



## **Faculty of Engineering**

Department of Textile Engineering

Project On

# **STUDY ON INDUSTRIAL ENGINEERING**

**Course Title: Thesis**

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**Advance in Apparel Manufacturing Technology**

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# LETTER OF APPROVAL

To

The Head

Department of Textile Engineering

Daffodil International University

102, Shukrabad, Mirpur Road, Dhaka 1207

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

Dear Sir,

I am just writing to let you know this project report titled as study on Industrial Engineering has been prepared by the student is bearing **Md. Mahbub Rahmna. ID: 182-23-5412, Rahanuba Tasnim Nishat. ID: 182-23-5389, Md. Masud Rana. ID: 182-23-5414**, are 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 student was directly involved in their project 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 Thesis report and consider it for final evaluation.

Yours Sincerely



.....

**Mohammad Abdul Baset**

Assistant Professor

Department of Textile Engineering

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# DECLARATION

We hereby declare that, this thesis 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 thesis nor any part of this thesis has been submitted elsewhere for award of any degree or diploma.

**Submitted By:**

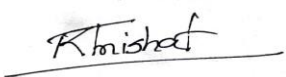


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# DEDICATION

Firstly we want to thanks almighty Allah. By the grace of Allah, We are successfully completed Our thesis paper. We also want to thanks **Mohammad Abdul Baset (Assistant Professor), Department of Textile Engineering, Daffodil International University** whose most Contribution behind or our success. Especially our father whose hard fatigue helps to reach this situation. Frankly we want to say, my friends, cousin or relatives everyone owing to get the devotion.

# ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to almighty Allah for his divine blessing makes us possible to complete this industrial training successfully. We feel grateful to and wish our profound my indebtedness to **Mohammad Abdul Baset (Assistant Professor)**. Department of Textile Engineering, Daffodil International University, Dhaka. Deep knowledge and keen interest of our supervisor in the field of garments manufacturing influenced us to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest to the authority of the **Ha-Meem Group**. For their kind help to finish our project. Special thanks to **Lt. Col. Delwar Hossain PSC (retd) (DMD), Md. Nazrul Islam (sample) (GM, Sample), S.M. Wahiduzzaman (GM, Washing) Md. Nuru Islam (ED) Md. Sohoag Rana (IE, Manager)** who has allowed or guide us to work in his organization within a congenial atmosphere during the industrial training period. Thanks goes to Managers of different sections, executives and personnel for their excellent guidance & co-operation during the period of our training.

During the attachment we were scheduled to work with all the departments of Ha-Meem group. So, we would like to thank the officials of Cutting, Fusing, Sewing, washing, Industrial Engineering (IE), Merchandizing, maintenance & all other departments who gave their valuable time in helping us to achieve our intended goal.

We would like to thank to them for their sincere co-operation, support and advice which they have provided us during these two months of training. Our sincere appreciation goes to the entire Ha-Meem Group team for extending their hands of cooperation throughout the training period.

Finally, we must acknowledge with due respect the constant support and patients of my parents.

# ABSTRACT

This document deals with the general process for SMV and the clothing industry operating bulletin. Ha-Meem Group visited us. The Operation Bulletin is collected. In time study, production, capacity study, objective, efficiency, we finished.

We have compared labor productivity and line efficiency before and after these things have been applied. The manufacturing arrangement finally presented was modeled and improved efficiency was guaranteed.

We covered some time process, Capacity, Target, SMV and production studies and analysis of different methods and also talked operating disruptions and other techniques, consisting of different experimental discussions, experiment results and discussion. We are analysis four items operation bulletins. We are achieved result of product SMV for 5 PKT LONG MENS & WOMENS PANT 23.39, CHINO SHORT & LONG PANT 22.48, TOP & BOTTOM OVERALL 8.64, 5 PKT LONG BIG & TALL 16.38, ELASTIC WEAST CHINO PANT 16:61.

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# **CHAPTER - 1: INTRODUCTION**

## **1.1 Introduction:**

In practically every sector of the economy, the current technological economic landscape is characterized by an increased rivalry. Customers' expectations are rising, and manufacturers must create and produce goods in as many varieties as possible (the concept of economies of scale is no longer discussed) to meet client demand. As a result, industries face a problem in producing items of the correct quality and quantity at the appropriate time and at the lowest possible cost in order to ensure their growth and development. This necessitates an improvement in the organization's productive efficiency. In order to boost efficiency, Industrial Engineering will be critical. To examine and optimize the work method, minimize waste, and ensure optimum economic efficiency and utilization, several industrial engineering techniques are applied.

Industrial engineering is a discipline in which judgment is used to design ways to use effectively the materials and other environmental assets and focus of nature for the betterment of humans, based on a knowledge of mathematical and social science gained through study, experience, and application.

## **1.2 Nature of the work in IE:**

Industrial engineers decide how to produce or manage a product or offer a service in the most effective manner employing simple aspects of production—people, machinery, resources, experience and power. They are the connection between effective selection and corporate accomplishment. Industrial engineers provide production potential and schedule-based production, cost savings, reporting SMV, etc.

## **1.3 Objective of the project:**

- To improve clothing industry productivity.
- For improved work in the field of clothing.
- To enhance the arrangement in several lines of a clothing sector.
- To enhance the stock control system.
- Sewing floor equivalence.
- All for non-stop output balancing.

## **1.3 Importance of this project:**

Combination of numerous publications, records and calculations between our general learning and technical life.

- The textile and apparel business earns a substantial quantity of foreign dollars (80%-85%).
- Many industrial engineering is concerned in textiles and its sub-sectors.
- I think that the initiative will provide technology manufacturers a means to lead our textiles and clothing sector in developing countries.
- Bangladesh is a developing country and is mainly dependent on foreign currencies.

## **1.4 Scope of this Project:**

- Great possibilities to achieve anything in IE's clothing business section.
- At present IE requested production to increase.
- Virtually all RMG plants comprehend IE's function in enhancing productivity.
- There are several options available to the RMG industry to create IE technologies and processes to improve productivity.
- It is an interesting subject, such that almost all companies modify the way IE research increases production.
- The authors of the RMG industry can fulfill the genuine request for IE for their product increases.

## **CHAPTER – 2: LITERATURE REVIEW**

## 2.0 Definition:

The industrial engineering industry aims to improve the efficiency of processes, systems or institutions. The industrial engineering industry. Industrial technicians labor to eliminate waste of money and time, money, materials, time for people, time for machinery, energy and other not valuable resources. They build engineering processes and systems that increase quality and productivity in accordance with the Institute of Industrial Engineers and Systems Engineers.

## 2.1 Concept of IE:

Commercial production requires intense manufacturing, but at same time certain aspects need to be combined – people, time, machinery and textiles–in a coordinated and productive system. The technological tool for the manufacturing of apparel should provide for anticipated product quality, key production distance, the transportation within the expected time-limit of prepared clothing and maximum usage at minimal fees of capability.

### 2.1.1 Objects of IE:

- Develop quality management methods and control of production costs.
- Development of programmers for cost reduction.

### 2.1.2 Process Flow chart of IE:

Trade with merchandiser for apparel



Analysis of clothing



Make P.P meeting

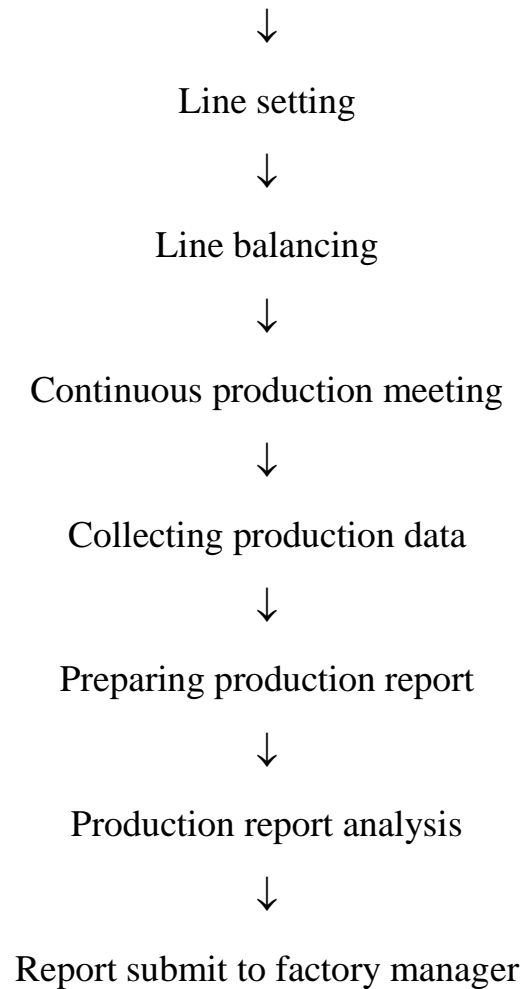


Production target



Set machine layout





### **2.1.3 Functions of IE:**

- Develop the quickest ways of work and create the best approach to accomplish the job. Determining the necessary quality standards (Standard Time).
- Developing a sound salary and incentives.
- The assessment of profitable lot size and the processing of each process stage is used to support the creation and design of a system designers of inventories.
- Development of cost reduction programs and cost control systems and inventory valuation system.

## 2.1.4 Activities of IE:

- Time, costing and quality measurement implementation.
- System selection and assembly procedures.
- Repair and maintenance design choosing.
- Design of plants, construction layout, manufacturing equipment, raw goods logistics chain, and storage facilities of final products.
- Productivity, inventory and assurance systems and service and transportation systems monitoring and scheduling systems development and growth.
- System of risk management.
- Analysis of mathematics and statistics.
- Evaluation of the effectiveness.

## 2.1.5 Responsibilities of an Industrial Engineer:

- Prepare the layout.
- Prepare the bulletin
- Manpower requirements
- Target Setup based on bulletin.
- Lay out as per Bulletin.
- Line feeding.
- Thread consumption.
- Find out the necessary attachments.
- Find out the necessary foots and guide.
- Find out the necessary work aids.
- Operation Break Down.
- Line Capacity Study.
- Find out bottle neck operation.
- Line Balancing.
- Capacity study with Graph.
- Follow up Study.
- Daily production Report.
- Line WIP monitoring & Follow up.
- Daily Efficiency Reports.
- Monthly Efficiency Reports
- Non Productive Time (NPT) Record.
- Hourly production monitoring.
- Style change over report.
- Sample follow up report.
- Pre-alert meeting report

## 2.2 Line Balancing:

The line balance equalizes the pressure across all cell or value sequence treatment to remove bottlenecks and surplus capacity.

Restrictions impede the processes that result if downstream activities await and excess capacity causes fixed expenses to wait and absorb. This is the assignment by the quality and presentation of the S/M. What kinds of clothing I need to create varies. This is done to boost productivity. When I contemplate mass-made clothing, a line with online finish and packing is created in line or in section. Much workstations with different workplaces are included in one line. Production is varying each hour based on the nature of the job (standard minutes of a given task/operation). Assigning entire workforce to certain operations, operator skill levels and inventory levels. The process is termed as the bottleneck for line with poorest output per hour.

### 2.2.1 Efficiency:

Efficiency is another method to convey production even if the figure of effectiveness is more helpful and relevant. Efficiency numbers inform us how we achieve a scientifically defined goal. The efficiency of the goal may be easily calculated as time per clothing or a needed level of output. The objective is usually set at 100 percent, so when an operator meets its goal production, its efficiency is 100 percent. Similarly, if an operator produces just 80% of its objective, then its efficiency will be 80%.

The formula for efficiency calculation is as follows:

$$Efficiency\% = \frac{\text{Total production} \times \text{SMV}}{\text{Total Man Power} \times \text{working hour} \times 60} \times 100$$

## **2.2.2 Cycle checks:**

A cycle review is a short time research to rapidly set a goal or ensure if the employee can achieve a specified time. It is a short time study. The cycle time is the time the operator takes to carry out one cycle, that is, between collection and disposal.

Conduct a cycle inspection in the next stages:

- Choose the operation(s) to be examined and input information on a suitable form.
- Check five rounds of each activity, no clock each round of competition.
- For each function compute the expected cycle time.
- Calculate the quality of cycle with the time given.

## **2.3 Standard Minute Value (SMV):**

SMV is measured as the period that can be successfully performed. It is usually represented in a little value. SMV has a SMV in its whole in the textile manufacturing business, the MV word is often used. Standardized assigned seconds are also called SMV (SAM). A merchant must establish an appropriate SMV in the garment manufacturing floor for seamless and timely dispatch of an export order. SMV is the default time for completion of a particular job with optimum performance methods.

### **2.3.1 Factors of Standard Minute Value in Garments:**

Types of garments.

- Types of fabrics.
- Garments size.
- Garments design.
- Difficulty of the process.
- Types of machine.
- Types of technology.

## 2.3.2 SMV Calculation in Garments Industry:

**SMV = Basic Time + Allowance**

**Basic Time = Observed Time × Rating**

**Observed Time** = Time recorded by observing a worker while he is doing work.

**Rating** = Rating means how much efficient is content of an observed worker than standard worker.

**Rating = Observed rating/ Standard \* 100%**

Personal or Relaxation+ Machine Delay+ Contingency allowance.

## 2.3.3 Bottleneck:

A bottleneck is a phenomena in which a single or restricted amount of material or resources restricts the performance and capacity of the whole system. The top narrow section of the forehead is the neck (opening side), and the path from a big part of the bottle to a tiny area of a neck is obstructed. It is a symbolic situation where the producing sector is obstructed.

## 2.3.4 Aries of Bottleneck:

The manufacturing line has so many reasons for a bottleneck and is described below.

A. Bottleneck before input in line:

- Error in building.
- The supply of Wrong problem.
- If the problem is lagging.
- Error in the issue of bar code.
- Problem with patterns.

B. Bottleneck in Line:

- Failure to provide.
- Non-equilibrium assignment of elements.
- Absences of Workers.
- Unrest / out of order for the machine.
- The issue of quality.
- When someone gets ill.
- Shading of color.
- Selecting the worker incorrectly.

- Failure of employees to work.

## 2.4 Pitch Time:

Pitch time = No of operation/SMV

Pitch time is being used to establish the line and calculate the line supervisor's goal.

## 2.5 Rating:

In time studies, the notion of rating (also called as grade in the US) is essential. A qualified time student differs from a beginner by his capacity to evaluate successfully. Rating is the procedure by which the IE compares the operator's true results with its typical performance mental idea.

The grade is the numerical figure that is used to indicate the operating rate. A predetermined level of achievement must be compared with a mean level in order to rate.

**Rating = Observed rating/ Standard × 100%**

## 2.6 Work study:

Work Studies are a global accreditation analysis approach that measures and sets time devices and material. Standard to achieve maximum production through the optimal utilization of human energy, equipment and material.

### 2.6.1 Objectives of Work Study:

- Better level of quality.
- Greater efficiency.
- The fastest way to accomplish a job is to select.
- Enhance the process of working.
- Operators and employees less tiredness.
- Labor control efficiency.
- Efficient resource usage.
- Deciding the needs for machinery.
- Fair salaries to pay.
- Help with accurate delivery calculation.

## **2.7 Method Study:**

Methodological studies are the process of systematic registration and critical assessment in order to create and implement easier and more efficient techniques, both current and planned work. It is used for cost reduction. The study of the approach is vital for increased productivity in the textile and clothing industries. It is one of the keys to improved productivity. Industrial engineering is responsible for the functions of the study of methods in the textiles and clothing sector.

## **2.8 Time Study:**

Time Studies is a job evaluation approach that enables the time to be recorded to complete a particular task, or a piece of a task carried out under given conditions, and to analyze the information to determine the time required for the operator to execute it at a defined rate.

## **2.9 Capacity Study:**

The measurement is the same as the capacity of the operator. This indicates that the operator is able to perform through the study. The main requirement for the capacity research is the quotas, operator motivation and capacity measurement. The supervisor is able to establish the total capacity of their sector by assessing the individual operator capacity. It is only a total of the capability of one person.

## 2.9.1 Calculation Method of Sewing section:

An industrial engineer required the relevant data in order to calculate the sewing line capacity of a textile plant.

- Number of line sewing machines.
- Workers are absent from this line %.
- Factory daily labor hours.
- The factory's line efficiency.
- Standard permitted output item time (SAM).

= [{"no. of machine in the line × daily working hour × 60} – workers absence %} × line efficiency] Standard allowed minutes for the produce item.



## **CHAPTER – 3: EXPERIMENTAL DETAILS**

### 3.0 EXPERIMENTAL DETAILS:

We collected those operation bulletin sheets like 5 PKT LONG MENS & WOMENS PANT, CHINO MENS & WOMENS PANTS, TOP & BOTTOM OVERALL, 5 PKT LONG BIG & TALL, ELASTIC WAIST CHINO PANT VEST & OPERATION BULLETIN from Artistic Design of Ha-Meem Group. The collected date was 27th February 2019.

And we observed those sheets carefully and completed report by following steps like Line capacity, SMV, production target, pitch time, efficiency calculation etc.

### 3.1 OPERATION BULLETIN 5 PKT LONG MENS & WOMENS PANT:

#### HA-MEEM GROUP

BUYER: JCP

STYLE: 161553

ITEM: 5 PKT LONG

**FRONT PART**

SUB- MENS & WOMENS

Planning / Work Study Dpt. Date - 5/28/2021

**HA-MEEM GROUP**

BUYER: JCP  
 STYLE: 161553  
 ITEM: 5 PKT  
 CATEGORY: 5 PKT LONG  
 SUB-CATEGORY: MENS & WOMENS

**OPERATION BULLETIN**

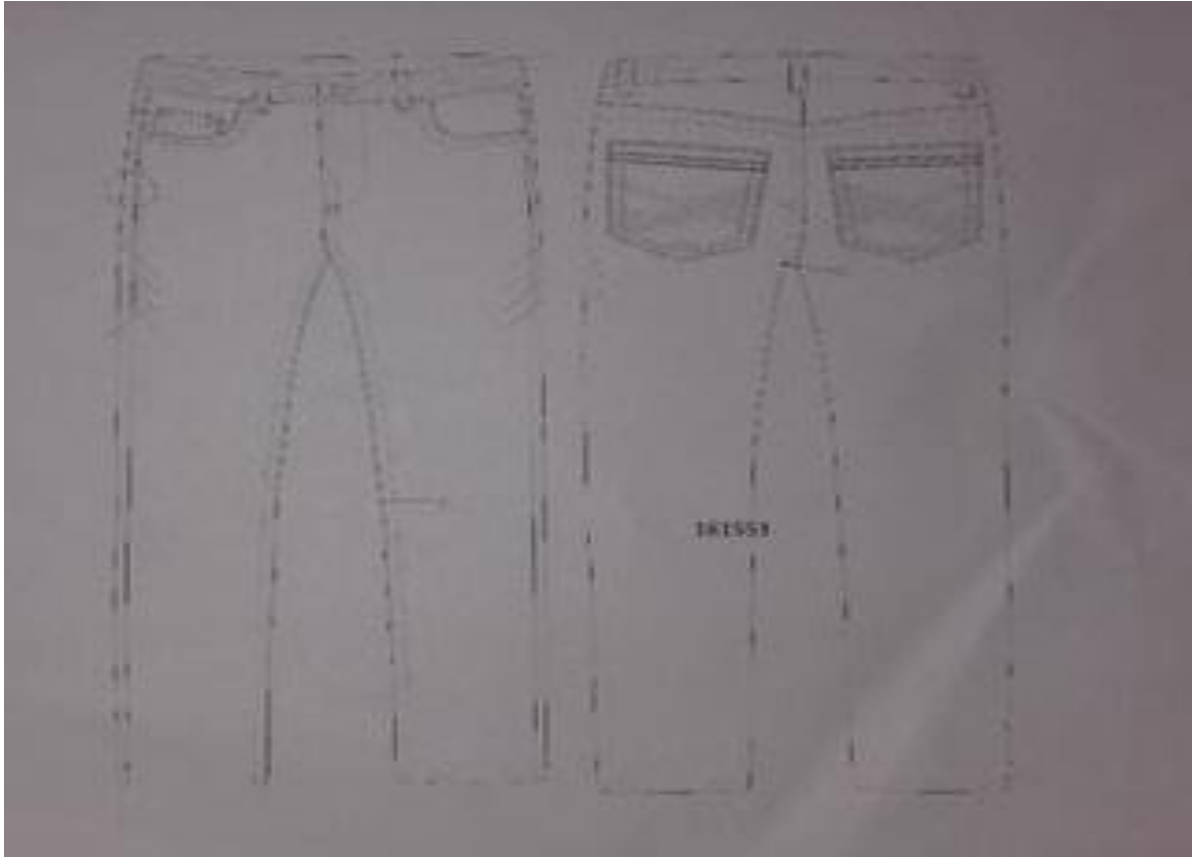
Prepared by:- TOWHID  
 Prepared date:- 9-Apr-17  
 Order Qty:- 10000 Pcs

