Faculty of Engineering
Department of Textile Engineering

Thesis Title: Investigation on Time Loss in Sewing Production due to Missing Broken Needle Part.

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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

Fall 2022

Approval Sheet

1st February, 2023

To

The Head

Department of Textile Engineering

Daffodil Smart City, Birulia 1216

Subject: Approval of Project Report of B.Sc. in TE Program.

Dear Sir,

I am just writing to let you know that this project report titled as “Investigation on Time Loss in sewing production due to Missing Broken Needle Part” in UHM LTD has been prepared by the student bearing ID: 191-23-5534, 191-23-5536 and 191-23-5510 is completed for final evaluation. The whole report is prepared based on the proper investigation and information in UHM LTD. The students were directly involved in their project report activities.

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

Yours Sincerely

.....

Supervisor

Md. Abdullah Al Mamun

Associate Professor

Department of Textile Engineering

Faculty of Engineering

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DECLARATION

We hereby declare that; this Industrial Report has been done by us and didn't copy from other sources and also declare that we did not submit this Industrial Attachment Report in any institute.

Submitted By

Serial	Name	ID	Signature
1	Zubaer Kabir	191-23-5534	
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ACKNOWLEDGEMENT

First of all, we would like to express our heartfelt thanks to Almighty ALLAH for his kind blessing to complete this Project (Thesis) successfully.

With sincerity, we extend our warm and deep appreciation and gratitude to our supervisor, **Md. Abdullah Al Mamun**, Associate Professor, Department of Textile Engineering of Daffodil International University for his guidance and support to come up with this research work. Being working with him, we have not only earned valuable knowledge but were also inspired by his innovativeness which helped to enrich our experience to a greater extent. His ideas and way of working were truly remarkable. We believe that this research could not be finished if he did not help us continuously.

We would like to express our heartiest gratitude to **Mr. Md. Mominur Rahman**, Assistant Professor & Head (In-Charge), Textile Engineering of Daffodil International University for his kind help to finish our project and also to other faculty members and the stuff of the Textile Engineering Department of Daffodil International University.

Then we would like to thank for the support and encouragement rendered by, “UHM Ltd.” stuffs were very vital in the completion of this project, their guidance and encouragement played a vital role in the planning and completion of the research work.

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Abstract

Time is one of the most important parameters in a Garments Industry. In Sewing department, it is even more important because the garments are needed to be sent in finishing within TNA. There are many factors that are responsible for time loss. By missing a broken needle part is both harassment and reduces productivity for worker and also causes of time loss who fails to find the broken needed part. By collecting data of 'Missing Broken Needle Part Report' from Block-A (Total two blocks- A, B) of 1 month (December, 2022) from UHM LTD. By investigating collected data we found total loss time after missing the broken part of needle and in which operation & machine when missing broken needle part were not found. Firstly, total loss time was 58 hours 48 minutes and the average loss time per machine was 53 minutes. Secondly, operations/ process having more than 2 missing broken needle part- Arm Hole Piping- 6, Side Top Seam- 6, Side Seam- 5, Chap Tack- 3, Panel Join- 3, Bar tack- 3, Body Hem- 3 and Side Join- 3. Thirdly, machines at which broken needle part were not found are Flat Lock Machine- 42.4%, Over Lock Machine- 21.2%, Plain Machine- 19.7%, Flat Seamer Machine- 9.1%, Bar tack Machine- 4.5% and Vertical Machine- 1.5%.

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Table of Contents

CHAPTER 1: INTRODUCTION 1
1.1 Motives behind this project: 2
1.2 Objective of this project: 2
1.3 Importance of this project: 2
1.4 Limitation of this project: 2
CHAPTER 2: LITERATURE REVIEW 3
2.1 Sharp Tools and Non-Conforming Goods Disposal Policy 4
2.2 Broken Needle Policy 4
2.3 Types of Sewing Needle Point in Garments 6
2.4 Guidelines for storing used needles 7
2.5 Guidelines for Discontinued Needles 7
CHAPTER 3: METHODOLOGY 8
3.1 Data Collection 9
3.2 Missing Broken Needle Part Repot 10
3.2.1 Day 1: 1st December, 2022 10
3.2.2 Day 2: 3rd December, 2022 11
3.2.3 Day 3: 4th December, 2022 12
3.2.4 Day 4: 5th December, 2022 13
3.2.5 Day 5: 6th December, 2022 14
3.2.6 Day 6: 7th December, 2022 16
3.2.7 Day 7: 8th December, 2022 18
3.2.8 Day 8: 10th December, 2022 18
3.2.9 Day 9: 12nd December, 2022 19
3.2.10 Day 10: 13rd December, 2022 20
3.2.11 Day 11: 15th December, 2022 21
3.2.12 Day 12: 18th December, 2022 21
3.2.13 Day 13: 19th December, 2022 23
3.2.14 Day 14: 20th December, 2022 23
3.2.15 Day 15: 21st December, 2022 24
3.2.16 Day 16: 22nd December, 2022 24

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3.2.17 Day 17: 24th December, 2022 25
3.2.18 Day 18: 25th December, 2022 25
3.2.19 Day 19: 27th December, 2022 27
3.2.20 Day 20: 28th December, 2022 27
3.2.21 Day 21: 29th December, 2022 28
3.2.22 Day 22: 31st December, 2022 28
3.2.23 Total Sewing Machine Data: 29
3.3 Summery Table 30
CHAPTER 4: RESULT AND DISCUSSION 34
4.1 Total Time Loss Due to Missing Broken Needle Part. 35
4.2 Missing broken needle part in respect of machine. 36
4.3 Missing broken needle part in respect of process/operation. 38
4.4 Discussion 39
CHAPTER 5: CONCLUSION 40

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List of Tables

Table 3.1 Day-1 Table-1 10
Table 3.2 Day-2 Table-1 11
Table 3.3 Day-2 Table-2 11
Table 3.4 Day-3 Table-1 12
Table 3.5 Day-3 Table-2 12
Table 3.6 Day-3 Table-3 13
Table 3.7 Day-4 Table-1 13
Table 3.8 Day-4 Table-2 14
Table 3.9 Day-5 Table-1 14
Table 3.10 Day-5 Table-2 15
Table 3.11 Day-5 Table-3 15
Table 3.12 Day-5 Table-4 16
Table 3.13 Day-6 Table-1 16
Table 3.14 Day-6 Table-2 17
Table 3.15 Day-6 Table-3 17
Table 3.16 Day-7 Table-1 18
Table 3.17 Day-8 Table-1 18
Table 3.18 Day-9 Table-1 19
Table 3.19 Day-9 Table-2 19
Table 3.20 Day-9 Table-3 20
Table 3.21 Day-10 Table-1 20
Table 3.22 Day-11 Table-1 21
Table 3.23 Day-12 Table-1 21
Table 3.24 Day-12 Table-2 22
Table 3.25 Day-12 Table-3 22
Table 3.26 Day-13 Table-1 23
Table 3.27 Day-13 Table-1 23
Table 3.28 Day-15 Table-1 24
Table 3.29 Day-16 Table-1 24
Table 3.30 Day-17 Table-1 25
Table 3.31 Day-18 Table-1 25
Table 3.32 Day-18 Table-2 26
Table 3.33 Day-18 Table-3 26
Table 3.34 Day-19 Table-1 27
Table 3.35 Day-20 Table-1 27
Table 3.36 Day-21 Table-1 28
Table 3.37 Day-22 Table-1 28

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List of Figures

Figure 2.1 Broken Needle Policy 5
Figure 2.2 Types of Sewing Needle Point in Garments 6
Figure 3.1 Sewing Machine part 1 29
Figure 3.2 Sewing Machine part 1 29
Figure 3.3 Missing Broken Needle Part Report December, 2022 All Record 33
Figure 4.1 Percentage of Loss Time and Available Time of 65 Machines 35
Figure 4.2 Total Machine % 36
Figure 4.3 Result-1 Missing broken needle part in respect of machine 37
Figure 4.4 More than 2 missing Needle 38

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CHAPTER 1: INTRODUCTION

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1.1 Motives behind this project:

In Garments manufacturing, Broken needle policy is a mandatory requirement for all buyers and must be maintained 100%. The most important aspect of technical audit and Q.M.S. audit is broken needle policy. This policy is followed for the safety to everyone from Garments makers to end users. All of the biggest garment companies put safety first. Brands provide needle policy to their suppliers in order to prevent user accidents caused by sharp instruments, like as a broken needle part remaining in a garment. Broken needle policy can be divided three types-1. Change needle,2. Broken needle,3. Missing needle. After the needle break, we often cannot find part of it, then it is considered a missing needle. Missing needle is not only a health hazard issue it is also kills our valuable time. When the time is loss in searching for the needle then the production will be definitely less. So, it is high time to give attention about this serious matter and in this article, we calculate loss time due to missing needle.

1.2 Objective of this project:

1.To know about the needle breakage policy.
2.To calculate the loss time due to needle missing.
3.To identify the machine which have the most needle breakage.
4.To identify which processes have the most needle breakages.

1.3 Importance of this project:

By this project we have to learn needle breakage policy. If a garment contains missing needle, it can become very harmful to health not only health It's hamper our time and we know time is very important to on time shipment. From here we know how much time is lost due to missing needle.

1.4 Limitation of this project:

1.This project done only knit garments. We can't collect woven Garments data.
2.We have only worked with 1 month of data, if we work with 2-3 months of data, we could calculate the loss time more accurately.

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CHAPTER 2: LITERATURE REVIEW

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2.1 Sharp Tools and Non-Conforming Goods Disposal Policy

1. Cutting Blades / Broken Needles / Old Button Hole Knife / Needled Garments Destruction / Not for sale before one year. That is, the material is stored up to 01 (one) year.
2. Product Safety Manager invites all our esteemed buyers or their representatives to be present during the destruction / recycling of cutting blades / broken needles / old button hole-knife / garments containing needles.
3. Form a team who will collect cutting blades / broken needles / old button hole-knife / garments with needles and take pictures before and after destruction.
4. Prepare a resolution as evidence.

2.2 Broken Needle Policy

Broken Needle Policy: We follow the Broken Needle Policy very seriously to fulfill (make) our garment industry users. If a machine needle breaks while sewing clothes, the following rules must be followed:

a) The operator will immediately inform the line supervisor if any needle breaks. The operator must deposit the entire broken needle part with the needle supplier.

b) The supplier of needles shall check with samples of all types of needles kept by him to ensure that all parts, sizes and types of broken needles are correct.

If the operator fails to submit all parts of the broken needle, the following policy will be followed:

a) If any part of broken needle goes into any body or bundle or is suspected, the concerned operator shall immediately inform the line supervisor. As soon as the needle breaks, the part of the garment made by the operator is stopped from being fed to another process for sewing.

b) Marking the part of the garment where the needle breaks while sewing the part of the garment.

c) The quality inspector will record the body or bundle in his register at the metal check table. After record keeping check the part of broken needle and write the result in the record register book.

d) Supervisor to send the complete bundle of the finished garment or part of the garment to the needle detector machine for testing.

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e) The area around the broken machine needle is checked by rolling magnet/hand metal detector. Check the garment at least four times.

f) If no broken needle is found by first checking the respective part of the finished garment, then the entire bundle is checked by needle detector machine.

g) If no broken needle part is found after checking then the body or bundle should be checked by metal checking machine. The garment on which the needle has broken is stored in a designated place.

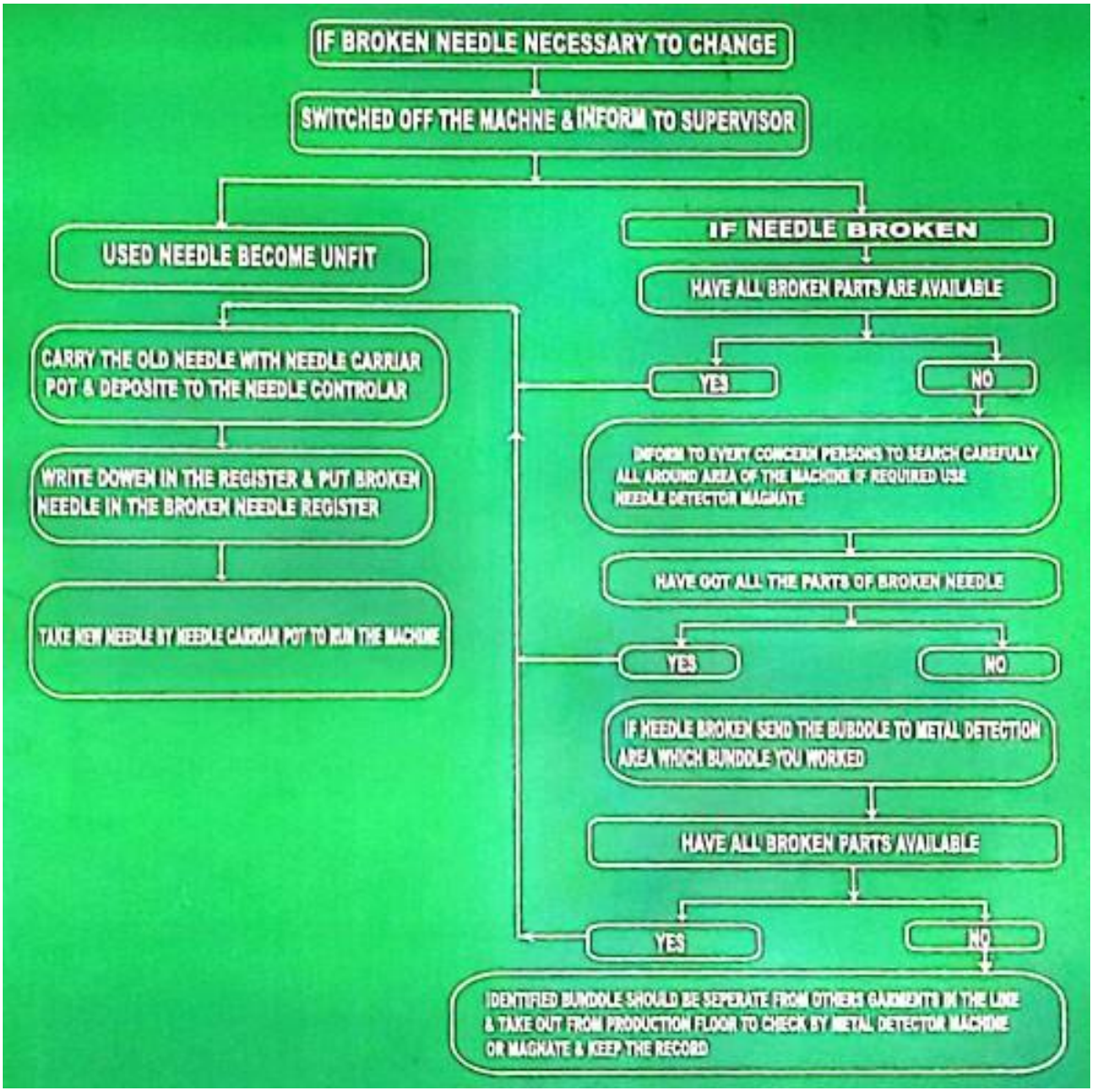

Figure 2.1 Broken Needle Policy

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2.3 Types of Sewing Needle Point in Garments

