GARMENT PRODUCTION

Level-III

Based on November, 2023 Curriculum Version II



Module Title: Sew Woven and Stretch Knit Fabrics

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Ministry of Labor and Skills wish to extend thanks and appreciation to the many representatives of TVET instructors and respective industry experts who donated their time and expertise to the development of this Teaching, Training and Learning Materials (TTLM).

ACRONYM

PP .....Permanent Press Finish

WIP .....Work-In-Process

TTLM.....Teaching, Training and Learning Materials

OHS.....Occupational Health and Safety

UPS…….. Unit Production System

INTRODUCTION TO THE MODULE

Interacting woven and stretch knit fabrics involve combining two different types of textiles to create a hybrid fabric with unique properties. Woven fabrics are made by interlacing warp and weft threads at right angles, resulting in a structured and stable fabric. On the other hand, stretch knit fabrics are created by interlocking loops of yarn, offering flexibility and stretch ability.

This module is designed to meet the industry requirement under the Garment Production occupational standard, particularly for the unit of competency: Sew Woven and Stretch Knit Fabrics this module covers the units**:**

- OHS Workstation
- Garment Construction
- Work Pieces
- Machine Setting and Performances
- Sewing Garment
- Complete Work

Complete work Learning Objective of the Module

- Prepare Workstation
- Plan Construction
- Prepare Work Pieces
- Adjust Machine Settings
- Identify Machine Performances
- Sew Garment item
- Complete Work

Module Instruction /for the module/

For effective use this modules trainees are expected to follow the following module instruction:

1. Read the information written in each unit
2. Accomplish the Self-checks at the end of each unit
3. Perform Operation Sheets which were provided at the end of units
4. Do the “LAP test” giver at the end of each unit and
5. Read the identified reference book for Examples and exercise

Unit One: OHS Workstation

This unit is developed to provide you the necessary information regarding the following content coverage and topics:

- OHS practice
- Patternmaking tools and equipment

This unit will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Prepare OHS practice
- Identify Patternmaking tools and equipment

1.1. OHS Workstation

Work instruction is a description of the specific tasks and activities within an organization. A work instruction in a business will generally outline all of the different jobs needed for the operation of the firm in great detail and is a key element to running a business smoothly.

In other words it is a document containing detailed instructions that specify exactly what steps to follow to carry out an activity. It contains much more detail than a Procedure and is only created if very detailed instructions are needed. For example, describing precisely how a Request for Change record is created in the Change Management software support tool.

Occupational health and safety (OHS)

Occupation:

"Occupation" is the kind of job a person performed at his or her place of work. These jobs are described in many ways. Some are patternmaking, sewing, finishing, etc.

Occupational health and safety (OHS) primarily seeks to maintain the working ability of the labor force as well as to identify, assess and prevent hazards within the working environment. Ergonomics, on the other hand, combines all of these issues to improve workers' efficiency and wellbeing and maintain industrial production through the design of an improved workplace. OHS and ergonomic applications therefore work together to satisfy the needs of changing local people's attitudes, local work methods and/or traditional ways of doing things.

These issues are important for many developing countries, because the effects of poor health and lack of safety facilities, and non-ergonomics conditions exist in various workplaces are a hindrance to the national economy and social progress. Since implementing the full concept of OHS and ergonomics application is a priority, understanding the meaning of the terms related to OHS and ergonomics applications is a major source of workplace improvement.

Safety procedures

Protective equipment, including personal protective equipment (PPE) for ears, eyes, face, head and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, inspected and maintained in a sanitary and reliable condition wherever it is necessary by reason of protecting in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

First aid procedures

The trainee Safety Representative is required to maintain current First Aid. Appropriate personal protective equipment shall be available on each department. Each section is required to have first aid equipment and supplies immediately available to their trainee. And adequate for the type and amount of work they will be performing and sufficient for the manpower anticipated for the training.

In the event that professional medical attention is required, injured trainee are to be directed to the designated Panel of Physicians.

Personal safety

Keep your hands fingers and feet always clean and dry.

Keep your nails always short and well-trimmed.

Avoid excessive oil on your hair.

Keep your uniform always clean.

Keep your personal hygiene and make sure that your work environment is always clear and tidy

Material safety

- Use Keep the materials in well manner.
- The material as enough as required.
- Put the scrap of waste in to dust bin.
- Cover the materials

Equipment/ machine safety

Every morning before you start work always wipe and clean your sewing machine so as to remove any oil trace in or around the sewing area.

When work is over do not forgot to place a scrap of fabric under the presser foot and cover the machine. Each trainee is responsible for taking care of his/ her machines all work aids and attachments

Ergonomics arrangement of work place

Ergonomics: The study of improving a garment design by enhancing the wearers' comfort, performance, or health. An ergonomically-designed job would ensure that a taller worker had enough space to safely perform his or her job, and also that a shorter worker could reach all of his or her tools and products without reaching beyond a comfortable and safe range.

The opposite of this, and what typically happens in the workplace, is that a worker is forced to work within the confines of the job or workstation that is already in place. This may require employees to work in awkward postures, perform the same motion over and over again or lift heavy loads – all of which could cause work-related musculoskeletal disorders.

When the job and work station are designed to fit each person, the trainee can expect the following:

- fewer aches and pains
- fewer illnesses and injuries
- more comfortable working conditions
- better morale
- higher productivity
- Less fatigue

Correct posture

The person sitting in the chair is more likely to use good posture when the chair has a well-designed, padded back rest, and the seat tilts forward slightly.

A cushioned seat distributes a person's weight so that no body part gets all the pressure. Chairs with a gently sloped or "waterfall" front edge also help prevent the chair's edge from pressing into the thighs. Having a chair with this kind of design is especially important for a trainee who uses a treadle or pedals because this trainee legs may have to be stretched out.

Full arm length shows how far a person can be expected to reach. If the person with the shortest arms can reach everything easily, other people can too.

1.2 Patternmaking Tools and Equipment

Pattern making is a crucial step in garment production, and it requires specific tools and equipment to create accurate and well-fitting patterns. Here are some essential pattern making tools and equipment.

1. **Straight pins:** Dressmaker silk for draping and fittings.




Fig: 1.3 Straight pin holders

2. **Scissors:**

- Paper scissors.
- Fabric scissors




3. **Pencils and pens:**
    - Mechanical pencil and sharpener.
    - Red and blue coloured pencils to identify pattern changes. Black, green, red, and blue felt-tip pens for pattern information.
    - A black lead pencil is required for draw the lines.





Fig: 1.5 Pencils and pens:

4. **18-lnch Clear Plastic Ruler:** A 2-inch wide ruler divided into 1/8-inch grids. It is clear and perfect for truing and adding seam allowances



Fig: 1.6 18-lnch Clear Plastic Ruler

5. **French curve Ruler**: An irregular curve with an edge describing a spiral curve used to shape and curve edges of curved collars, necklines, crotch seams, and armholes.



Fig: 1.7 French curves Ruler

6. **Hip Curve Ruler**: A 24-inch ruler with a long, slightly shaped curve that finishes with a strong circular shape.



Fig: 1.8 Hip Curve ruler

7. **L-Square:** A metal or plastic ruler with two arms of different lengths meeting at right angles. These rulers are marked in both inches and centimeters, along with fractional measurements.

8. **Notcher:** A punching tool used to mark the edge of a sloper or paper pattern.



Fig: 1.10 Notcher

9. **Push pins***:* For pattern manipulation.