OP. #	PROCESS CODE	OPERATION	M/C	T.M.U.	S.M.V.	100% TGT / HR	OP EFFI	OP TGT/H	BLN/T GT	T.M.L	A.M.L	TGT / DAY	OPRS REQD
<b>FRONT PART</b>													
1	SPFM-H	SCOPE PKT FACING MARK	11/W	336.09	0.23	259	70%	181	181	0.60	1.60	1142	
2	CPHR-D	COIN PKT HEM ROLLING	D/N	342.19	0.24	254	70%	178	178	0.62	1.59	1125	
3	CPAF-D	COIN PKT ATTACH TO FACING (BOTH SIDE)	D/N	396.30	0.27	219	85%	187	187	0.71	1.69	1192	
4	SPBFA-S	SCOPE PKT BAG FACING ATTACH	S/N	455.65	0.31	191	85%	162	162	0.82	1.55	1298	
5	SPME&JM-H	SCOPE PKT MOUTH HEM & JOIN MARK	11/W	448.09	0.31	191	85%	165	165	0.81	1.60	1326	
6	SPMJ-S	SCOPE PKT MOUTH JOIN	S/N	867.77	0.39	153	85%	130	130	1.02	1.69	1012	
7	SPMREH-S	SCOPE PKT MOUTH TURN & EDGE STC	S/N	566.21	0.39	154	85%	131	131	1.02	1.60	1015	
8	SPM2TS-S	SCOPE PKT MOUTH 2ND TOP STC	S/N	553.15	0.38	157	85%	134	134	0.99	1.60	1009	
9	SPBO-O35	SCOPE PKT BAG OVERLOCK	3/5TH OL	392.51	0.27	222	85%	188	188	0.71	1.60	1017	
10	SPBT&TS-S	SCOPE PKT BAG TURN & TOP STC	S/N	593.77	0.41	146	85%	125	125	1.07	1.60	990	
11	FPS&WT-S	FRONT PKT SIDE AND WAIST TACK	S/N	577.21	0.40	151	85%	128	160	1.04	1.25	1281	Balance with 12
12	SPBES&DS-S	SEPLY JOIN EDGE STC & DECO STC	S/N	369.33	0.25	235	85%	200	150	0.66	0.75	1201	
13	ZJ&DFM-D	ZIPPER JOIN & DFLY MATCH	D/N	373.22	0.26	233	85%	198	198	0.67	1.00	1385	
14	ISMHP-S	"J" STC MAKE BY PATTERN	S/N	407.64	0.28	213	85%	181	181	0.73	1.00	1351	
15	DFR&JWFP-S	DFLY & ZIPPER JOIN WITH FRONT PART	S/N	394.64	0.27	220	85%	187	187	0.71	1.00	1199	
16	DCS-S	DFLY CLOSE STC	S/N	375.64	0.26	232	85%	197	197	0.68	1.00	1513	
17	FRT-S	FRONT RISE TACK	S/N	343.88	0.24	253	70%	177	177	0.62	1.00	1116	
18	FRTS-D	FRONT RISE TOP STC	D/N	407.58	0.28	213	85%	181	181	0.73	1.00	1451	
19	CLC&AWP-S	CARE LABEL CUT & ATTACH WITH POLY	S/N	406.13	0.28	214	85%	182	182	0.73	1.00	1456	

## BACK PART & ASSEMBLE

BACK PART													
20	BY103	BACK YOKE JOIN	3H10L	387.57	0.27	221	85%	191	191	0.76	1.00	132%	
21	BYM-S	BACK YOKE MAKE	SN	380.28	0.26	229	85%	191	191	0.68	1.00	133%	
22	BY1S-DC	BACK YOKE TOP STC	SN	169.65	0.32	185	85%	157	157	0.81	1.00	139%	
23	BY2S-DC	BACK YOKE 2ND TOP STC	SN	469.65	0.32	185	85%	157	157	0.84	1.00	139%	
24	BR105	BACK RISE JOIN	3H10L	421.51	0.29	205	85%	171	171	0.76	0.75	164%	Balance with 43
25	BRM-S	BACK RISE JOIN MAKE	SN	342.77	0.21	251	85%	216	216	0.62	1.00	173%	
26	BRTS-FO	BACK RISE TOP STC	F.O.A	392.32	0.27	222	85%	188	188	0.71	1.00	180%	
27	BPPAKMO-03	BACK PKT PANEL JOIN & MOUTH EDGE OL	3H10L	592.51	0.41	147	85%	125	125	1.07	1.00	98%	
28	BPPTS-S	BACK PKT PANNEL TOP STC	SN	610.54	0.42	142	65%	121	121	1.10	1.00	96%	Balance with 35
29	BPL&BM-H	BACK PKT L&M MARK & IRON	IRON	176.09	0.33	183	85%	155	155	0.96	1.00	121%	
30	BPIR-S	BK PKT IRON ROLLING	SN	330.77	0.23	263	80%	210	210	0.59	1.00	168%	
31	BPWCPM-H	BK PKT BK WAIST ELASMT & CORD STC MARK	HW	560.09	0.39	155	85%	132	132	1.00	1.00	166%	
32	BPEL&M-H	BACK POCKET ELASTICS CUT & MATCH	HW	418.09	0.31	194	85%	165	165	0.81	1.00	132%	
33	BPA-S	BACK POCKET ATTACH	SN	890.16	0.61	98	85%	83	166	1.60	2.00	132%	
34	BP2S-S	BACK PKT 2ND STC	SN	787.23	0.51	110	85%	91	188	1.42	2.00	180%	
35	SLC&A-S	SIZE LABEL CUT & ATT	SN	295.14	0.20	294	85%	250	188	0.53	0.75	150%	Balance with 42
ASSEMBLE													
36	F&BPM-H	FRONT & BACK PART MATCH	HW	392.09	0.27	222	85%	189	189	0.71	1.00	180%	
37	F&BKM-H	FRONT & BACK KNEE MARK	HW	418.09	0.31	194	85%	165	165	0.81	1.00	132%	
38	SSEOL-03	SIDE SEAM EDGE OL (LONG)	3H10L	1145.38	0.79	76	85%	65	129	2.00	2.00	167%	
39	SSIL-SC	SIDE SEAM JOIN (LONG)	SN/CS	1151.16	0.80	75	85%	61	128	2.07	2.00	162%	
40	BT-H	BODY TURN	HW	392.09	0.27	222	85%	189	189	0.71	1.00	180%	
41	SCSWDSM-H	SIDE CORD STC & DECO STC MARK	HW	560.09	0.39	155	85%	132	132	1.00	1.00	166%	
42	SCSWDS-S	SIDE CORD STC WITH DECO STC	SN	1925.69	1.33	45	85%	38	135	3.16	3.25	97%	
43	ISIL-03	IN SEAM JOIN (LONG)	3H10L	653.51	0.45	133	85%	113	141	1.17	1.25	113%	
44	ISM-S	IN SEAM JOIN MAKE	SN	771.96	0.53	113	85%	96	141	1.33	1.50	114%	Balance with 53
45	ISIL-FO	IN SEAM TOP STC (LONG)	F.O.A	722.42	0.50	120	70%	81	169	1.30	2.00	131%	
46	WL&BY-F	WAIST LOOP MAKE BY FOLDER & MATCH	FL	300.14	0.21	289	85%	246	246	0.51	1.00	198%	
47	WL&CPM-H	WAIST LOOP CUT & POSITION MARK	HW	448.09	0.31	194	85%	165	165	0.81	1.00	132%	
48	WBSS-SC	WAIST BAND SHEARING STC	SN/CS	550.21	0.38	138	85%	131	131	0.99	1.00	167%	
49	WBM&M-H	WAIST BAND MARK & MATCH	HW	560.09	0.39	155	85%	132	132	1.00	1.00	166%	
50	WBW2-K	WAIST BELT JOIN BY FOLDER(02 PCS)	K/S	778.21	0.54	112	85%	95	190	1.40	2.00	152%	
51	WB&CTO-H	WAIST BELT CHECK & THREAD OPENING	HW	672.09	0.46	129	90%	116	116	1.21	1.00	93%	
52	WBDSM-H	WAIST BAND DECO STC MARK	HW	615.09	0.42	141	85%	120	120	1.11	1.00	96%	
53	WLA-S	WAIST BAND DECO STC	SN	778.42	0.54	112	85%	95	142	1.40	1.50	110%	
54	WTQDS-S	WAIST BAND 2ND DECO STC	SN	778.42	0.54	112	85%	95	142	1.40	1.50	110%	Balance with 55
55	WL&CWDS-S	WAIST TOP MOUTH CLOSE WITH DECO STC	SN	731.77	0.51	119	85%	101	151	1.32	1.50	128%	
56	WL&BCWDS-S	WAIST BOTTOM MOUTH CLOSE WITH DECO STC	SN	629.33	0.43	138	85%	117	176	1.13	1.50	110%	Balance with 58
57	WL&BCTS-S	WAIST MOUTH TOP & BTM CLOSE-DECO STC	SN	484.75	0.33	180	85%	133	133	0.87	1.00	123%	
58	WLH-S	WAIST LOOP BOTTOM LACK	SN	855.33	0.50	119	85%	126	189	1.05	1.50	136%	
59	WLH-S	WAIST LOOP TOP LACK	SN	595.33	0.41	146	85%	121	186	1.07	1.50	145%	Balance with 60
60	WBM-S	BOTTOM IRON MAKE	SN	666.12	0.46	131	85%	111	166	1.23	1.50	133%	Use Extra MC
61	FTC-H	FINAL THREAD CUT	HW	426.09	0.29	207	85%	176	176	0.76	1.00	168%	
				<b>23.40</b>									
										<b>73.00</b>			

**Figure 3.1.1 Operation Bulletin for 5 PKT long pant.**



**Figure 3.1.2 5 PKT LONG MENS & WOMENS PANT**



### 3.1.1 Physically Observation of this Operation Bulletin:

HA-MEEM GROUP  
 BUYER JCP  
 STYLE 161553  
 ITEM 5 PTK  
 CATEGORY 5 PKT LONG  
 SUB-CATEGORY MENS & WOMENS

OPERATION BULLETIN

Prepared by: - TOWHID  
 Prepared date: - 9 Apr-17  
 Order Qty: - 10000 Pcs

OP #	PROCESS CODE	OPERATION	M/C	T.ML	S.M.V.	100% TGT/HR	OP EFF	OP TGT/H	BUNT GT	T.ML	AML	TGT DAY	OPERS REQ/ST
1	SPFM-11	SCOPE PKT FACING MARK	H/W	330.00	0.22	250	70%	181	181	0.60	1	1440	
2	CPHR-D	CONV PKT HEM ROLLING	D/N	342.10	0.27	210	85%	178	178	0.62	1	1150	
3	CPAF-D	CONV PKT ATTACH TO FACING	U	186.50	0.31	191	U	157	157	0.72	1	1400	
4	SPBFA-S	SCOPE PKT BAG FACING ATW	S/N	455.65	0.37	191	U	162	162	0.82	1	1208	
5	SPME-11	SCOPE PKT MOUTH EMB JOIN	H/W	448.00	0.40	153	U	156	156	0.81	1	1320	
6	SPMJ-S	SCOPE PKT MOUTH JOIN	S/N	507.77	0.39	153	U	180	180	1.02	1	1012	
7	SPMTS-S	SCOPE PKT MOUTH TURN EDGE	U	506.21	0.38	154	U	137	137	1.02	1	1015	
8	SPM10-S	U U BAG OVER LOCK	U	538.5	0.27	157	U	134	134	0.99	1	1000	
9	SPM12-S	U U BAG TURN & TOP STC	3/50L	302.51	0.41	202	U	138	138	0.71	1	1507	
10	SPM13-S	FRONT PKT SIDE AND WAIST TACK	S/N	593.77	0.40	148	U	125	125	1.07	1	900	
11	SPM14-S	FRONT PKT SIDE AND WAIST TACK	S/N	574.21	0.25	151	U	128	128	1.04	1.25	1281	Blance with 12
12	SPM15-S	ZIPPER JOIN, DRY MATCH	U	380.32	0.26	232	U	200	200	0.66	0.75	1241	
13	SPM16-S	ZIPPER JOIN, DRY MATCH	D/N	593.22	0.28	233	U	198	198	0.67	1.00	1585	
14	SPM17-S	ZIPPER JOIN, DRY MATCH	S/N	404.60	0.27	213	U	181	181	0.73	1	1457	
15	SPM18-S	ZIPPER JOIN, DRY MATCH	U	304.61	0.26	220	U	187	187	0.71	1	1499	
16	SPM19-S	ZIPPER JOIN, DRY MATCH	U	375.61	0.24	234	U	197	197	0.68	1	1573	
17	SPM20-S	ZIPPER JOIN, DRY MATCH	U	343.33	0.28	253	U	177	177	0.62	1	1416	
18	SPM21-S	ZIPPER JOIN, DRY MATCH	D/N	405.68	0.28	213	U	181	181	0.73	1	1457	
19	SPM22-S	ZIPPER JOIN, DRY MATCH	S/N	406.43	0.28	214	U	182	182	0.73	1	1456	
20	SPM23-S	BACK YORE JOIN	STHOL	387.53	0.27	221	U	197	197	0.70	1	1526	
21	SPM24-S	BACK YORE JOIN	S/N	380.33	0.26	229	U	194	194	0.69	1	1585	
22	SPM25-S	BACK YORE JOIN	U	469.65	0.22	185	U	137	137	0.84	1	1230	
23	SPM26-S	BACK YORE JOIN	U	469.65	0.22	185	U	137	137	0.84	1	1230	
24	SPM27-S	BACK RISE JOIN	STHOL	324.51	0.20	205	U	174	174	0.76	0.75	1045	Blance with 43
25	SPM28-S	BACK RISE JOIN	S/N	342.71	0.21	224	U	216	216	0.62	1	1725	
26	SPM29-S	BACK RISE JOIN	FOA	392.22	0.27	212	U	183	183	0.77	1	1508	
27	SPM30-S	BACK RISE JOIN	STHOL	322.34	0.21	197	U	125	125	1.07	1	900	
28	SPM31-S	B. PKT DYNEL TOP STC	S/N	613.40	0.42	242	U	121	121	1.10	1	860	Blance with 38
29	SPM32-S	B. PKT EMB MARK & STRON	TRON	476.00	0.33	183	U	135	135	0.86	1	1249	
30	SPM33-S	B. PKT EMB MARK & STRON	S/N	320.77	0.23	263	U	210	210	0.59	1	1683	
31	SPM34-S	B. PKT EMB MARK & STRON	H/W	525.00	0.39	155	U	132	132	1.01	1	1056	
32	SPM35-S	B. PKT EMB MARK & STRON	U	448.00	0.31	194	U	163	163	0.81	1	1320	
33	SPM36-S	B. PKT EMB MARK & STRON	S/N	500.16	0.61	108	U	87	87	1.60	2	1320	
34	SPM37-S	B. PKT EMB MARK & STRON	U	375.23	0.41	110	U	91	91	1.42	2	1563	
35	SPM38-S	B. PKT EMB MARK & STRON	U	2.95	0.26	204	U	250	250	0.58	0.75	1501	Blance with 90
36	SPM39-S	FRONT & BACK PART MATCH	H/W	322.00	0.27	222	U	189	189	0.71	1	1508	
37	SPM40-S	FRONT & BACK PART MATCH	U	448.00	0.31	194	U	165	165	0.81	1	1320	
38	SPM41-S	FRONT & BACK PART MATCH	STHOL	448.00	0.31	194	U	165	165	0.81	1	1320	
39	SPM42-S	SIDE SEAM EDGE 0/2	S/N	1153.16	0.82	76	U	64	64	2.07	2	2096	
40	SPM43-S	SIDE SEAM EDGE 0/2	H/W	302.00	0.27	222	U	189	189	0.71	1	1508	
41	SPM44-S	SIDE SEAM EDGE 0/2	H/W	580.00	0.30	183	U	122	122	1.01	1	1056	
42	SPM45-S	SIDE SEAM EDGE 0/2	S/N	1925.00	1.33	95	U	58	58	2.46	3.25	998	
43	SPM46-S	SIDE SEAM EDGE 0/2	STHOL	653.31	0.43	132	U	117	117	1.47	1.25	9132	
44	SPM47-S	IN SEAM JOIN MARK	S/N	371.96	0.42	113	U	96	96	1.09	2.50	1160	Blance with 52
45	SPM48-S	IN SEAM JOIN MARK	FOA	322.99	0.51	120	70%	80	80	1.31	2	1348	
46	SPM49-S	IN SEAM JOIN MARK	FIL	370.44	0.50	239	80%	246	246	0.51	1	2066	
47	SPM50-S	IN SEAM JOIN MARK	H/W	448.00	0.31	194	U	165	165	0.81	1	1320	
48	SPM51-S	IN SEAM JOIN MARK	S/N	552.21	0.31	153	U	134	134	0.90	1	1320	
49	SPM52-S	IN SEAM JOIN MARK	H/W	580.00	0.30	183	U	122	122	1.01	1	1056	
50	SPM53-S	IN SEAM JOIN MARK	K/S	372.21	0.30	193	U	95	95	1.40	1	1656	
51	SPM54-S	IN SEAM JOIN MARK	H/W	672.00	0.41	129	80%	116	116	1.21	1	1520	
52	SPM55-S	IN SEAM JOIN MARK	U	615.00	0.46	141	80%	120	120	1.11	1.50	962	
53	SPM56-S	IN SEAM JOIN MARK	S/N	378.42	0.42	112	U	95	95	1.40	1.50	1490	
54	SPM57-S	IN SEAM JOIN MARK	U	378.42	0.42	112	U	95	95	1.40	1.50	1490	Blance with 55
55	SPM58-S	IN SEAM JOIN MARK	U	378.42	0.42	112	U	95	95	1.40	1.50	1490	
56	SPM59-S	IN SEAM JOIN MARK	U	620.33	0.51	120	U	117	117	1.31	1.50	1210	Blance with 58
57	SPM60-S	IN SEAM JOIN MARK	U	483.37	0.33	149	U	153	153	0.81	1	1210	
58	SPM61-S	IN SEAM JOIN MARK	U	385.52	0.33	146	U	126	126	1.05	1.90	1223	
59	SPM62-S	IN SEAM JOIN MARK	U	505.37	0.40	131	U	124	124	1.07	1.90	1316	
60	SPM63-S	IN SEAM JOIN MARK	U	666.42	0.41	129	U	111	111	1.26	1.50	1490	Blance with 6
61	SPM64-S	IN SEAM JOIN MARK	H/W	42.00	0.29	207	U	176	176	0.76	1	1831	Use Extra me

Figure 3.1.3 Physically Observation of 5 PKT LONG MENS & WOMENS PANT.