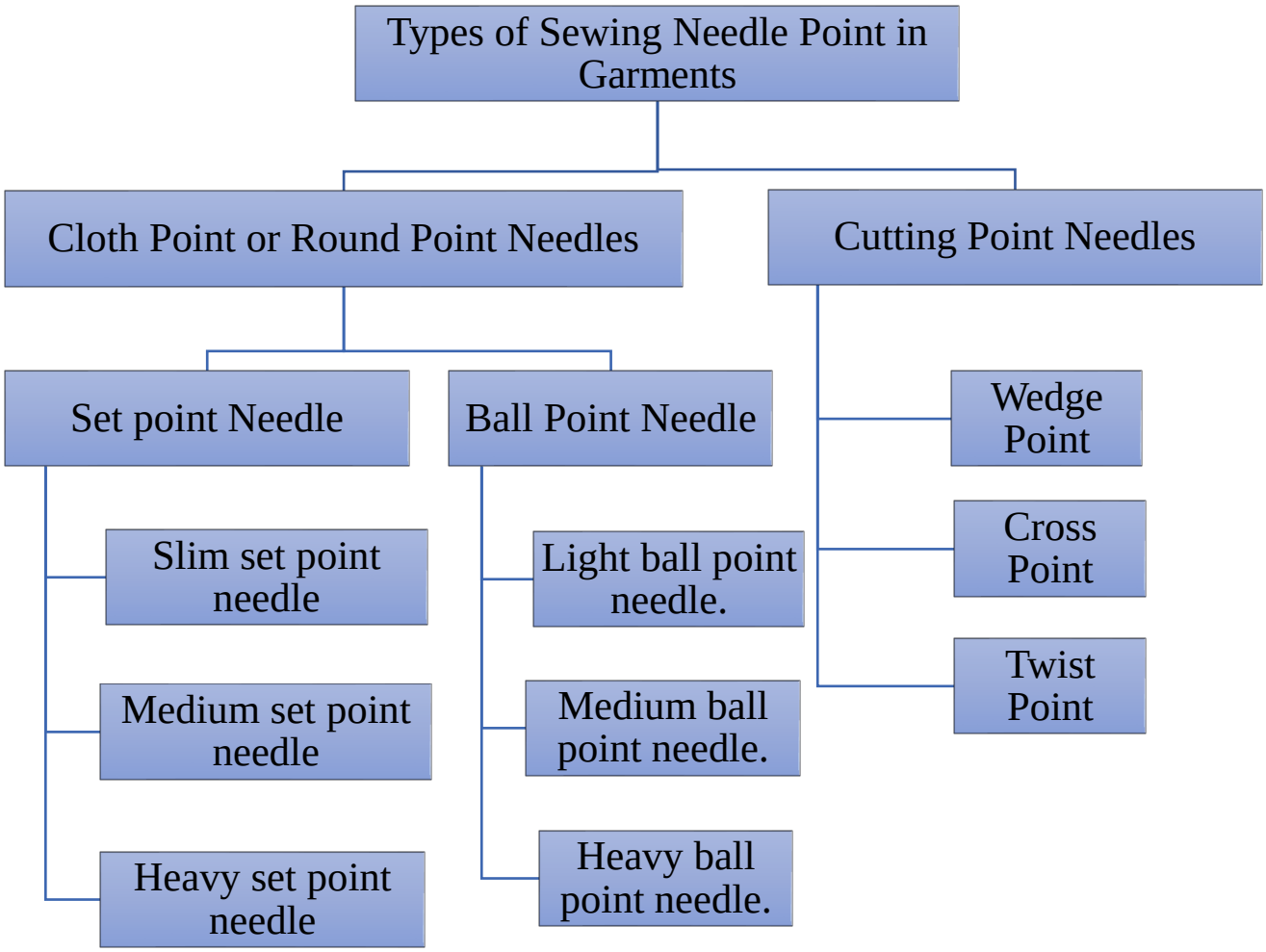

Figure 2.2 Types of Sewing Needle Point in Garments

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2.4 Guidelines for storing used needles

Guidelines for storing used needles: Prolonged use of the same needle may reduce the sharpness of the needle or bend the needle head. In this case, the reasons mentioned above may occur.

a) The thread of the fabric may be cut which may cause holes after washing.

b) Using the same needle for a long time may cause marks to remain on the garment as the needle head becomes dull or coarse. Which can cause rejection in finished clothes after washing.

2.5 Guidelines for Discontinued Needles

The supervisor must collect the entire parts of the broken needle and submit it to the maintenance department along with the operator's name, card number, line, order number in a specific container/box.

The supervisor will tie the body or bundle with a red ribbon and carefully go to the metal check table and deposit it.

1. If the machine gives any signal during checking, then the body or bundle must be recorded in the register book in a specific locked box or if it does not give the signal, then the OK bodies will be recorded in the register book and delivered to the specific place by the quality control manager.
2. If the amount of goods in the locked box is too much, those bodies should be carefully taken outside the factory to a designated place and burned.
3. If there is any difficulty or problem in understanding the above, the help of the authorities should be taken immediately.

So far, no article has revealed how much time is lost due to needle missing. Here, we have mentioned which machine the most needle missing and operation also.

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CHAPTER 3: METHODOLOGY

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We have done our internship in UHM LTD for two months from November 2022 to January 2023. Finding a proper project topic or finding a problem took quite of time. Finding a problem in any industry is must be beneficial for both sides. In this short amount of time were able to find a problem, collected and worked on it.

3.1 Data Collection

In this project there are total two types of data are collected. All of the data are authentic and collected from UHM LTD. For the project purpose we collected data of December, 2022.

1. Missing Broken Needle Part Report.
2. Total sewing machine in Block- A.

By collecting these data, we should be able to find loss time, responsible process/operation and responsible machine.

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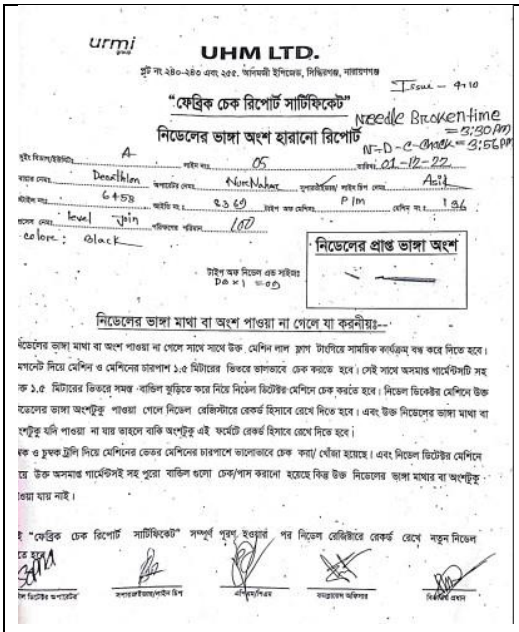
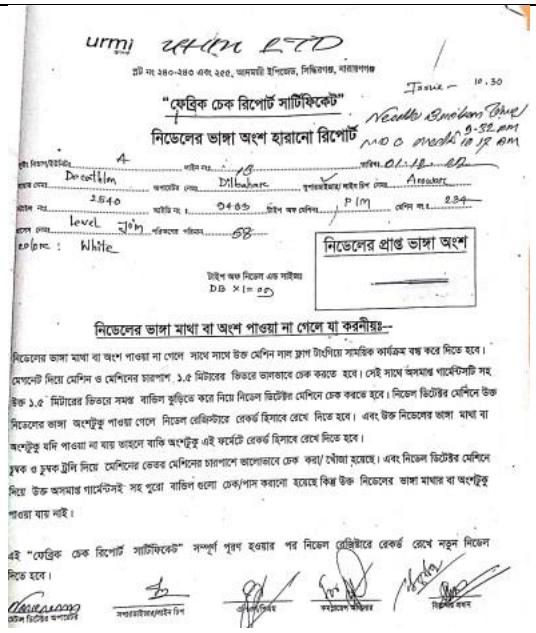
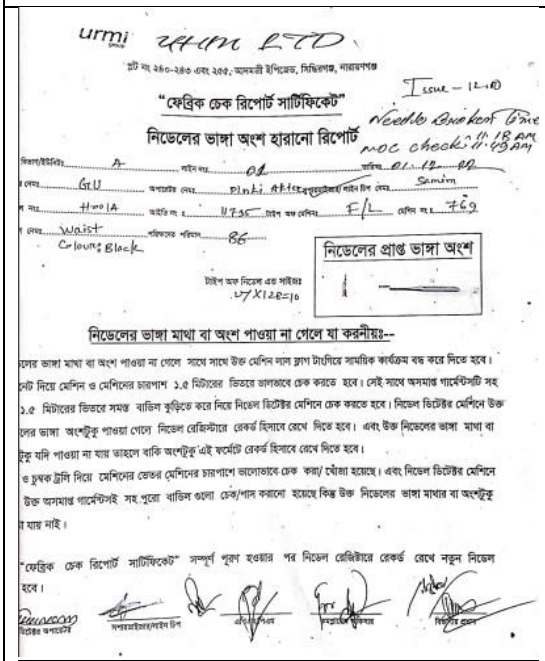
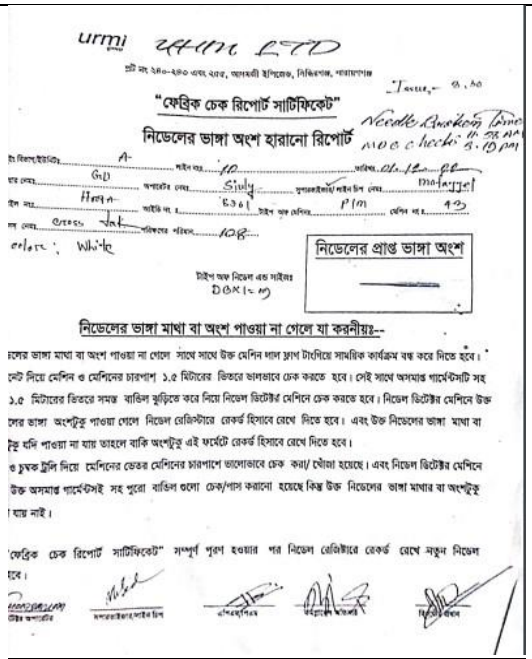
3.2 Missing Broken Needle Part Repot

3.2.1 Day 1: 1st December, 2022

Table 3.1 Day-1 Table-1

	
Buyer: Decathlon, Line: 5, Machine: Plain Machine, Process Name: Label Join	Buyer: Decathlon, Line: 13, Machine: Plain Machine, Process Name: Label Join
	
Buyer: GU, Line: 1, Machine: Flat Lock Machine, Process Name: Waist	Buyer: GU, Line: 10, Machine: Flat Lock Machine, Process Name: Cross Tack

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3.2.2 Day 2: 3rd December, 2022

Table 3.2 Day-2 Table-1

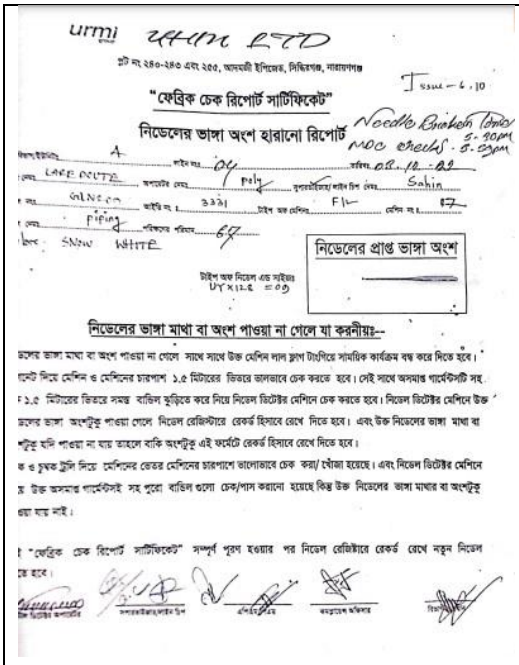
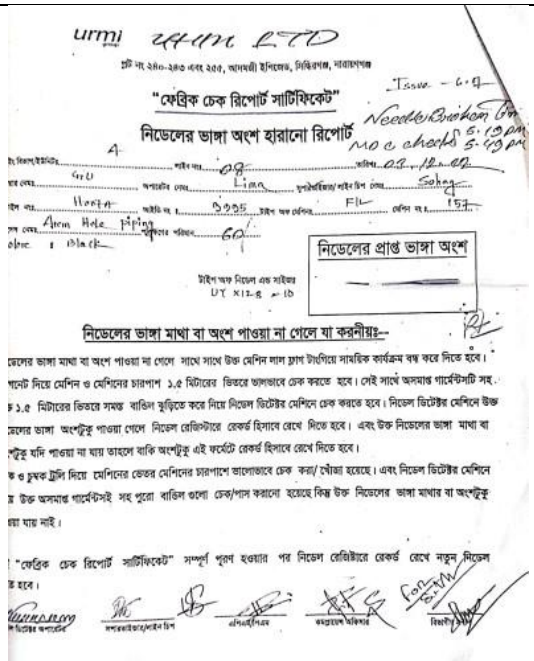
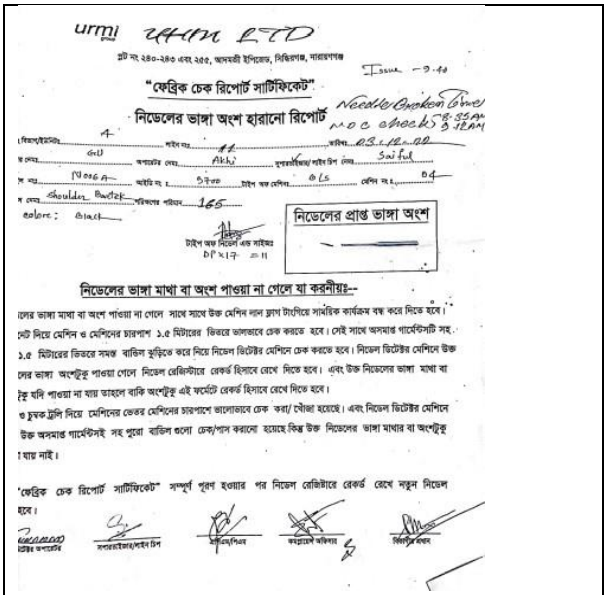
	
Buyer: Laredoute, Line: 4, Machine: Flat Lock Machine, Process Name: Piping	Buyer: GU, Line: 8, Machine: Flat Lock Machine, Process Name: Arm Hole Piping

Table 3.3 Day-2 Table-2


Buyer: GU, Line: 11, Machine: Bar tack Machine, Process Name: Shoulder Bar tack

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3.2.3 Day 3: 4th December, 2022

Table 3.4 Day-3 Table-1

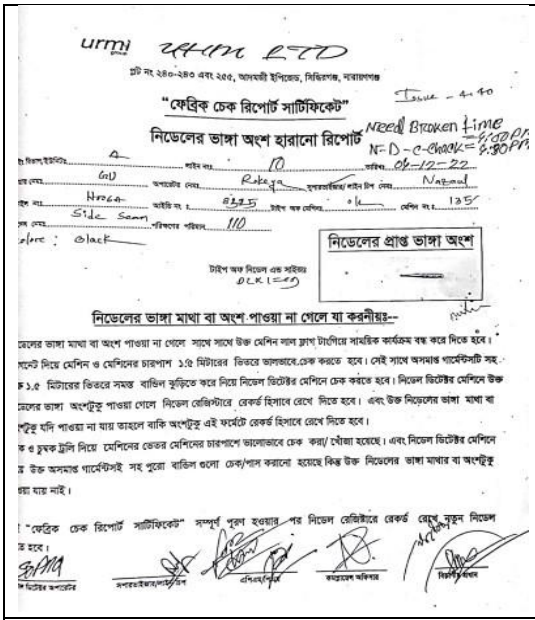
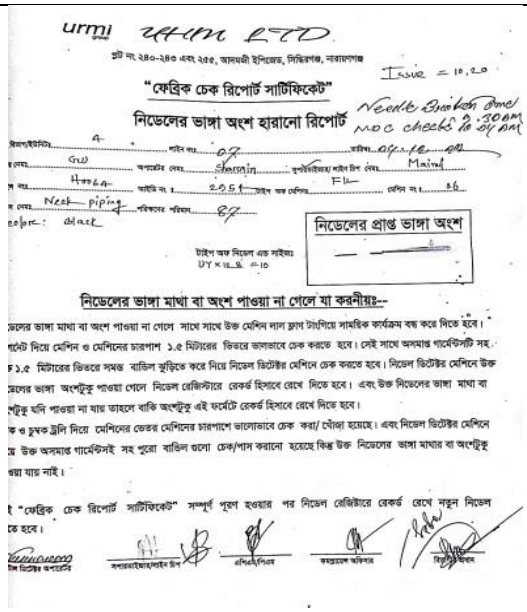
 "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--	 "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: GU, Line: 10, Machine: Overlock Machine, Process Name: Side Seam	Buyer: GU, Line: 7, Machine: Flat Lock Machine, Process Name: Neck Piping

Table 3.5 Day-3 Table-2

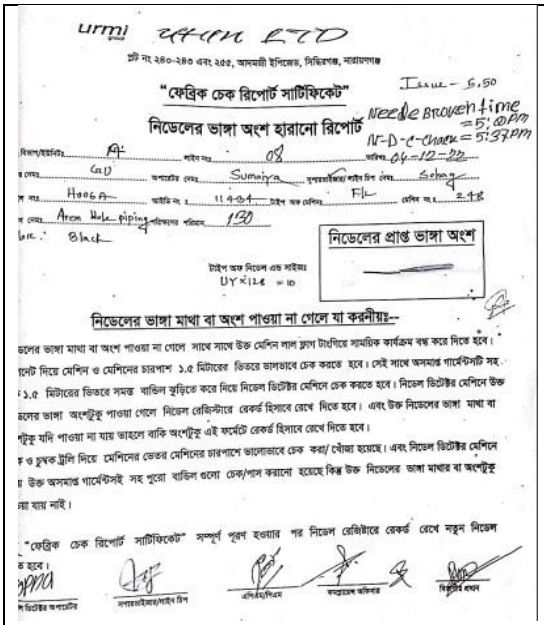
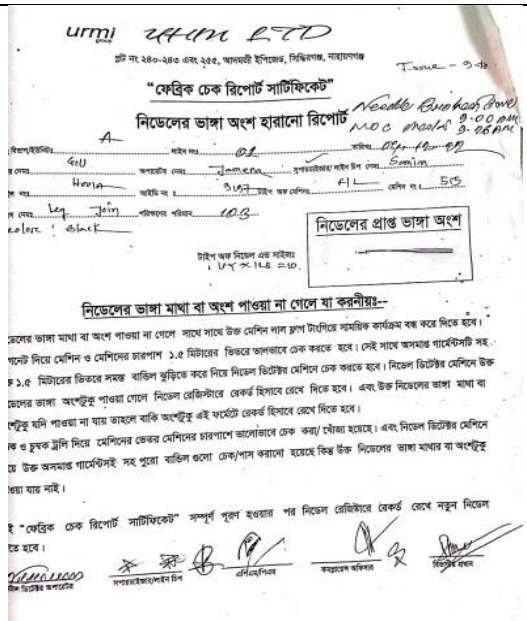
 "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--	 "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: GU, Line: 8, Machine: Flat Lock Machine, Process Name: Arm Hole Piping	Buyer: GU, Line: 1, Machine: Flat Lock Machine, Process Name: Leg Join