Fig:1.11 Push pins

10. **Tracing Wheel:** A sharp, spike edged, circular wheel with a handle that is used to transfer markings and shape to the pattern paper.

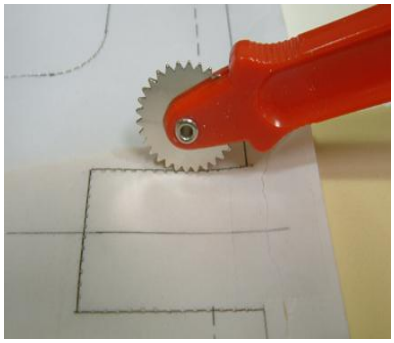




Fig:1.12 Tracing Wheel:

11. Metal weights (several)*:* Hold patterns in place for tracing and marking.

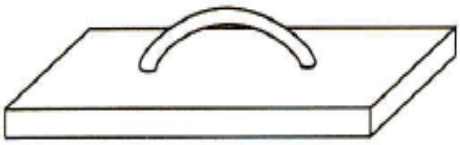


Fig:1.13 Metal weights

12. Tailor's Chalk: A small piece of chalk, approximately 1 1/2-inch square, with two tapered edges. It is used to mark lines temporarily on garment hems and other alteration points.



Fig:1.14Tailor's Chalk

13. Tape Measure: A flexible, narrow, firmly woven, 60- inch reversible tape marked with measurements indicating both inches and metric terms used to take dress form, muslin, and body measurements.



Fig:1.15 Tape Measures

15. Awl: Pierces 1/8-inch hole in the pattern to indicate the ending of darts, pocket, trim, and buttonhole placements.

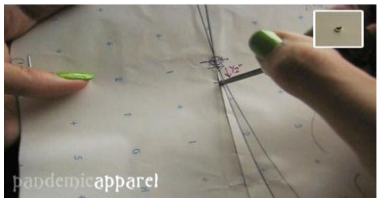




Fig:1.16 Awls

16. Stapler and remover: Prevents pattern slippage when cutting several plies of paper together.





Fig:1.17 Stapler and remover

17. Magic mend scotch tape: To mend pattern work.



Fig: 1.18 *Magic mend scotch tape*

18. Black twill tape: **For placement of style lines on form or garment.**



Fig: 1.19 *Black twill tapes*

19. Pattern paper: Has code numbers to indicate its weight from heavy to light

- **Heavy-weight pattern paper** is called *tag board, manila, or hard paper and used primarily for* "production patterns. “



Fig: 1.20 Pattern paper

20. **Light-weight paper is called *marking paper.*** Marking paper is used for making markers and to develop “first patterns.”





Fig: 1.21 Light-weight papers is called *marking paper*

- **Color-coded paper (color on one side only) has two functions:** to indicate "right-side-up” of the pattern pieces and/or to indicate the design division to which the patterns belong.

21. Muslin- Designers use muslin most frequently in sewing and pattern making to test new pattern. It is a loose plain weave cotton material that used in everything from photography back drops to cooking to surgical procedures.



Fig: 1.22 Muslin

23. Hanger hooks or ringers: To hold patterns together for hanging on rods.

Fig: 1.23 Hanger hooks or ringers

24. Pattern maker table: used to hold pattern when pattern makings done or on process.



Fig:-1.24 Pattern maker table

25. Pattern wall-mounted support

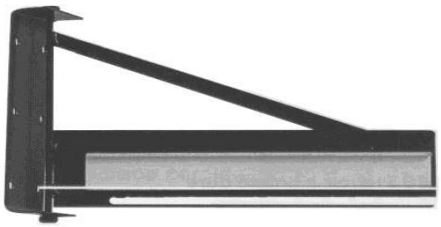


Fig: 1.25 Pattern wall-mounted supports

26. Hobby cutting knife for paper and Kraft



Fig: 1.26 *Hobby cutting knife for paper and Kraft*

27. Round weight for maintaining canvas or pattern



Fig: 1.27 Round weight for maintaining canvas or pattern

Self-Check -1

I. Choose the best answer for the questions bellow

1. ---------- Has code numbers to indicate its weight from heavy to light
   A. Pattern paper
   B. Awl
   C. Straight pins
   D. Straight pin holder
2. ---------- is Pierces 1/8-inch hole in the pattern to indicate the ending of darts, pocket, trim, and buttonhole placements.
   A. Pattern paper
   B. Awl
   C. Straight pins
   D. Straight pin holder
3. ---------- is Pincushion, or magnetic holder for wrist, or table.
   A. Pattern paper:
   B. Awl
   C. Straight pins:
   D. Straight pin holder:
4. ---------- is Dressmaker silk for draping and fittings.
   A. Pattern paper
   B. Awl
   C. Straight pins
   D. Straight pin holder:
5. ---------- is a description of the specific tasks and activities within an organization.
   A. Work instruction
   B. Patternmaking
   C. Cutting tools
   D. OHS practices

II. Give short answer for the questions bellow

1. List down Measuring tape and its characteristics

_____, _____, _____

III. Say True or False

1. Stapler and remover is Prevents pattern slippage when cutting several plies of paper together.

2. Good housekeeping involves every phase of industrial operations and should apply throughout the entire premises, indoors and out.

3. Tracing Wheel is a sharp, spike edged, circular wheel with a handle that is used to transfer markings and shape to the pattern paper.

4. Pattern paper pierces 1/8-inch hole in the pattern to indicate the ending of darts, pocket, trim, and buttonhole placements.

5. Awl has code numbers to indicate its weight from heavy to light.

Unit Two: Garment Construction

This unit to provide you the necessary information regarding the following content coverage and topics:

- Garment requirements
- Garment constriction plan

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Identify Garment requirements
- Determine machine requirement
- Develop Garment constriction plan

2.1 Garment Requirements

Garment requirements refer to the specifications and criteria that define the desired characteristics of a garment. These requirements are typically established by the designer or client and serve as the basis for the garment production process.

Tech packs, design brief

Tech packs and design briefs are two important documents used in the garment industry to communicate and provide detailed instructions for the production of garments. Here is a brief explanation of each:

1. **Tech Pack:**

A tech pack, short for technical package, is a comprehensive document that contains all the technical information and specifications required to produce a garment. It serves as a communication tool between the designer, pattern maker, and manufacturer.

A tech pack typically includes the following information.

2. **Design Sketch:** A detailed sketch or illustration of the garment, showing the front, back, and side views. It may also include close-up views of specific design elements.
3. **Measurement Chart:** A table or chart specifying the measurements for each size of the garment. This includes body measurements, garment dimensions, and any specific fit requirements.
4. **Bill of Materials (BOM):** A list of all the materials and components required for the garment, including the type of fabric, trims (buttons, zippers, etc.), labels, and any other necessary materials.
5. **Construction Details**: Detailed instructions on how the garment should be constructed. This includes information on seams, stitches, closures, hems, and any specific construction techniques or details.
6. **Grading**: If the garment is intended to be produced in multiple sizes, the tech pack may include instructions for grading, which involves scaling the pattern to different sizes.
7. **Labeling and Packaging**: Information on the labels, tags, and packaging requirements to be included with the garment.
8. **Quality Standards**: Specifications and standards for the quality of the garment, including stitch quality, fabric specifications, and any relevant testing requirements.

9. **Production Notes**: Additional instructions or notes that are important for the production process, such as specific sewing techniques, pressing instructions, or any other special considerations.