### 3.1.2 Operation Bulletin of 5 PKT Pant: HA-MEEM GROUP

BUYRE                    JCP  
 STYLE                    161553  
 ITEM                      5 PKT  
 CATEGORY                5 PKT LONG  
 SUB- CATEGORY        MENS &  
                                  WOMENS

**OPERATION BULLETIN**

**Prepared by**    TOWHID  
**Prepared date**    9- Apr- 17  
**Oder Qty**            10000 Pcs

OPERATION	M/C	T.M.U	S.M.V	100% TGT/HR	OP EFFI	OP TGT/H	BLN/T GT	TML	AML	TGT/DAY	OPRN REQUEST
<b>FRONT PART</b>											
SCOPL PKTFACING MARK	H/W	336.09	0.23	259	70%	181	181	0.6	1	1449	
COIN PKT HEM ROLLING	D/N	342.19	0.24	254	70%	178	178	0.62	1	1425	
COIN PKT ATTACH TO FACING (BOTTH SDE)	D/N	397.3	0.27	219	85%	187	187	0.71	1	1497	
SCOPE PKT BAG FACING ATTACH	S/N	455.65	0.31	191	85%	162	162	0.82	1	1297	
SCOPE PKT MOUTH EMB & JOIN MARK	H/W	448.09	0.31	194	85%	165	165	0.81	1	1321	
SCOPE PKT MOUTH JOIN	S/N	567.77	0.39	153	85%	130	130	1.02	1	1041	
SCOPE PKT MOUTH TURN & EDGE STC	S/N	561.21	0.39	154	85%	131	131	1.02	1	1049	
SCOPE PKT MOUT 2NID TOP STC	S/N	553.15	0.38	157	85%	134	134	0.99	1	1073	
SCOP PKT BAG OVER LOCK	3/5TH OL	392.51	0.27	222	85%	188	188	0.71	1	1505	
SCOPE PKT BAG TURN & TOP STC	S/N	593.77	0.41	146	85%	125	125	1.07	1	1001	
FRONT PKT SIDE AND WAIST TACK	S/N	577.21	0.4	151	85%	128	160	1.04	1.25	1281	Balance with 12
S/FLY JOIN EDGE STC & DECO STC	S/N	369.33	0.25	235	85%	200	150	0.66	0.75	1201	
ZIPPER JOIN & D/FLY MATCH	D/N	373.22	0.26	233	85%	198	198	0.67	1	1585	
"J" STC MAKE BY PATTEN	S/N	407.64	0.28	213	85%	181	181	0.73	1	1449	
D/FLY & ZIPPER JOIN WTH FRONT PART	S/N	394.61	0.27	220	85%	187	187	0.71	1	1497	
D/FLY CLOSE STC	S/N	375.61	0.26	232	85%	197	197	0.08	1	1577	
FRONT RISE TACK	S/N	343.88	0.24	253	70%	177	177	0.62	1	1417	
RONT RISIE TOP STC	D/N	407.58	0.28	213	85%	181	181	0.73	1	1449	

CARELBL CUT & ATTACH WITH POLY	S/N	406.13	0.28	214	85%	182	182	0.73	1	1457	
<b>BACK PART</b>											
BACK YOKE JOIN	3TH OL	387.52	0.27	224	85%	191	191	0.7	1	1529	
BACK YOKE MAKE	S/N	380.28	0.26	229	85%	194	194	0.68	1	1553	
BACK YOKE TOP STC	S/N	469.65	0.32	185	85%	157	157	0.84	1	1257	
BACK YOKE 2ND TOP STC	S/N	469.65	0.32	185	85%	157	157	0.84	1	1257	
BACK RISE JON	3TH OL	424.51	0.29	205	85%	174	131	0.76	0.75	1049	Balance with 43
BACK RISE JOIN MAKE	S/N	342.77	0.24	254	85%	216	216	0.62	1	1729	
BACK RISE TOP STC	FOA	392.32	0.27	222	85%	188	188	0.71	1	1505	
BACK PKT PANNEL JOIN & MOUTH EDGE OL	3TH OL	592.54	0.41	147	85%	125	125	1.07	1	1001	
BACK PKT PANNEL TOP STC	S/N	610.54	0.42	142	85%	121	121	1.1	1	969	Balance with 35
BACK PKT EMB MARK & IRON	IRON	476.09	0.33	183	85%	155	155	0.86	1	1241	
BK PKT HEM ROLLING	S/N	330.77	0.23	263	80%	210	210	0.59	1	1681	
BK PKT BK WAIST PLSMNT & CORD STC MARK	H/W	560.09	0.39	155	85%	132	132	1.01	1	1057	
BACK POCKET EXCESS CUT & MATCH	H/W	448.09	0.31	194	85%	165	165	0.81	1	1321	
BACK POCKET ATTACH	S/N	890.16	0.61	98	85%	83	166	1.6	2	1329	
BACK PKT 2ND STC	S/N	787.23	0.54	110	85%	91	188	1.42	2	1505	
SIZE LBL CUT & ATT	S/N	295.14	0.2	294	85%	250	188	0.53	0.75	1505	Balance with 42
<b>ASSEMBLY</b>											
FRONT & BACK PART MATCH	H/W	392.09	0.27	222	85%	189	189	0.71	1	1513	
FRONT & BACK KNEE MARK	H/W	448.09	0.31	194	85%	165	165	0.81	1	1321	
SIDE SEAM EDGE O/L (LONG)	3TH OL	1145.4	0.79	76	85%	65	129	2.06	2	1033	
SIDE SEAM JOIN (LONG)	S/N CS	1153.2	0.8	75	85%	64	128	2.07	2	1025	
BODY TURN	H/W	392.09	0.27	222	85%	189	189	0.71	1	1513	
SIDE CORD STC & DECO STC MARK	H/W	560.09	0.39	158	85%	132	132	1.01	1	1057	
SIDE CORD STC WITH DECO STC	S/N	1925.7	1.33	45	85%	38	125	3.46	3.25	1001	
IN SEAM JOIN (LONG)	3TH OL	653.31	0.45	133	85%	113	141	1.17	1.25	1129	
IN SEAM JOIN MAKE	S/N	771.96	0.53	113	85%	96	144		1.5	1153	Balance with 53
IN SIEAM TOP STC (LONG)	FOA	722.42	0.5	120	70%	84	169	1.3	2	1353	
WAIST LOOP MAKE BY FOLDER & MATCH	F/L	300.44	0.21	289	85%	246	246	0.54	1	1969	

WAIST LOOP CUT & POSITION MARK	H/W	448.09	0.31	194	85%	165	165	0.81	1	1321	
WAIST BAND SHEARING STC	S/N CS	550.21	0.38	158	85%	134	134	0.99	1	1073	
WAIST BAND MARK & MATCH	H/W	560.09	0.39	155	85%	132	132	1.01	1	1057	
WAIST BELT JOIN BY FOLDER (02 PCS)	K/S	778.21	0.54	112	85%	95	190	1.4	2	1521	
WAIST BELT CHECK & THREAD OPENING	H/W	672.09	0.46	192	90%	116	116	1.21	1	929	
WAIST BAND DIECO STC MARK	H/W	615.09	0.42	141	85%	120	120	1.11	1	961	
WAIST BAND DIECO STC	S/N	778.42	0.54	112	85%	95	142	1.4	1.5	1137	
WAIST BAND 2ND DIECO STC	S/N	778.42	0.54	112	85%	95	142	1.4	1.5	1137	Balance with 55
WAIST TOP MOUTH CLOSE WITH DECO STC	S/N	733.77	0.51	119	85%	101	151	1.32	1.5	1209	
WAIST BTM MOUTH CIOSE WITH DECO STC	S/N	629.33	0.43	138	85%	117	176	1.13	1.5	1409	Balance with 58
WAIST MOUTH TOP & BTM CIOSE DECO STC	S/N	483.77	0.33	180	85%	153	153	0.87	1	1225	
WAIST LOOP ROTTOM TACK	S/N	595.33	0.4	149	85%	126	189	1.05	1.5	1513	
WAIST LOOP TOP TACK	S/N	666.42	0.41	146	85%	124	186	1.07	1.5	1489	Balance with 60
BOTTOM HEM MAKE	S/N	420.09	0.46	131	85%	111	166	1.2	1.5	1329	use Extra MC
FINAL THREAD CUT	H/W		0.29	207	85%	176	176	0.76	1	1409	
			<b>23.39</b>						<b>73</b>		

**Table 3.1.2.1 Operation Bulletin of 5 PKT LONG MENS & WOMENS PANT (Artistic Design LTD) of Ha-Meem Group**



## Requirement of Machines:

Machine Requirements are Depend on Process of the Garments,

MACHINE SUMMARY	
M/C Type	Nos
SINGLE NEEDLE	39
DOUBLE NEEDLE	4
3/5 THREAD OVER LOCK	1
3 THREAD OVER LOCK	6
FEED OF THE ARM	3
KANSAI	2
SINGLE NEEDLE CHAIN STITCH	3
<b>TOTAL M/C</b>	<b>59</b>
TTL Helper	13
TTL Ironer	1
<b>TTL Man P</b>	<b>73</b>

**Table 3.1.2.2 Machine and worker summary of 5 PKT LONG MENS & WOMENS PANT (Artistic Design LTD) of Ha-Meem Group.**

TOTAL S.M.V	23.39
BPT	0.38
UCL	0.59
LCL	0.18
NO OF M/C & OPERATOR	59
TTL MANPOWER	73
HOURLY TGT @ 100% EFFI.	187
EXPECTED EFFICIENCY	65%
LINE TGT/Hr. (As incentive TGT)	<b>122</b>
WORK HOUR	8
LINE TGT/Day	973
<b>Aveg. Prod. From the Beginning/Hour (65%)</b>	<b>122</b>

**Table 3.1.2.3 Machine, worker, SMV summary of 5 PKT LONG MENS & WOMENS PANT (Artistic Design LTD) of Ha-Meem Group.**

## **Description:**

Above the operation bulletin sheet is a 5 PKT LONG PANT of Artistic Design Ltd-2 on HA-MEEM GROUP. This sheet contains buyer name JCP, Style: 161553 & line-302, here we can also found total manpower are in the operation, SMV, efficiency, target measure per hour. In this sheet we can found 59 m/c to make a 5 PKT LONG PANT. This sheet shows many process SMV & calculate the total SMV. Calculate total SMV is 23.39. Plan target production 10000. Plan efficiency is 65%. There are different type of efficiency is calculate like

65%, 70%, 80%, is calculated the total production per 8 hrs.

## **3.1.3 Calculation:**

### **S.M.V CALCULATION:**

**SMV:** SMV is a standard time of a process that taken by a standard operator to complete the process.

**SMV = Basic Time + Allowance**

**Basic Time = Observed Time × Rating**

**Observed Time** = Time recorded by observing a worker while he is doing work.

**Rating** = Rating means how much efficient is content of an observed worker than standard worker.

**Rating = Observed rating/ Standard \* 100%**

**Allowance:** There are three kinds of Allowance, as given below

1. Personal/ Relaxation Allowance
2. Machine Delay Allowance
3. Contingency Allowance

We can calculated SMV in 3 different way:

1. Cycle check / Time study
2. PMTS (Base on sew easy software)
3. Past record or GSD.

**Here we showing S.M.V Calculation by cycle check:**

### **1. Break the work into element.**

Back PKT Attach

- Take
- Sewing
- Dispose

## 2. Measure the cycle time

5-10 Times take cycle time.

EXM: 61sec, 60sec, 62sec, 61sec, 61sec.

## 3. Calculate the average time.

$$= (61+60+62+61+61)/5$$

$$= 61\text{sec.}$$

## 4. Calculate the average time in minute.

$$= 61/60 \text{ min}$$

$$= 1.02 \text{ min (Observed Time)}$$

**Rating = Observed rating/ Standard × 100%**

$$= (80/100) \times 100$$

$$= 80\%$$

## 5. Convert observed time to Basic time

**Basic Time** = Observed Time × Rating

$$= 1.02 \times 80\%$$

$$= 0.82 \text{ min}$$

## 6. Give necessary allowance

Personal or Relaxation+ Machine Delay+ Contingency allowance=15%

Finally,

**SMV**=Basic Time + Allowance of basic Time

$$= 0.82 + (0.82 \times 15\%)$$

$$= 0.95 \text{ min}$$

## PITCH TIME

Here,

No of Operation = 61

S.M.V = 23.39 min

So, Pitch time = No of operation/SMV

$$= 61/ 23.39$$

$$= 2.61 \text{ min}$$

## EFFICIENCY CALCULATION:

Here,

Total production = 973

SMV = 23.39 min

Total man power = 73

Working hour = 8

We know,

$$\text{Efficiency}\% = \frac{\text{Total production} \times \text{SMV}}{\text{Total Man Power} \times \text{working hour} \times 60} \times 100$$

$$= \frac{973 \times 23.39}{73 \times 8 \times 60} \times 100$$

$$= 64.95$$

$$= 65\%$$

## LINE CAPACITY:

We know,

$$\text{Line capacity} = \frac{\text{Total man Power} \times \text{Working hour} \times 60 \times \text{Efficiency}\%}{\text{S.M.V}}$$

$$= \frac{73 \times 8 \times 60 \times 0.65}{23.39}$$

$$= 973.75$$

$$= 974 \text{ Pcs}$$

<b>S.M.V</b>	<b>0.76</b>
<b>Pitch time</b>	<b>18</b>
<b>Efficiency</b>	<b>65%</b>
<b>Line Capacity</b>	<b>974</b>

## TARGET CALCULATION:

Here,

Total worker = 73

SMV = 23.39

Working hrs. = 8

Efficiency = 65%,

We know that,

Target = total man power × work hr. × efficiency % × SMV

$$= 73 \times 8 \times 65\% \times 23.39$$

$$= 8878.85$$

$$= 8879 \text{ (per 8 hours)}$$

When efficiency = 70%,

Target =  $73 \times 8 \times 70\% \times 23.39$

$$= 9561$$

When efficiency = 80%,

Target =  $73 \times 8 \times 80\% \times 23.39$

$$= 10927$$

Efficiency	65%	70%	80%
Target Per hour	1110	1195	1365

# 3.2 OPERATION BULLETIN CHINO SHORT & LONG PANT

## HA-Meem Group

<b>BUYER NAME:-</b>	<b>KHOLS</b>
<b>STYLE NO:-</b>	<b>M573X210RS</b>
<b>ITEM:-</b>	<b>CHINO</b>
<b>CATEGORY:-</b>	<b>CHINO SHORTS &amp; LONG</b>
<b>SUB - CATEGORY:-</b>	<b>MENS &amp; WOMENS</b>

Prepared by: - MD.SHAFIQUL ISLAM
Prepared Date: - 01 Jan' 19
Qty:- 185000 Pcs

**OPERATION BULLETIN**

**HA-MEEM GROUP**  
**BUYER :- KOILS**  
**STYLE NO:- M573X210RS**  
**ITEM :- CHINO**  
**CATEGORY:- CHINO SHORTS & LONG**  
**SUB-CATEGORY:- MENS & WOMENS**

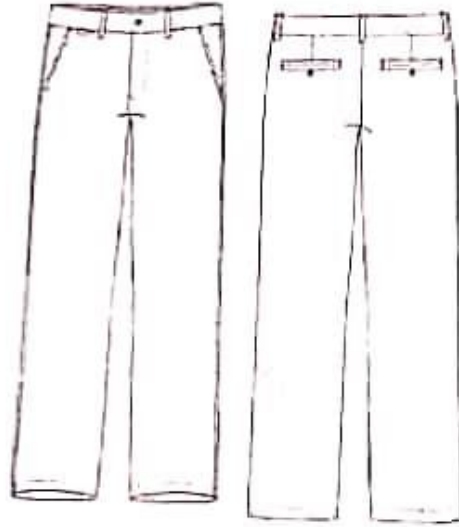
**OPERATION BULLETIN**

Prepared by:- MD. SHAFIQUL ISLAM  
 Prepared Date:-01 Jan'19  
 Qty:-185000 Pcs

OP.#	PROCESS CODE	OPERATION	M/C	T.M.U.	S.M.V.	100% TGT / HR	OP EFF	OP TGT/H	BLN/T GT	T.M.L	A.M.L	TGT / DAY	OPRN REQUEST
<b>FRONT PART</b>													
1	FRONSEF-O3	FRONT RISE/S/D FLY O/L & S/FLY JOIN	3TH OL	575.54	0.40	151	85%	128	128	0.97	1.00	1309	
2	DFBSTT&SFES-S	D.FLY BOTH SIDE TACK, TURN & SEELY EDGE STC	S/N	585.77	0.40	148	85%	126	126	0.99	1.00	1488	Use pattern
3	ZI-D	ZIPPER JOIN	D/N	347.66	0.24	250	85%	213	213	0.59	1.00	2004	
4	JEN-S	IRONING STC	N/N	395.88	0.20	291	85%	240	240	0.50	0.50	2442	Use Pattern
5	DF&ZVATVWLS-N	DEFLX & ZIPPER JOIN WITH FRONT PART WITH MARK	S/N	560.61	0.39	153	85%	132	132	0.95	1.00	1311	
6	ZCS&FRT-S	ZIPPER CLOSE STC & FRONT RISE TACK	S/N	466.05	0.32	147	85%	124	124	0.29	1.00	1493	
7	FPMSR&E-S	FRONT PKT MOUTH & BAG FACING ATTACH	S/N	862.31	0.59	101	85%	86	129	1.36	1.50	807	Balance with 01
8	CPM&C-C-H	COIN PKT POSTN MARK & CORNER CUT	H/W	564.09	0.39	155	85%	132	132	0.95	1.00	1242	
9	CPM&E-S	COIN PKT BAG & HOME ATTACH WITH SIAKE	S/N	492.88	0.34	176	85%	150	150	0.83	1.00	1412	
10	CPM&C&T-S	COIN PKT BTM OUTLINE & CORNER TACK	S/N	523.57	0.36	166	85%	141	141	0.88	1.00	1329	
11	CPM&E&A-S	COIN PKT TOP & BTM FAC ATT	S/N	500.88	0.35	174	85%	148	148	0.85	1.00	1389	
12	CPM&V&T-O3	COIN PKT BAG CLOSE WITH TURN	3TH OL	530.64	0.32	164	85%	139	139	0.90	1.00	1311	
13	CPM&E-S	COIN PKT BAG EDGE STC	S/N	511.64	0.35	170	85%	144	144	0.86	1.00	1360	
14	FPM&S	FRONT PKT MOUTH MAKE	S/N	538.28	0.39	156	85%	133	132	0.94	1.00	1246	
15	FPM&E&S-S	FRONT PKT MOUTH TURN & EDGE STC	S/N	678.28	0.47	128	85%	109	136	1.14	1.25	1026	Balance with 48
16	FPD-O3	FRONT PKT BAG OVERLOCK	3TH OL	378.14	0.26	230	85%	196	147	0.64	0.74	1846	
17	FP&T&S-S	FRONT PKT BAG TURN & TOP STC	S/N	529.53	0.32	163	85%	137	137	0.91	1.00	1297	
18	FP&W&F-S	FRONT PKT SIDE & WAIST TACK	S/N	642.02	0.44	135	85%	115	173	1.08	1.50	1084	Use cut mark on fabric
<b>BACK PART</b>													
19	BDM&B&P&T-S	BK DART MAKE & TOP STC & B.C. 2 PART TACK	S/N	729.28	0.50	119	85%	101	127	1.23	1.25	954	Use cut mark & attachment
20	BWP&W&B-S	BK WELT PKT BAG ATTACH WITH BODY	S/N	515.39	0.36	169	85%	133	143	0.87	1.00	1340	Use Pattern
21	BWP&A&APV	BK WELT PKT FACING ATTACH	APV	504.09	0.35	173	85%	147	147	0.85	1.00	1380	With corner cut
22	BWP&P&L&W&F-S	BK WELT PKT BTM OUTLINE WITH TURN	S/N	873.70	0.60	100	85%	85	127	1.47	1.50	796	Balance with 29
23	BWP&E&F&E-S	BK WELT PKT TOP & BTM FACING ATTA	S/N	740.16	0.51	118	85%	100	150	1.25	1.50	940	Balance with 28
24	BWP&P&C-O3	BK WELT PKT BAG CLOSE	3TH OL	629.04	0.48	124	85%	105	133	1.18	1.25	993	Balance with 16
25	BWP&P&E&S-S	BK WELT PKT BAG TURN & EDGE STC	S/N	1004.75	0.69	87	85%	74	147	1.20	2.00	693	
26	BWP&T&L-S	BK WELT PKT TOP O/L LINE	S/N	652.46	0.45	133	85%	113	170	1.10	1.50	1066	
27	BWP&P&W&S-N	BACK WELT PKT BAG TACK WITH WAIST	S/N	722.77	0.26	233	85%	198	149	0.63	0.75	1867	Balance with 19
<b>ASSEMBLE</b>													
28	F&S&P&M-H	FRONT & BK PART MATCH	H/W	392.09	0.27	222	85%	189	189	0.66	1.00	1775	
29	ISJ-C&A	INSIDE JOIN	3TH OL	703.31	0.49	124	85%	103	158	1.19	1.50	989	
30	FRIC&L&O3	FR & BK CONTINUE RISE JOIN	5TH OL	482.72	0.34	178	85%	153	152	0.93	1.00	1498	
31	FR&C&H&T&S-S	FR & BK CONTINUE RISE TOP STC	S/N CS	457.41	0.32	190	85%	162	162	0.77	1.00	1521	
32	SLS-O3	SIDE SEAM JOIN	5TH OL	897.82	0.62	97	85%	82	124	1.52	1.50	775	Balance with 29
33	SSTS-FO	SIDE SEAM TOP STC	FOA	886.16	0.61	98	85%	83	125	1.50	1.50	785	
34	BT-H	BODY TURN	H/W	336.09	0.23	259	85%	220	165	0.57	0.75	2070	
35	WLM&M&F-L	WAIST LOOP MAKE CUT & MATCH	F/L	496.36	0.34	175	85%	149	149	0.84	1.00	1402	
36	WBMB&E-S	INSIDE WAIST BTM BINDING BY FOLDER	S/N CS	546.76	0.38	159	85%	135	135	0.92	1.00	1273	
37	WBJ-S	WAIST TWO PART JOIN	S/N	500.98	0.35	171	85%	143	145	0.86	1.00	1567	Use attachment
38	WBJ&S-S	WAIST TWO PART JOIN TOP STC	S/N CS	483.98	0.33	180	85%	153	143	0.82	1.00	1438	Use attachment
39	WLA&M&H-H	WAIST LOOP ATT & BODY MARK	H/W	728.09	0.50	119	85%	102	127	1.24	1.25	966	Balance with 3
40	WB&M&M-H	WAIST HAND OUTER & INSIDE MARK & MATCH	H/W	504.09	0.35	173	85%	147	147	0.85	1.00	1380	
41	WLT-S	WAIST LOOP TACK	S/N	525.33	0.36	166	85%	141	141	0.89	1.00	1324	
42	WBJ-S	WAIST HAND JOIN	S/N CS	813.79	0.56	107	85%	91	146	1.37	1.50	855	Balance with 17
43	WBJ&F-L	WAIST HAND TOP EDGE FOLD IRON	IRON	560.09	0.39	155	85%	132	132	0.94	1.00	1342	
44	IR&SLAW-HT	IR&ND & SIZE LBL ATTACH ON WAIST	H/T	392.09	0.27	222	85%	189	189	0.66	1.00	1775	
45	WM&P&T&C&S	WAIST MOUTH & PATCH INSIDE TACK TURN & CLOSE STC	S/N	600.95	0.44	138	85%	117	176	1.07	1.50	1103	1 OP 15 & 16
46	WHT-S	WAIST HAND TOP TACK	S/N	772.52	0.53	113	85%	96	141	1.50	1.50	901	Use make up sheet
47	WB&H&T&S-S	WAIST HAND BOTTOM OUTLINE/STC	S/N CS	875.76	0.60	99	85%	84	127	1.28	1.50	794	
48	CL&R&TW&B-S	CARE LBL CUT & TACK WITH BODY	S/N	401.13	0.28	217	85%	183	138	0.68	0.75	1733	
49	WLT-S	WAIST LOOP BTM TACK	S/N	525.33	0.36	166	85%	141	141	0.89	1.00	1324	
50	WLT&S	WAIST LOOP TOP TACK	S/N	525.33	0.36	166	85%	141	141	0.89	1.00	1324	
51	WM&P&R&S-S	WAIST MOUTH & FRT RISE SAFETY STC	S/N	422.88	0.29	206	85%	175	175	0.71	1.00	1645	
52	BHM-S	BTM HEM MAKE	S/N	684.42	0.47	127	85%	108	162	1.16	1.50	1017	1 OP 21 & 22 & 53
53	LBL-F	LOOP BARTACK (D)	H/T	778.09	0.50	119	85%	102	152	1.23	1.50	976	
54	IR&S&H-H	FRT BK SIDE & BODY BARTACK (L)	H/T	1695.09	0.74	80	85%	68	135	1.84	2.00	637	
55	IR&H-H	EXHOLE MARK (L)	H/T	504.09	0.35	173	85%	147	220	0.85	1.50	1380	
						<b>22.48</b>							

NOTE: BS SECTION OPERATION INCLUDING IN OPERATION BULLETIN

Figure 3.2.1 Operation Bulletin of CHINO SHORT & LONG PANT of (Artistic Design LTD) of Ha-Meem Group.