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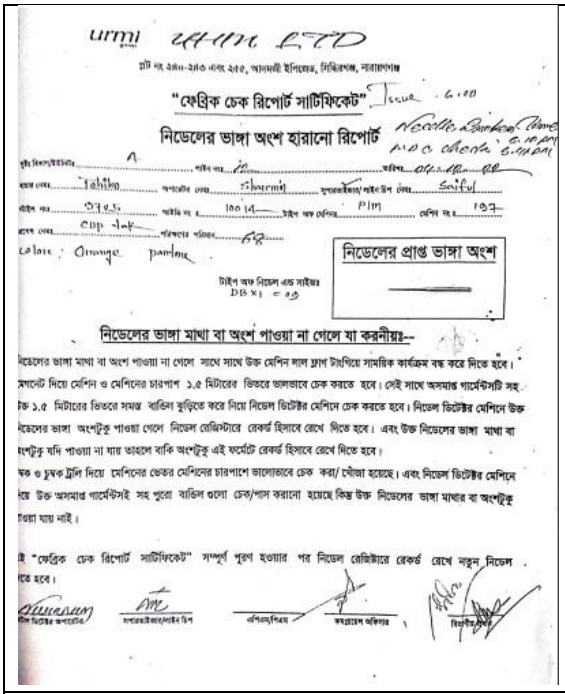
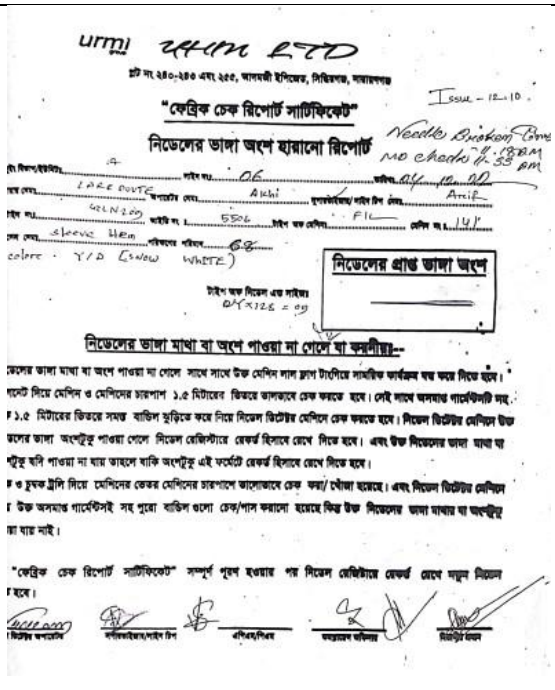
Table 3.6 Day-3 Table-3

	
Buyer: Tchibo, Line: 12, Machine: Plain Lock Machine, Process Name: Chup Tack	Buyer: Laredoute, Line: 6, Machine: Flat Lock Machine, Process Name: Sleeve Hem

3.2.4 Day 4: 5th December, 2022

Table 3.7 Day-4 Table-1

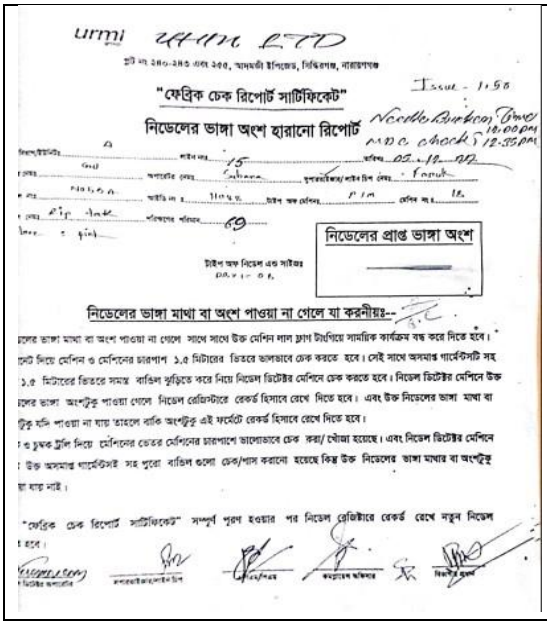
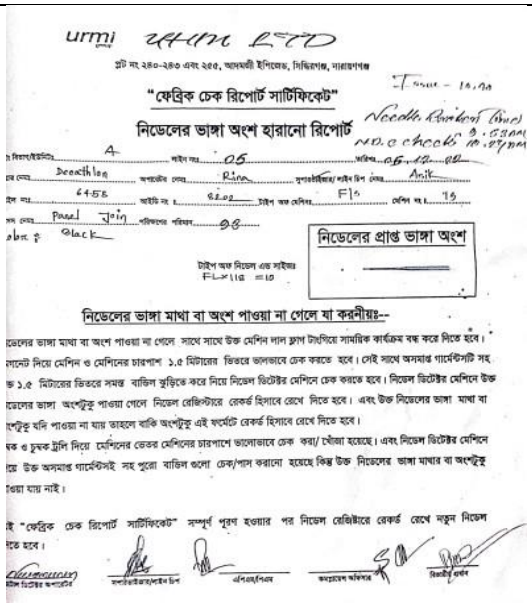
	
Buyer: GU, Line: 15, Machine: Plain Lock Machine, Process Name: Rib Tack	Buyer: Decathlon, Line: 5, Machine: Flat Seamer Machine, Process Name: Panel Join

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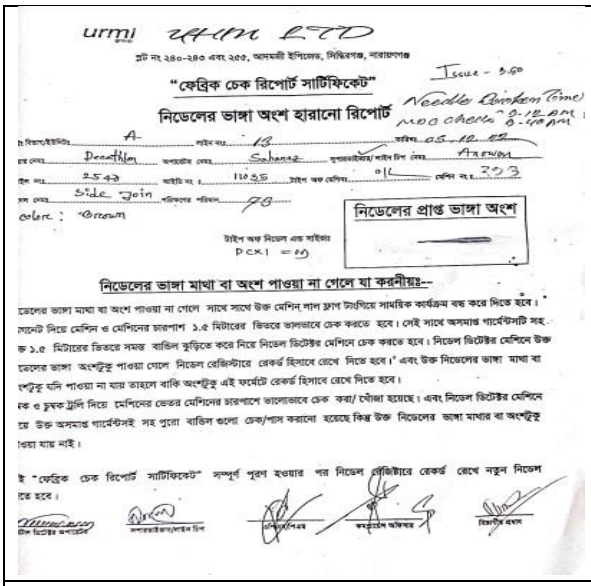
Table 3.8 Day-4 Table-2

 urmi UHM LTD "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: Decathlon, Line: 13, Machine: Over Lock Machine, Process Name: Side Join

3.2.5 Day 5: 6th December, 2022

Table 3.9 Day-5 Table-1

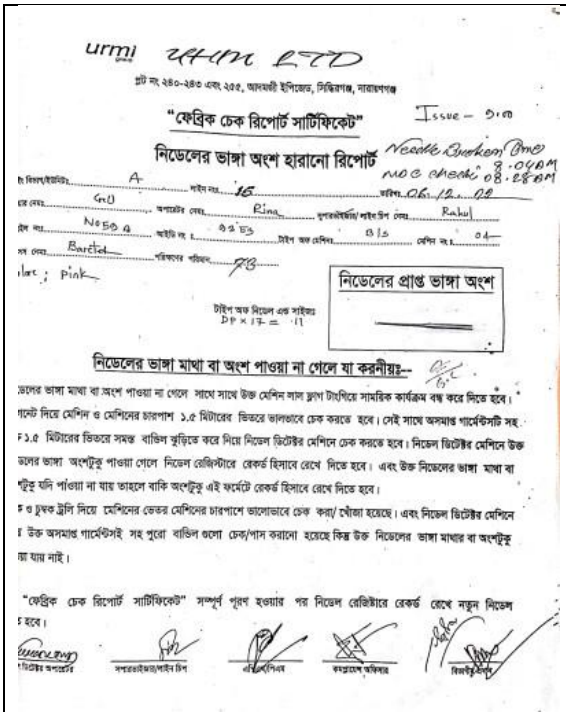
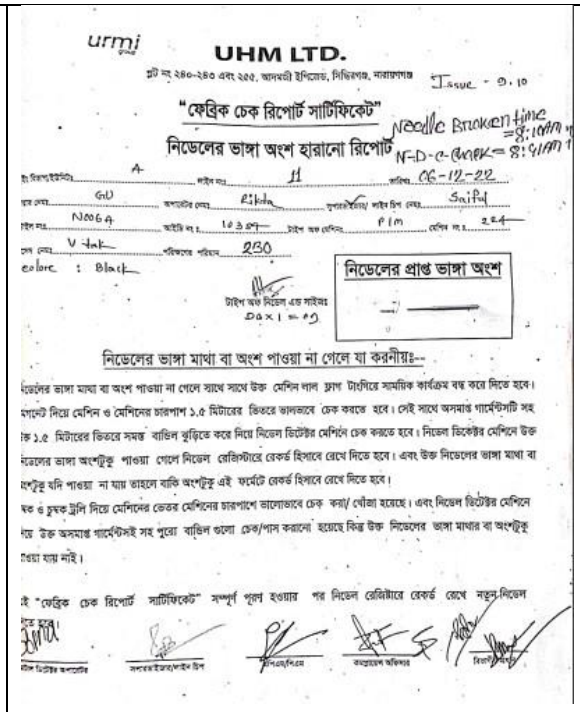
 urmi UHM LTD "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--	 urmi UHM LTD. "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: GU, Line: 15, Machine: Bar Tack Machine, Process Name: Bar Tack	Buyer: GU, Line: 11, Machine: Plain Machine, Process Name: V Tack

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Table 3.10 Day-5 Table-2

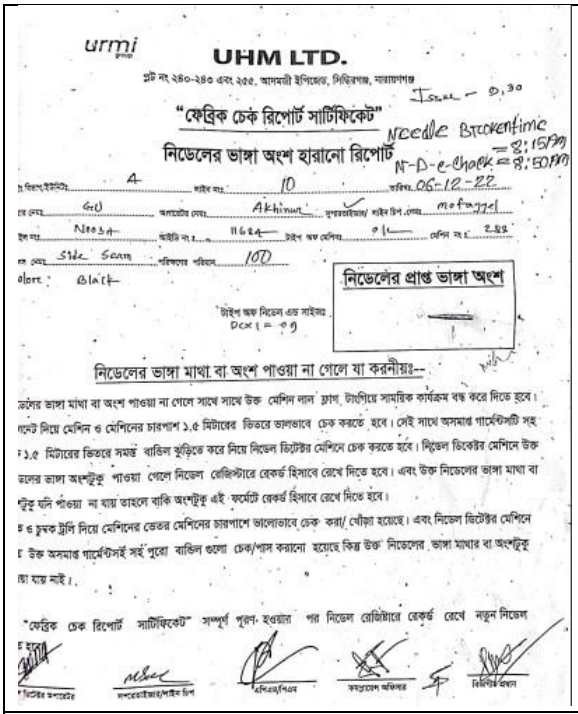	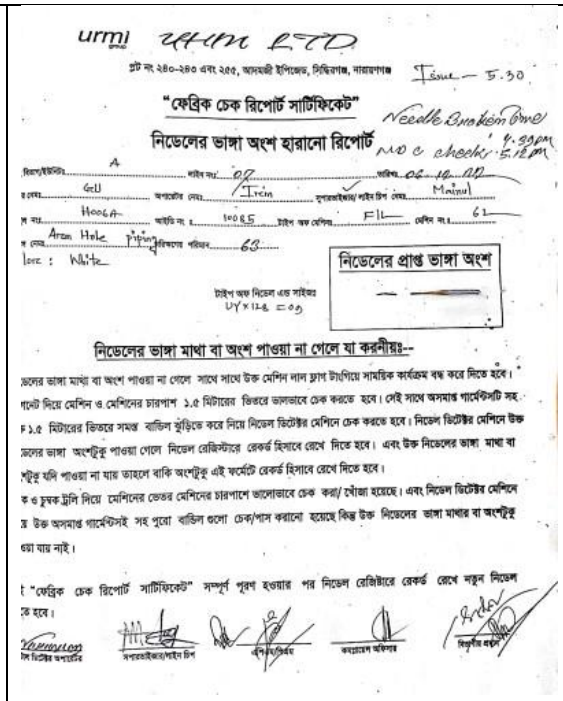
Buyer: GU, Line: 10, Machine: Over Lock Machine, Process Name: Side Seam	Buyer: GU, Line: 7, Machine: Flat Lock Machine, Process Name: Arm Hole Piping

Table 3.11 Day-5 Table-3

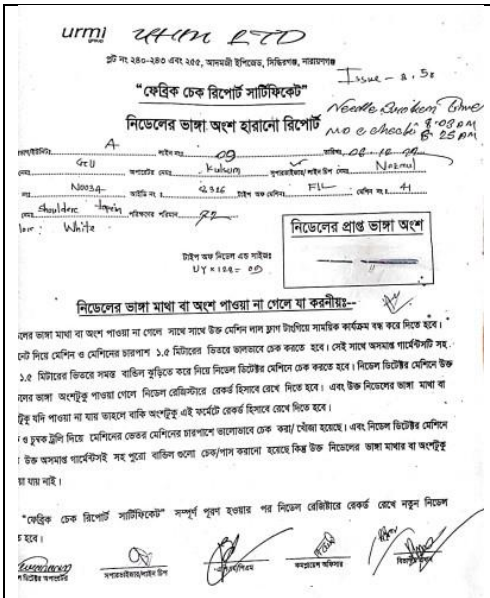	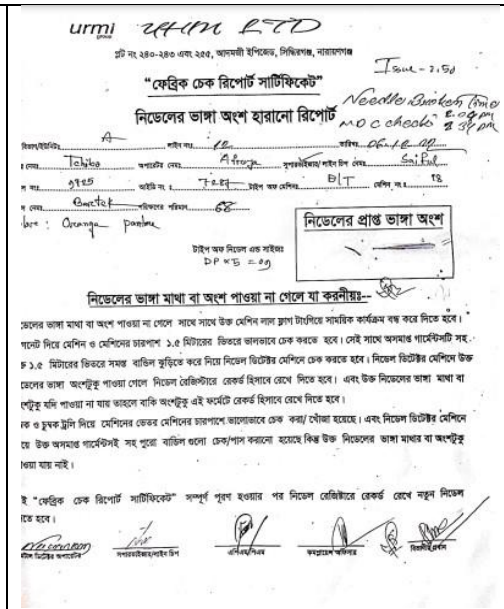
Buyer: GU, Line: 9, Machine: Flat Lock Machine, Process Name: Shoulder Top Seam	Buyer: Tchibo, Line: 12, Machine: Bar Tack Machine, Process Name: Bartack

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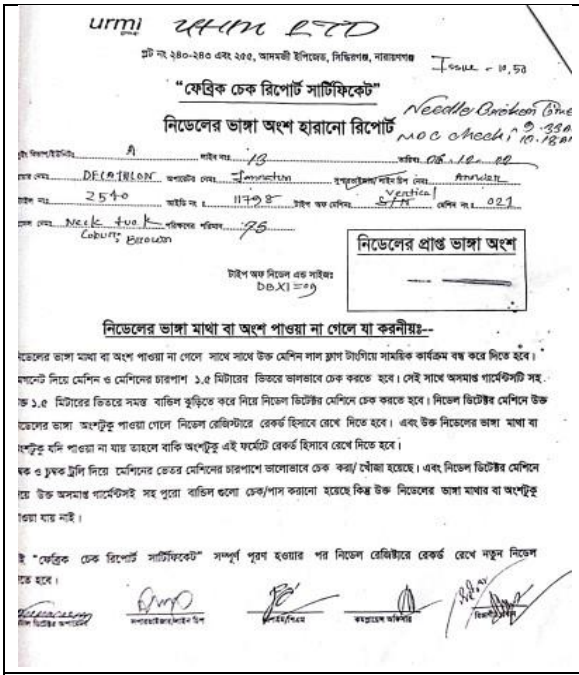
Table 3.12 Day-5 Table-4