Design Brief:

10. A design brief is a document that provides a clear overview of the design concept and requirements for a garment. It serves as a creative and strategic guide for designers and communicates the vision and goals for the garment. A design brief typically includes the following:
11. **Design Concept**: A description of the overall design concept, including the inspiration, theme, or story behind the garment.
12. **Style and Silhouette**: Information on the desired style, silhouette, and overall aesthetic of the garment.
13. **Color and Print Direction**: Specifications for the color palette, print patterns, or any specific color or print requirements.
14. **Fabric and Material Guidelines**: Guidelines for fabric selection, including the desired fabric type, weight, texture, and any specific fabric treatments or finishes.
15. **Design Elements**: Details about specific design elements, such as neckline, sleeve type, embellishments, or any unique design features.
16. **Target Market and Customer Profile**: Information on the target market, customer demographics, and any specific requirements or preferences for the intended audience.
17. **Branding and Labeling**: Instructions for incorporating branding elements, logos, labels, or any other branding details.
18. **Timeline and Deadlines**: The timeline and deadlines for the design development process, including sketches, revisions, and final design approval.
19. **Budget and Cost Considerations**: Any budget constraints or cost considerations that need to be taken into account during the design and production process.
20. A well-prepared tech pack and design brief are essential tools to ensure clear communication, accuracy, and consistency in the production of garments. They help streamline the production process, minimize errors, and ensure that the final product aligns with the designer's vision and requirements.

2.2 Identifying Stretchable Fabric

Stretchable fabrics, also known as stretch fabrics or elastin fabrics, are materials that possess the ability to stretch and return to their original shape. They are commonly used in various applications, including sportswear, active wear, swimwear, undergarments, and medical textiles. To identify stretchable fabric,

Use the following methods:

A. **Fabric Content Label:** Check the fabric content label attached to the garment or fabric. Stretchable fabrics often contain a considerable amount of synthetic fibers such as elastin (also known as spandex or Lycra), nylon, or polyester. These synthetic fibers provide the necessary elasticity and stretch.

B. **Stretch Test**: Gently stretch the fabric in both directions (horizontally and vertically). Stretchable fabrics will have a noticeable stretch and will return to their original shape when released. They offer resistance to stretching and exhibit a good recovery.

C. **Visual Inspection**: Observe the fabric's appearance and texture. Stretchable fabrics generally have a smooth and sleek surface and may appear slightly shiny. They often have a tight-knit or woven construction to provide elasticity.

D. **Hand Feel**: Feel the fabric with your hands. Stretchable fabrics typically have a soft and smooth texture. They may feel slightly springy or have a rubbery texture due to the presence of elastic fibers.

E. **Fabric Construction**: Some stretchable fabrics have a distinctive construction. For example, rib knit fabrics, jersey knits, or fabrics with a high percentage of elastin are often stretchable.

F. **Brand Information**: If you are unsure about a particular fabric, you can research the brand or manufacturer. Many well-known sportswear or active wear brands specialize in using stretchable fabrics in their products.

Remember that while these methods can help identify stretchable fabrics, it is always best to consult the fabric content label or seek additional information from the manufacturer or retailer to ensure accuracy.

2.3 Operation Breakdown

A garment operation breakdown, also known as a production operation breakdown or simply an operation breakdown, is a detailed list of all the tasks or operations required to manufacture a specific garment. It provides a step-by-step breakdown of the manufacturing process, including the order of operations, the number of operators required for each task, and the estimated time for completion.

Example of a garment operation breakdown for a basic t-shirt:

- **Spreading and Cutting:**

Spreading fabric

Fabric cutting

- **Sewing Operations:**

Join shoulder seams

Attach neckband

Sew side seams

Attach sleeves

Hem sleeves

Hem bottom

Finishing Operations:

Attach labels

Sew buttons or snaps (if applicable)

Quality inspection

Folding and packaging

Each operation in the breakdown is typically assigned a unique identifier or operation code for easy reference. The breakdown may also include additional details such as machine types or equipment required, stitch types, specific measurements or markings, and any special instructions or considerations.

The purpose of an operation breakdown is to provide a comprehensive overview of the garment manufacturing process. It helps production managers, supervisors, and operators understand the sequence of operations, allocate resources effectively, estimate production time, and ensure consistent quality throughout the manufacturing process.

2.4 Determining machine requirement

Determining the machine requirements for garment manufacturing depends on various factors, including the type of garment being produced, the specific operations involved, the production volume, and the available budget.

Some steps to help determine the machine requirements:

A. **Identify the Operations**: Make a list of all the operations or tasks involved in the garment manufacturing process. This could include tasks such as cutting, sewing, hemming, buttonholing, attaching labels, etc.

B. **Determine Machine** Types: For each operation, determine the type of machine required. There are different types of sewing machines available, such as straight stitch machines, over lock machines, cover stitch machines, buttonhole machines, etc. Consider the specific functionalities needed for each operation.

C. **Evaluate Production Volume**: Assess the expected production volume. If it's a small-scale production or sample making, you may opt for versatile machines that can handle multiple operations. For larger production volumes, specialized machines dedicated to specific operations may be more efficient.

D. **Consider Automation and Specialization**: Determine if automation or specialized machines would improve productivity and efficiency. Automated machines, such as computerized sewing machines or automatic fabric cutters, can significantly speed up production and reduce labor requirements. Specialized machines designed for specific operations can enhance quality and productivity.

E. **Budget Considerations**: Take into account your budget constraints. Some machines can be expensive, especially high-end automated or specialized machines. Consider the cost-effectiveness of the machines and weigh it against the expected benefits and long-term production needs.

F. **Consult Experts or Suppliers**: Seek advice from industry experts or machine suppliers. They can provide valuable insights based on their knowledge and experience. They can recommend suitable machines based on your specific requirements and budget.

2.5 Stitch, Seams and Sewing Needles

A. Stitch Types:

Stitches are the basic units of sewing that join fabric pieces together. Different stitch types are used for various purposes in garment construction. Here are some common stitch types:

I. **Straight Stitch:** The straight stitch is the most basic stitch, created by a single thread passing through the fabric. It is commonly used for seaming, topstitching, and edge stitching.

II. **Zigzag Stitch**: The zigzag stitch creates a zigzag pattern and is used for finishing raw edges, preventing fraying, and adding stretch to seams.

III. **Over lock Stitch**: The over lock stitch, also known as a serged stitch, is created by multiple threads and creates a strong and finished edge. It is commonly used for seam finishing and securing raw edges.

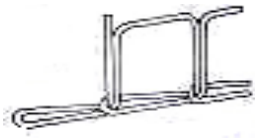
IV. **Chain stitch:** The chain stitch is created by a single thread looping back on it self. It is commonly used for decorative stitching, hemming, and embroidery

V. **Double Needle Stitch**: The double needle stitch is created using two parallel needles and creates parallel rows of stitching on the fabric. It is used for decorative purposes, hemming, and creating professional-looking finishes.

Stitch Formation

One unit of conformation results from one or more strands or loops of thread intra-looping, inter-looping or passing into or through material.

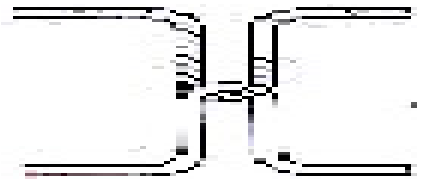
a) **Intra-looping**- is the passing of a loop of thread through another loop formed by the same thread. Figure here shows intra-looping concept.



b) **Inter-looping** - is the passing of a loop of thread through another loop formed by a different thread. Figure here shows inter-looping concept.



c) **Interlacing**- a term used in relation to certain stitches, is the passing of a thread over or around thread or loop of another thread. Figure here shows inter-lacing concept.