**Figure 3.2.2 CHINO SHORT & LONG PANT of (Artistic Design LTD) of Ha-Meem Group.**



### 3.2.1 Physically observation of This Operation Bulletin:

Planning / Work Study Dept Date - 5/26/2021

#### HA-MEEM GROUP

BUYER :- KOHLS  
 STYLE NO:- MS73X210RS  
 ITEM:- CHINO  
 CATEGORY:- CHINO SHORTS & LONG  
 SUB-CATEGORY:- MENS & WOMENS

#### OPERATION BULLETIN

Prepared by:- MD. SHAFIQUZ ISLAM  
 Prepared Date:- 01 Jan'19  
 Qty:- 185000 Pcs

OP. #	PROCESS CODE	OPERATION	M/C	T.M.U.	S.M.V.	100% TGT / HR	OP EFFI	OP TGT/H	BLN/T CT	T.M.L	AML	1GT / DAY	OPRN REQUEST
FRONT PART													
1	FRO & SFL	Front Rise S/D FLY BL & S	S/N	577	0.44	170	85%	126	128	0.94	1.00	1209	
2	DFB11	D/FLY Both side Tack	S/N	542.74	0.40	146	85%	108	128	0.96	1.00	1188	Use pattern
3	ZJ-D	Zipper Join	S/N	342.44	0.25	250	85%	249	270	0.68	1.00	2001	
4	FRJ-S	J" Round STC	S/N	292.80	0.20	294	85%	250	120	0.50	0.50	2352	Use pattern
5	DFB2	D/FLY, ZIPPER Join, Front MARK	S/N	560.70	0.34	150	85%	159	220	0.90	1.00	1241	
6	2CS BERT3	ZIPPER Class Hitch Front Rise	S/N	452.54	0.40	187	85%	86	130	0.96	1.00	1423	
7	FDM BFB3	Front Part Mouth & BAG Facing Att	S/N	364.34	0.32	101	85%	160	206	0.79	1.50	909	Balance 84
8	EPDM BCBH	coin PKT PASTIN MARK, corner mark	S/N	570.80	0.60	160	85%	132	130	0.89	1.00	1240	
9	CPB BDA-S	coin PKT BAG, BONE Attch	S/N	492.84	0.39	178	85%	160	152	0.60	1.00	1092	
10	CPB BDA-S	coin PKT BTM outline, corner mark	S/N	520.54	0.34	167	85%	141	141	1.46	1.00	1125	
11	OPT BFA-S	coin PKT TOP & BTM FAC ATT	S/N	200.88	0.35	174	85%	196	128	0.89	1.00	1388	
12	APACWT 05	coin PKT both close with TURN	S/N	300.98	0.40	168	85%	186	192	0.58	1.00	1472	
13	CPBBS-S	coin PKT EDGE STC	S/N	511.64	0.35	170	85%	244	142	0.49	1.00	1311	
14	FDMM-S	Front PKT Facing MARK	S/N	650.70	0.40	150	85%	220	246	0.88	1.00	1270	
15	FDMT-ES13	Front PKT Mouth TURN EDGE	S/N	678.70	0.39	150	85%	120	130	0.44	1.25	1329	Balance with 48
16	FPDS-03	Front PKT OVER LOCK	S/N	380.10	0.47	220	85%	126	200	0.62	0.75	1420	
17	FPDT-15-S	Front PKT BAG TURN TOP STC	S/N	520.38	0.38	160	85%	170	180	0.82	1.00	1298	
18	FPB-WT-S	Front PKT SIDE, waist TACK	S/N	640.20	0.44	104	85%	128	173	1.08	1.50	1084	use cut mark packaging
BACK PART													
19	BMM-BDP2	BK PART mark TOP STC 2 part	S/N	720.20	0.40	110	85%	101	107	1.28	1.25	954	use cut mark
20	QWPD,AWB3	BK WEL PKT Attach Body	S/N	618.28	0.38	183	85%	143	143	0.87	1.00	1350	use pattern
21	QWAPF	BK WELT PART Re-cling att	APW	504.28	0.38	173	85%	147	147	0.85	1.00	1388	with count cut
22	QWAPBL-S	BK WELT BTM out. line TURN	S/N	870.40	0.51	180	85%	127	107	1.50	1.50	796	Balance with 20
23	QWPT-03	BK WELT TOP, Facing att	S/N	706.70	0.39	148	85%	150	150	1.02	1.00	948	Balance with 20
24	QWPT-03	BK WELT PKT BAG, close	S/N	690.30	0.30	118	85%	106	106	1.47	1.00	985	" "
25	QWPT-03	BK WELT TOP BAG, close	S/N	684.20	0.33	129	85%	74	148	1.70	1.00	1066	" "
26	QWPTBL-S	BK WELT TOP out lone	S/N	652.75	0.38	162	85%	113	170	1.40	2.00	690	
27	QWPTW-S	BK WELT PKT TACK waist	S/N	672.70	0.40	103	85%	138	143	0.63	1.00	1867	Balance with 19
ASSEMBLE													
28	F2 BPM-H	Front and back part match	H/M	251.0	0.40	124	85%	152	152	0.66	1.00	1578	
29	LSJ-0A	In seam Join	S/N	783.04	0.74	130	85%	95	158	1.68	1.00	1528	
30	FR BCR-0A	FR & BK continuous waist join	S/N	487.31	0.32	233	85%	228	172	1.52	1.50	929	
31	F2 BCR	FR & BK continuous TOP STC	S/N	574.41	0.34	180	85%	196	158	0.82	1.50	1428	
32	SSJ-0A	side seam Join	S/N	831.83	0.32	171	85%	145	180	0.77	1.25	1521	
33	SSJ-FD	side seam TOP STC	FOA	884.16	0.62	138	85%	150	162	1.10	1.00	775	Balance with 20
34	BT-H	body TURN	H/M	336.89	0.61	170	85%	182	158	0.77	1.00	775	
35	WLMC-M	waist Loop MARK cut	F/L	426.34	0.34	268	85%	147	152	1.50	0.75	785	
36	WDBP-FL	inner, loop make cut	S/N	678.20	0.38	198	85%	141	124	0.84	0.50	2070	
37	WDBT-S	waist two part join	S/N	408.08	0.35	193	85%	91	105	0.92	1.00	1402	
38	WDBTIS-S	waist two part join	S/N	493.88	0.35	166	85%	132	125	0.86	1.00	1270	
39	WAL-BTM	waist loop ATT body mark	H/M	928.83	0.50	187	85%	180	140	0.82	1.00	1027	use attachment
40	WDM-H	waist cut cut inner mach	H/M	504.00	0.35	150	85%	117	180	1.23	1.00	1428	use attachment
41	WIT-S	waist TACK	S/N	623.30	0.38	224	85%	96	147	0.85	1.25	2576	Balance with 37
42	WIB-SC	waist band join	S/N	213.19	0.56	138	85%	84	141	1.01	1.00	1280	
43	WIB-FEL	waist band TOP EDGE	L/RN	560.50	0.40	110	85%	134	156	0.95	1.00	1242	
44	WB2AW1	waist band 1, 2 & 3 BL ATT	S/N	292.34	0.28	209	85%	141	176	0.66	1.00	1175	
45	WMB-PH	waist mouth, patch inside	S/N	800.20	0.48	200	85%	91	144	1.01	1.50	1103	LOP 15 / 46
46	WMBF-S	waist band close TACK	S/N	772.44	0.60	194	85%	132	121	1.00	1.50	1103	use water soluble
47	WIBBT3	waist band bottom outline	S/N	876.40	0.60	208	85%	183	138	1.48	1.50	795	
48	CLC-PTMB	waist BL cut-tack with	S/N	481.02	0.26	182	85%	84	162	0.69	0.75	1735	
49	WIBT-S	waist loop TOP BTM-tack	S/N	625.33	0.36	186	85%	184	141	1.80	1.00	1324	
50	WIBT-S	waist loop TACK	S/N	625.33	0.36	206	85%	141	145	0.83	1.00	1324	
51	WMT-FB3	waist mouth, FRT Rise	S/N	423.84	0.29	193	85%	175	156	0.71	1.00	1628	
52	BHM-S	BTM Hem MARK	S/N	289.42	0.47	449	85%	108	162	1.16	1.50	1618	LOP 2 MC 33/52
53	LB-B	loop waist TACK (B)	B/H	723.00	0.60	140	85%	182	152	1.00	1.50	956	
54	FBSR BDBF	waist, BK, Body Bantle	B/H	1032.3	0.75	88	85%	62	106	1.84	2.00	637	
55	EM-EH	Eye hole make (B)	E/H	504.00	0.36	170	85%	147	220	0.85	1.50	680	

NOTE: BS SECTION OPERATION INCLUDING IN OPERATION BULLETIN

Figure 3.2.3 Physically Observation of CHINO SHORT & LONG PANT



### 3.2.2 Operation Bulletin Chino Short & Long Pants: HA-MEEM GROUP

**BUYER** KHOLS  
**NAME:-**  
**STYLE NO:-** M573X210RS  
**ITEM:-** CHINO  
**CATEGORY:-** CHINO SHORTS  
 & LONG  
**SUB –** MENS &  
**CATEGORY:-** WOMENS

#### **OPERATION BULLETN**

Prepared by: - MD.SHAFIQL ISLAM
Prepared Date: - 01 Jan' 19
Qty:- 185000 Pcs

OPERATION	M/C	T.M.U	S.M.V	100% TGT/HR	OP EFFI	OP TGT/H	BLN/T GT	TML	AML	TGT/DAY	OPRN REQUEST
<b>FRONT PART</b>											
FRONT RAIS S/D FLY O/L & S	3TH/OL	575	0.44	150	85%	126	128	0.94	1	1209	
D/FLYBOTH SIDE TACK	S/N	542.74	0.4	146	85%	128	128	0.96	1	1188	USE PATTERN
ZIPPER JOIN	D/N	342.44	0.25	250	85%	240	270	0.6	1	2001	
J ROUND STC	D/N	292.8	0.2	294	85%	250	190	0.5	0.5	2352	USE PATTERN
D/FLY & ZIPPER JOIN & F PART MARK	S/N	560.7	0.34	150	85%	159	220	0.9	1.001.50	1241	
ZIPPER CLOSS STITCH & FRONT RICE MARK	S/N	452.9	0.4	187	85%	86	130	0.96	1	1493	
FRONT PART MOUTH & BAG FATCHING ATTACH	S/N	864.3	0.32	101	85%	160	206	0.79	1	807	BALANCE 04
COIN POCKET POSTAN MARK & BAG FATCHING ATTACH	H/W	570.8	0.6	160	85%	132	130	0.83	1	1240	
COIN POCKET BAG & BONE ATTACH	S/N	492.88	0.39	178	85%	160	152	0.6	1	1392	
COIN POCKET BTTM OUTLINE & CORNER TACK	S/N	520.58	0.34	167	85%	141	141	1.46	1	1129	
COIN POCKET TOP & BTTM ATTACH	S/N	500.88	0.35	174	85%	190	120	0.69	1	1380	
COIN POCKET BOTH CLOSE WITH TURN	3TH-OL	530.2	0.4	168	85%	186	192	0.5	1.92	1412	
COIN POCKET EDGE STC	S/N	511.64	0.35	170	85%	144	142	0.49	1	1311	
FRONT POCKET MOUTH MRKE	S/N	550.4	0.4	150	85%	220	246	0.86	1	1220	
FRONT POCKET MOUTH TURN EDGE	S/N	678.7	0.39	150	85%	120	130	0.44	1.25	1329	BALANCE WITH 48
FRONT POCKET OVER LOCK	3TH-OL	380.1	0.47	230	85%	196	200	0.62	0.75	1420	
FRONT PKT BAG TURN TOP STC	S/N	530.3	0.38	160	85%	173	180	0.92	1	1290	

FRONT PKT SIDE & WAST TACK	S/N	640.2	0.44	134	85%	120	173	1.08	1.5	1084	USE CUT MARK FACLING
<b>BACK PART</b>											
BK PART MARK TOP STC 2 PART	S/N	730.28	0.49	119	85%	101	127	1.28	1.25	954	USE CUT MARK
BK WELT PKT ATTACH BODY	S/N	515.29	0.5	169	85%	143	143	0.87	1	1350	USE PATTERN WITH CORENT CUT
BK WELT PART FACHING ATTATCH	APW	504.2	0.68	173	85%	147	147	0.85	1	1380	BALANCE WITH 20
BK WELT BTM OUT LINE TUPON	S/N	873.4	1.51	100	85%	127	127	1.5	1.5	796	BALANCE WITH 18
BK WELT TOP & FACING ATTATCH	S/N	740.7	0.29	148	85%	150	150	1.32	1.49	940	BALANCE WITH 16
BK WELT PKT BAG CLOCE	3TH-OL	699.8	0.8	118	85%	106	128	1.47	1.29	995	
BK WET TOP BAG CLOCE	S/N	1004.2	0.69	129	85%	74	148	1.7	1.3	1066	
BK WELT TOP OUT LINE	S/N	652.75	0.28	162	85%	113	170	1.4	2	690	
BK WELT PKC TACK WAIST	S/N	372.77	0.23	133	85%	198	149	0.63	1.9	1867	BALANCE WITH 19
<b>ASSEMBLE</b>											
FRONT & BACK PART MATCH	H/W	391.9	0.49	124	85%	152	190	0.66	1	1878	
IN SEAM JOIN	H/W	703.31	0.74	190	85%	83	158	1.68	1	1528	
FR & BK CONTINOUS PAIS JOIN	3TH OL	487.81	0.52	259	85%	220	162	1.52	1.5	982	
FR & BK CONTINOUS TOP STC	S/N CS	574.41	0.34	159	85%	135	158	0.82	1.5	1428	
SAID SEAM JOIN	H/W	897.82	0.32	171	85%	145	189	0.77	1.25	1521	
SIDE SEAM TOP STC	H/W	886.16	0.62	180	85%	153	162	1.19	1	775	
BODY TURN	S/N	336.09	0.61	173	85%	102	158	0.77	1	775	BALANCE WITH 29
WAIST LOOP MAEK CUT	3TH OL	496.36	0.34	260	85%	147	152	1.5	0.75	785	
INNER LOOP MAEK CUT	S/N	548.9	0.38	190	85%	141	124	0.84	0.5	2070	
WEST TWO PART JOIN	FOA	508.98	0.35	129	85%	91	165	0.92	1	1402	
WEST TWO PART JOIN	F/L	483.98	0.33	166	85%	132	125	0.86	1	1273	
WAST LOOP ATTACH BODY MARK	H/W	728.09	0.5	107	85%	189	149	0.82	1	1367	USE ATTACHMENT
WEST (OUTER + INNER )MACH	S/N CS	504.3	0.35	155	85%	117	153	1.23	1	1438	USE ATTACHMENT
WEST LOOK TACH	H/W	529.3	0.38	222	85%	96	127	0.85	1.25	956	BALANCE WITH 34
WEST BAND JOIN	K/S	803.19	0.56	138	85%	84	141	1.37	1	1380	
WEST BAND TOP EDGE	H/W	560.9	0.4	113	85%	184	136	0.95	1	1242	
BRAND & SIZE LBL ADD	H/W	392.88	0.24	99	85%	141	176	0.66	1	1175	
WAST MOUTH & PATICH INSIDE	S/N	630.2	0.48	260	85%	91	144	1.07	1.5	1103	LOP 15/46
WAST BAND FALSE TACK	S/N	772.5	0.5	194	85%	132	127	1.30	1.5	1103	USE WATER SOLUBLE

WAST BAND BOTTOM OUTLINE	S/N	875.4	0.6	208	85%	189	138	1.48	1.5	795	
CARE LBL CUT TACK	S/N	401.02	0.26	166	85%	84	142	0.69	0.75	1735	
WEST LOOP TOP BTM TACK	S/N	525.33	0.38	106	85%	184	141	1.89	1	1324	
WEST LOOP TACK	S/N	525.3	0.38	206	85%	141	145	0.89	1	1324	
WEST MOUTH & FRT RASE	S/N	422.88	0.29	129	85%	175	175	0.71	1	1628	
BTTM HEM MEKE	S/N	689.42	0.47	449	85%	108	162	1.16	1.5	1018	
LOOP BAR TACK (10)	B/T	728.09	0.5	150	85%	102	152	1.23	1.5	956	LOOP 2 MC 33/52
FAT BK & BODY BART (15)	B/T	1092.9	0.75	88	85%	68	135	1.84	2	637	
EYE HOLE MARK (3)	E/H	504.04	0.36	173	85%	147	220	0.85	1.5	1380	
			<b>22.48</b>								

**Table 3.2.2.1 Operation Bulletin of CHINO SHORT & LONG PANT of (Artistic Design LTD) of Ha-Meem Group.**

## Requirement of Machines:

MACHINE SUMMARY	
M/C Type	Nos
SINGLE NEEDLE	34
DOUBLE NEEDLE	1
OVER LOCK	8
APW	1
FEED OF THE ARM/CH	8
KANSAI	2
FAT LOCK	1
<b>TOTAL M/C</b>	<b>55</b>
BT.E/H.H/T	6
TTL Helper	5
TTL Ironer	1
<b>TTL Man p</b>	<b>67</b>

TOTAL S.M.V	22.48
BPT	0.41
UCL	0.58
LCL	0
NO OF M/C & OPERATOR	55
TTL MANPOWER	67
HOURLY TGT @ 100% EFFI.	215

EXPECTED EFFICIENCY	70%
LINE TGT/Hr. (As incentive TGT)	<b>154</b>
WORK HOUR	8
LINE TGT/Day	1230
<b>Aveg. Prod. From the Beginning/Hour (70%)</b>	<b>154</b>

**Table 3.2.2.2 Machine, Man power, SMV, Efficiency% CHINO SHORT & LONG PANT of (Artistic Design LTD) of Ha-Meem Group.**

### **DESCRIPTION:**

Above the operation bulletin sheet is a CHINO SHORT & LONG PANT of Artistic Design Ltd-2 on HA-MEEM GROUP. This sheet contains buyer name KOHLS, Style: M573 × 210SR & line-305, here we can also found total manpower are in the operation, SMV, efficiency, target measure per hour. In this sheet we can found 55 M/C to make a CHINO SHORT & LONG PANT. This sheet shows many process SMV & calculate the total SMV. The calculated total SMV is 22.48. Plan target production 185000. Plan efficiency is 70%. There are different type of efficiency is calculate like

70%, 85%, 90% is calculated the total production per 8 hrs.