	
Buyer: Decathlon, Line: 13, Machine: Vertical Machine, Process Name: Neck Tuck	Buyer: Vertbaudet, Line: 15, Machine: Plain Lock Machine, Process Name: Side Top Seam

3.2.6 Day 6: 7th December, 2022

Table 3.13 Day-6 Table-1

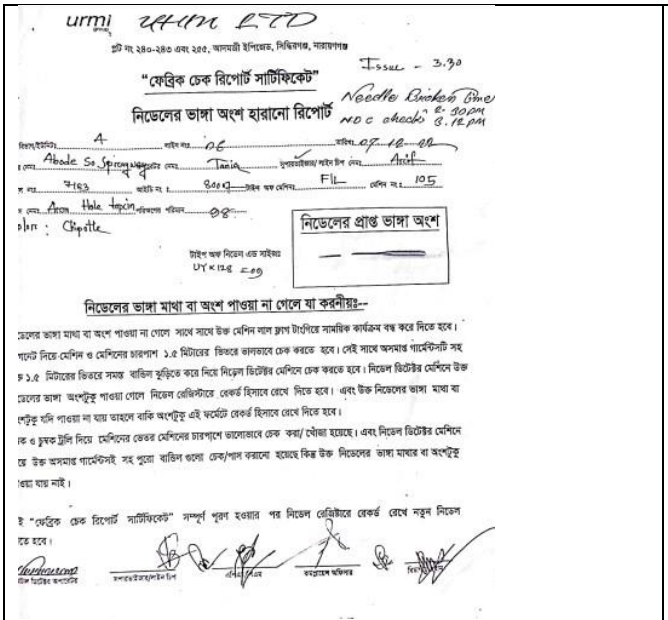
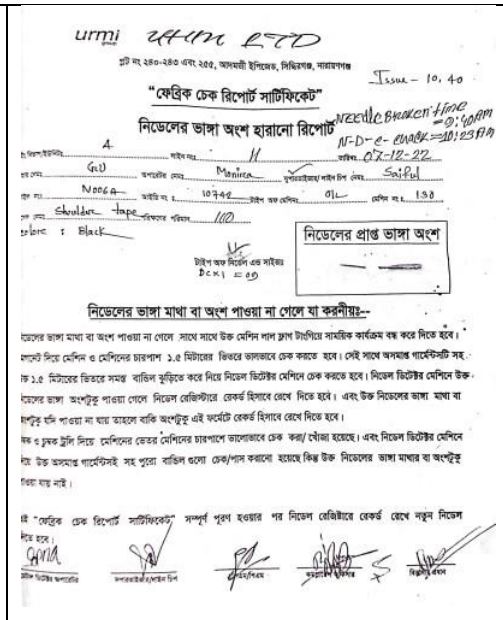
	
Buyer: Adobe Sourcing, Line: 6, Machine: Flat Lock Machine, Process Name: Arm Hole Piping	Buyer: GU, Line: 11, Machine: Over Lock Machine, Process Name: Shoulder Tape

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Table 3.14 Day-6 Table-2

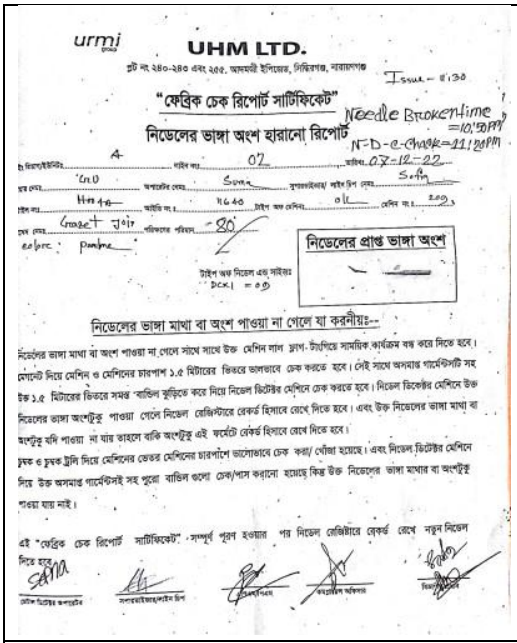
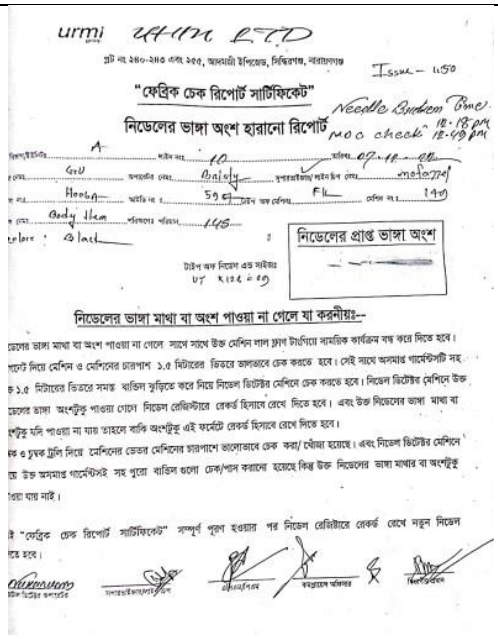
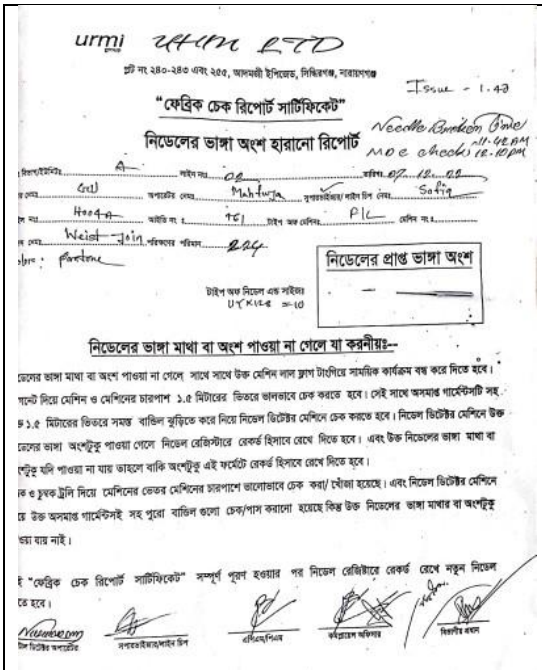
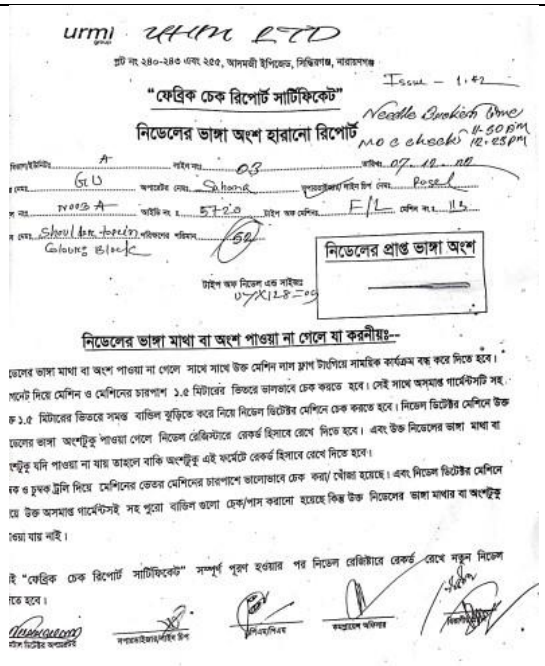
	
Buyer: GU, Line: 2, Machine: Over Lock Machine, Process Name: Gusset	Buyer: GU, Line: 10, Machine: Flat Lock Machine, Process Name: Body Hem

Table 3.15 Day-6 Table-3

	
Buyer: GU, Line: 2, Machine: Flat Lock Machine, Process Name: Waist	Buyer: GU, Line: 3, Machine: Flat Lock Machine, Process Name: Shoulder Top Seam

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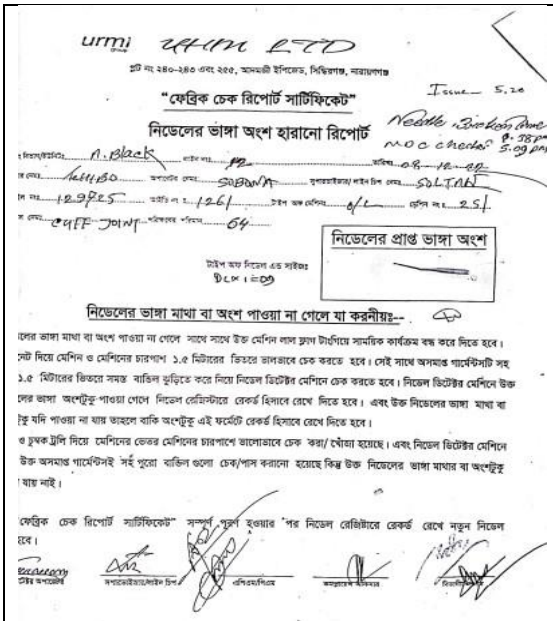
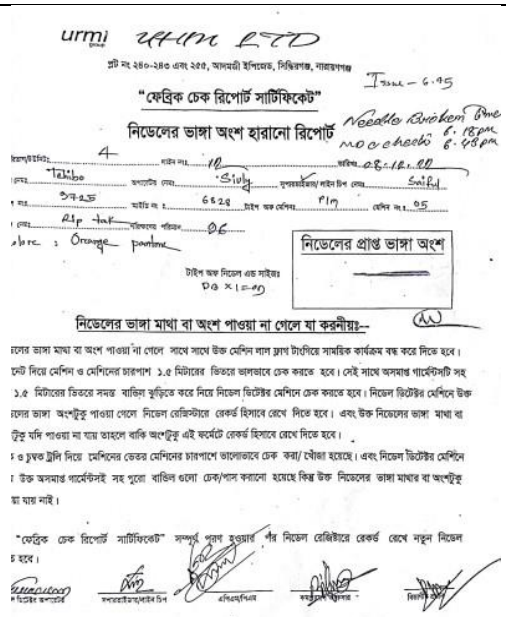
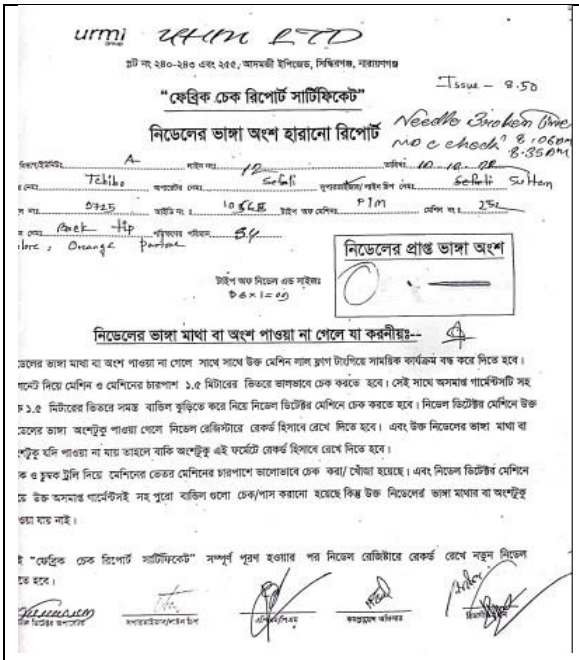
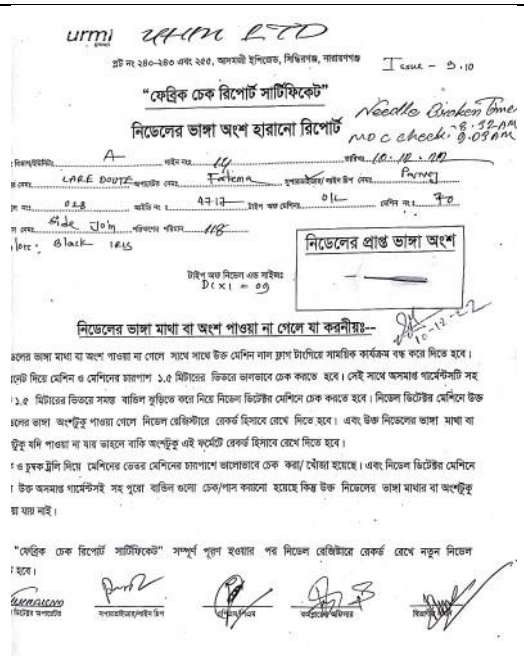
3.2.7 Day 7: 8th December, 2022

Table 3.16 Day-7 Table-1

	
Buyer: Tchibo, Line: 12, Machine: Over Lock Machine, Process Name: Cuff Join	Buyer: Tchibo, Line: 12, Machine: Plain Lock Machine, Process Name: Rib Tack

3.2.8 Day 8: 10th December, 2022

Table 3.17 Day-8 Table-1

	
Buyer: Tchibo, Line: 12, Machine: Plain Lock Machine, Process Name: Back Rib	Buyer: Laredoute, Line: 14, Machine: Over Lock Machine, Process Name: Side Join

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3.2.9 Day 9: 12nd December, 2022

Table 3.18 Day-9 Table-1

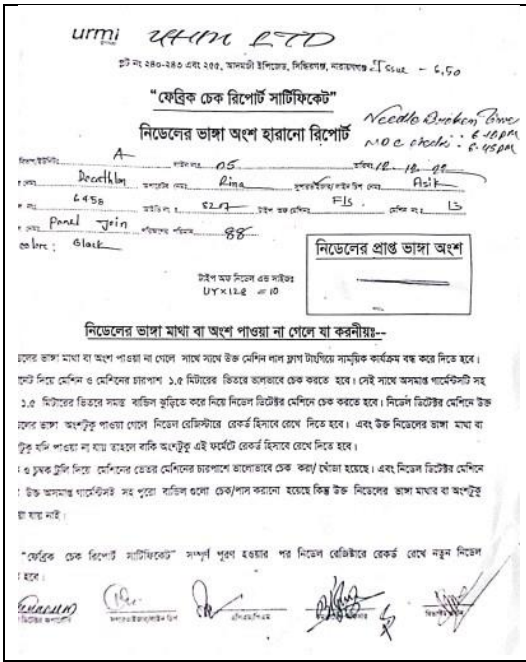	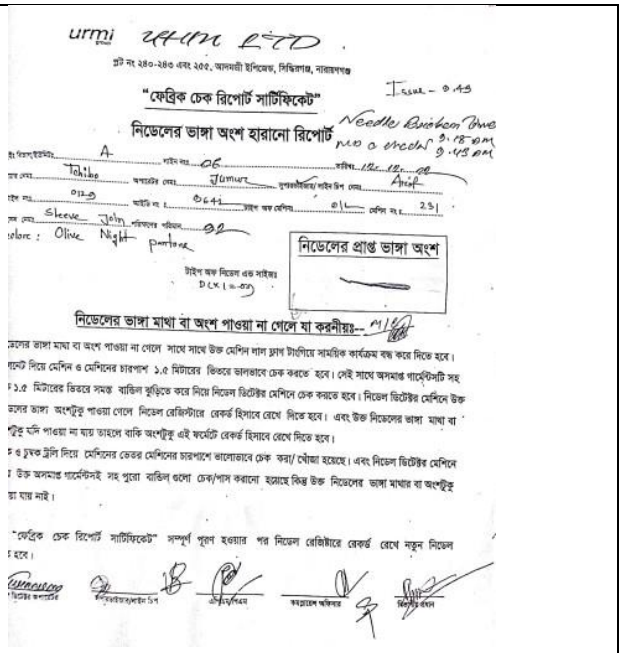
Buyer: Decathlon, Line: 5, Machine: Flat Seamer Machine, Process Name: Panel Join	Buyer: Tchibo, Line: 6, Machine: Over Lock Machine, Process Name: Sleeve Join