Properties of stitches that relate to aesthetics and performance are size, tension and consistency. Stitch size has three dimensions i.e.

Length, width and depth.

I. Stitch Length

It is specified as the number of stitches per inch (SPI) and it is an indicator of quality. High SPI means short-stitches and low SPI means long-stitches. Generally the greater SPI holds greater holding power and seam strength.

II. Stitch Width

Stitch width refers to the horizontal span covered in the formation of one stitch or single line of stitching.

III. Stitch Depth

Stitch depth means the distance between upper and lower surface of the stitch. Stitch depth should be sufficient to catch all fabric plies, yet not deep enough to show through on the face of fabric.

B. Seam Types:

Seams are the lines along which two or more fabric pieces are joined. Different seam types are used based on the desired strength, appearance, and functionality of the garment. Here are some common seam types:

I. **Plain Seam**: The plain seam is the most basic seam where fabric pieces are stitched together with a straight stitch. It is commonly used for joining fabric panels.

II. **French seam**: The French seam is a type of enclosed seam that hides the raw edges within the seam. It is commonly used for lightweight and sheer fabrics.

III. **Flat-Felled Seam:** The flat-felled seam is a strong and durable seam used in jeans and work wear. It involves two fabric pieces with one folded over the other and stitched down

IV. **Bound Seam**: The bound seam is created by enclosing the raw edges of the fabric within bias binding. It provides a neat finish and is commonly used for lightweight fabrics

C. Sewing Needles:

Sewing needles are essential tools used in sewing machines or hand sewing to penetrate the fabric and create stitches. Here are some common sewing needles

1. **Universal Needle**: The universal needle is the most versatile needle and can be used for a wide range of fabrics.
2. **Ballpoint Needle:** The ballpoint needle has a rounded tip and is used for knit fabrics to prevent the needle from damaging the fabric.

3. **Sharp Needle**: The sharp needle has a sharp point and is used for woven fabrics, as it easily penetrates the fabric.
4. **Jeans Needle**: The jeans needle has a strong, sharp point and is designed for sewing through thick and heavy fabrics like denim.
5. **Stretch Needle**: The stretch needle has a specialized design with a slightly rounded point, making it suitable for stretch fabrics.

Choosing the appropriate needle for your specific fabric type and sewing machine is crucial for achieving good stitch quality and preventing damage to the fabric.

Remember to refer to the sewing machine manual and consult with sewing experts or suppliers for specific recommendations on stitch types, seam types, and sewing needles based on the fabrics and garments

Self-Check -2

Multiple Choices and Short Answers

Part one choose the best answer for the questions bellow

1. Which of the following is Identifying Garment requirements

   A. Work pieces, accessories and trims
   C. Tech packs,
   B. Pattern
   D. All

2. ---------- refers to the section where the ready sewn, trimmed and quality

   A. Pressing/finishing
   C. design brief
   B. Work pieces
   D. None

3. _____ is one unit of conformation results from one or more strands or loops of thread intra-looping, inter-looping or passing into or through material.

   A. Stitches
   C. Sewing
   B. Cutting
   D. A and B

Part II. Matching

A.	**B.**
1. Softening Finish	A. a smooth finish applied to finely woven Micro Fiber fabric
2. Brush and Sanding Finish	B. stabilize the fiber to make it shrinkage and crease
3. Mercerizing and Singeing Finish	C. related and done at the same time.
4. Resin Finish	D. brushing or sanding to give them smooth
5. Skewing Finish	E. an operation done by machine to make the weft threads
6. Peach Skin Finish	F. generally done together with desizing and pre-shrinking.

Unit Three: Preparing Work Pieces

This unit to provide you the necessary information regarding the following content coverage and topics:

- Assemble requirement
- Receive work bundle
- Check work pieces

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Sort work piece assembling requirement.
- Receive work bundle with information.
- Check work pieces according to assembling plan.

3.1 Assembling requirement

The assembling requirements for garment manufacturing refer to the materials, tools, and equipment needed to put together the various components of a garment. Here are some common assembling requirements:

A. **Fabric Panels**: The fabric panels or cut pieces of the garment are the primary components that need to be assembled. These panels are usually pre-cut according to the garment pattern.

B. **Sewing Machines**: Sewing machines are essential for joining the fabric panels together. Different types of sewing machines such as straight stitch machines, over lock machines, cover stitch machines, and buttonhole machines, may be required based on the garment's construction and desired stitching techniques.

C. **Thread**: High-quality sewing threads are needed to stitch the fabric panels together. The thread choice depends on the fabric type, garment style, and desired seam strength and appearance.

D. **Needles**: Sewing machine needles, as mentioned earlier, are required to stitch the fabric. Select appropriate needles based on the fabric type and sewing machine being used.

E. **Trims and Notions**: Trims and notions, such as buttons, zippers, snaps, hook-and-loop fasteners, and elastic, are needed for functional and decorative purposes. These components are attached to the garment during the assembly process.

F. **Interfacing**: Interfacing is a material used to provide structure and stability to specific areas of the garment, such as collars, cuffs, and plackets. It is fused or sewn onto the fabric panels during assembly.

G. **Marking Tools**: Marking tools, like chalk or fabric markers, are used to transfer pattern markings onto the fabric panels. These markings guide the sewing process, ensuring accurate assembly.

H. **Cutting Tools**: Cutting tools, such as fabric shears, rotary cutters, and cutting mats, are required to cut the fabric panels according to the pattern.

I. **Pressing Equipment**: Pressing equipment, including irons and steamers, are used to press and flatten fabric seams, creases, and finished garments. This step helps achieve a professional and finished appearance.

J. **Workstations and Layout Tables:** Adequate workstations and layout tables are necessary for assembling the garments. These provide space for the operators to work comfortably and organize the components during the assembly process.

K. **Quality Control Tools:** Quality control tools, such as measuring tapes, rulers, and magnifying glasses, are used to inspect the finished garments for accuracy, fit, and overall quality.

It's important to consider the specific requirements of the garment style and construction when determining the assembling requirements. The choice of materials, tools, and equipment should align with the desired quality standards, production volume, and available resources.

4.1 3.2 Receiving work bundle with information.

When receiving a work bundle in garment manufacturing, it typically contains the necessary information and materials needed to complete a specific sewing task or set of tasks. The work bundle serves as a package that includes the following:

I. **Job Order/Work Order**: This document provides essential information about the specific garment style, including the quantity to be produced, delivery deadlines, and any special instructions or requirements from the client or production manager.

II. **Bill of Materials (BOM):** The BOM lists all the materials required for the specific sewing task. It includes details such as fabric type, color, size, and quantity, as well as information about trims, buttons, zippers, or other notions needed for the task.

III. **Cutting Tickets:** Cutting tickets specify the dimensions and quantities of fabric panels that have been cut for the specific sewing task. They provide a reference for the operators to ensure they have the correct fabric pieces to assemble.

IV. **Sewing Instructions**: The sewing instructions outline the step-by-step process for assembling the garment. They may include details about stitch types, seam allowances, specific techniques, and any special considerations for the task.

V. **Pattern or Template**: The work bundle may include the garment pattern or template, which serves as a guide for cutting fabric panels and ensures consistency in size and shape during assembly.