### **3.2.3 Calculation:**

#### **S.M.V calculation**

**We Know that,**

**SMV = Basic Time + Allowance**

**Basic Time = Observed Time × Rating**

Observed time = Average cycle time/60

**Rating = Observed rating/ Standard \* 100%**

Here,

We showing SMV calculation for Back Part of BK WET TOP BAG CLOCE

#### **1. Measure the cycle time**

5-10 Times take cycle time.

EXM: 69sec, 70sec, 68sec, 70sec, 68sec

#### **2. Calculate the average time.**

$$\begin{aligned} &= (69+70+68+70+68)/5 \\ &= 69\text{sec} \end{aligned}$$

### 3. Calculate the average time in minute.

$$\begin{aligned} &= 69/60 \text{ min} \\ &= 1.15 \text{ min (Observed Time)} \end{aligned}$$

**Rating = Observed rating/ Standard × 100%**

$$\begin{aligned} &= \frac{80}{100} \times 100 \\ &= 80\% \end{aligned}$$

### Convert observed time to Basic time

**Basic Time = Observed Time × Rating**

$$\begin{aligned} &= 1.15 \times 80\% \\ &= 0.92 \end{aligned}$$

Personal or Relaxation+ Machine Delay+ Contingency allowance=15%

Finally,

**SMV = Basic Time + Allowance of basic Time**

$$\begin{aligned} &= 0.92 \times (0.92 \times 15\%) \\ &= 1.06 \text{ min} \end{aligned}$$

### PITCH TIME

Here,

No of operation = 55

S.M.V = 22.48 min

So, Pitch Time = No of operation/SMV

$$\begin{aligned} &= 55/ 22.48 \\ &= 2.45 \text{ min} \end{aligned}$$

### EFFICIENCY CALCULATION:

Here,

Total production = 1230

SMV = 22.48

Total man power = 67

Working hour = 8

We Know that,

$$\begin{aligned} \text{Efficiency\%} &= \frac{\text{Total production} \times \text{SMV}}{\text{Total Man Power} \times \text{working hour} \times 60} \times 100 \\ &= \frac{1230 \times 22.48}{67 \times 8 \times 60} \times 100 \\ &= 85.98 \\ &= 86\% \end{aligned}$$

### LINE CAPACITY:

We know,

$$\begin{aligned} \text{Line capacity} &= \frac{\text{Total man Power} \times \text{Working hour} \times 60 \times \text{Efficiency\%}}{\text{S.M.V}} \\ &= \frac{67 \times 8 \times 60 \times 86\%}{22.48} \\ &= 1230 \text{ pcs} \end{aligned}$$

SMV	1.06 min
Pitch Time	2.54 min
Efficiency%	86 %
Line Capacity	1230

### TARGET CALCULATION:

Here,

Total worker = 67

SMV = 22.48

Working hrs. = 8

Efficiency = 70%,

We know that,

$$\begin{aligned} \text{Target} &= \text{work hr.} \times \text{total man power} \times \text{efficiency \%} \times \text{SMV} \\ &= 8 \times 67 \times 70\% \times 22.48 \\ &= 8434 \end{aligned}$$

When, Efficiency = 85%

$$= 8 \times 67 \times 85\% \times 22.48$$

$$= 10242$$

When, Efficiency = 90%

$$= 8 \times 67 \times 90\% \times 22.48$$

$$= 10844$$

Efficiency%	70%	85%	90%
Target per 8 hour	8434	10242	10844

### 3.3 Operation Bulletin of TOP & BOTTOM OVERALL:

#### Ha-Meem Group

BUYER: -	<u>KOHL'S</u>
STYLE: -	<u>UL13X210</u>
ITEMS:-	<u>TOP &amp; BOTTOM</u>
CATEGORY:-	<u>OVERALL</u>
SUB-CATEGORY:-	<u>BOYS</u>

**OPEERATION BULLETIN**

**Ha-Meem Group**

BUYER:- KOHL'S  
 STYLE :- UL13X210  
 ITEMS:- TOP & BOTTOM  
 CATEGORY:- OVERALL  
 SUB-CATEGORY:- BOYS

**OPERATION BULLETIN**

Prepared by:  
 Prepared date:  
 Order Qty :

OP.#	PROCESS CODE	OPERATION	M/C	T.M.E.	S.M.V.	TGT / HR 100%	OP EFF	OP LGTH	BLNT GT	TML	AML	TGT / DAY
<b>FRONT PART</b>												
1	FELG-5	FRONT RISE JOIN	5 TH OL	405.34	0.28	215	85%	182	182	0.78	1.00	1717
2	FRTS-D	FRONT RISE TOP STC	D/N	300.98	0.21	280	85%	246	184	0.58	0.75	2312
3	FRAATS-D	FRONT BIB ALL-AROUND TOP STC	D/N	566.75	0.39	155	85%	130	163	1.09	1.25	1228
4	FB&BTEI-I	FRONT BIB PKT & BIB TOP EDGE IRON	IRON	448.09	0.31	194	85%	165	165	0.86	1.00	1553
5	FPMR-D	FRONT PKT MOUTH ROLLING	D/N	452.45	0.31	192	85%	163	163	0.87	1.00	1536
6	BPI-I	BK PKT IRON	IRON	560.09	0.39	145	85%	132	165	1.07	1.25	1242
7	FPFM-H	FRONT PKT POSITION MARK	H/W	304.09	0.35	173	85%	147	147	0.97	1.00	1380
8	BPA-DA	BK PKT ATTACH	D/N A	1019.75	0.70	85	90%	77	154	1.96	2.00	682
9	SCAFLCATRE-S	SIZE,CARE & SEFTY LBL CUT & TACK WITH FRONT	S/N	413.33	0.29	211	85%	179	179	0.79	1.00	1684
<b>BACK PART</b>												
10	BRJUTHB-SOL	BK RISE JOIN UP TO BK BIB	5TH OL	648.17	0.45	134	85%	114	171	1.24	1.50	1073
11	BRJTSBB-SO	BK RISE TOP STC UP TO BK BIB	F.O.A	454.65	0.31	191	85%	163	163	0.87	1.00	1530
12	F&BBTFER-S	FRONT & BACK BIB TOP FACING EDGE RULLING	S/N	406.77	0.28	214	85%	182	182	0.78	1.00	1711
13	F&BBT&T-S	FRONT & BACK BIB ATT & TURN	S/N	630.77	0.44	138	85%	117	176	1.23	1.50	1103
14	SI-I	STRAP IRON	IRON	380.20	0.26	229	85%	194	146	0.73	0.75	1830
15	STS&TTS-S	STRAP TOP STC	S/N	610.05	0.42	143	85%	121	182	1.17	1.50	1141
16	STTB-S	STRAP TACK TO BACK BIB	S/N	425.68	0.29	204	85%	174	174	0.82	1.00	1635
17	STS&TTS-S	STRAP BUTTON HOLE	BH	320.00	0.22	272	85%	231	231	0.61	1.00	2174
18	BBATS-D	BK BIB ALLARROUND TOP STC	D/N	701.33	0.48	124	85%	105	211	1.34	2.00	992
<b>ASSEMBLE</b>												
19	F&BPM-H	FRONT & BACK PART MATCH	H/W	420.09	0.29	207	85%	176	176	0.81	1.00	1656
20	ISI-SOL	INSEAM JOIN	5TH OL	624.54	0.43	139	85%	118	178	1.20	1.50	1114
21	SSI-OS	SIDE SEAM JOIN(LONG)	5TH OL	572.54	0.39	152	85%	129	194	1.30	1.50	1215
22	SDRE&BPEO-O3	SIDE D'FLY BK EDGE & BK PART SIDE EDGE O.L	5TH OL	520.51	0.36	167	85%	142	215	1.00	1.50	1337
23	SDM&CS-S	SIDE D'FLY JOIN & CLOSE STC	S/N	531.49	0.37	164	85%	139	209	1.02	1.50	1309
24	BHM-S	BOTTOM HEM MAKE	S/N	600.78	0.41	145	85%	123	185	1.15	1.50	1158
											<b>8.64</b>	
												<b>38.00</b>

Figure 3.3.1.1 Operation Bulletin of TOP & BOTTOM Overall (Artistic Design LTD) of Ha-Meem Group.



Figure 3.3.1.2 TOP & BOTTOM Overall (Artistic Design LTD) of Ha-Meem Group.



### 3.3.1 Operation Bulletin of TOP & BOTTOM Overall:

#### Ha-Meem Group

BUYER: -	<u>KOHL'S</u>
STYLE: -	<u>UL13X210</u>
ITEMS:-	<u>TOP &amp; BOTTOM</u>
CATEGORY:-	<u>OVERALL</u>
SUB-CATEGORY:-	<u>BOYS</u>

#### OPERATION BULLATIN

OPERATION	M/C	T.M.U	S.M.V	100% TGT/H R	OP EFFI	OP TGT/H	BLN/T GT	TML	AML	TGT/D AY	OPRN REQUEST
<b>FRONT PART</b>											
FRONT RISE JOIN	5 TH OL	405.14	0.28	215	85%	182	182	0.78	1	1717	
FRONT RISE TOP STC	D/N	300.98	0.21	289	85%	246	184	0.58	0.75	2312	
FRONT BIB ALL-AROUND TOP STC	D/N	566.75	0.39	153	85%	130	163	1.09	1.25	1228	
FRONT BIB PKT & BIB TOP EDGE IRON	IRON	448.09	0.31	194	85%	165	165	0.86	1	1552	
FRONT PKT MOUTH ROLLING	D/N	452.45	0.31	192	85%	163	163	0.87	1	1538	
BK PKT IRON	IRON	560.09	0.39	155	85%	132	165	1.07	1.25	1242	
FRONT PKT POSITION MARK	H/W	504.09	0.35	173	85%	147	147	0.97	1	1380	
BK PKT ATTACH	D/N A	1019.75	0.7	85	90%	77	154	1.96	2	682	
SIZE,CARE & SEFTY LBL CUT & TACK WITH FRONT	S/N	413.13	0.29	211	85%	179	179	0.79	1	1684	
<b>BACK PART</b>											
BK RISE JOIN UP TO BK BIB	5TH OL	648.17	0.45	134	85%	114	178	1.24	1.5	1073	
BK RISE TOP STC UP TO BK BIB	F.O.A	454.65	0.31	191	85%	136	163	0.87	1	1530	
FRONT & BACK BIB TOP FACING EDGE RULLING	S/N	406.77	0.28	214	85%	182	182	0.78	1	1711	
FRONT & BACK BIB ATT. & TURN	S/N	630.77	0.44	138	85%	117	176	1.21	1.5	1103	
TRAP IRON	IRON	380.2	0.26	229	85%	194	146	0.73	0.75	1830	
STRAP TOP STC	S/N	610.05	0.42	143	85%	121	182	1.17	1.5	1141	
STRAP TACK TO BACK BIB	S/N	425.68	0.29	204	85%	174	174	0.82	1	1635	
STRAP BUTTON HOLE	B/H	320	0.22	272	85%	231	231	0.61	1	2174	
BK BIB ALLARROUND TOP STC	D/N	701.33	0.48	124	85%	105	211	1.34	2	992	
<b>ASSEMBLE</b>											
FRONT & BACK PART MATCH	H/W	420.09	0.29	207	85%	176	176	0.81	1	1656	
INSEAM JOIN	5TH OL	624.54	0.43	139	85%	118	178	1.2	1.5	1114	
SIDE SEAM JOIN(LONG)	5TH OL	572.54	0.39	152	85%	229	194	1.1	1.5	1215	

SIDE D/FLY,BK EDGE & BK PART SIDE EDGE O/L	3TH OL	520.51	0.36	167	85%	142	213	1	1.5	1337	
SIDE D/FLY JOIN & CLOSE STC.	S/N	531.49	0.37	164	85%	139	209	1.02	1.5	1309	
BOTTOM HEM MAKE	S/N	600.78	0.41	145	85%	123	185	1.15	1.5	1158	
			<b>8.64</b>					<b>30</b>			

**Table 3.3.1 Operation Bulletin TOP & BOTTOM Overall (Artistic Design LTD) of Ha-Meem Group.**

### Requirement of Machines:

<b>TOTAL S.M.V</b>	<b>8.64</b>
BPT	0.36
UCL	0.51
LCL	0.21
NO OF M/C & OPERATOR	48
TTL MANPOWER	60
HOURLY TGT @100% EFFI.	417
EXPECTED EFFICIENCY	70%
<b>LINE TGT/Hr. (As incentive TGT)</b>	<b>292</b>
PRODUCTIVITY PER MAN PER HOUR	5
WORK HOUR	8
<b>Avg.production/Hour 65%</b>	<b>271</b>

M/C Type	Nos
S/N	9
D/N	7
OL	7
F/L	0
P/S SNB	0
K/S	0
D/N CH.F	1
<b>TTL M/C</b>	<b>24</b>
TTL Helper	2
TTL Ironer	3
<b>TTL Manp</b>	<b>29</b>

**Table 3.3.2. Machine, Man power, SMV, Efficiency% TOP & BOTTM OVERALL of (Artistic Design LTD) of Ha-Meem Group.**

### 3.3.3 Calculation:

#### S.M.V calculation

We Know that,

$$\text{SMV} = \text{Basic Time} + \text{Allowance}$$

$$\text{Basic Time} = \text{Observed Time} \times \text{Rating}$$

$$\text{Observed time} = \text{Average cycle time}/60$$

$$\text{Rating} = \text{Observed rating/ Standard} * 100\%$$

Here,

We showing SMV Calculation for Front Rise join

#### 1. Measure the cycle time

5 – 10 Times take cycle time

EXM: 27sec, 29sec, 27sec, 29sec, 28sec

#### 2. Calculate the average time.

$$\begin{aligned} &= (27+29+27+29+28)/5 \\ &= 28\text{sec} \end{aligned}$$

#### 3. Calculate the average time in minute.

$$\begin{aligned} &= 28/60 \text{ min} \\ &= 0.47 \text{ min (Observed Time)} \end{aligned}$$

$$\text{Rating} = \text{Observed rating/ Standard} \times 100\%$$

$$\begin{aligned} &= \frac{70}{100} \times 100 \\ &= 70\% \end{aligned}$$

#### Convert observed time to Basic time

$$\text{Basic Time} = \text{Observed Time} \times \text{Rating}$$

$$= 0.47 \times 70\%$$

$$= 0.33$$

Personal or Relaxation+ Machine Delay+ Contingency allowance=15%

Finally,

**SMV**= Basic Time + Allowance of basic Time

$$= 0.33 + (0.33 \times 15\%)$$

$$= 0.38 \text{ min}$$

## **PITCH TIME**

Here,

No of operation = 24

S.M.V = 8.64 min

So, Pitch Time = No of operation/SMV

$$= 24/ 8.64$$

$$= 2.8 \text{ min}$$

## **EFFICIENCY CALCULATION:**

Here,

Total production = 10,000 pcs

SMV = 8.64

Total man power = 29

Working hour = 8

We Know that,

$$\begin{aligned} \text{Efficiency}\% &= \frac{\text{Total production} \times \text{SMV}}{\text{Total Man Power} \times \text{working hour} \times 60} \times 100 \\ &= \frac{1300 \times 8.64}{29 \times 8 \times 60} \times 100 \\ &= 80.69 \\ &= 81\% \end{aligned}$$

## LINE CAPACITY:

We know,

$$\begin{aligned}\text{Line capacity} &= \frac{\text{Total man Power} \times \text{Working hour} \times 60 \times \text{Efficiency}\%}{S.M.V} \\ &= \frac{29 \times 8 \times 60 \times 81\%}{8.64} \\ &= 1305 \text{ pcs}\end{aligned}$$

SMV	0.38 min
PITCH TIME	2.8 min
Efficiency%	81%
Line Capacity	1305

## TARGET CALCULATION:

Here,

Total worker = 29

SMV = 8.64

Working hrs. = 8

Efficiency = 70%,

We know that,

$$\begin{aligned}\text{Target} &= \text{work hr.} \times \text{total man power} \times \text{efficiency \%} \times \text{SMV} \\ &= 8 \times 29 \times 70\% \times 8.64 \\ &= 1403\end{aligned}$$

When, Efficiency = 85%

$$\begin{aligned}&= 8 \times 29 \times 85\% \times 8.64 \\ &= 1703\end{aligned}$$

When, Efficiency = 90%

$$\begin{aligned}&= 8 \times 29 \times 90\% \times 8.64 \\ &= 1804\end{aligned}$$

Efficiency%	70%	85%	90%
Target per 8 hour	1403	1703	1804





Figure 3.4.2 5 PKT LONG BIG & TALL of (Artistic Design LTD) of Ha-Meem Group.

### 3.4.1 Operation Bulletin of 5PKT LONG BIG & TALL: Ha-Meem Group

BUYER: -	<u>KOHL'S</u>
STYLE: -	<u>YU93D403/MS13D403/ MS13D404/MS13D409 X</u>
ITEMS:-	<u>5 PKT</u>
CATEGORY:-	<u>5PKT LONG</u>
SUB-CATEGORY:-	<u>BIG &amp; TALL</u>

#### OPERATION BULLETIN

Prepared by Arif  
Prepared date 4- May- 21  
Oder Qty 75,000 Pcs

OPERATION	M/C	T.MU	S.M.V	100% TGT/HR	OP EFFI	OP TGT/H	BLN/T GT	TML	AML	TGT/DAY	OPRN REQUEST
Front Part											
FRONT RISE,D/FLY & S/FLY OVERLOCK	3TH OL	471.7	0.33	184	88%	162	243	0.89	1.5	1947	Balance with 25
COIN PKT RULLING & ATTACH TO FACING	S/N	451.39	0.31	193	85%	164	164	0.86	1	1310	
COIN PKT ATT. 2ND STC	S/N	307.26	0.21	283	85%	241	241	0.58	0.75	1444	Balance with 5
SCOPE PKT BAG FACING ATTACH	F/L	469.72	0.32	185	88%	163	163	0.89	1	1304	
SCOPE PKT MOUTH JOIN	S/N	561.65	0.39	155	85%	132	165	1.06	1.25	1316	
SCOPE PKT MOUTH TURN & TOP STC	D/N	622.75	0.43	140	85%	119	237	1.18	2	1899	
FRONT PKT SIDE AND WAIST TACK	S/N	577.21	0.4	146	85%	128	192	1.09	1.5	1537	Balance with 9
SCOPE PKT BAG OVERLOCK	3/5TH OL	392.51	0.27	222	85%	188	188	0.74	1	1507	
SCOPE PKT BAG TURN & TOP STC	S/N	593.77	0.41	146	85%	125	187	1.13	1.5	1494	
SS/FLY JOIN, EDGE STC, & D/FLY SEFTY TACK	S/N	392.77	0.27	221	85%	188	188	0.74	1	1506	
ZIPPER JOIN WITH S/FLY	D/N	356.98	0.25	244	85%	207	207	0.68	1	1657	
"J" STC MAKE BY PATTEN	D/N	344.94	0.24	252	85%	214	214	0.65	1	1715	
D/FLY & ZIPPER JOIN WITH FRONT PART	S/N	364.39	0.25	239	85%	203	203	0.69	1	1623	
D/FLY CLOSE STC, & FRONT RISE TACK	S/N	423.64	0.29	205	85%	175	175	0.8	1	1396	