Table 3.19 Day-9 Table-2

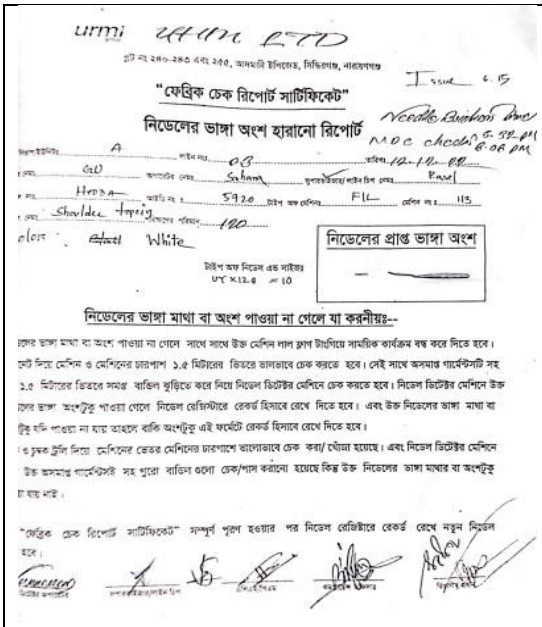	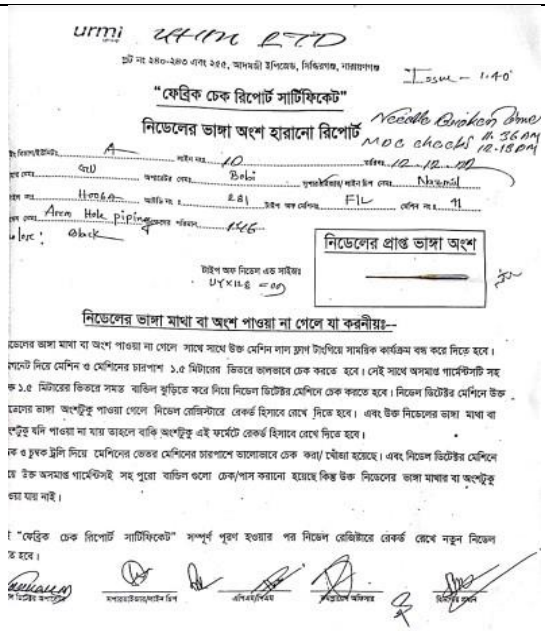
Buyer: GU, Line: 3, Machine: Flat Lock Machine, Process Name: Shoulder Top Seam	Buyer: GU, Line: 10, Machine: Flat Lock Machine, Process Name: Arm Hole Piping

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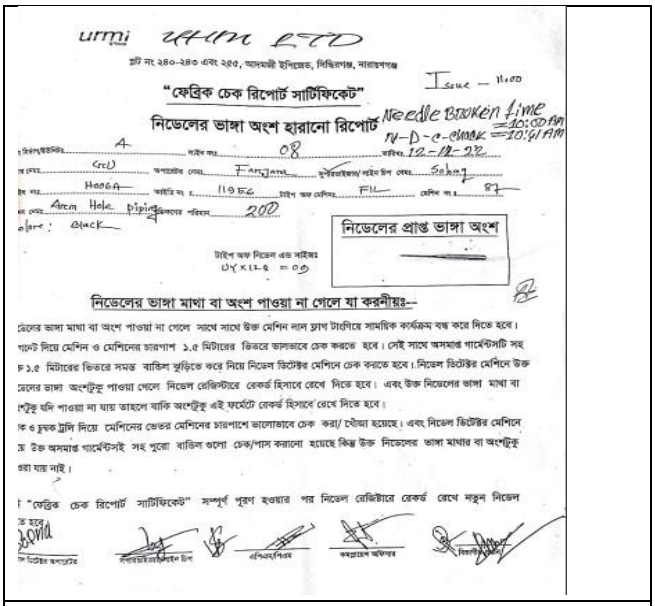
Table 3.20 Day-9 Table-3



"ফেব্রিক চেক রিপোর্ট সার্টিফিকেট"

নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট

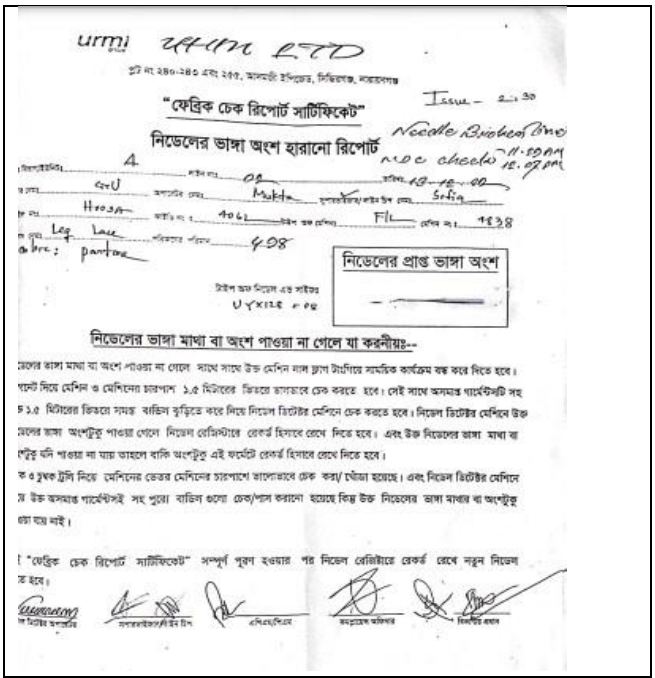
নিডেলের প্রাপ্ত ভাঙ্গা অংশ

নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--

Buyer: GU, Line: 8, Machine: Flat Lock Machine, Process Name: Arm Hole Piping

3.2.10 Day 10: 13rd December, 2022

Table 3.21 Day-10 Table-1



"ফেব্রিক চেক রিপোর্ট সার্টিফিকেট"

নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট

নিডেলের প্রাপ্ত ভাঙ্গা অংশ

নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--

Buyer: GU, Line: 2, Machine: Flat Lock Machine, Process Name: Leg Lace

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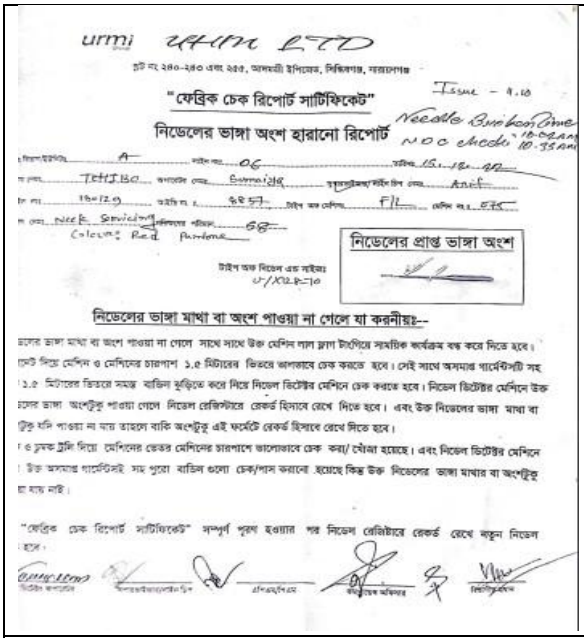
3.2.11 Day 11: 15th December, 2022

Table 3.22 Day-11 Table-1

 "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: Tchibo, Line: 6, Machine: Flat Lock Machine, Process Name: Neck Servicing

3.2.12 Day 12: 18th December, 2022

Table 3.23 Day-12 Table-1

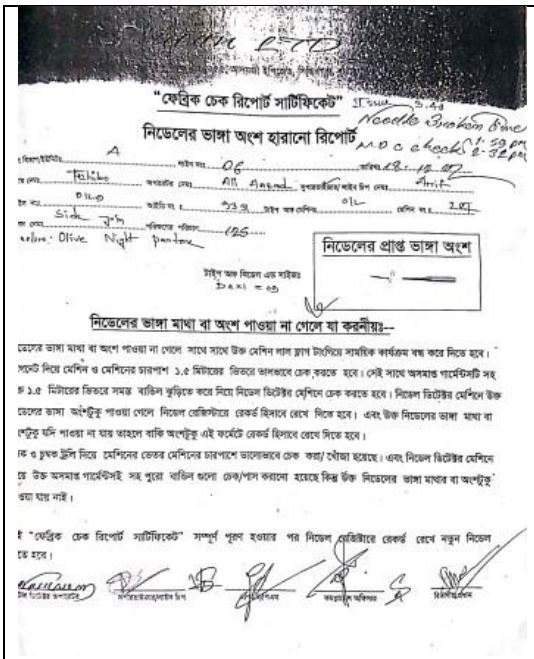
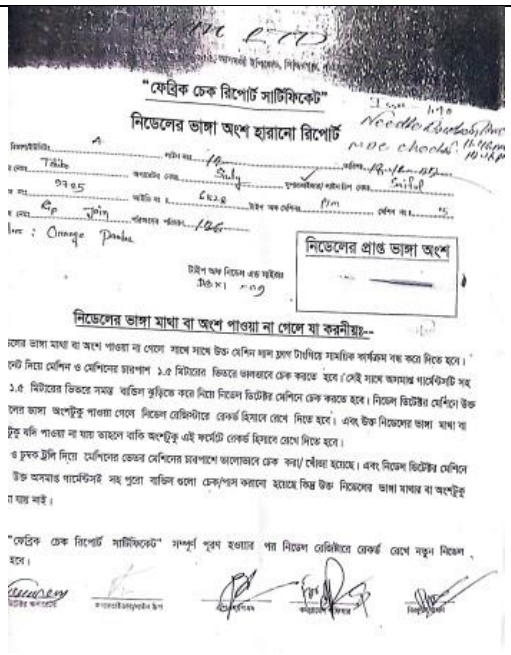
 "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--	 "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: Tchibo, Line: 6, Machine: Over Lock Machine, Process Name: Side Join	Buyer: Tchibo, Line: 12, Machine: Plain Lock Machine, Process Name: Rib Join

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Table 3.24 Day-12 Table-2

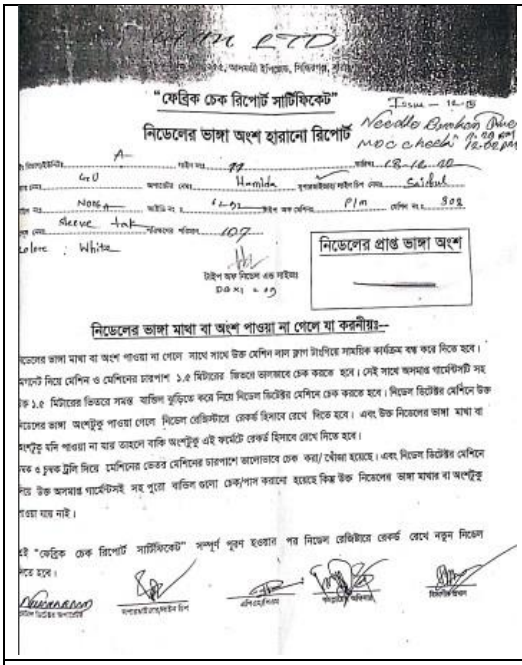
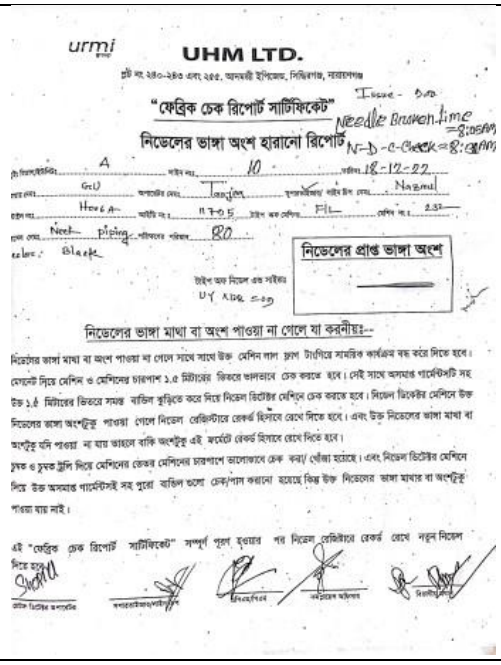
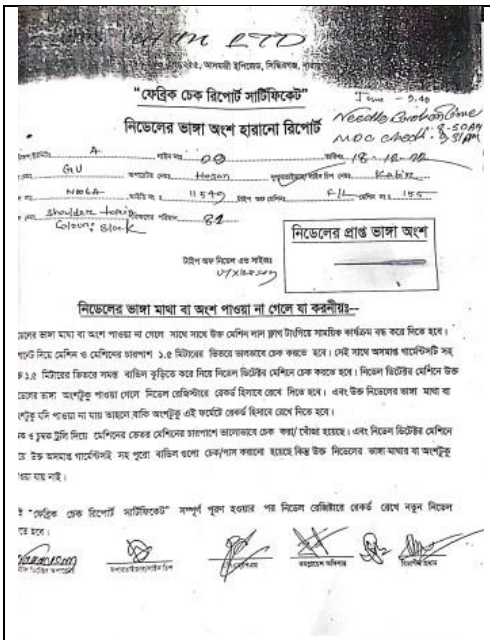
	
Buyer: GU, Line: 11, Machine: Plain Machine, Process Name: Sleeve Tack	Buyer: GU, Line: 10, Machine: Flat Lock Machine, Process Name: Neck Piping

Table 3.25 Day-12 Table-3


Buyer: GU, Line: 9, Machine: Flat Lock Machine, Process Name: Shoulder Top Seam

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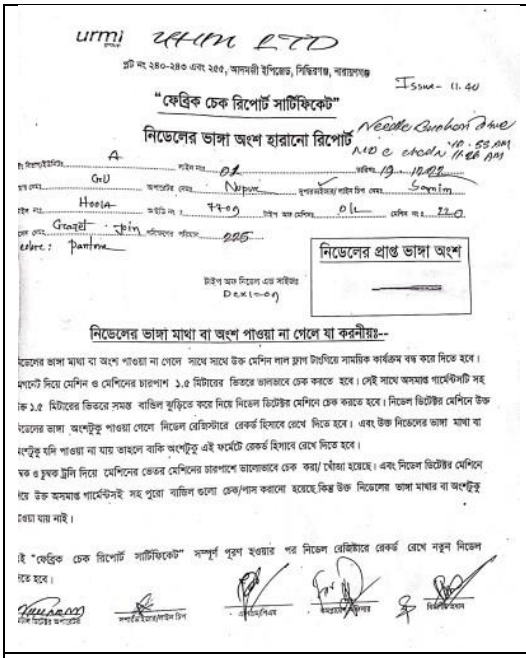
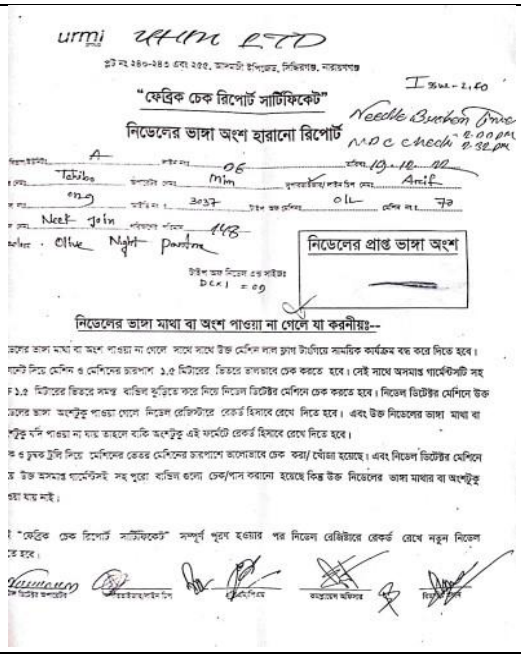
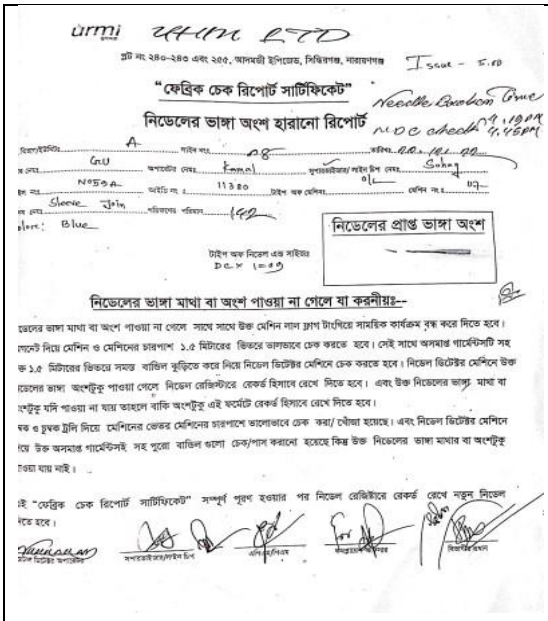
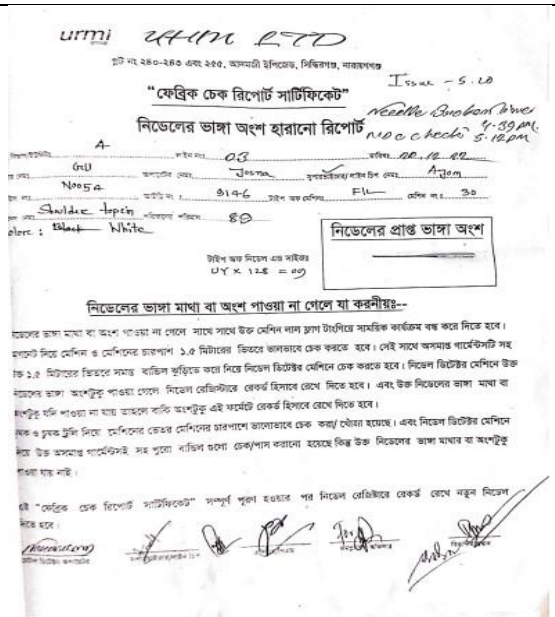
3.2.13 Day 13: 19th December, 2022