VI. **Sample or Approved Prototype**: In some cases, a sample or approved prototype of the garment may be included in the work bundle. This serves as a reference for the operators to understand the desired fit, construction, and overall appearance of the finished garment.

VII. **Notions and Trims:** The work bundle may include the required trims, buttons, zippers, or other notions specifically needed for the sewing task. These materials are typically provided in the appropriate quantities to complete the task.



Fig: - 3.2 Notions and Trims

VIII. **Work Instructions or Standard Operating Procedures (SOPs):** Depending on the organization's practices, the work bundle may include detailed work instructions or SOPs that provide additional guidance on specific techniques, quality standards, or safety protocols.

Receiving a work bundle with the necessary information and materials is crucial for ensuring the smooth and accurate execution of the sewing task. It helps operators understand the requirements, follow the correct procedures, and maintain consistency throughout the production process.

Manufacturers use a variety of bundling methods depending upon their needs, with **four** basic systems being the most common among local manufacturers:

A. Item bundling – all pieces that comprise a garment are bundled together.

B. **Group bundling** – several (10-20) garments are put together in a bundle and given to a single operator or team to sew.

IX. **Purpose of bundle tickets is to**: Monitor the progress of each specific garment, Ensure that all the correct parts are assembled together, and. Compensate operators for their work on each garment.

X. **Ticketing**: It is a process in which each cut piece of fabric is given a unique number so that the cut pieces of different sorts/shades do not get mixed and sewn together resulting in a

defective /rejected garment. Ticketing machines are available to carry out this process. After ticketing is done, pieces of each type like collar, band, cuff, back, front etc. are bundled together and taken to subsequent operations.



Fig. 3.3 Bundling



Fig. 3.4 Ticketing

3.2 Checking work pieces

Checking work pieces in garment manufacturing is an important step to ensure quality and accuracy in the production process. It involves inspecting the completed or partially completed garments or garment components to identify any defects, errors, or deviations from the required specifications.

Some key points to consider when checking work pieces:

A. **Visual Inspection**: Perform a visual inspection of the work pieces to check for any visible defects, such as incorrect stitching, skipped stitches, uneven seams, fabric puckering, loose threads, or fabric damage. Examine the garment components from various angles to ensure consistency in appearance.

B. **Measurement Verification**: Use measuring tools, such as measuring tapes, rulers, or gauges, to verify the measurements of the garment components. Check critical dimensions like length, width, and circumference against the required specifications. This helps ensure that the garments are sized correctly and meet the desired fit.

C. **Seam and Stitch Quality**: Inspect the seams and stitches for quality and strength. Check for straight, even stitches with consistent tension. Ensure that the appropriate stitch type and seam allowance have been used. Look for any loose or skipped stitches that may compromise the garment's durability.

D. **Check Notions and Trims**: Verify the placement and attachment of notions and trims, such as buttons, zippers, snaps, or decorative elements. Ensure that they are securely fastened, aligned correctly, and function properly.

E. **Pattern Alignment and Matching**: If applicable, compare patterned fabric components, such as plaids, stripes, or prints, to ensure proper alignment and matching across seams and garment sections. This helps maintain consistency and visual appeal in the finished garment.

F. **Labeling and Markings:** Check for accurate labeling and markings on the work pieces. This includes verifying the correct placement of size labels, care labels, and any other required markings or branding elements.

G. **Functionality and Fit**: If possible, assess the functionality and fit of the garments by trying them on or using dress forms or fit models. Evaluate factors such as ease of movement, comfort, and overall appearance.

H. **Documentation and Reporting**: Document any identified defects, errors, or deviations from the required specifications. Create a report or checklist noting the issues found, along with any corrective actions taken or recommendations for improvement.



Fig stretch fabric

Self-Check -3

I. Multiple choices

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page

1) Which one of the following is not type of sleeve2 point each)
   A. cup sleeve C. tailored sleeve
   B. Puff sleeve D. cuffs E. All
2) Which one of the following can NOT be garment pieces?
   A. Belt loop C. Sleeve
   B. Pocket D. Trouser
3) Which one of the following can NOT affect the productivity of a sewing operator?
   A. Machine speed C. Quality of bundle
   B. Material handling of the operator D. None of the above

II. Say True or False

1) Item bundling is all pieces that comprise a garment are bundled together.

2) The purpose of bundle tickets is to monitor the progress of each specific garment.

3) Progressive bundling is a pieces corresponding to specific sections of the garment.

4) Modular or “team based” manufacturing is another type of bundling that combines some of the above characteristics.

Unit four: Machine Setting

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Production Machine
- Machine Specification
- Needles, attachments and parts

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Perform Production Machine
- Adjust Machine Specification
- Check Needles, attachments and parts

4.1. Production Machine

In garment manufacturing, various production machines are used to perform specific tasks in the production process. These machines are designed to streamline and automate different aspects of garment production, increasing efficiency and productivity. Here are some common production machines used in garment manufacturing:

A. Sewing Machines: Sewing machines are the most fundamental machines used in garment production. They are used to stitch fabric pieces together, create seams, and attach trims. Different types of sewing machines are available, including single-needle lockstitch machines, over lock machines, cover stitch machines, and specialized machines for specific sewing techniques or tasks.



Fig: - 4.1 Sewing Machines

B. Cutting Sewing Machines: Cutting machines are used to cut fabric panels according to the garment patterns. They can be manual or computerized, and they significantly speed up the cutting process compared to manual cutting with scissors. Common types of cutting machines include straight knife cutters, round knife cutters, and computerized fabric cutting machines.



Fig: - 4.2 Cutting Sewing Machines

C. **Ironing and Pressing Machines:** These machines are used to press and finish garments, ensuring a neat and professional appearance. They include steam irons, steam presses, and industrial pressing machines. They help remove wrinkles; shape collars and cuffs, and create crisp seams.

D. **Embroidery Machines**: Embroidery machines are used to add decorative designs, logos, or patterns to garments using computerized stitching. They can create intricate and detailed embroidery designs, enhancing the aesthetic appeal of the garments.



Fig: - 4.3 Embroidery Machines

E. **Buttonholing Machines**: Buttonholing machines are specialized machines used to create buttonholes on garments. They can be programmed to create different buttonhole sizes and shapes, ensuring precise and consistent buttonholes across garments.



Fig: 4.4 Buttonholing Machines

F. **Button Attaching Machines**: These machines are used to attach buttons to garments quickly and accurately. They can handle various button sizes and styles, providing efficient button attachment.



Fig: - 4.5 Button Attaching Machines

G. **Snap Fastening Machines**: Snap fastening machines are used to attach snaps or press studs to garments. They apply pressure to securely fasten the snaps, allowing for easy opening and closing.



Fig: - 4.6 Snap Fastening Machines

H. **Fusing Machines:** Fusing machines are used for applying fusible interlining or interfacing materials to specific areas of garments, such as collars, cuffs, or waistbands. They use heat and pressure to bond the interlining to the fabric, providing structure and stability.



Fig: - 4.7 Fusing Machines

I. **Bar tack Machines**: Bar tack machines are used to create reinforced stitches, often in the form of a rectangular shape, at specific points on garments. They reinforce areas prone to stress or where additional strength is required, such as pockets, belt loops, or key attachment points.



Fig: - 4.8 Bar tack Machines

J. **Pocket Setting Machines**: Pocket setting machines automate the process of attaching pockets to garments. They accurately position and secure the pockets in the desired locations, saving time and ensuring consistent pocket placement.