FRONT RISE TOP STC,	D/N	325.87	0.22	267	85%	227	227	0.62	1	1815	
Back Part											
BACK YOKE JOIN BY FOLDER	F.O.A	401.63	0.28	217	85%	184	184	0.76	1	1473	
BACK RISE JOIN BY FOLDER	F.O.A	386.9	0.27	225	85%	191	191	0.73	1	1529	
BK PKT HEM ROLLING	D/N	390.96	0.27	222	85%	189	189	0.74	1	1513	
BACK PKT IRON WITH SHINING MARK	IRON	700.09	0.48	124	85%	106	211	1.33	2	1690	
BK PKT PLSMNT MARK	H/W	392.09	0.27	222	85%	189	189	0.74	1	1508	
BACK PKT ATTACH	S/N	946.42	0.65	92	85%	78	195	1.79	2.5	1562	Blance with 27
BACK PKT 2ND STC	S/N	832.36	0.57	104	85%	89	178	1.58	2	1421	
Assemble											
FRONT & BACK PART MATCH	H/W	364.09	0.25	239	85%	203	203	0.69	1	1624	
INSEAM JOIN BY FOLDER (LONG)	F.O.A	766.96	0.53	113	85%	96	193	1.45	2	1542	
SIDE SEAM JOIN (LONG)	5TH OL	932.82	0.64	93	88%	82	205	1.77	2.5	1641	
BODY TURN & BACK 2 LOOP MARK	H/W	392.09	0.27	222	85%	189	189	0.74	1	1508	
SIDE CORD STC	S/N	503.83	0.35	173	85%	147	220	0.96	1.5	1761	Balance with 32
WAIST LOOP MAKE BY FOLDER,CUT & MATCH (7 PCS)	F/L	405.28	0.28	215	85%	182	182	0.77	1	1459	
WAIST BAND & ELASTIC MARK & CUT	H/W	364.09	0.25	239	85%	203	203	0.69	1.5	1624	
TOP WAIST BAND 2 PART JOIN & SHEL TACK	S/N	378.51	0.26	230	85%	195	195	0.72	1	1563	
INNER WAIST PIPING ATTACH BY FOLDER	S/N	434.31	0.3	200	85%	170	170	0.82	1	1362	
TOP WAIST BAND & INNER ELASTIC PART JOIN	S/N	664.09	0.46	131	85%	111	195	1.26	1	1558	Balance with 36
WAIST BAND TOP EDGE FALSE RUN STC	S/N	432.79	0.3	201	85%	171	171	0.82	1	1367	
TOP WAIST BAND JOIN MARK & MATCH	H/W	392.09	0.27	222	85%	189	189	0.74	1.75	1508	
WAIST BAND JOIN TO BODY	S/N CS	687.31	0.47	127	85%	108	215	1.3	1	1721	
WAIST TOP & BTTM MOUTH INSIDE	S/N	591.51	0.41	147	85%	129	162	1.12	1	1508	

TACK,TURN & TOP STC											
WAIST BELT FALSE TACK	S/N	460.33	0.32	189	85%	161	161	0.87	2	1721	
WAIST BAND TOP STC 2ND & T-CUT	K/S	828.89	0.57	105	85%	89	178	1.57	1.25	1294	
WAIST TOP & BTM MOUTH CLOSE WITH CHAIN TACK.	S/N	403.88	0.28	25	85%	183	183	0.77	1	1285	
CARE & LOT LBL ATT AT CENTER BACK	S/N	391.44	0.27	222	85%	189	189	0.74	1	1427	
WAIST LOOP TOP & BTM TACK (14)	S/N	1217.54	0.84	71	88%	63	157	2.31	2.5	1464	Balance with 42
BOTTOM HEM MAKE	S/N	666.42	0.46	131	85%	111	166	1.26	1.5	1331	
FRONT,BACK ,SIDE & 2 LOOP BTK ( 11 )	B/T	800.89	0.55	109	85%	92	185	1.52	2	1477	
WAIST LOOP BTK	B/T	728.09	0.5	119	85%	102	203	1.38	2	1625	
WAIST MOUTH EYLET HOLE	E-LET	224.09	0.15	388	85%	330	330	0.42	1	2639	
			<b>16.38</b>						<b>61</b>		

**Table 3.4.1 Operation Bulletin of 5 PKT LONG BIG & TALL of (Artistic Design LTD) of Ha-Meem Group.**

## Requirement of Machines:

TOTAL S.M.V.	<b>16.38</b>	<b>M/C Type</b>	<b>Nos</b>
BPT	0.36	S/N	28
UCL	0.52	D/N	6
LCL	0.21	D/N CS	0
NO OF M/C (OPERATOR)	49	S/N CS	2
TTL MANPOWER	61	3TH OL	1.5
HOURLY TGT @ 100% EFFI.	223	5TH OL	2.5
EXPECTED EFFICIENCY	70%	3/5TH OL	1
<b>LINE TGT/Hr.</b>	<b>156</b>	F.O.A	4
TAKT TIME	0.38	K/S	2
Allocated Time/pcs	23.39	F/L	2
<b>Man Productivity / Pcs Per man/Hour</b>	<b>2.56</b>	V.B.M	0
MAN MACHINE RATIO IN LINE [LINE MMR]	1.24	P/S	0
WORK HOUR	10	<b>TTL M/C</b>	<b>49</b>
LINE TGT/Day	1564	TTL HELPER	5
<b>Prod cost Per piece CPP (Cost/Line ÷ TGT/Day)</b>	<b>74</b>	TTL IRON	2
		<b>TTL Manp</b>	<b>56</b>

**Table 3.4.2 Man Power, machine, SMV, Efficiency% of 5 PKT LONG BIG & TALL of (Artistic Design LTD) of Ha-Meem Group.**

### 3.4.2 Calculation: S.M.V calculation

We Know that,

$$\text{SMV} = \text{Basic Time} + \text{Allowance}$$

$$\text{Basic Time} = \text{Observed Time} \times \text{Rating}$$

$$\text{Observed time} = \text{Average cycle time}/60$$

$$\text{Rating} = \text{Observed rating/ Standard} * 100\%$$

Here,

We showing SMV Calculation for COIN PKT RULLING & ATTACH TO FACING

#### 1. Measure the cycle time

5 – 10 Times take cycle time

EXM: 32sec, 29sec, 33sec, 32sec, 29sec

#### 2. Calculate the average time.

$$\begin{aligned} &= (32+29+33+32+29)/5 \\ &= 31\text{sec} \end{aligned}$$

#### 3. Calculate the average time in minute.

$$\begin{aligned} &= 31/60 \text{ min} \\ &= 0.52 \text{ min (Observed Time)} \end{aligned}$$

$$\text{Rating} = \text{Observed rating/ Standard} \times 100\%$$

$$\begin{aligned} &= \frac{70}{100} \times 100 \\ &= 70\% \end{aligned}$$

#### Convert observed time to Basic time

$$\text{Basic Time} = \text{Observed Time} \times \text{Rating}$$

$$= 0.52 \times 70\%$$

$$= 0.36 \text{ min}$$

Personal or Relaxation+ Machine Delay+ Contingency allowance=15%

Finally,

**SMV**= Basic Time + Allowance of basic Time

$$= 0.36 + (0.36 \times 15\%)$$

$$= 0.42 \text{ min}$$

## **PITCH TIME**

Here,

No of operation = 45

S.M.V = 16.38 min

So, Pitch Time = No of operation/SMV

$$= 45/ 16.38$$

$$= 2.75 \text{ min}$$

## **EFFICIENCY CALCULATION:**

Here,

Total production = 75,000 pcs

SMV = 16.38

Total man power = 56

Working hour = 8

We Know that,

$$Efficiency\% = \frac{\text{Total production} \times \text{SMV}}{\text{Total Man Power} \times \text{working hour} \times 60} \times 100$$

$$= \frac{75000 \times 16.38}{56 \times 8 \times 60} \times 100$$

$$= 79.83$$

$$= 80\%$$

## LINE CAPACITY:

We know,

$$\begin{aligned}\text{Line capacity} &= \frac{\text{Total man Power} \times \text{Working hour} \times 60 \times \text{Efficiency}\%}{S.M.V} \\ &= \frac{56 \times 8 \times 60 \times 80\%}{16.38} \\ &= 1313 \text{ pcs}\end{aligned}$$

SMV	0.42 min
PITCH TIME	2.75 min
Efficiency%	80%
Line Capacity	1313

## TARGET CALCULATION:

Here,

Total worker = 56

SMV = 16.38

Working hrs. = 8

Efficiency = 70%,

We know that,

$$\begin{aligned}\text{Target} &= \text{work hr.} \times \text{total man power} \times \text{efficiency \%} \times \text{SMV} \\ &= 8 \times 56 \times 70\% \times 16.38 \\ &= 5137\end{aligned}$$

When, Efficiency = 85%

$$\begin{aligned}&= 8 \times 56 \times 85\% \times 16.38 \\ &= 6237\end{aligned}$$

When, Efficiency = 90%

$$\begin{aligned}&= 8 \times 56 \times 90\% \times 16.38 \\ &= 6604\end{aligned}$$

Efficiency%	70%	85%	90%
Target per 8 hour	5137	6237	6604

### 3.5 OPERATION BULLETIN OF ELASTIC WAIST CHINO LONG & SHORT PANT:

BUYER	KOHL'S
STYLE	MS01X024RS/RR
ITEM	ELASTIC WAIST CHINO
CATEGORY	LONG & SHORTS
SUB-CATAGORY	MENS & WOMENS

**OPERATION BULLETIN**

PREPARED BY	MD. SHAFIQU L ISLAM
Prepared date	1-oct-19
Order qty	75000 pcs

HA-MEEM GROUP

BUYER: KOHL'S  
STYLE: MS01X024RS/RR  
ITEM: ELASTIC WAIST CHINO  
CATEGORY: LONG & SHORTS  
SUB-CATAGORY: MENS & WOMENS

OPERATION BULLETIN

Prepared by: MD. SHAFIQU L ISLAM  
Prepared date: 1-Oct-19  
Order Qty: 75000 Pcs

NO.	DESCRIPTION	OPERATION	REV	QTY	U.S.K.	FORM	SP	SP	BUYER	TRG	AVG	NO. OF	NO. OF
<b>FRONT PART</b>													
1	NO. 1	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	NO. 2	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	NO. 3	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	NO. 4	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	NO. 5	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6	NO. 6	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7	NO. 7	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
8	NO. 8	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
9	NO. 9	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10	NO. 10	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
11	NO. 11	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12	NO. 12	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13	NO. 13	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
14	NO. 14	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15	NO. 15	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
16	NO. 16	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
17	NO. 17	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
18	NO. 18	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
19	NO. 19	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	NO. 20	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
21	NO. 21	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22	NO. 22	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
23	NO. 23	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
24	NO. 24	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25	NO. 25	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
26	NO. 26	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
27	NO. 27	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
28	NO. 28	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
29	NO. 29	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30	NO. 30	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
31	NO. 31	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
32	NO. 32	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
33	NO. 33	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
34	NO. 34	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
35	NO. 35	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
36	NO. 36	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
37	NO. 37	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
38	NO. 38	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
39	NO. 39	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
40	NO. 40	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
41	NO. 41	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
42	NO. 42	FRONT PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>BACK PART</b>													
43	NO. 43	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
44	NO. 44	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
45	NO. 45	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
46	NO. 46	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
47	NO. 47	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
48	NO. 48	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
49	NO. 49	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
50	NO. 50	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
51	NO. 51	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
52	NO. 52	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
53	NO. 53	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
54	NO. 54	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
55	NO. 55	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
56	NO. 56	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
57	NO. 57	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
58	NO. 58	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
59	NO. 59	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
60	NO. 60	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
61	NO. 61	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
62	NO. 62	BACK PART	1	75000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

NOTE: REFLECTION OPERATION INCLUDING IN OPERATION BULLETIN

Figure 3.5.1.1 Operation Bulletin of ELASTIC WAIST CHINO LONG & SHORT PANT of Artistic design of Ha-Meem group.



Figure 3.5.1.2 Out look of ELASTIC WAIST CHINO PANT.



### 3.5.1 Operation Bulletin of ELASTIC WEAST CHINO PANT:

BUYER	KOHL'S
STYLE	MS01X024RS/RR
ITEM	ELASTIC WEAST CHINO
CATEGORY	LONG & SHORTS
SUB-CATAGORY	MENS & WOMENS

**OPERATION  
BULLETIN**

PREPARED BY	MD. SHAFIQU ISLAM
Prepared date	1-oct-19
Order qty	75000 pcs

OPERATION	M/C	T.M.U	S.M.V	100% TGT/H R	OP EFFI	OP TGT/H	BLNT/GT	TM L	AM L	TGT/D AY	OPRN REQUEST
<b>FRONT PART</b>											
SLANT PKT FACING (04) IRON & MARK & MATCH	IRON	840.09	0.58	104	85%	88	176	1.47	2	1408	
FRONT RISE O/L FOR MOCK FLY & PKT BAG MATCH	3 TH OL	590.51	0.41	147	85%	125	188	1.03	1.5	1502	
SLANT PKT BAG FACING ATTACH	S/N	555.65	0.38	157	85%	133	200	0.97	1.5	1597	Blance with 04
SLANT PKT MOUTH FACING ATTACH	S/N	519.65	0.36	167	85%	142	213	0.91	1.5	1707	
SLANT PKT MOUTH JOIN	S/N	761.1	0.53	114	85%	97	194	1.33	2	1554	
SLANT PKT MOUTH TURN & TOP STC	S/N	792.1	0.55	110	85%	96	191	1.38	2	1528	
SLANT PKT BAGOL OL ROUND	3/5 TH OL	471.77	0.33	184	85%	157	235	0.82	1.5	1880	Balance with 02
SLANT PKT BAG TURN & TOP STC	S/N	635066	0.44	137	85%	116	174	1.11	1.5	1396	
FRT PKT TOP SIDE & WAIST TACK	S/N	741.1	0.51	117	85%	100	175	1.29	1.75	1397	Use cut mark on facing
FRONT RISE TACK & EDGE STC FOR MOCK FLY	S/N	389.77	0.27	223	85%	190	190	0.68	1	1517	
J" STC MAKE BY PATTEN	S/N	378.64	0.26	230	85%	195	195	0.66	1	1562	
FRONT RISE TOP STC	S/N	489.77	0.34	178	85%	151	189	0.85	1.25	1509	Blance with 09
<b>BACK PART</b>											
BACK RISE JOIN	5 TH OL	374.51	26	232	85%	197	197	0.65	1	1579	
BACK RISE TOP STC	FOA	330.77	0.23	263	85%	224	224	0.58	1	1788	
BACK WELT PKT BAG ATTACH WITH PUNCH MARK	S/N	609.15	0.42	143	85%	121	182	1.06	1.5	1456	1 op 08 & 15
BACK WELT PKT FACING ATTACH	APW	504.9	0.34	173	85%	147	293	0.88	2	2346	With corner cut
BACK WELTT PKT BTM OUT LINE WITH TURN	S/N	871.39	0.6	100	85%	85	170	1.52	2	1357	
BACK WELT PKT TOP & BTM FACING ATT	S/N	732.54	0.51	119	85%	101	177	1.28	1.75	1413	
BACK WELT PKT BAG CLOSE & TURN	3/5 TH OL	786.54	0.54	111	85%	94	188	1.37	2	1504	
BACK WELT PKT BAG TOP STC	S/N	906.31	0.63	96	85%	82	184	1.58	2.35	1468	Balance with 18

BACK WELT PKT BAG TACK TO WAIST	S/N	462.77	0.32	188	85%	160	200	0.8 1	1.25	1598	Balance with 22
BACK WELT PKT TOP OUTLIE	S/N	732.83	0.51	119	85%	101	177	1.2 8	1.75	1412	
<b>ASSEMBLE</b>											
FRONT & BACK PRT MATCH	H/W	364.09	0.25	239	85%	203	203	0.6 4	1	1624	
IN SEAM JOIN (SHORTS)	5TH OL	375.77	0.26	231	85%	197	197	0.6 6	1	1574	
SIDE SEAM JOIN (SHORTS)	5TH OL	587.54	0.41	148	85%	126	189	1.0 2	1.5	1510	1 op 25 & 26
SIDE SEAM TOP STC (SHORTS)	FOA	567.95	0.39	153	85%	130	195	0.9 9	1.5	1562	
BODY TURN	H/W	336.09	0.23	259	85%	220	220	0.5 9	1	1760	
ELASTIC MARK & CUT	H/W	448.09	0.31	194	85%	155	223	0.7 8	1.5	1863	Balance with 34
SHADE & CARE LBL CUT & ATTCH ON BK	S/N	564.16	0.39	154	85%	131	197	0.9 8	1.5	1572	1 op 29 & 36
WAIST BAND METAL GUMET MARK ATTACH	SAP	336.09	0.23	259	85%	220	220	0.5 9	1	1760	
WAIST ELASTIC ROUND/CLOSE TACK	S/N	329.77	0.23	264	85%	224	224	0.5 8	1	1793	
INNER WEAST IRO & MARK 2 PART	IRON	420.09	0.29	207	85%	176	176	0.7 3	1	1408	
INNER WEAST 2 PART ROUND/CLOSE TACK	S/N	364.95	0.25	238	85%	203	203	0.6 4	1	1621	
WEAST BAND MARK FOR MAKE & I/WEAST MATTCH	H/W	616.09	0.43	141	85%	120	180	1.0 7	1.5	1440	
INNER WEAST BAND JOIN TO BODY	S/N	681.05	0.47	128	85%	109	190	1.1 9	1.75	1520	Balance with 39
WEAST BAND & ELASTIC INSERT FOLD & FALES TACK STC	S/N	946.54	0.65	92	85%	78	195	1.6 5	2.5	1562	Use water soitable thread
WEAST BAND TOP STC	K/S	950.79	0.66	91	85%	78	233	1.6 6	3	1866	
WEAST BELT CHAKE & THREAD CUT	H/W	364.09	0.25	239	85%	203	203	0.6 4	1	1624	
MAIN LBL CUT & ATT ON WEAST WITH SIZE LBL	S/N	503.95	0.35	173	85%	147	183	0.8 8	1.25	1467	
BOTTOM HEM MAKE (SHORTS)	S/N	756.75	0.52	115	85%	98	195	1.1 2	2	1563	
WAIST CHAIN SAFTY STC	S/N	385.16	0.25	243	85%	206	206	0.6 2	1	1651	
FRT .BK & BODY BARTACK (10)	B/T	728.09	0.5	119	85%	102	203	1.2 7	2	1625	
			<b>16.61</b>						<b>64</b>		

**Table 3.5.1.1 Operation bulletin of ELASTIC WEAST CHINO**

## Requirement of Machines:

<b>TOTAL S.M.V</b>	<b>16.61</b>
BPT	0.4
UCL	0.56
LCL	0.23
NO OF M/C & OPERATOR	3
TTL MANPOWER	64
HOURLY TGT @ 100% EFFI	231
EXPECTED EFFICIENCY	70%
Man productivity / Pcs per man/ Hour	<b>2.53</b>
LINE TGT Hr. (As incentive TGT)	162
WORK HOUR	8
LINE TGT / Day	1295
<b>Aveg. Prod. Frome the Beginning / Hour (65%)</b>	<b>150</b>

M/C	NOS
S/N	36
D/N	0
D/N CS	0
3/5 TH OL	8.5
APW	2
F.O.A	2.5
K/S	3
<b>TTL M/C</b>	<b>52</b>
B/T.SNAP	3
TTL Helper	6
TTL IRONER	3
<b>TTL Manp</b>	<b>64</b>

**Table 3.5.1.2 Man Power, machine, SMV, Efficiency% of ELASTIC WEAST CHINO PANT of (Artistic Design LTD) of Ha-Meem Group.**

### 3.5.2 Calculation: S.M.V calculation

We Know that,

$$\text{SMV} = \text{Basic Time} + \text{Allowance}$$

$$\text{Basic Time} = \text{Observed Time} \times \text{Rating}$$

$$\text{Observed time} = \text{Average cycle time}/60$$

$$\text{Rating} = \text{Observed rating/ Standard} * 100\%$$

Here,

We showing SMV Calculation for SLANT PKT BAG TURN & TOP STC

#### 1. Measure the cycle time

5 – 10 Times take cycle time

EXM: 44sec, 46sec, 44sec, 42sec, 44sec

#### 2. Calculate the average time.

$$\begin{aligned} &= (44+46+44+42+44)/5 \\ &= 44\text{sec} \end{aligned}$$

#### 3. Calculate the average time in minute.

$$\begin{aligned} &= 44/60 \text{ min} \\ &= 0.73 \text{ min (Observed Time)} \end{aligned}$$

$$\text{Rating} = \text{Observed rating/ Standard} \times 100\%$$

$$\begin{aligned} &= \frac{70}{100} \times 100 \\ &= 70\% \end{aligned}$$

#### Convert observed time to Basic time

$$\text{Basic Time} = \text{Observed Time} \times \text{Rating}$$

$$\begin{aligned} &= 0.73 \times 70\% \\ &= 0.51 \text{ min} \end{aligned}$$

Personal or Relaxation+ Machine Delay+ Contingency allowance=15%

Finally,

**SMV**= Basic Time + Allowance of basic Time

$$= 0.44 + (0.44 \times 15\%)$$

$$= 0.51 \text{ min}$$

## **PITCH TIME**

Here,

No of operation = 64

S.M.V = 16.61 min

So, Pitch Time = No of operation/SMV

$$= 64 / 16.61$$

$$= 3.86 \text{ min}$$

## **EFFICIENCY CALCULATION:**

Here,

Total production = 75,000 pcs

SMV = 16.61

Total man power = 64

Working hour = 8

We Know that,

$$Efficiency\% = \frac{\text{Total production} \times \text{SMV}}{\text{Total Man Power} \times \text{working hour} \times 60} \times 100$$

$$= \frac{1528 \times 16.61}{64 \times 8 \times 60} \times 100$$

$$= 82.62$$

$$= 83\%$$

## LINE CAPACITY:

We know,

$$\begin{aligned}\text{Line capacity} &= \frac{\text{Total man Power} \times \text{Working hour} \times 60 \times \text{Efficiency}\%}{S.M.V} \\ &= \frac{64 \times 8 \times 60 \times 83\%}{16.61} \\ &= 1535 \text{ pcs}\end{aligned}$$