Table 3.26 Day-13 Table-1

	
Buyer: GU, Line: 1, Machine: Over Lock Machine, Process Name: Gusset Join	Buyer: Tchibo, Line: 6, Machine: Over Lock Machine, Process Name: Neck Join

3.2.14 Day 14: 20th December, 2022

Table 3.27 Day-13 Table-1

	
Buyer: GU, Line: 8, Machine: Over Lock Machine, Process Name: Sleeve Join	Buyer: GU, Line: 1, Machine: Flat Lock Machine, Process Name: Shoulder Top Seam

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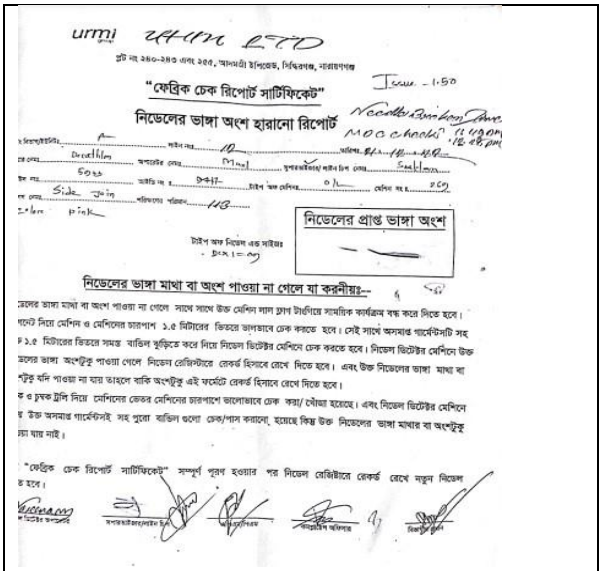
3.2.15 Day 15: 21st December, 2022

Table 3.28 Day-15 Table-1


urmi ltd

"ফেব্রিক চেক রিপোর্ট সার্টিফিকেট"

নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট

নিডেলের প্রাপ্ত ভাঙ্গা অংশ

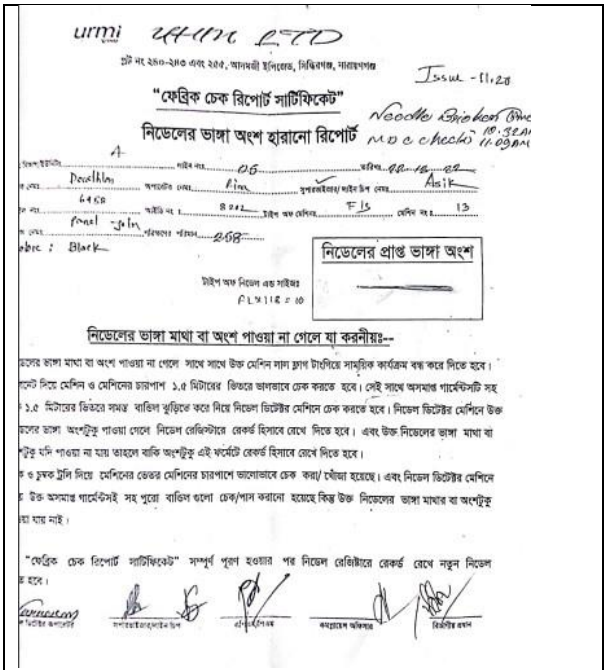
নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--

"ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" সম্পূর্ণ পূরণ হওয়ার পর নিডেল রেজিষ্টারে রেকর্ড রেখে নতুন নিডেল

Buyer: Decathlon, Line: 12, Machine: Over Lock Machine, Process Name: Side Join

3.2.16 Day 16: 22nd December, 2022

Table 3.29 Day-16 Table-1


urmi ltd

"ফেব্রিক চেক রিপোর্ট সার্টিফিকেট"

নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট

নিডেলের প্রাপ্ত ভাঙ্গা অংশ

নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--

"ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" সম্পূর্ণ পূরণ হওয়ার পর নিডেল রেজিষ্টারে রেকর্ড রেখে নতুন নিডেল

Buyer: Decathlon, Line: 5, Machine: Flat Seamer Machine, Process Name: Panel Join

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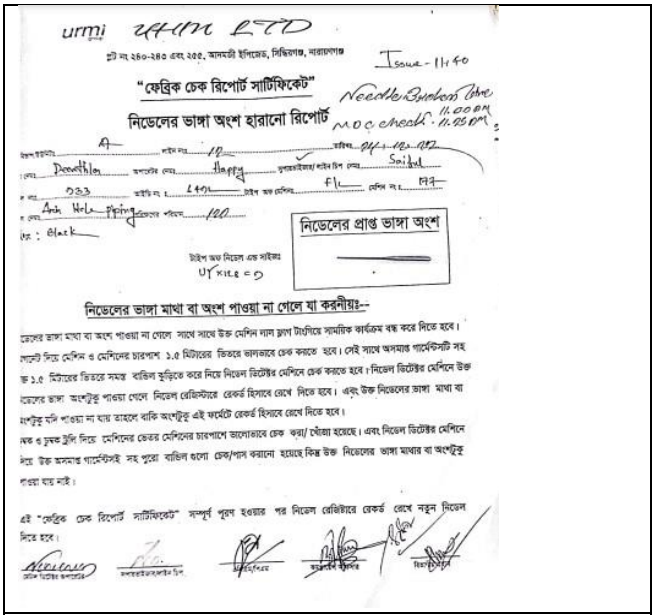
3.2.17 Day 17: 24th December, 2022

Table 3.30 Day-17 Table-1

 urmi UHM LTD "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: Decathlon, Line: 12, Machine: Flat Lock Machine, Process Name: Arm Hole Piping

3.2.18 Day 18: 25th December, 2022

Table 3.31 Day-18 Table-1

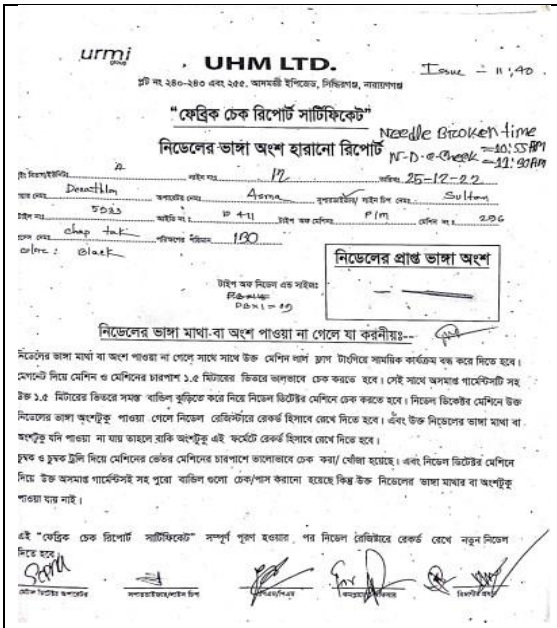
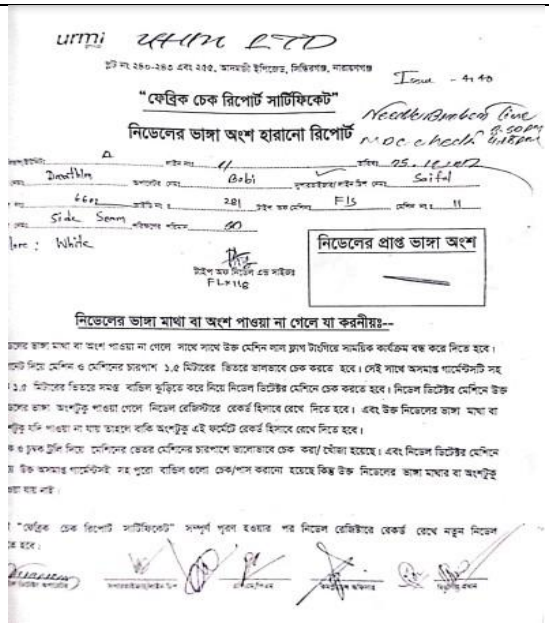
 urmi UHM LTD. "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--	 urmi UHM LTD "ফেব্রিক চেক রিপোর্ট সার্টিফিকেট" নিডেলের ভাঙ্গা অংশ হারানো রিপোর্ট নিডেলের প্রাপ্ত ভাঙ্গা অংশ নিডেলের ভাঙ্গা মাথা বা অংশ পাওয়া না গেলে যা করনীয়ঃ--
Buyer: Decathlon, Line: 12, Machine: Plain Machine, Process Name: Chap Tack	Buyer: Decathlon, Line: 11, Machine: Flat Seamer Machine, Process Name: Side Join

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Table 3.32 Day-18 Table-2

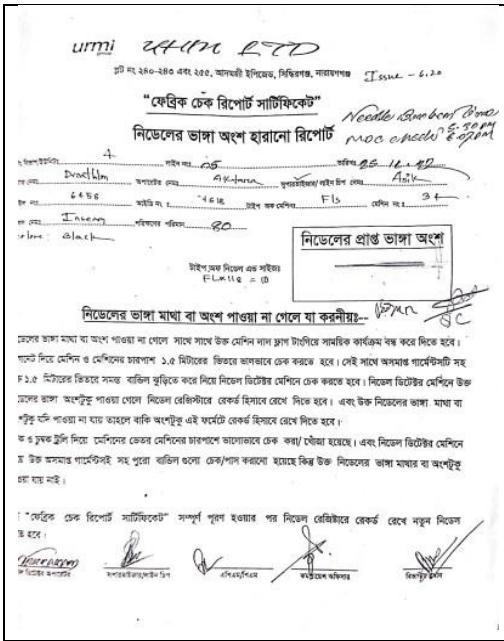
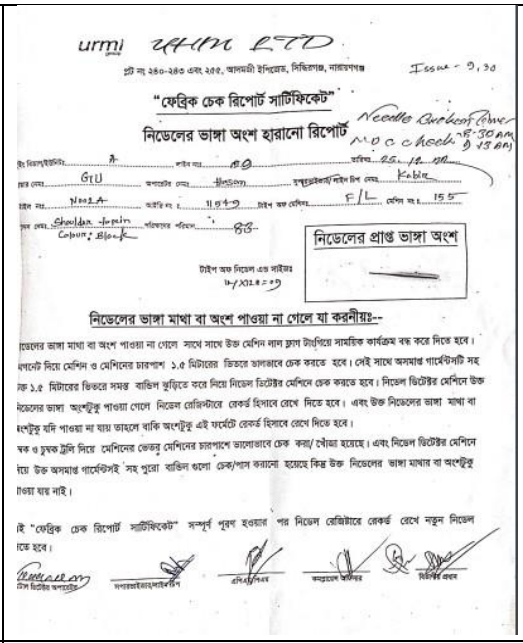
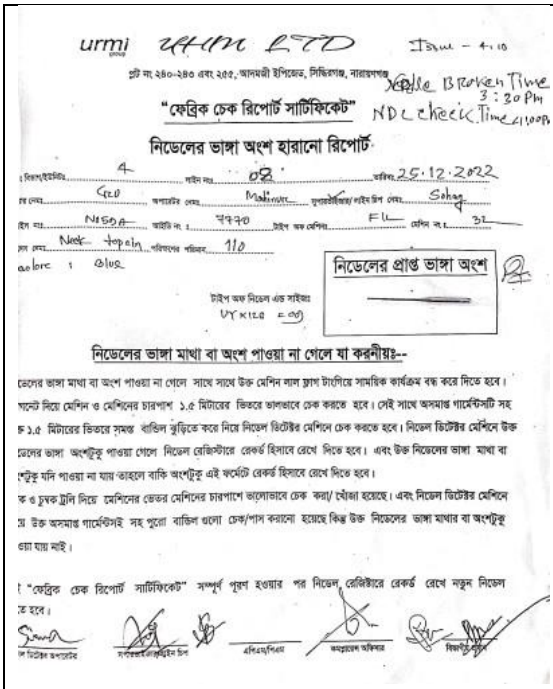
	
<u>Buyer</u>: Decathlon, <u>Line</u>: 5, <u>Machine:</u> Flat Seamer Machine, <u>Process Name</u>: Inseam	<u>Buyer</u>: GU, <u>Line</u>: 9, <u>Machine:</u> Flat Lock Machine, <u>Process Name</u>: Shoulder Top Seam

Table 3.33 Day-18 Table-3


<u>Buyer</u>: GU, <u>Line</u>: 8, <u>Machine:</u> Flat Lock Machine, <u>Process Name</u>: Neck Top Seam

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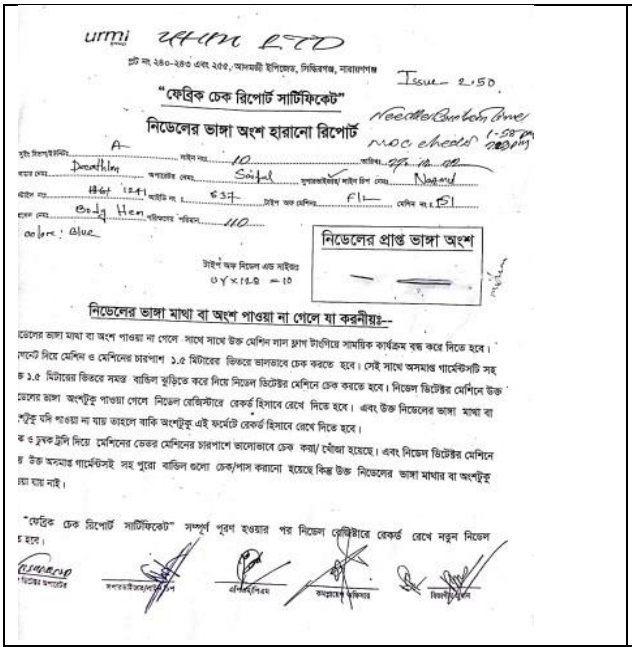
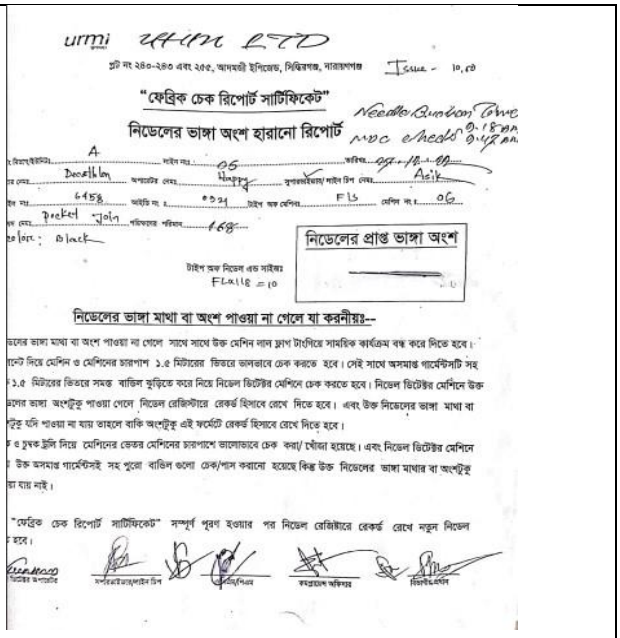
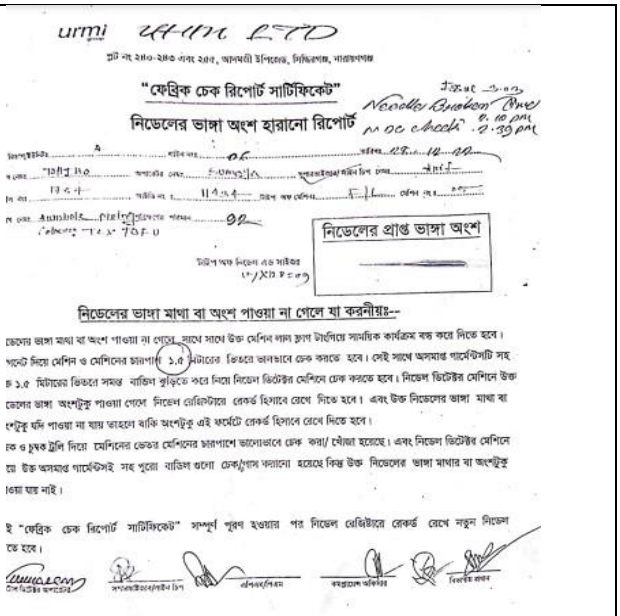
3.2.19 Day 19: 27th December, 2022