Fig: - 4.9 Pocket Setting Machines

These are just a few examples of the production machines used in garment manufacturing. The specific machines required depend on the production volume, garment styles, and production processes implemented by each manufacturer.

Material handling system

The means used for transporting work (like fabrics, cuttings, bundles, finished garments and general items) from one place to another, storing materials and protecting material from damage, are called material handling system.

Garment stitching department does stitching of garments from fabric (cuttings). Different types of line layout for stitching line are found in the garment industry. Based on the production line layout, material handling system is designed. In stitching department material handling system is needed for transporting bundles from one workstation to next workstation, and for storing WIP.

A. **Trolleys**: Cutting bundles are stacked on trolley and the trolley is moved in the line. Some factories found it difficult to assess WIP in the line by using trolley system.



Fig: - 4.11 Trolleys

B. **Plastic crates and Bins**: Bins are used for disposing stitched garments. Plastic bins are used for transporting garments from one place to another.

IV. Machine setting and Specification

1. Machine Specification

Machine specifications in garment manufacturing refer to the detailed specifications and features of the machines used in the production process. These specifications provide information about the machine's capabilities, functions, and technical details.

Here are some common machine specifications to consider:

A. **Machine Type:** Identify the specific type of machine, such as a sewing machine, cutting machine, embroidery machine, or pressing machine.

B. Machine Model: Each machine has a specific model or model number that distinguishes it from other machines of the same type. It helps in identifying and referencing the machine accurately.

C. Machine Brand: The brand or manufacturer of the machine is an important specification to consider. Different brands may have varying levels of quality, reliability, and customer support.

D. Machine Operation: Determine whether the machine is manual, semi-automatic, or fully automatic. Manual machines require human intervention for most operations, while automatic machines can perform tasks with minimal human input.

E. Machine Power: Specify the power requirements of the machine, including voltage, frequency, and power consumption. Ensure that the machine's power requirements align with the available power supply in the production facility.

F. Stitch Types and Functions: For sewing machines, identify the available stitch types and functions. Common stitch types include straight stitch, zigzag stitch, over lock stitch, and cover stitch. The machine may also have additional functions, such as buttonholing, button attaching, or embroidery capabilities.

G. Speed and Production Capacity: Specify the machine's maximum sewing speed or cutting speed, measured in stitches per minute (SPM) or inches per minute (IPM). Consider the production capacity of the machine to determine its suitability for meeting production volume requirements.

I. **Needle System**: For sewing machines, identify the type of needle system used. Common needle systems include the DBx1, 134, and 16x231. The needle system affects the compatibility of different needle types and sizes with the machine.

II. **Cutting Capacity**: For cutting machines, specify the maximum cutting capacity in terms of fabric thickness or number of fabric layers it can cut at once. This helps determine the machine's efficiency and suitability for cutting specific types of fabrics.

III. **Control System**: Describe the control system of the machine. It can be mechanical, electronic, or computerized. Computerized control systems offer advanced features, programmability, and automation capabilities.

IV. **Machine Dimensions and Weight**: Provide the dimensions (length, width, height) and weight of the machine. This information helps with planning the layout of the production floor and determining the machine's portability or installation requirements.

V. **Additional Features**: Identify any additional features or accessories that come with the machine, such as built-in lights, automatic thread trimmers, thread tension control, or digital displays.

Machine specifications are crucial for selecting the right machines for garment production, ensuring compatibility with the production requirements and desired outcomes. It's important to review and compare specifications from different machine models and brands to make informed decisions and optimize the production process.

4.2 Machine settings

Setting the Machine can set basic functions required to use the machine in System Settings. The machine can be used on factory default, but the configuration can be changed depending on the condition of the user. The changed condition holds even if the machine is turned off.

Basic Settings for Sewing Straight Stitches on a Sewing Machine

- Stitch Length: 2.5mm or 10 (stitches per inch)
- Stitch Width: needle centered over stitch plate*
- Stitch Tension: 3.

i. Thread guides.

The thread guides are the metal devices that help regulate tension. They are various loops when run the thread through before looping it into the needle. They keep the thread from getting tangled and distribute the tension evenly from the spool to your fabric.

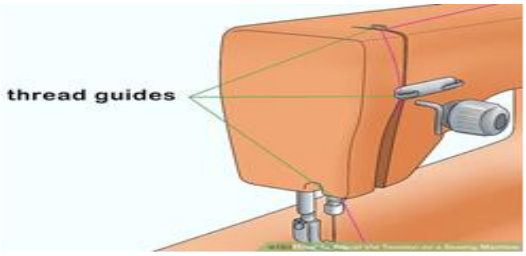


Fig: - 4.13 Thread guides

ii. Machine Tension

Sewing machine tension adjustment is controlled by devices that separately control the needle thread and the bobbin thread; putting varying amounts of tension (or strength) on the threads

they control to form a strong, balanced stitch. Sewing machine tension can be tightened or loosened to affect the needle thread, the bobbin thread, or both.

iii. Tension discs and regulator

The tension discs and tension regulator together are called the tension assembly. The tension discs squeeze the thread as it passes between them, while the tension regulator controls the amount of pressure on the discs. When adjusted to a higher number (turned clockwise), the discs move closer together, increasing the pressure. Turned to a lower number (counter clockwise), the discs move apart, decreasing pressure.



Fig: - 4.14 *Tension* disc

iv. The top tension.

To increase your top tension if it's too loose, turn your knob so that the numbers are increasing. Try ½ to 1 number higher, and then test the stitches on a piece of scrap fabric. Continue until it looks even on both sides and you can no longer see the bobbin thread on the right side of the fabric

Tension is what keeps the bottom and top stitches in equal tension with one another. In other words, it is what keeps the front and back stitches looking the same. Both the top and bottom tension must work together in order to create consistent stitching. If the top and bottom stitches aren't even, it may be due to the tension not being right on the top or bottom.

4.3 Identify Machine Performances

Identifying machine performances in garment manufacturing involves assessing various aspects of machine operation and output. Here are some key steps to identify machine performances:

I. **Define Performance Metrics**:

Determine the specific performance metrics that are relevant to your production goals and requirements. These metrics could include machine speed, production capacity, accuracy, reliability, energy efficiency, and others discussed earlier. Clear performance metrics help in setting benchmarks and evaluating machine performance effectively.

II. **Data Collection**:

Gather data related to the identified performance metrics. This can be done through direct observation, machine monitoring systems, or data logging features available in modern machines. Collect data over a sufficient period to capture variations and identify patterns in machine performance.

III. **Analyze Machine Output**:

Analyze the output generated by the machine. For sewing machines, examine the quality of stitches, stitch length, and consistency. For cutting machines, assess the accuracy of fabric cuts and the number of layers that can be cut effectively. Compare the output against the desired standards and specifications.

IV. **Evaluate Speed and Efficiency**:

Measure the machine's speed and efficiency in terms of stitches per minute (SPM), inches per minute (IPM), or other relevant units. Compare the actual output against the machine's maximum rated speed to assess its efficiency and productivity. Consider factors that may affect the machine's speed, such as fabric type, complexity of operations, and operator skill level.

V. **Assess Reliability and Downtime**:

Evaluate the machine's reliability by analyzing its downtime and the frequency of breakdowns or malfunctions. Consider unplanned maintenance requirements and the availability of spare parts. A reliable machine should have minimal downtime, allowing for uninterrupted production.

