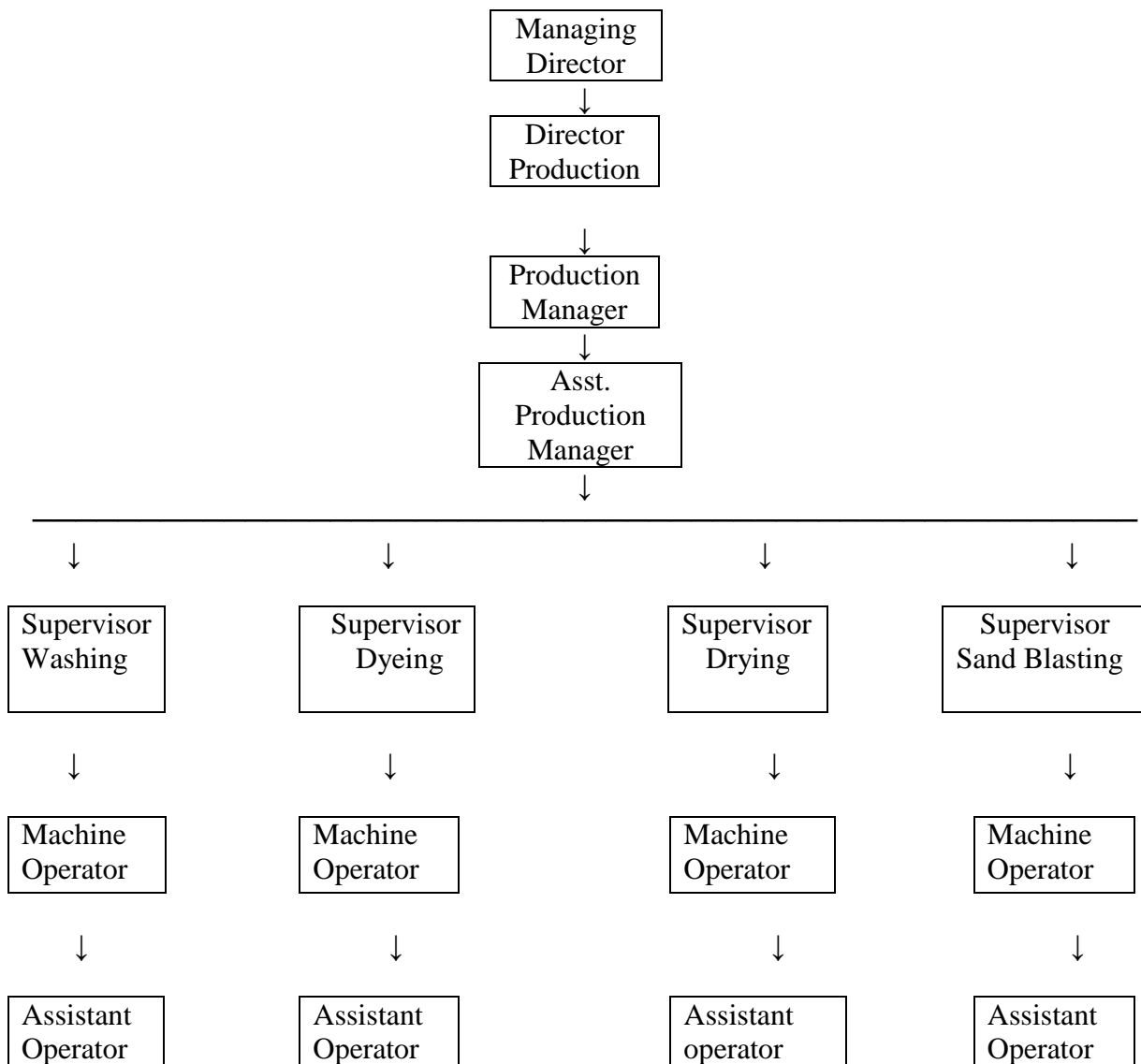
Figure: Layout of KC Washing Plant



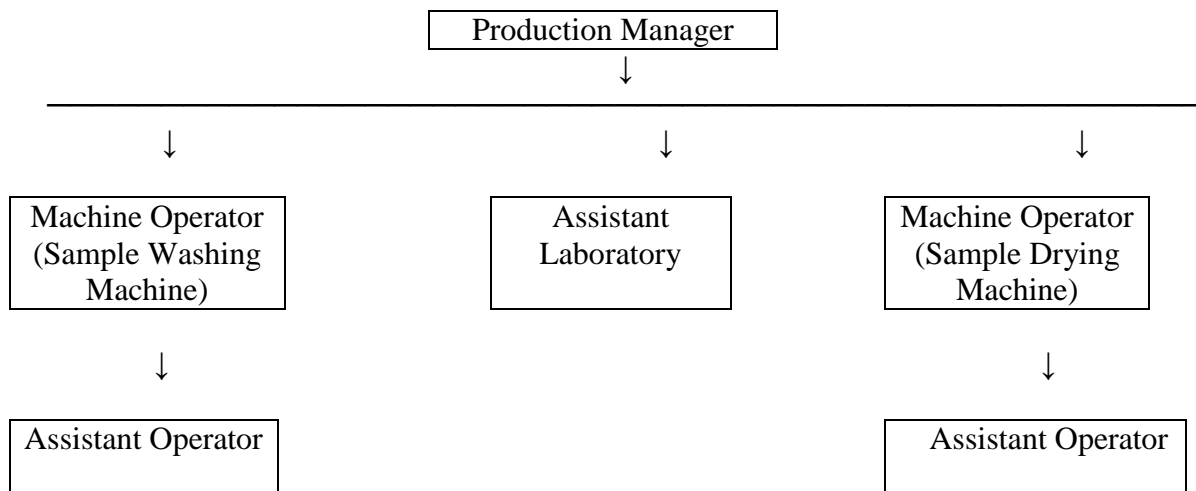
2.17 ORGANOGRAM-ADMINISTRATION:



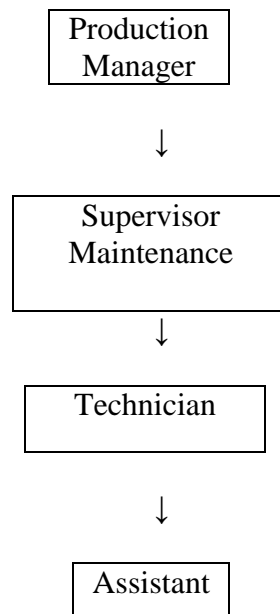
2.18 ORGANOGRAM-PRODUCTION:



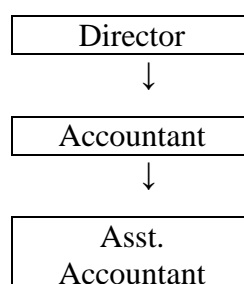
2.19 Organogram Laboratory:



2.20 Organogram Maintenance:



2.21 ORGANOGRAM FINANCE:





CHAPTER-3

GARMENTS WASHING AND DYEING

3.1 MACHINE DESCRIPTION

There are 5 sample machine and 11 industrial machine in kc washing plant. Here also 10 dryer and 5 hydro-extractor. In 5 sample washing machine 2 tonello and 3 belly machine and in 11 industrial washing machine 6 tonello and 5 belly machine. In 10 dryer there is 6 modern Dryer and 4 Bangla dryer .

3.1.1 SAMPLE WASHING MACHINES

No of machine – 3

Manufacturing company: Bengal Heavy Electric Engineering.

Manufacturing country: Bangladesh.

Features:

- Single door design for general washing, sample washing
- Machine body and essential parts are made of stainless steel.
- Preset front and backward rotation.
- Conventional machine.

Specifications:

- Capacity: 30kg
- Inner Cylinder: 28”X34”
- Thickness of inner drum: 3mm
- Motor (HP): 1HP, 0.75KW
- Power Consumption: 2.3 Amp
- Steam Consumption: 2 HP, 31 Kg
- Water Inlet: 2”, 1 way in.
- Steam Inlet: 1”, 1 way in.
- Water Discharge: 3”, 1 way out.



3.1.2 INDUSTRIAL WASHING MACHINES

No of machine -5

Manufacturing company: Bengal Heavy Electric Engineering.