SMV	0.42 min
PITCH TIME	2.75 min
Efficiency%	83%
Line Capacity	1535

## TARGET CALCULATION:

Here,

Total worker = 64

SMV = 16.61

Working hrs. = 8

Efficiency = 70%,

We know that,

$$\begin{aligned}\text{Target} &= \text{work hr.} \times \text{total man power} \times \text{efficiency \%} \times \text{SMV} \\ &= 8 \times 64 \times 70\% \times 16.61 \\ &= 5953\end{aligned}$$

When, Efficiency = 85%

$$\begin{aligned}&= 8 \times 64 \times 85\% \times 16.61 \\ &= 7228\end{aligned}$$

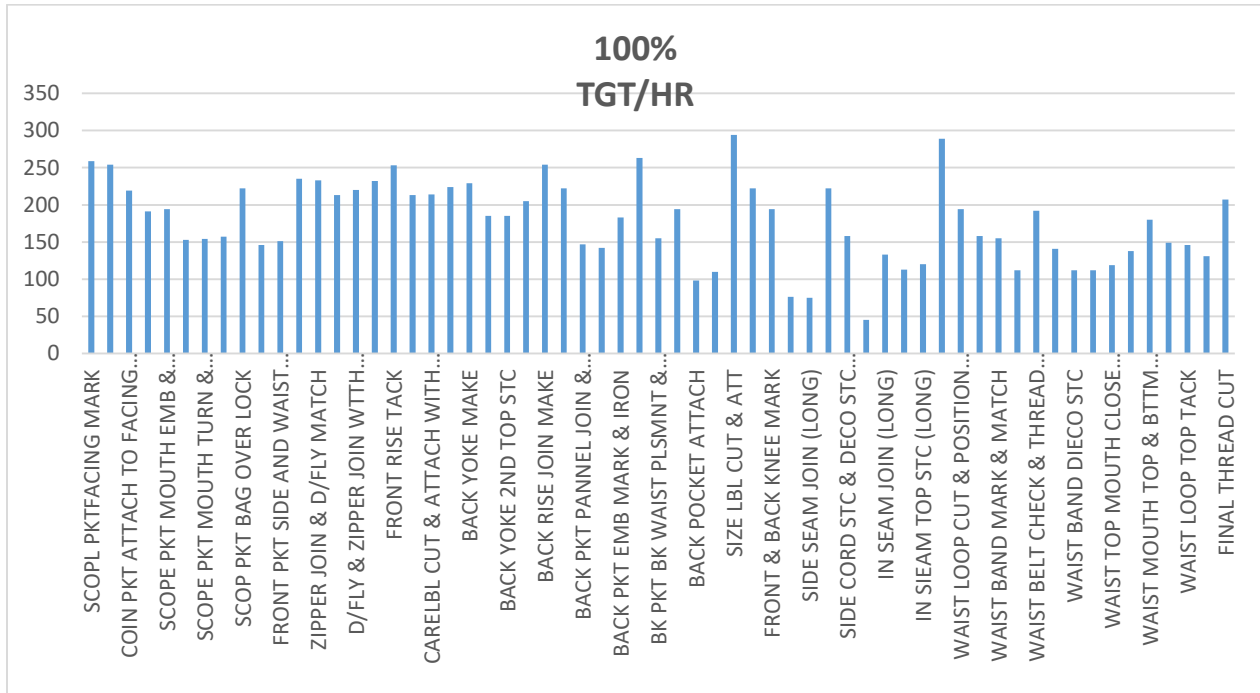
When, Efficiency = 90%

$$\begin{aligned}&= 8 \times 64 \times 90\% \times 16.61 \\ &= 7654\end{aligned}$$

Efficiency%	70%	85%	90%
Target per 8 hour	5953	7228	7654

## 4.0 Result and Discussion:

### 4.1.1 Analysis of Capacity Study of Different Operation from Data-3.1

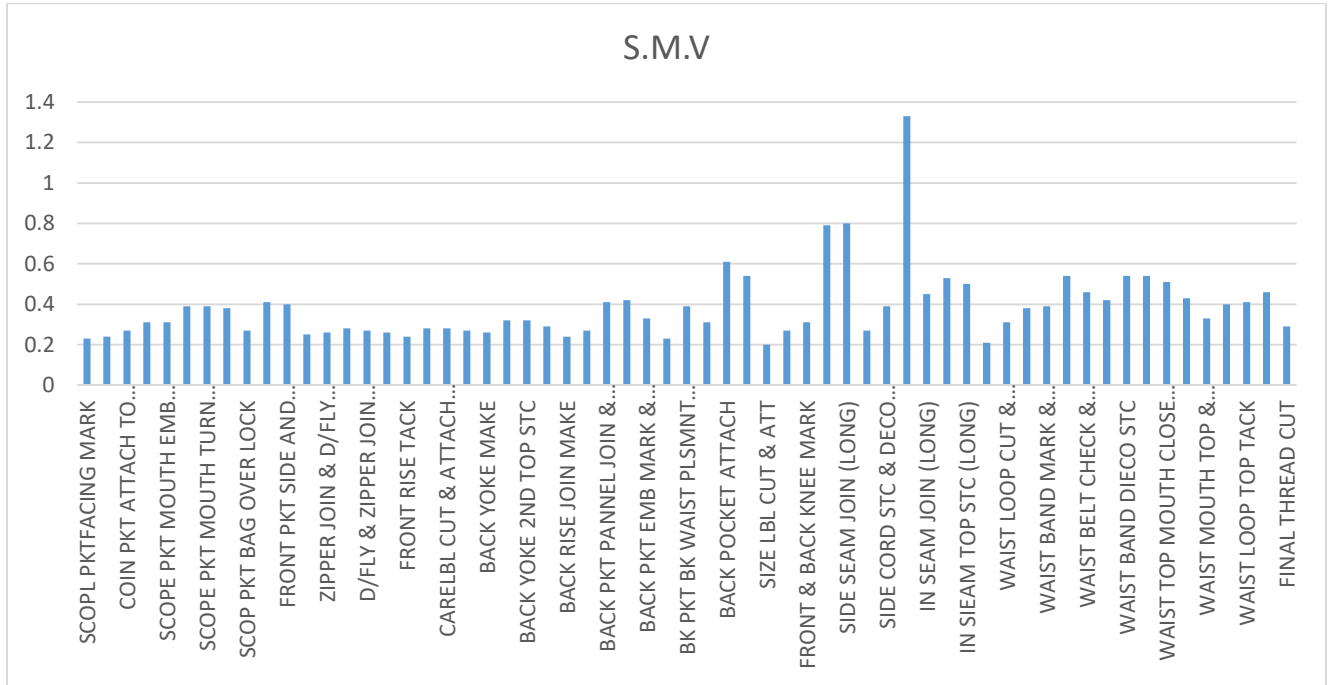


**Chart 4.1.1: Analysis of 100% TGT/HR for different operation of 5 PKT LONG MENS & WOMENS PANT from data.**

#### Description:

In this chart we showed 100% TGT/HR production capacity of various process of 5 PKT LONG MENS & WOMENS PANT. Here 65% efficiency calculated various process by the outcome of we make this chart. Firstly I calculated production capacity in chapter-03 and finally this outcome make beneficial chart. This chart presence statistics about various types of process under the chart and also presence the various ability of various process under of this chart. Here the highest volume of the process is SIZE LBL OUT & ATTACH (294), and the lowest capacity of the process is IN SEAM JOIN (LONG-45). And other process are average volume.

### 4.1.2 Analysis of SMV of Different Operation from Data 3.1



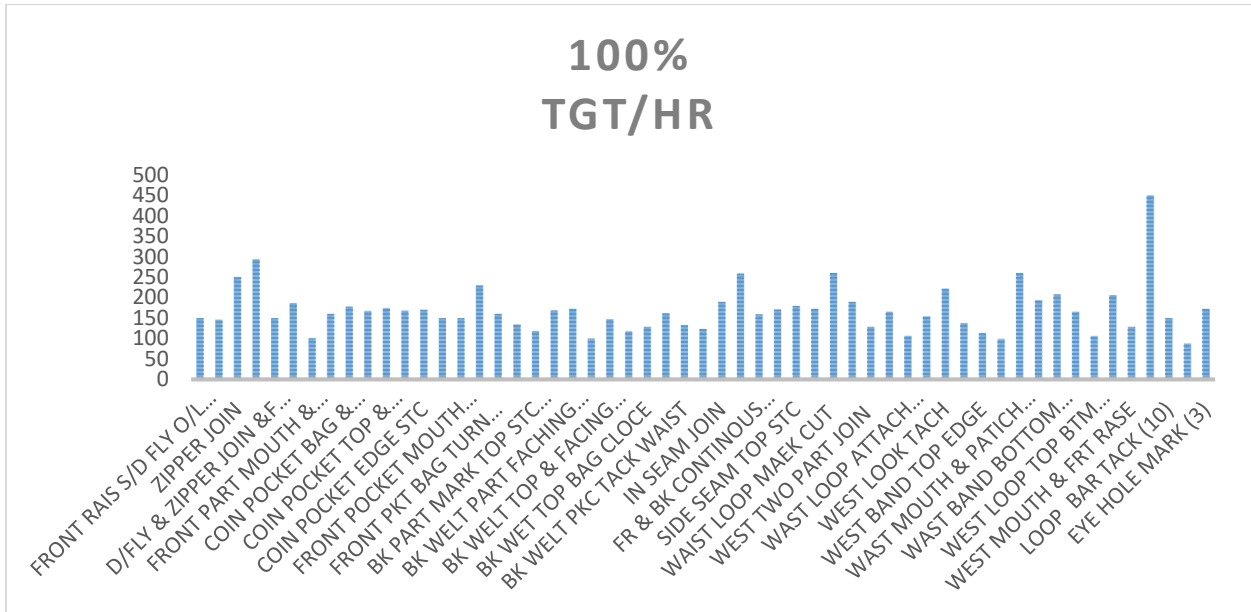
**Chart 4.1.2: Analysis of SMV for Different Operation of 5 PKT LONG MENS & WOMENS PANT from Data.**

**Description:**

In this chart we showed SMV of various process of 5 PKT LONG MENS & WOMENS PANT. At first we determined by calculating SMV of various process. By The outcome of we make this chart. This chart presence statistics about various process of operation below the chart and also showing the various SMV of various process of this chart. Higher SMV in this chart is BK WELT BTM OUT LINE TUPON (1.51) and the lowest SMV in this chart is J ROUNDE STRITCH (0.2).



## 4.2.1 Analysis of 100% TGT/HR Capacity Study of Different Operation from Data 3.2

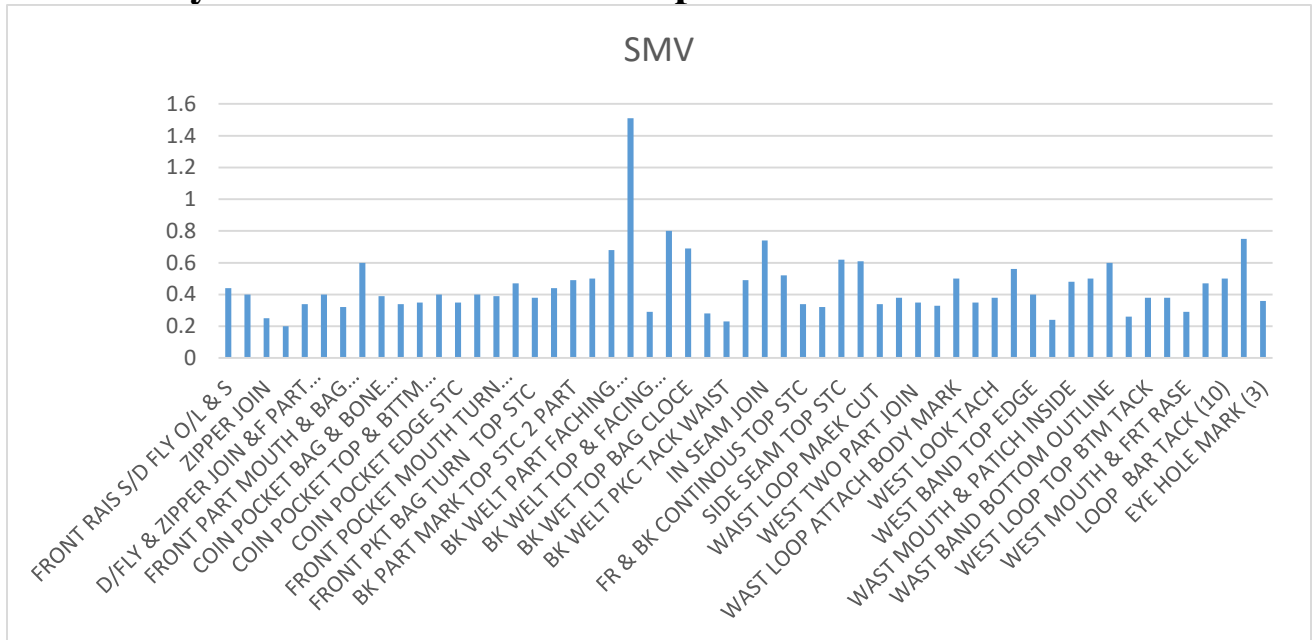


**Chart 4.2.1: Analysis of Capacity Study for Different Operation of Chino Short & Long Pant from Data**

### Description:

In this chart we showed hourly production capacity of various process of Chino Short & Long Pant. Here 70% efficiency calculated various process by the result of we make chart. First of all we calculated production volume sin chapter-03 and finally this result and make beneficial chart. This chart presence statistics about various types of operation below the chart and also presence the various volume of various process on the left side of this chart. The highest volume of the operation BTTM HEM MAKE (449) and the lowest volume of the process FAT BK & BODY BART 15 point is (88). And other process are average volume.

## 4.2.2 Analysis of SMV of Different Operation from Data 3.2

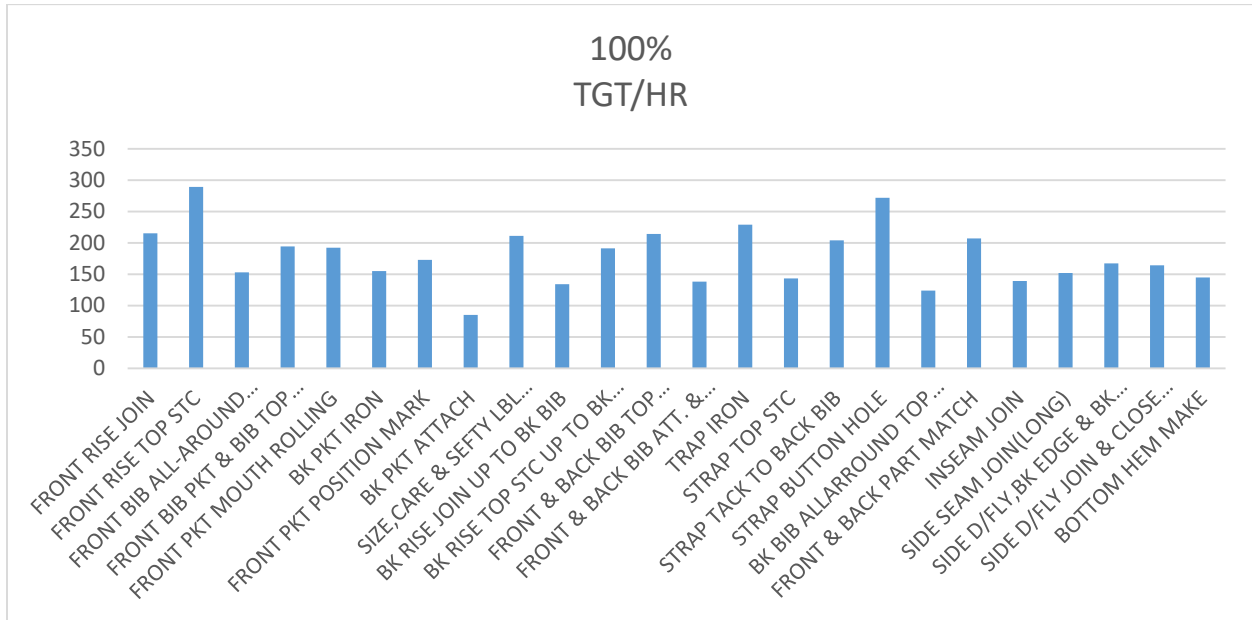


**Chart 4.2.2: Analysis of Capacity Study for Different Operation of CHINO SHORT & LONG PANT from Data**

### Description:

In this chart we showed SMV of various process of CHINO SHORT & LONG PANT. Firstly we calculated SMV of various process. By The result of we make this chart. This chart presence information about various process of operation below the chart and also showing the various SMV of various process on the left side of this chart. Highest SMV in this chart is BK WELT BTM OUT LINE TUPON (1.51) and the lowest SMV in this chart is J ROUND STITCH (0.2).

### 4.3.1 Analysis of Capacity Study of Different Operation from Data 3.3



**Chart 4.3.1: Analysis of Capacity Study for Different Operation of TOPE & BOTTOM OVERALL from Data**

#### Description:

In this chart we showed hourly production ability of various process of VEST. Here 70% beneficial calculated various process by the result we make this chart. Firstly we determined by calculating production ability in chapter-03 and finally this result and make beneficial chart. This chart presence information about various types of operation below the chart and also presence the various volume of various process on the left side of this chart. Here the highest volume of the operation is FRONT RISE TOP STITCH (289) and the lowest volume of the operation is BACK POCKET ATTACH (85). And other process are average volume.