Table 3.34 Day-19 Table-1

	
Buyer: Decathlon, Line: 10, Machine: Flat Lock Machine, Process Name: Body Hem	Buyer: Decathlon, Line: 5, Machine: Flat Seamer Machine, Process Name: Pocket Join

3.2.20 Day 20: 28th December, 2022

Table 3.35 Day-20 Table-1

	
Buyer: Laredoute, Line: 14, Machine: Over Lock Machine, Process Name: Side Join	Buyer: Tchibo, Line: 6, Machine: Flat Lock Machine, Process Name: Arm Hole Piping

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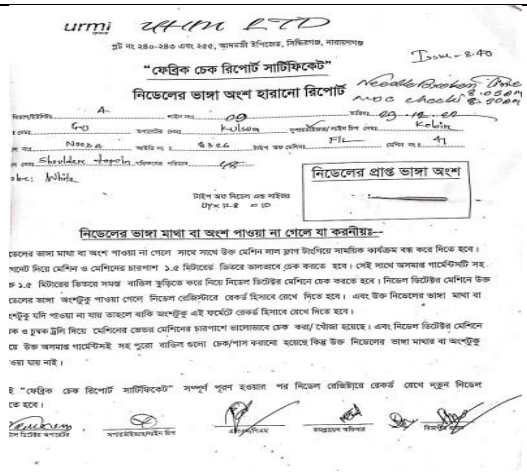
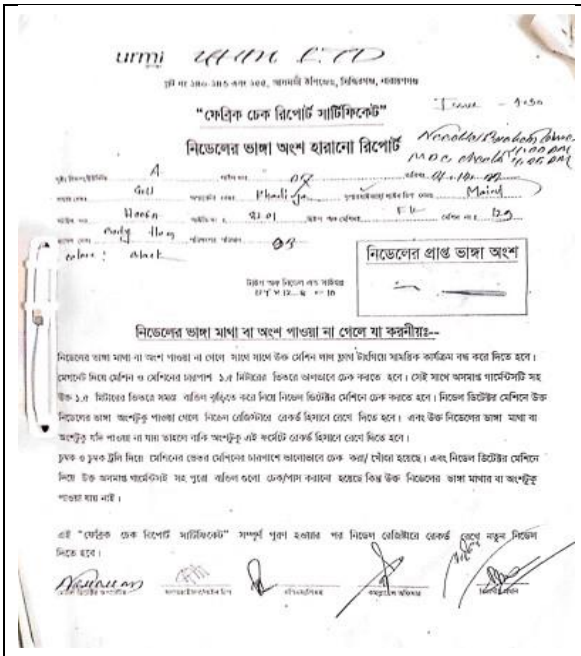
3.2.21 Day 21: 29th December, 2022

Table 3.36 Day-21 Table-1

	
Buyer: GU, Line: 1, Machine: Plain Machine, Process Name: Tuck	Buyer: GU, Line: 9, Machine: Flat Lock Machine, Process Name: Shoulder Top Seam

3.2.22 Day 22: 31st December, 2022

Table 3.37 Day-22 Table-1


Buyer: GU, Line: 7, Machine: Flat Lock Machine, Process Name: Body Hem

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3.2.23 Total Sewing Machine Data:

Total Machine Inventory Record List

Machine list of Sewing section

SL-No	M/C Type	Brand	Qty	Total Qty	Sampol	Taknical	Traning	Total	Sewing Total Qty	Block-A 45%
1	Hole M/C	Juki	12	12 - Set	1	0	0	1	11	5
2	Button Stitch M/C	Juki	12	12 - Set	1	0	0	1	11	5
3	Bartack M/C	Juki	10	22- Set	0	0	0	0	10	5
	Bartack M/C	Brother	12		1	0	0	1	11	5
Total	Total		22	22-set	1	0	0	1	21	10
4	Snap Button M/C	TOYO	12	12-Set	0	0	0	0	12	5
5	Rib Cutting M/C	TOYO	4	13-Set	0	0	0	0	4	2
	Rib Cutting M/C	UZO	9		1	0	0	1	8	4
Total	Total		13	13-set	1	0	0	1	12	6
6	Picoting M/C	kansai	2	2-Set	0	0	0	0	2	1
7	Thread trimmer double head	Unisun	2	2-Set	0	0	0	0	2	1
8	2 Needle - lock stitch machine	Typical	5	5-Set	0	0	0	0	5	2
9	Malti Needle Chain Stitch M/C (Kansai)	Kansai	8	8-Set	0	0	0	0	8	4
10	Feed Of The Arm M/C	Brother	12	12 - Set	1	0	0	1	11	5
11	3-Needle Chain Stitch M/C	Typical	17	17-Set	0	0	0	0	17	8
12	Zig Zag M/C	Brother	7	7-set	1	0	0	1	6	3
13	Pattern Taker M/C	Brother	2	2-Set	0	0	0	0	2	1
14	Elastic Band Joining	Juki	2	2-Set	0	0	0	0	2	1
15	Vertical Edge Cutter M/C	TYPICAL	24	24-Set	0	0	0	0	24	11

Figure 3.1 Sewing Machine part 1

SL-No	M/C Type	Brand	Qty	Total Qty	Sampol	Taknical	Traning	Total	Sewing Total Qty	Block-A 45%
16	Over Lock M/C - (Tk)	Pegasus	26	26-set	0	0	6	6	20	9
	Over Lock M/C - (Oto)	Pegasus	263	263-set	10	6	0	16	247	111
	Over Lock M/C	Yamato	40	40-set	0	0	0	0	40	18
	Over Lock M/C - (Small)	Pegasus	3	3-set	0	0	3	3	0	0
	Over Lock M/C - (Latus)	Overlock	2	2-set	0	0	2	2	0	0
Total	Total		334	234	10	6	11	27	307	138
17	Flat lock Salander -Big	Brother	66	66-set	2	2	3	7	59	27
	Flat lock Salander- Roller	Brother	12	12-set	1	0	0	1	11	5
	Flat lock Salander - small	Brother	24	24-set	2	1	0	3	21	9
Total	Total		102	102	5	3	3	11	91	41
18	Feed up the arm, Cylinder bed, Interlock stitch - (IT)	Pegasus	5	5 set	0	0	0	0	5	2
19	Elastic Lace attach machine	Yamato	33	33 set	1	0	0	1	32	14
20	FLAT SEAMER	Yamato	28	28-Set	0	0	0	0	28	13
	FLAT SEAMER	Megasew	22	22	1	0	0	1	21	9
Total	Total		50	50	1	0	0	1	49	22
21	Piping m/c	Pegasus	85	85-set	3	2	2	7	78	35
	Piping m/c	Siruba	3	3-set	0	0	0	0	3	1
Total	Total		88	88-set	3	2	2	7	81	36
22	Body hem	other/yama	62	62-set	0	0	2	2	60	27
23	H.cutter(Elastick att mc)	Pegasus	14	14-set	1	0	0	1	13	6
24	Single Needle(PM) M/C	Big Bodi	46	46-Set	0	0	2	2	44	20
	Single Needle(PM) M/C	Black Had	63	63-set	0	0	0	0	63	28
	Single Needle(PM) M/C	Small Body	208	208-set	10	7	0	17	191	86
Total	Total		317	317-set	10	7	2	19	298	134
25	Elastick cut divish		15	15-set	0	0	0	0	15	7
G.Total		Total	1172	1172- set	37	18	20	75	1097	495
				1127 set						

Figure 3.2 Sewing Machine part 1

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3.3 Summery Table

Serial	Date	Buyer	Machine Type	Line	Operation	Breakage Time	Metal Detctor	Issue Time	**Loss Time**	Minute with Break	Hour With Break
1	12/1/22	GU	FL	1	Waist	11:18 AM	11:49 AM	12:00 PM	0:42	42	0:42
2	12/1/22	Decathlon	PM	5	Label join	3:10 PM	3:56 PM	4:10 PM	1:00	60	1:00
3	12/1/22	GU	PM	10	Cross Tack	11:58 AM	3:19 PM	3:30 PM	3:32	152	2:32
4	12/1/22	Decathlon	PM	13	Label join	9:32 AM	10:17 AM	10:30 AM	0:58	58	0:58
5	12/3/22	Laredoute	FL	4	Piping	5:30 PM	5:39 PM	6:10 PM	0:40	40	0:40
6	12/3/22	GU	FL	8	Arm Hole Piping	5:19 PM	5:49 PM	6:07 PM	0:48	48	0:48
7	12/3/22	GU	Bartack	11	Shoulder Bartack	8:35 AM	9:12 AM	9:40 AM	1:05	65	1:05
8	12/4/22	GU	FL	1	Leg Join	9:00 AM	9:26 AM	9:40 AM	0:40	40	0:40
9	12/4/22	Laredoute	FL	6	Sleeve Hem	11:18 AM	11:55 AM	12:10 PM	0:52	52	0:52
10	12/4/22	GU	FL	7	Neck Piping	9:30 AM	10:04 AM	10:20 AM	0:50	50	0:50
11	12/4/22	GU	FL	8	Arm Hole Piping	5:00 PM	5:37 PM	5:50 PM	0:50	50	0:50
12	12/4/22	GU	OL	10	Side Seam	4:00 PM	4:30 PM	4:40 PM	0:40	40	0:40
13	12/4/22	Tchibo	PM	12	Chup Tack	5:10 PM	5:41 PM	6:00 PM	0:50	50	0:50
14	12/5/22	Decathlon	Flat Seemer	5	Panel Join	9:53 AM	10:24 AM	10:40 AM	0:47	47	0:47
15	12/5/22	Decathlon	OL	13	Side Seam	9:12 AM	9:40 AM	9:50 AM	0:38	38	0:38

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16	12/5/22	GU	PM	15	Rib Tack	12:00 PM	12:35 PM	1:50 PM	1:50	50	0:50
17	12/6/22	GU	FL	7	Arm Hole Opening	4:39 PM	5:12 PM	5:30 PM	0:51	51	0:51
18	12/6/22	GU	FL	9	Shoulder Top Seam	8:03 AM	8:25 AM	8:50 AM	0:47	47	0:47
19	12/6/22	GU	OL	10	Side Seam	8:15 AM	8:50 AM	9:30 AM	1:15	75	1:15
20	12/6/22	GU	PM	11	V Tack	8:10 AM	8:41 AM	9:10 AM	1:00	60	1:00
21	12/6/22	Tchibo	Bartack	12	Bartack	2:04 PM	2:34 PM	2:50 PM	0:46	46	0:46
22	12/6/22	Decathlon	Vertical	13	Neck Tack	9:33 AM	10:18 AM	10:50 AM	1:17	77	1:17
23	12/6/22	Vertbaudet	Bartack	15	Bartack	8:04 AM	8:28 AM	9:00 AM	0:56	56	0:56
24	12/6/22	GU	PM	15	Side Top Seam	8:03 AM	9:42 AM	10:00 AM	1:57	117	1:57
25	12/7/22	GU	OL	2	Gusset Join	10:50 AM	11:20 AM	11:30 AM	0:40	40	0:40
26	12/7/22	GU	FL	2	Waist	11:42 AM	12:10 PM	1:40 PM	1:58	58	0:58
27	12/7/22	GU	FL	3	Shoulder Top Seam	11:50 AM	12:23 PM	1:42 PM	1:52	52	0:52
28	12/7/22	Adobe Sourcing	FL	6	Bartack	2:30 PM	3:12 PM	3:30 PM	1:00	60	1:00
29	12/7/22	GU	FL	10	Body Hem	12:18 PM	12:49 PM	1:50 PM	1:32	32	0:32
30	12/7/22	GU	OL	11	Shoulder Tape	9:40 AM	10:23 AM	10:40 AM	1:00	60	1:00
31	12/8/22	Tchibo	PM	12	Rib Tack	6:18 PM	6:43 PM	6:45 PM	0:27	27	0:27
32	12/8/22	Tchibo	OL	12	Cuff Join	4:38 PM	5:09 PM	5:20 PM	0:42	42	0:42
33	12/10/22	Tchibo	PM	12	Back Tip	8:06 AM	8:35 AM	8:50 AM	0:44	44	0:44

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34	12/10/22	Laredoute	OL	14	Side Seam	8:32 AM	9:03 AM	9:10 AM	0:38	38	0:38
35	12/12/22	GU	FL	3	Shoulder Top Seam	5:32 PM	6:06 PM	6:15 PM	0:43	43	0:43
36	12/12/22	Decathlon	Flat Seemer	5	Panel Join	6:10 PM	6:45 PM	6:50 PM	0:40	40	0:40
37	12/12/22	Tchibo	OL	6	Sleeve Join	9:18 AM	9:43 AM	9:43 AM	0:25	25	0:25
38	12/12/22	GU	FL	8	Arm Hole Piping	10:00 AM	10:41 AM	11:00 AM	1:00	60	1:00
39	12/12/22	GU	FL	10	Arm Hole Piping	11:36 AM	12:13 PM	1:40 PM	2:04	63	1:03
40	12/13/22	GU	FL	2	Leg Lace	11:29 AM	12:07 PM	2:30 PM	3:01	121	2:01
41	12/15/22	Tchibo	FL	6	Neck Servicing	10:02 AM	10:35 AM	11:10 AM	1:08	68	1:08
42	12/18/22	Tchibo	OL	6	Side Join	1:59 PM	2:32 PM	3:40 PM	1:41	101	1:41
43	12/18/22	GU	FL	9	Shoulder Top Seam	8:50 AM	9:31 AM	9:40 AM	0:50	50	0:50
44	12/18/22	GU	FL	10	Neck Piping	8:05 AM	8:31 AM	9:00 AM	0:55	55	0:55
45	12/18/22	GU	PM	11	Sleeve Tack	11:29 AM	12:02 PM	12:15 PM	0:46	46	0:46
46	12/18/22	Tchibo	PM	12	Rib Join	11:46 AM	12:16 PM	1:40 PM	1:54	54	0:54
47	12/19/22	Tchibo	OL	6	Neck Join	2:00 PM	2:32 PM	2:40 PM	0:40	40	0:40
48	12/19/22	GU	OL	1	Gusset Join	10:55 AM	11:26 AM	11:40 AM	0:45	45	0:45
49	12/20/22	GU	FL	3	Shoulder Top Seam	4:39 PM	5:12 PM	5:20 PM	0:41	41	0:41
50	12/20/22	GU	OL	8	Sleeve Join	4:19 PM	4:45 PM	5:00 PM	0:41	41	0:41
51	12/21/22	Decathlon	OL	12	Side Join	11:49 AM	12:28 PM	1:50 PM	2:01	61	1:01

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52	12/22/22	Decathlon	Flat Seemer	6	Panel Join	10:32 AM	11:09 AM	11:20 AM	0:48	48	0:48
53	12/24/22	Decathlon	FL	12	Arm Hole Piping	11:00 AM	11:25 AM	11:40 AM	0:40	40	0:40
54	12/25/22	Decathlon	Flat Seemer	5	Inseam	5:30 PM	6:07 PM	6:20 PM	0:50	50	0:50
55	12/25/22	GU	FL	8	Neck Top Seam	3:50 PM	4:00 PM	4:10 PM	0:20	20	0:20
56	12/25/22	GU	FL	9	Shoulder Top Seam	8:30 AM	9:13 AM	9:30 AM	1:00	60	1:00
57	12/25/22	Decathlon	Flat Seemer	11	Side Seam	3:50 PM	4:18 PM	4:40 PM	0:50	50	0:50
58	12/25/22	Decathlon	PM	12	Chap Tuck	10:55 AM	11:30 AM	11:40 AM	0:45	45	0:45
59	12/27/22	Decathlon	Flat Seemer	6	Pocket Join	9:18 AM	9:47 AM	10:00 AM	0:42	42	0:42
60	12/27/22	Decathlon	FL	10	Body Hem	1:58 PM	2:29 PM	2:50 PM	0:52	52	0:52
61	12/28/22	Tchibo	FL	6	Arm Hole Piping	2:10 PM	2:39 PM	3:03 PM	0:53	53	0:53
62	12/28/22	Laredoute	OL	14	Side Join	11:00 AM	11:33 AM	1:43 PM	2:43	103	1:43
63	12/29/22	GU	PM	1	Chap Tack	9:18 AM	9:46 AM	10:00 AM	0:42	42	0:42
64	12/29/22	GU	FL	9	Shoulder Top Seam	8:05 AM	8:30 AM	8:40 AM	0:35	35	0:35
65	12/31/22	GU	FL	7	Body Hem	4:00 PM	4:25 PM	4:30 PM	0:30	30	0:30
							Total Loss Time		62:55	3488	58:08
								Average Loss Time	1:02	53.66153846	0:53

Figure 3.3 Missing Broken Needle Part Report December, 2022 All Record

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CHAPTER 4: RESULT AND DISCUSSION

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4.1 Total Time Loss Due to Missing Broken Needle Part.