VI. **Consider Accuracy and Precision**:

Examine the accuracy and precision of the machine's operations. This includes assessing the consistency of stitch lengths, the alignment of pattern elements, and the accuracy of fabric cuts. Look for any deviations or inconsistencies that may affect the quality of the finished garments.

VII. **Energy Consumption Analysis:**

Assess the machine's energy consumption and compare it against similar machines or industry benchmarks. Energy-efficient machines can contribute to cost savings and environmental sustainability.

VIII. **Operator Feedback**:

Gather feedback from machine operators who work with the equipment regularly. They can provide insights into the machine's ease of use, user-friendliness, and any challenges they encounter during operation. Operator feedback helps assess the machine's usability and its impact on productivity.

IX. **Benchmarking and Comparison**:

Compare the machine's performance against industry standards, similar machines from different manufacturers, or machines used in other production lines within your facility. Benchmarking helps identify areas of improvement and make informed decisions when selecting or upgrading machines.

X. **Continuous Monitoring and Improvement:**

Establish a system for continuous monitoring of machine performance to identify trends, patterns, and opportunities for improvement. Regularly review performance data and address any issues or bottlenecks promptly.

5 Self-Check -4

I. Multiple choices

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page

1. _____ is a wheel with shining surface, at the right side of the head which is driven by handle or belt.

   A. Balance wheel
   C. Head
   B. Bed
   D. None

2. _____ is the flat part of the head under which the lower thread mechanism, shuttle and feed dog are mounted.

   A. Balance wheel
   C. Head
   B. Bed
   D. All

3. The complete sewing machine without the box or stand is called_____.

   A. Balance wheel
   C. Head
   B. Bed
   D. None

II. Say True if the statement is true or false if not.

1) Balance wheel is the metal devices that help regulate tension.

2) Tension regulator is a mechanism fixed to the face plate for controlling the tension on the upper thread.

3) The thread guides is a wheel with shining surface, at the right side of the head which is driven by handle or belt.

III. Give short answer

1. Define material handling system.

2. What does trolleys means?

Self-Check -5

I. Multiple choices

1) ---------- Measure the machine's speed and efficiency in terms of stitches per minute machine.

A. Define Performance Metrics: C. Analyze Machine Output

B. Data Collection D. Evaluate Speed and Efficiency:

2) ---------- Analyze the output generated by the machine

A. Define Performance Metrics: C. Analyze Machine Output

B. Data Collection D. Evaluate Speed and Efficiency:

3) ---------- Gather data related to the identified performance metrics

A. Define Performance Metrics: C. Analyze Machine Output

B. Data Collection D. Evaluate Speed and Efficiency

4) ---------- Determine the specific performance metrics that are relevant to your production goals and requirements.

A. Define Performance Metrics: C. Analyze Machine Output

B. Data Collection D. Evaluate Speed and Efficiency:

II. Give Long Answer

1. Write different parts of a sewing machine
2. Define the scope of work
3. What is primary function of project specifications

Unit Six: Sewing Garment

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Woven And Knitted Fabric
- Garment Requirements and Operation
- OHS Practice.

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Sew stretchable woven and knitted fabric
- Check the garment requirement
- Follow OHS practice

6.1. Sewing Woven and Knitted Fabric

Sewing Stretchable woven and knitted fabrics are commonly used in various types of garments and apparel. These fabrics offer comfort, flexibility, and ease of movement. Here's a brief overview of stretchable woven and knitted fabrics:

I. Stretchable Woven Fabrics:

Stretch Woven Fabrics: These fabrics are woven with a blend of stretch fibers, such as spandex (also known Lycra), along with other fibers like cotton, polyester, or nylon. The stretch fibers provide the fabric with elasticity and allow it to stretch and recover.

II. Denim with Stretch:

Denim fabrics are sometimes blended with stretch fibers to provide added comfort and mobility. These stretch denim fabrics are popular in jeans and other casual garments.

Twill with Stretch: Twill fabrics, known for their diagonal weave pattern, can also be woven with stretch fibers. Stretch twill fabrics are commonly used in pants, jackets, and skirts, offering both durability and flexibility.

Stretchable Knitted Fabrics:

I. **Jersey Knits**: Jersey is a common type of knitted fabric characterized by its smooth and stretchy nature. It is commonly used in T-shirts, dresses, and active wear. Jersey fabrics are made from various fibers, including cotton, polyester, rayon, or blends, and can have varying degrees of stretch.

II. **Rib Knits:** Rib knits have a distinct vertical rib pattern and are known for their excellent stretch and recovery. They are often used for cuffs, collars, and waistbands in garments.

III. **Interlock Knits:** Interlock knits are double-knit fabrics that have a smooth and stable surface on both sides. They offer good stretch and recovery and are commonly used in active wear, loungewear, and baby clothing.

IV. **Ponte Knits**: Ponte knits are dense and stable double-knit fabrics with a firm hand. They have good stretch and recovery, making them suitable for garments that require structure and shape, such as skirts, pants, and tailored dresses.

Spandex Blends: Many knitted fabrics incorporate spandex or elastin fibers to provide stretch and elasticity. These blends enhance the fabric's ability to stretch and recover while retaining shape and comfort.

Sewing men Shirt

A shirt typically consists of several components that come together to create the finished garment. Here are the main components of a shirt:

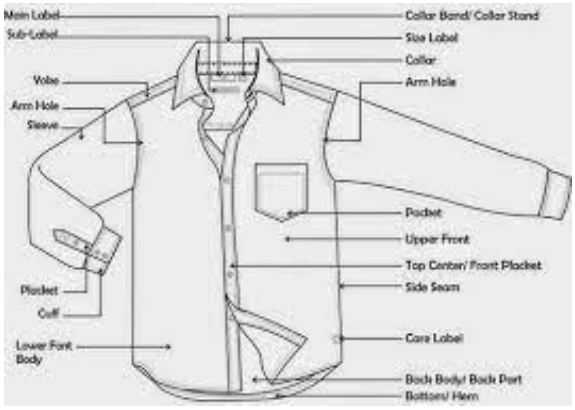


Fig: - 6.1 Men shirt

Types of men's shirts:

1. **Dress shirt:** A dress shirt is a formal shirt typically worn with a suit or formal attire. It is usually made of cotton or a blend of fabrics and features a pointed collar, long sleeves with cuffs, and a button-down front. Dress shirts come in various colors and patterns.

2. **Casual shirt:** Casual shirts are more relaxed and versatile compared to dress shirts. They are often made of lightweight fabrics such as cotton or linen and can have different collar styles, such as a button-down collar, spread collar, or camp collar. Casual shirts can be short-sleeved or long-sleeved.

3. **Polo shirt:** A polo shirt features a soft, knitted collar and a placket with two or three buttons. It is typically made of cotton or a blend of fabrics and is known for its sporty and preppy style. Polo shirts can be short-sleeved and are often worn for casual or semi-formal occasions.

4. **T-shirt:** T-shirts are a staple in men's wardrobes. They have a simple design with short sleeves and a round neckline. T-shirts are made of soft, breathable fabrics such as cotton and are available in a wide range of colors, patterns, and graphic prints. They are commonly worn for casual and everyday occasions.

5. **Henley shirt:** A Henley shirt is similar to a T-shirt but features a round neckline with a partial buttoned placket. It can have short or long sleeves and is often made of cotton or a blend of fabrics. Henley shirts offer a casual and slightly more dressed-up alternative to basic T-shirts.