Manufacturing country: Bangladesh.

Features:

- Single door design for general washing, sample washing.
- Machine body and essential parts are made of stainless steel.
- Preset front and backward rotation.

Specifications:

- Capacity: 200 kg
- Inner Cylinder: 42”X88”
- Thickness of inner drum: 3 mm
- Outer Cylinder: 54”X96”
- Motor (HP): 10HP, 7.5KW
- Power Consumption: 17 Amp
- Steam Consumption: 15 HP, 230 Kg
- Water Inlet: 2”, 2 ways in.
- Steam Inlet: 1”, 2 ways in.
- Water Discharge: 3”, 2 ways out

3.1.3 Modern Industrial Washing Machine:

No. of machines: 6

Manufacturing Company: Tonello

Model no: G1 420 LW2

Manufacturing Country: Italy

Features:

- They are particularly well-suited for the treatment of jeans, and are equipped with a basket with special beaters that speed up the process while at the same time guaranteeing uniform results every time. G1 LW2 / MW2 machines are fitted as standard with a B&R control system, a latest-generation microprocessor, as well as a touch screen. Tonello software optimises the functions of each machine, allowing the user to store a large number of automated programs. Recipes can be easily transferred from one machine using a USB drive, and a simple network connection enables control from a PC with the Tonello supervision system as well as interfacing with third-party management systems.

Specifications:

- Capacity: 150 kg (1:10)
- Inner cylinder: 1878 mm dial x 1490 mm
- Wash motor: 7.5 KW
- Exact speed: 110 RPM
- Main door opening: 300 mm dial
- Inspection door opening: 300 mm dial
- Water consumption: 45 Liter/Kg
- Drain: 115 mm dial, 2 ways out
- Power consumption: 0.127 kWh/kg
- Thermal fluid connection consumption: 1.5" X 1.5" BSP, 8000 KCAL/hr.
- Overall dimension: 1950mm(W) X 2500mm(D) X 2100mm(H)

3.1.4 Hydro-Extractors:

No of machine: 5

Manufacturing Company: Tongxin Ltd

Manufacturing Country: China



Features:

- Due to solid connections it can be positioned onto firm floorings to operate.
- It has excellent electrical layout in prevention of electricity leakage, shock, which is important in wet conditions in the operations.
- Machine operations are made easy, with convenient start-stop operations for maximum efficiency.
- The inner stainless steel is well balanced, thus achieving longer life span and assuming energy efficiency of machine.
- Shock absorbers are well paced in the three suspension points to reduce vibrations.
- Stainless steel constructions in major parts ensure durability.

Specifications:

- Model no: SHE-42
- Capacity: 145 kg
- Inner cylinder: 1067dial X 419mm
- Over all dimensions: 2150 mm (W) X 1650 mm (D) X 1050 mm (H).
- Wash motor: 7.5 KW
- Extract speed: 860 RPM

3.1.6 SAMPLE DRYING MACHINES:

No. of machines: 01

Manufacturing company: TRIVENETA GRANDI

Manufacturing country: ITALY

Specifications:

- Capacity: 18 Kg
- Basket size: 700 mm (dial) X 470 mm
- Volume: 180 Litres
- Dry clean motor: 0.37 KW
- Extract motor: 1.5 KW
- Extract speed: 220 rpm
- Loading door opening: 400 mm (dial)
- Model: E/50V STEAM
- Volt:400

3.1.7 INDUSTRIAL DRYING MACHINES:

No. of machines: 10

Manufacturing company: TRIVENETA GRANDI

Manufacturing country: ITALY

Specifications:

- Capacity: 145 kg
- Model: E/250RV
- Volt: 400
- Serial No: 16615
- Frequency: 50Hz

3.2 Dry Process Section:

3.2.1 Machine Name: 3D Wrinkle

No of machine: 07

Manufacturing Company: Method

Manufacturing Country: Turkey

Features:

Specifications:

- Model: 3D-CEF4
- Serial No: 16-160
- Date of Manufacturing: 2016

3.2.2 Machine Name: Industrial Oven

Number of Machine: 01

Manufacturing Company: Triventa Grandi

Manufacturing Country: Italy



Specifications:

- Model: DTS380
- Serial No: 17608
- Manufacturing Date: 2017
- Voltage: 400 KW
- Frequency: 50 HZ

3.2.3 Machine Name: Circular 3D Machine

Number of Machine: 01

Manufacturing Country: Turkey

Manufacturing Company: Metod

Specifications:

- Model: DOC-3D-CRS
- Serial Number: MTD17039
- Frequency: 50HZ
- Voltage: 180V
- Weight: 10000 Kg
- Temperature: MAX 200 Degree Calcuis

3.2.5 Machine Name: P.P Spray

Number of Machine: 12

Manufacturing Country: Turkey

Features:

3.2.6 Machine Name: Tag Gun

Number of Machine: 6

Manufacturing Country:

Manufacturing Company:

Features:

- Machine body are generally made of plastic.
- Inside the tag gun there is a pin which is made of metal.

3.2.7 Machine Name: Grinding Machine

Number of Machine:05

Manufacturing Country:

Manufacturing Company:

Features:

- Machine body and essential parts are made of metal.
- Made for specially destroy garments material.
- There are two wheels which are used to destroy garments material.
- These two wheels are made of sand.



3.3 Sample section

3.3.1 Sample Washing machine (belly)

No of machine:01

Manufacturer: bangladesh

Manufacture Company: Bengal Heavy Electric Engineering.

Specification;

- Capacity: 30kg
- Inner Cylinder: 28”X34”
- Thickness of inner drum: 3mm
- Motor (HP): 1HP, 0.75KW
- Power Consumption: 2.3 Amp
- Steam Consumption: 2 HP, 31 Kg
- Water Inlet: 2”, 1 way in.
- Steam Inlet: 1”, 1 way in.
- Water Discharge: 3”, 1 way out.

3.3.2 Sample Washing Machine (tonello)

No of machine: 02

Manufacturer Company: Tonello

Manufacturer country: Italy

Specification;

- Capacity:50 kg
-
-
-]

3.3.3 Sample Drying Machine (Modern)

No of machine: 01

Manufacturer Company: TRIVENATA GRANDI

Manufacturer country: ITALY

Specification

- Capacity: 18 Kg
- Basket size: 700 mm (dial) X 470 mm
- Volume: 180 Litres
- Dry clean motor: 0.37 KW

- Extract motor: 1.5 KW
- Extract speed: 220 rpm
- Loading door opening: 400 mm (dial)
- Model: E/50V STEAM

3.3.4 Lab machine

- Electrical Balance
- Crock Meter
- Sample washing machine
- Woven
- Dryer
- Rabing tester
- PH tester
- Gray scale
- Gayro-wash machine



CHAPTER-4

IMPACT OF INTERNSHIP

4.0 Impact of the Internship

4.1 Sample section/ R and D section

- To know about different types of testing such as rubbing test, ph test, Wash Fastness test, Light Fastness test, Water fastness test etc.
- How to Increase GSM of Fabric
- How to increase fastness of fabric
- How to make the recipe of washing

4.2 Washing section (wet):

- To know about chemical function and its implementation
- To know about shade variation
- To know about effect
- To know about washing faults and its remedies
- To know about different types of wash technics
- To know how to drive tonello and belly machine
- To know about different types of wash
- To know how to match the shade and color ton

4.3 Washing Section (dry)

- To know about different type of dry wash
- To see the whisker pattern
- To know how to do pp spray
- To know how to do grinding

4.4 Chemical Store

- To see different chemical for different wash
- To know about chemical function



CHAPTER -5

CONCLUSION

Conclusion

Through the training we have learned about different types of washing such as acid wash, bleach wash, Enzyme wash, Stone enzyme wash, stone acid wash etc. This industrial training also gives us to enlarge our knowledge and to implement our theoretical knowledge practically for practical using our knowledge we can identify the variation between practical and theoretical learning. It also a big opportunity to cope with the industry environment .KC washing plant is a new plant which is established in 2017 we were the first intern of this plant for the first trainee we hope we got more opportunity to learn and gain practical knowledge.