From the data summery we have seen,

- Total Loss time is 58.08-hours or 3488 minutes in the month of December, 2022.
- Minimum time to collect needle is 20 minutes.
- Maximum time to collect needle is 152 minutes.
- Total missing broken needle broken part is 65.
- Total Machines in block- A is 508.

→ Average time to collect a new needle = Total Loss Time/ Total Broken Needle

=3488/65 minutes

=53.7 minutes or 0.53 hours

→ In December, 2022, including 5 off days total working hours,

= 26 days × 11 hours = 286 hours [For each machine]

→ For total 508 machines, Total hours will be,

= (286 × 508) hours = 145,288 hours

→ From 65 machines, Total hours will be,

= (65 × 286) hours = 18,590 hours

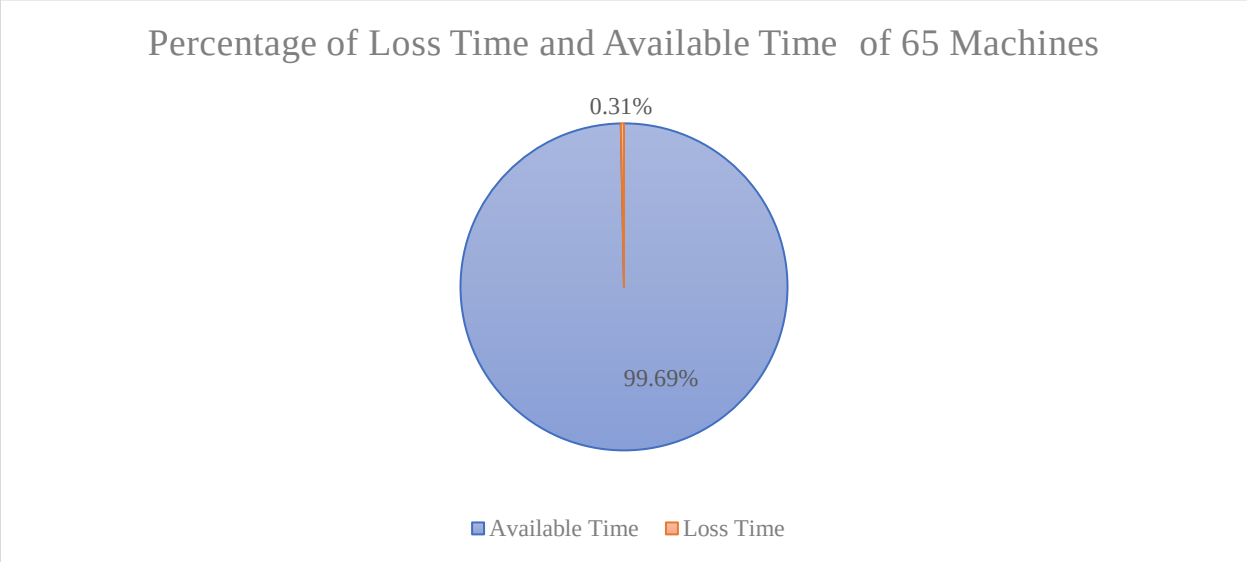

Figure 4.1 Percentage of Loss Time and Available Time of 65 Machines

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4.2 Missing broken needle part in respect of machine.

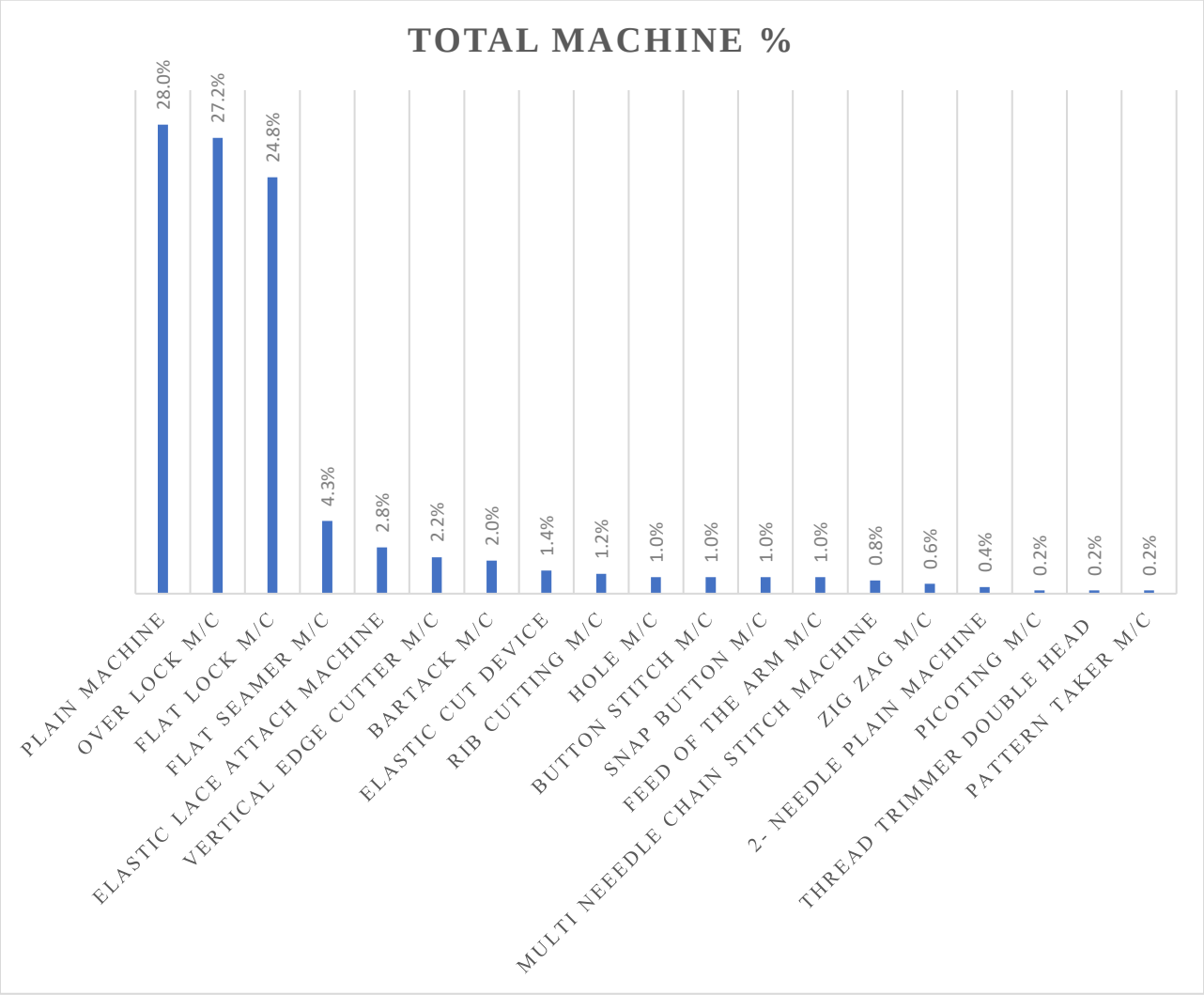

Figure 4.2 Total Machine %

Description: The above clustered column shows are the percentage of total machine. Here, 508 machines are used in Block-A and this number is not fixed. It varies from order and types of garments.

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Below Chart shows are the percentage of machine in respect of missing broken needle part.

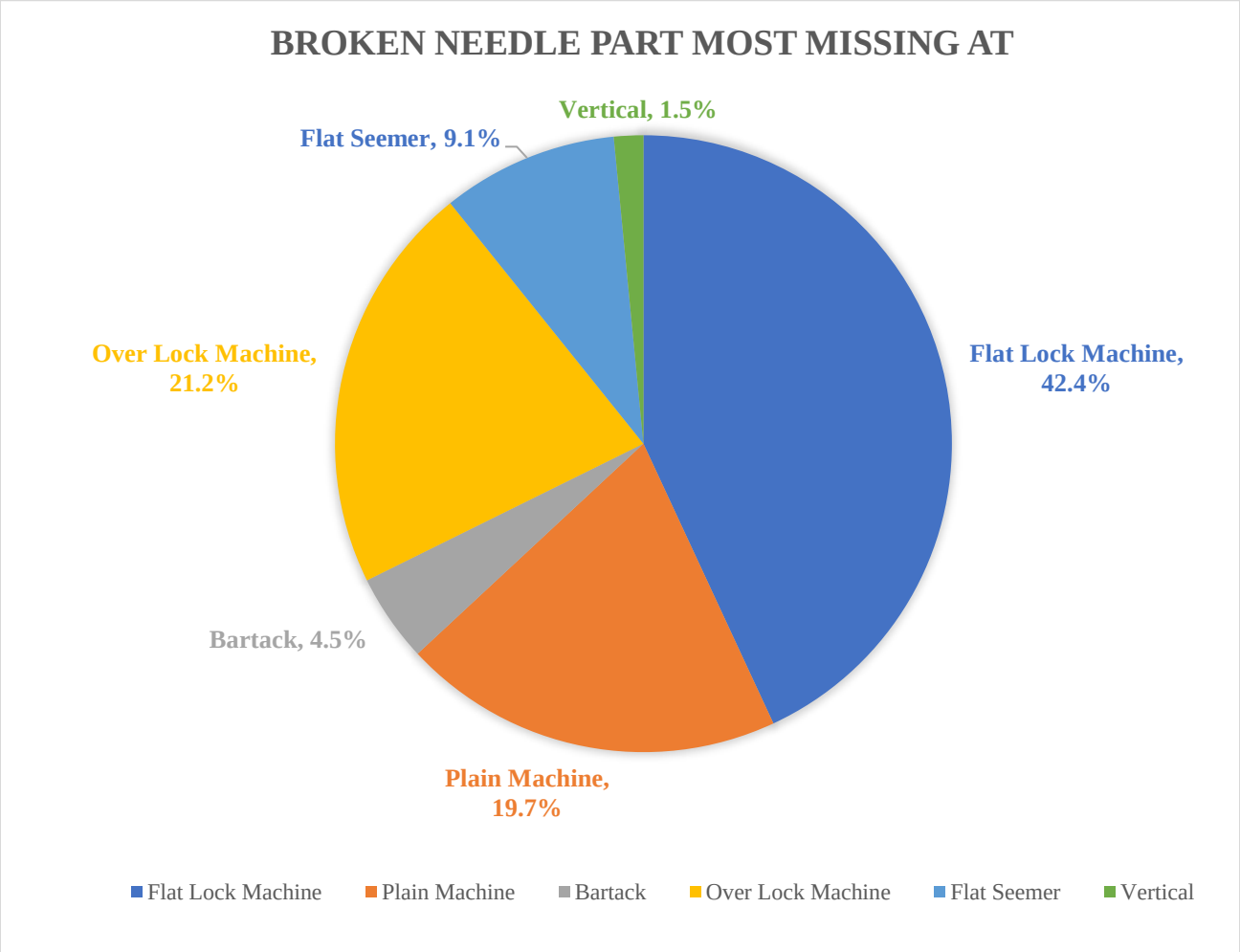

Figure 4.3 Result-1 Missing broken needle part in respect of machine

Description: The above chart shows are the percentage of machine in respect of missing broken needle part. Flat Lock Machine is top of them.

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4.3 Missing broken needle part in respect of process/operation.

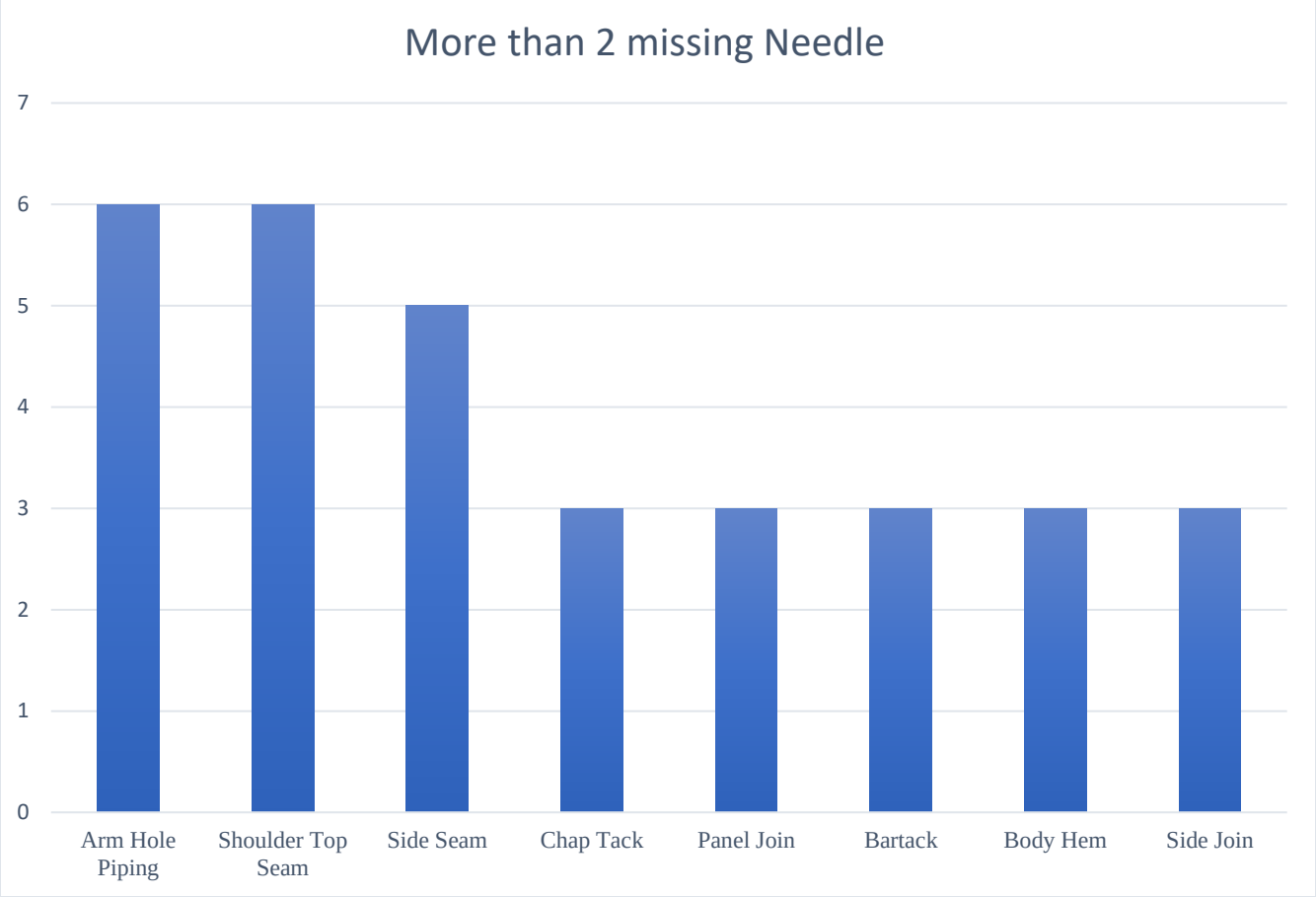

Figure 4.4 More than 2 missing Needle

Description: The above chart shows are the amount of operation/process in respect of missing broken needle part. Both arm hole piping and shoulder top seam is top of them.

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4.4 Discussion

There is various reason a needle can break. These are,

- When needle end point hits the needle plate.
- Improper RPM of a machine.
- When pressure guide doesn't place properly.
- Sometimes the quality of needle is responsible for needle breakage.
- If the needle is not positioned properly.
- If the timing rotary hook and needle doesn't maintain. Perfect position is considered when the rotary hook is above the needle eye before it catches the thread.
- When the pressure foot isn't proper condition or loses.

Broken needle part is not found because of,

- Workers fails to find the broken part when the part is too small.
- If the workers fail to concentrate.
- When the broken part loses in the garments.

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CHAPTER 5: CONCLUSION

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We are grateful to the employee of UHM LTD who helped by providing requires data during this project. In our project by collecting data of 'Missing Broken Needle Part Report' from Block-A (Total two blocks- A, B) of 1 month (December, 2022) from UHM LTD. By investigating collected data we found total loss time after missing the broken part of needle and in which operation & machine when missing broken needle part were not found. Firstly, total loss time was 58 hours 48 minutes and the average loss time per machine was 53 minutes. Secondly, operations/ process having more than 2 missing broken needle part- Arm Hole Piping- 6, Side Top Seam- 6, Side Seam- 5, Chap Tack- 3, Panel Join- 3, Bar tack- 3, Body Hem- 3 and Side Join- 3. Thirdly, machines at which broken needle part were not found are Flat Lock Machine- 42.4%, Over Lock Machine- 21.2%, Plain Machine- 19.7%, Flat Seamer Machine- 9.1%, Bar tack Machine- 4.5% and Vertical Machine- 1.5%.

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