### 4.3.2 Analysis of SMV of Different Operation from Data 3.3

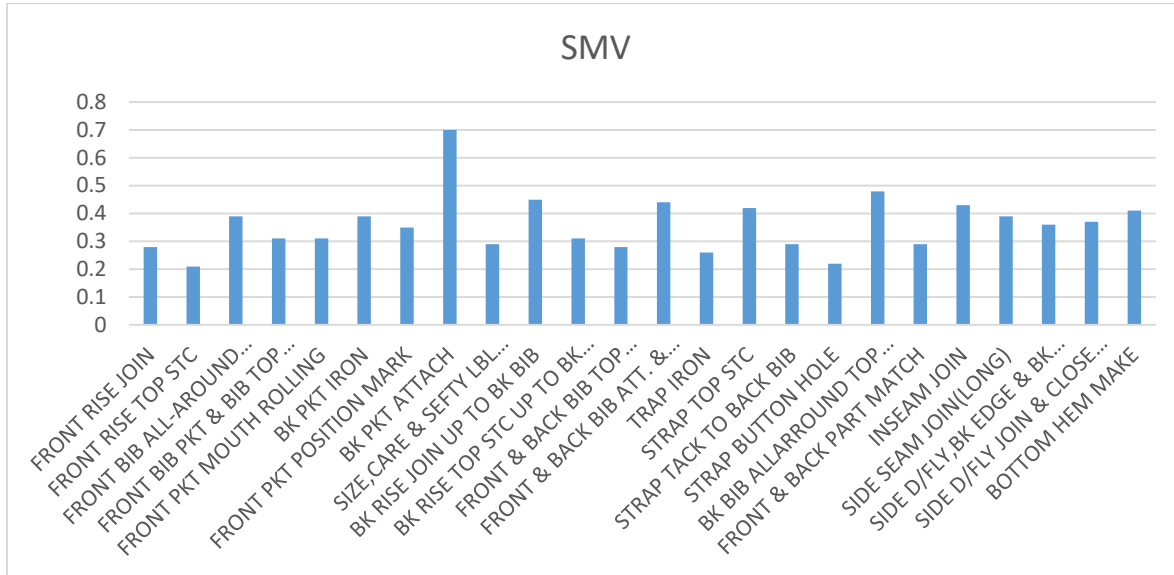
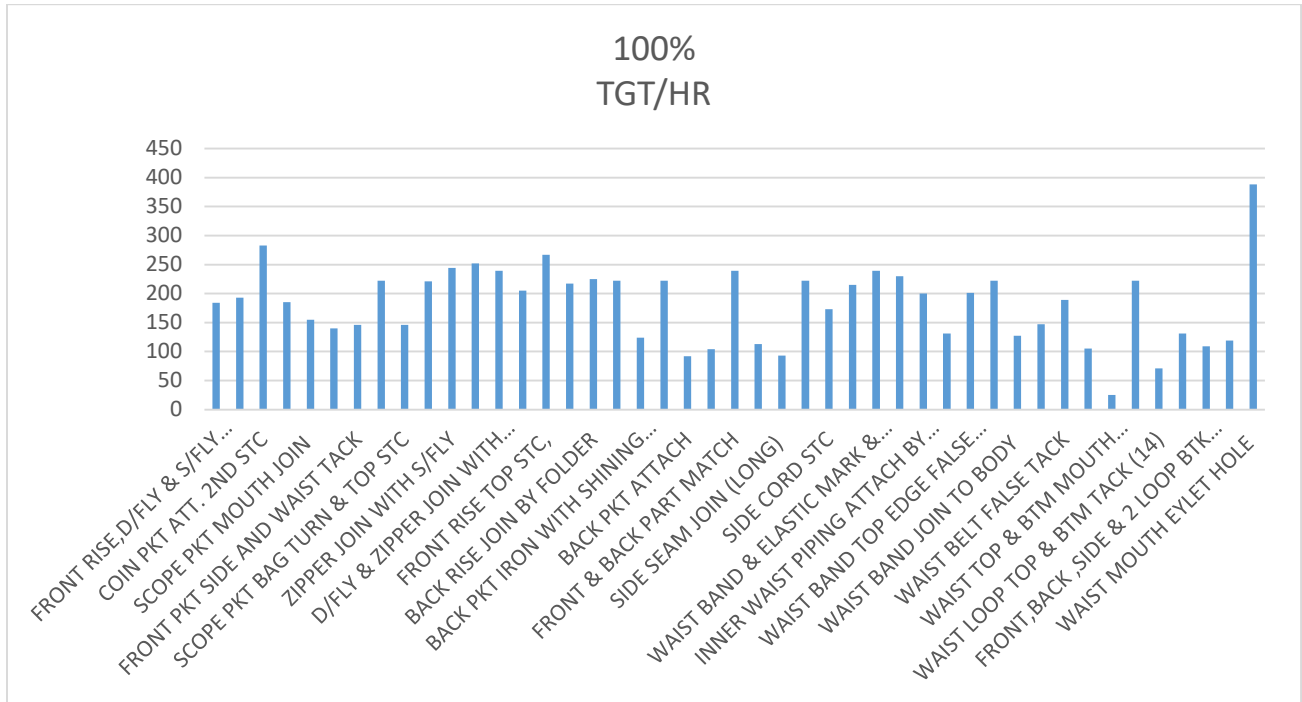


Chart 4.3.2: Analysis of SMV for Different Operation of TOP & BOTTOM OVERALL from Data

#### Description:

In this chart we showed SMV of various process of TOP & BOTTOM OVERALL. Firstly we determined by the calculation SMV of various process. By The result we make this chart. This chart presence information about various types of operation below the chart and also showing the various SMV of various process on the left side of this chart .Higher SMV in this chart is BK PKT ATTACH (0.7) and the lowest SMV FRONT RISE TOP STITCH (0.21).

### 4.4.1 Analysis of Capacity Study of Different Operation from Data 3.4

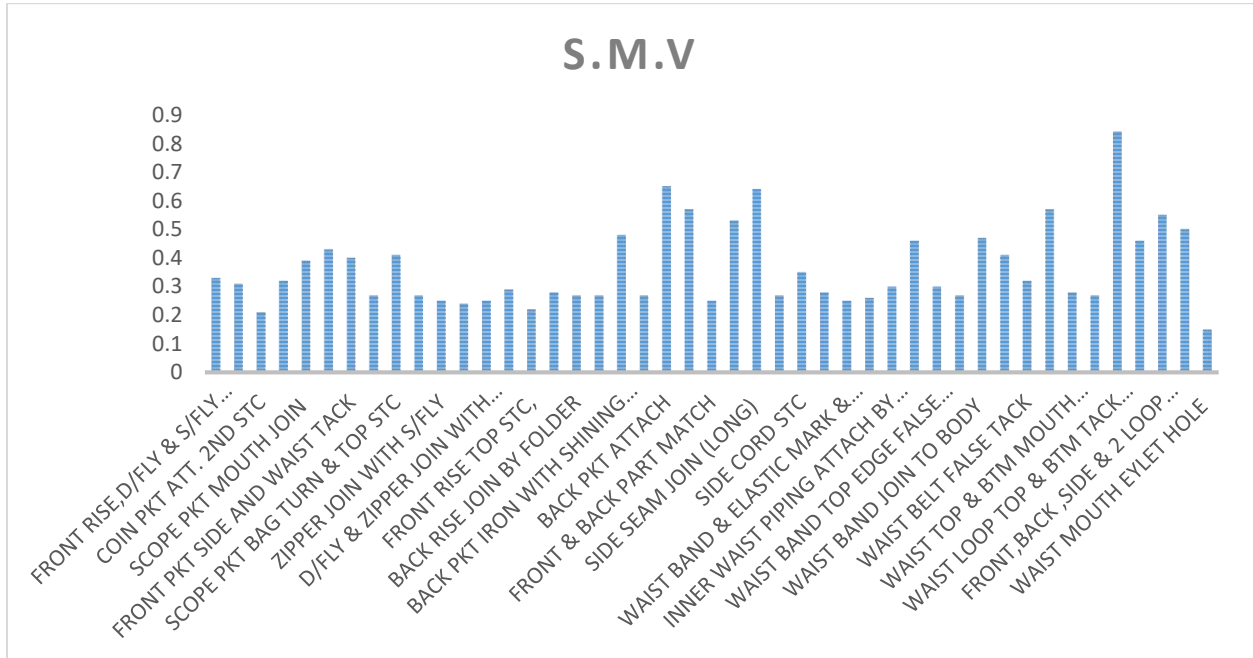


**Chart 4.4.1: Analysis of Capacity Study for Different Operation of 5 PKT LONG BIG & TALL from Shirt**

#### Description:

In this chart we showed hourly production capacity of various process of 5 PKT LONG BIG & TALL from Shirt. Here 70% efficiency determined but the calculating various process by the result of we make chart. First of all we determined by the calculating production volume in chapter-03 and finally this result and make beneficial chart. This chart presence information about various types of operation below the chart and also presence the various volume of various process on the left side of this chart. The highest volume of the operation is WAIST MOUTH EYLET HOLE (388) and the lowest volume of the operation is WAIST LOOP & BTM MOUTH (25). And other process are average volume.

## 4.4.2 Analysis of SMV of Different Operation from Data 3.4

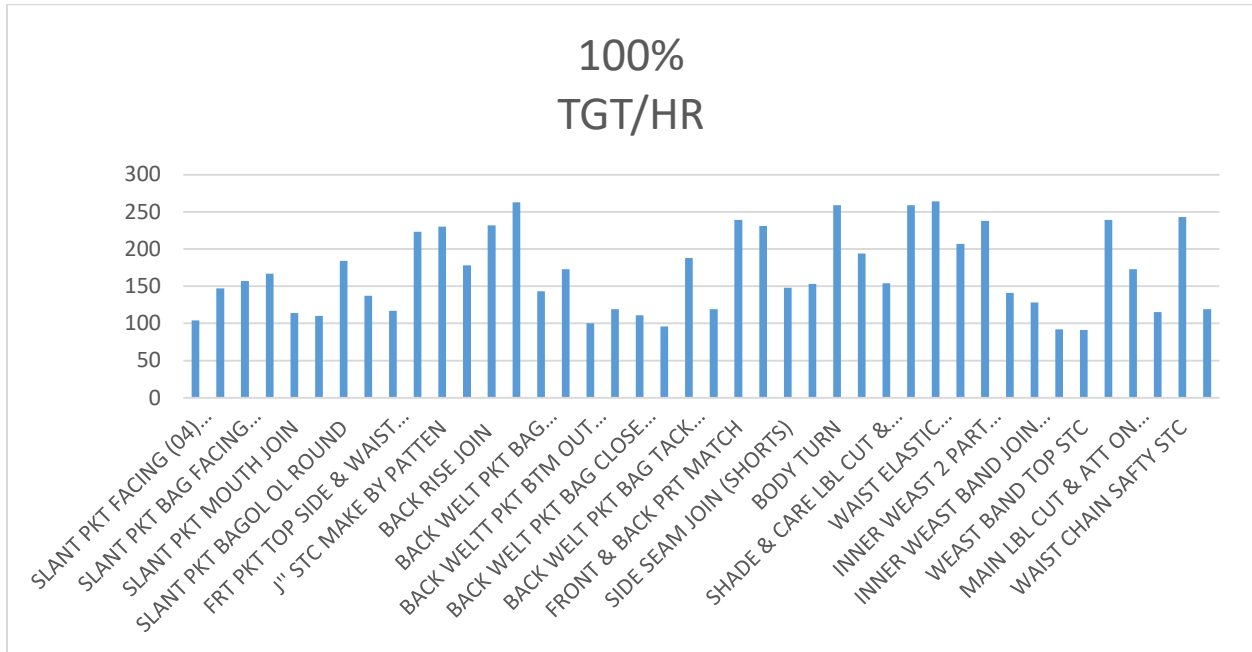


**Chart 4.4.2: Analysis of SMV for Different Operation of 5 PKT LONG BIG & TALL from Data**

### Description:

In this chart we showed SMV of various process of 5 PKT LONG BIG & TALL. Firstly we calculated SMV of various process. By that outcome of we make this chart. This chart presence information about different types of process below the chart and also showing the various SMV of various process on the left side of this chart. Where higher SMV in this chart is WEST TOP & BTM MOUTH at Assemble is 0.84 and the lowest SMV in this chart is WAIST MOUTH EYLET HOLE are 0.15.

### 4.5.1 Analysis of Capacity Study of Different Operation from Data 3.5

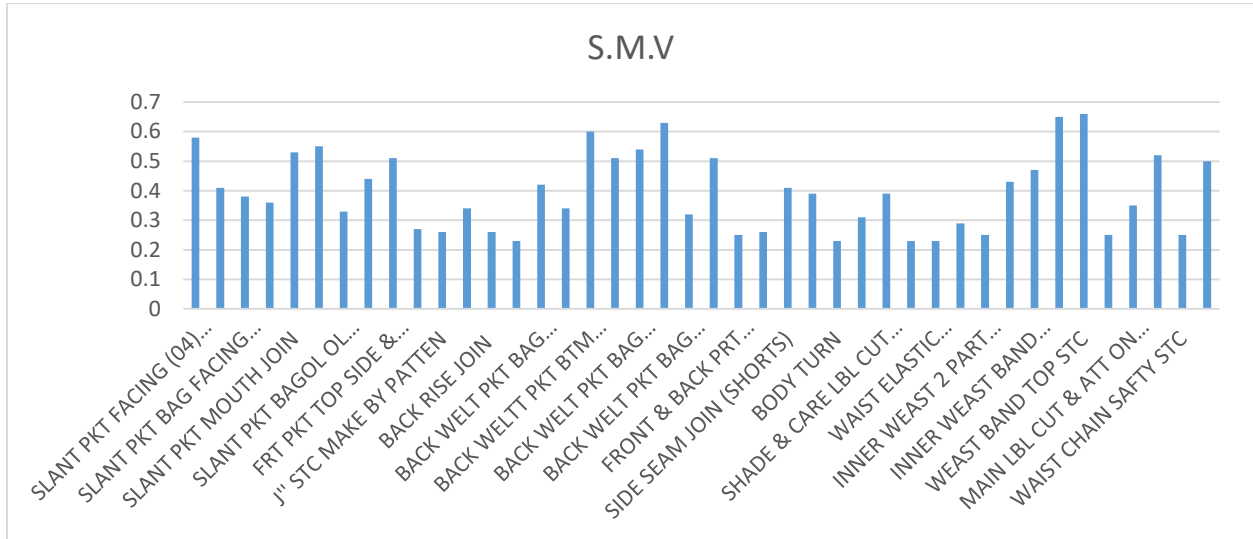


**Chart 4.5.1: Analysis of Capacity Study for Different Operation of ELASTIC WEAST CHINO PANT**

**Description:**

In this chart we showed hourly production capacity of various process of 5 ELASTIC WEAST CHINO PANT from Shirt. Here 70% efficiency determined but the calculating various process by the result of we make chart. First of all we determined by the calculating production volume in chapter-03 and finally this result and make beneficial chart. This chart presence information about various types of operation below the chart and also presence the various volume of various process on the left side of this chart. The highest volume of the operation is WAIST ELASTIC ROUND/CLOSE TACK (264) and the lowest volume of the operation is WEAST BAND TOP STC (91). And other process are average volume.

## 4.5.2 Analysis of SMV of Different Operation from Data 3.5



**Chart 4.5.2: Analysis of SMV for Different Operation of ELASTIC WEAST CHINO PANT from Data**

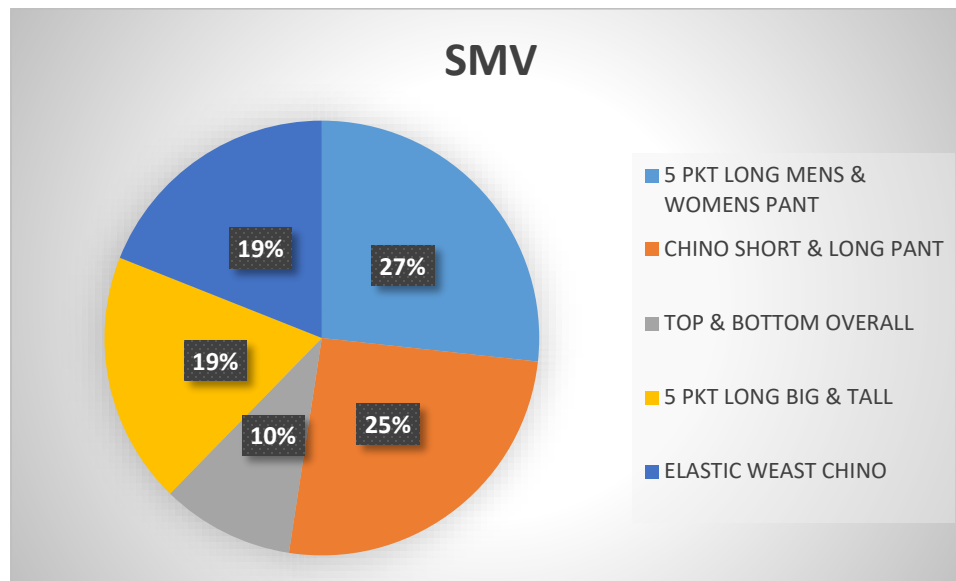
### Description:

In this chart we showed SMV of various process of ELASTIC WEAST CHINO PANT. Firstly we calculated SMV of various process. By that outcome of we make this chart. This chart presence information about different types of process below the chart and also showing the various SMV of various process on the left side of this chart. Where higher SMV in this chart is WEAST BAND TOP STC 0.66 at Assemble is 0.84 and the lowest SMV in this chart is BODY TURN and WAIST BAND METAL GUMET MARK ATTACH are 0.23.



## 4.6 Analysis of Total SMV of Different item from Data 3.1, 3.2, 3.3, 3.4, 3.5

ITEM	TOTAL SMV
5 PKT LONG MENS & WOMENS PANT	23.39
CHINO SHORT & LONG PANT	22.48
TOP & BOTTOM OVERALL	8.64
5 PKT LONG BIG & TALL	16.38
ELASTIC WEAST CHINO	16.61



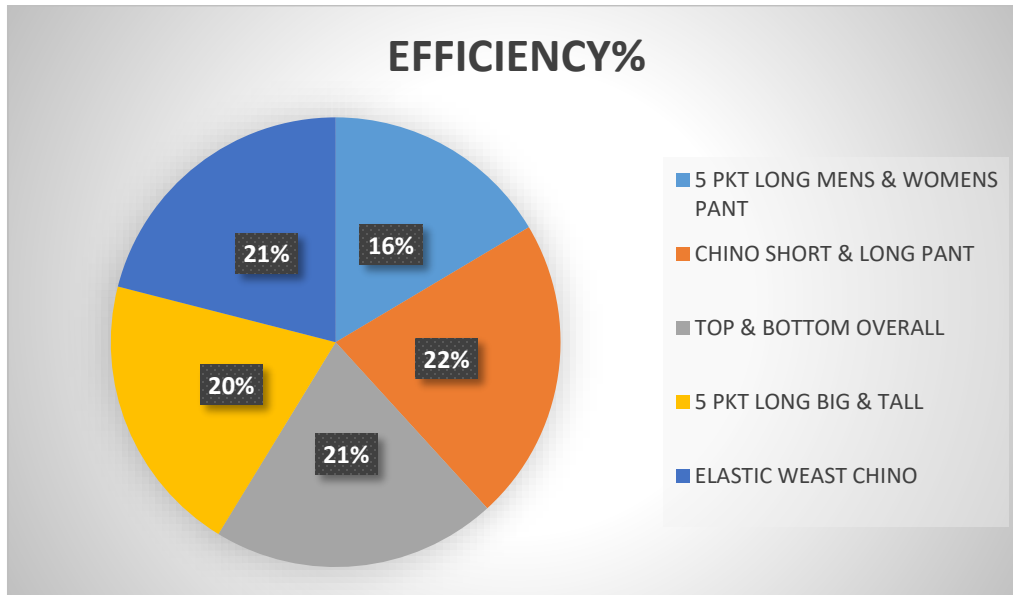
**Chart 4.6.1: Analysis of Total SMV of Different Item 5 PKT LONG MENS & WOMENS PANT, CHINO SHORT & LONG PANT, TOP & BOTTOM OVERALL, 5 PKT LONG BIG & TALL, ELASTIC WEAST CHINO.**

### Description:

In this pie chart we showed the different item's total SMV which we determined by calculating Chapter-03. Here we analysis 5 PKT LONG MENS & WOMENS PANT, CHINO SHORT & LONG PANT, TOP & BOTTOM OVERALL, 5 PKT LONG BIG & TALL, ELASTIC WEAST CHINO PANT. This pie chart show total SMV. 5 PKT LONG MENS & WOMENS PANT is 23.39 in this pie chart this is 27%, CHINO SHORT & LONG PANT is 22.48 in this pie chart this is 25%, TOP & BOTTOM OVERALL is 8.64 in this pie chart this is 10%, 5 PKT LONG BIG & TALL is 16.38 in this pie chart this is 19%, ELASTIC WEAST CHINO IS 16.61 in this pie chart 19%. Here we can see higher SMV in the pie chart is 5 PKT LONG MENS & WOMENS PANT is 23.39 and lowest SMV in the pie chart is TOP & BOTTOM OVERALL is 8.64.

### 4.7 Analysis Efficiency% of Different item from Data 3.1, 3.2, 3.3, 3.4, 3.5

ITEM	EFFICIENCY %
5 PKT LONG MENS & WOMENS PANT	65%
CHINO SHORT & LONG PANT	86%
TOP & BOTTOM OVERALL	81%
5 PKT LONG BIG & TALL	80%
ELASTIC WEAST CHINO	83%



**Chart 4.5.1: Analysis of Total Efficiency of Different Item 5 PKT LONG MENS & WOMENS PANT, CHINO SHORT & LONG PANT, TOP & BOTTOM OVERALL, 5 PKT LONG BIG & TALL, ELASTIC WEAST CHINO PANT.**

#### Description:

In this pie chart we showed the various garments efficiency% which determined by calculating Chapter-03. We evaluation, 5 PKT LONG MENS & WOMENS PANT, CHINO SHORT & LONG PANT, TOP & BOTTOM OVERALL, 5 PKT LONG BIG & TALL. This pie chart show efficiency%. Efficiency% 5 PKT LONG MENS & WOMENS PANT is 65% in this pie chart this is 16%, CHINO SHORT & LONG PANT is 86% in this pie chart this is 22%, TOP & BOTTOM OVERALL is 81% in this pie chart this is 21%, 5 PKT LONG MENS & WOMENS PANT is 80% in this pie chart this is 20%, ELASTIC WEAST CHINO PANT is 83% in this pie chart is 21% We can watch higher efficiency% in the pie chart is CHINO SHORT & LONG PANT is 22% and lowest Efficiency% in the pie chart is 5 PKT LONG MENS & WOMENS PANT is 16%.

## **CHAPTER – 5: CONCLUSION**

## **Conclusion:**

We had finished our project by accumulate operation bulletin its related process facts from Ha-Meem Group (ADL). This research helps us understand the supply chain, the formulation and their corrected technique of SMV time study. This study also enables us to gain information on the industrial engineering of the clothing industry. This project provides me the chance to broaden my expertise in textile management, manufacturing, planning and sourcing, Manufacturing process and machinery and teaching me to live in the industry. We can also know this section's job approach. Hopefully it will assist us in our career.

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