6. **Flannel shirt:** Flannel shirts are made of warm and soft flannel fabric, typically woven from cotton or wool. They are known for their plaid or checkered patterns and are popular for their cozy and rugged style. Flannel shirts are often worn in colder weather or for a casual, outdoorsy look.

7. **Oxford shirt:** An Oxford shirt is a button-down shirt made of Oxford cloth, a type of woven fabric. It has a slightly textured appearance and is characterized by its button-down collar. Oxford shirts are versatile and can be worn for both casual and dressier occasions.

8. **Hawaiian shirt:** Hawaiian shirts, also known as Aloha shirts, feature vibrant and colorful prints inspired by Hawaiian and tropical motifs. They are typically made of lightweight fabrics such as cotton or rayon and are associated with a relaxed and casual style.



Fig: - 6.2 types of shirt

Steps of Shirt sewing

Sewing a shirt involves various operations that need to be performed in a specific order to ensure proper construction. Here are the general operations involved in sewing a shirt:

1. **Preparation**:

Gather all the necessary materials, including fabric, pattern, thread, buttons, interfacing, and any additional notions required.

Pre-wash and press the fabric to prevent shrinkage.

Cut out the pattern pieces according to your size and style options, and transfer any markings onto the fabric.



Fig: - 6.3 Preparation

2. Darts and Shaping:

Mark and sew any darts on the front and back panels of the shirt to provide shaping. Fold along the dart lines, match the markings, and stitch from the wider end tapering to a point.



Fig: - 6.4 Darts and Shaping

3. Shoulder Seams:

With right sides together, sew the front and back panels together at the shoulder seams, matching the notches.



Fig: - 6.5 Shoulder Seams

4. Sleeve Attachment:

Align the notches on the sleeves with the shoulder seams, right sides together.

Pin or baste the sleeves in place, ensuring that the sleeve cap is eased into the armhole.

Sew the sleeves to the body panels, starting from the sleeve hem and sewing all the way down to the shirt hem.



Fig: - 6.7 Sleeve

5. Side Seams:

With right sides together, sew the side seams of the shirt, starting from the sleeve hem and continuing down to the shirt hem.



Fig: - 6.8 Side Seams

6. Collar:

Attach the collar pieces to the neckline, following the pattern instructions. This may involve sewing the collar right sides together to the neckline, under stitching, and then turning the collar out and pressing it.



Fig: - 6.9 Collar

7. Cuffs:

If shirt has cuffs, sew them according to the pattern instructions. This typically involves folding and sewing the cuff pieces right sides together, attaching them to the sleeve, and then folding them back and topstitching for a finished look.



Fig: - 6.10 cuff

8. Buttonholes and Buttons:

Mark and sew buttonholes on the placket, following the pattern instructions. Test the buttonholes on a scrap piece of fabric before sewing them on the shirt. Sew buttons on the opposite placket side, aligning them with the buttonholes.

9. Hemming:

Fold and press the bottom hem of the shirt to the desired length.

Depending on the pattern, you may need to sew a double-fold hem or use a serger or zigzag stitch to finish the raw edge before folding and stitching the hem.

10. Finishing Touches:

Trim any loose threads and give the shirt a final press to ensure a professional finish.

It's important to follow the specific instructions provided with your pattern and consult sewing references or tutorials for detailed guidance on each operation. Take your time, pay attention to accuracy, and enjoy the process of creating a well-made shirt.

Basic Skirt

A skirt is a garment that is typically worn by women and girls and covers the lower part of the body, extending from the waist to varying lengths, such as above the knee, below the knee, or to the ankle.

1. **A-line skirt**: This skirt flares out gently from the waist in the shape of the letter "A." It is a versatile and flattering style that suits a variety of body types.

2. **Maxi skirt**: A long skirt that typically reaches the ankles or floor. Maxi skirts are comfortable and provide excellent coverage while still allowing for airflow during hot summer days.

3. **Midi skirt**: A skirt that falls between the knee and ankle. Midi skirts can have various silhouettes, such as A-line, pleated, or pencil, and they offer a chic and modest option for summer styling.

4. **Pleated skirt**: Characterized by vertical folds or pleats that create volume and movement. Pleated skirts can be short, midi, or maxi length, and they add an elegant and playful touch to summer outfits.

5. **Flared skirt**: Also known as a circle skirt, it is a skirt that flares out dramatically, forming a full circle when laid flat. Flared skirts are fun, feminine, and provide excellent freedom of movement.

6. **Wrap skirt**: A skirt that wraps around the waist and is secured with a tie or button closure. Wrap skirts offer an adjustable fit and are often made from lightweight fabrics, making them ideal for summer.

7. **Denim skirt**: A skirt made from denim fabric, similar to jeans but in skirt form. Denim skirts can come in various styles, such as A-line, pencil, or button-front, and they provide a casual and versatile option for summer outfits.

8. **Tiered skirt:** A skirt with multiple layers or tiers of fabric, often in a cascading or ruffled design. Tiered skirts are playful and provide a bohemian or romantic look that is perfect for summer.

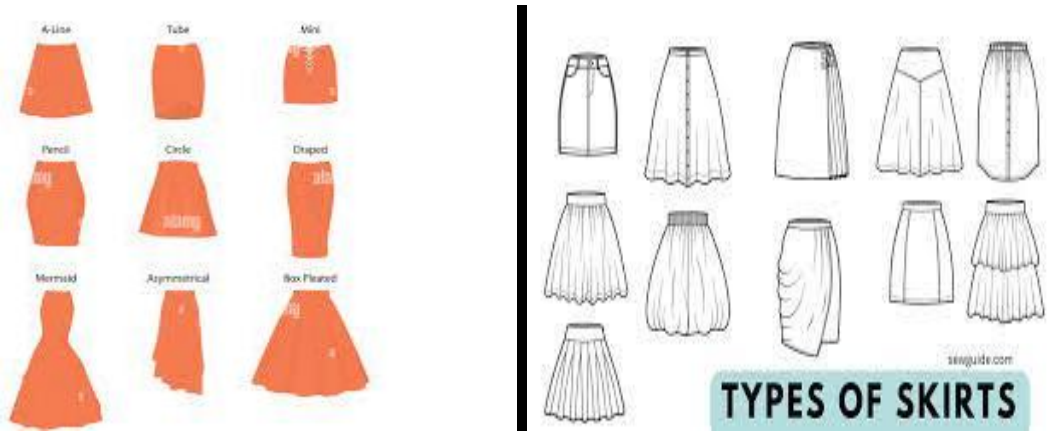


Fig: - 6.13 Types of Skirt

Steps of Sewing Skirt

1. **Prepare the fabric:** Pre-wash and press the fabric to ensure it won't shrink later on.

Lay out the fabric on a flat surface and place the pattern pieces on top, following the layout diagram provided in the pattern instructions. Pin the pattern pieces to the fabric and carefully cut them out, transferring any markings onto the fabric.

2. **Sew darts and shaping:** Fold the fabric along the dart lines, matching the markings, and pin in place. Stitch along the marked lines, tapering to a point at the end. Press the darts flat or to one side, following the pattern instructions.



Fig: - 6.16 Sew darts and shaping

3. **Assemble the skirt panels:**

With right sides together, sew the side seams of the skirt panels, matching the notches. Press the seams open or to one side.



Fig: - 6.17 assemble the skirt panels

4. **Attach a zipper or elastic:** attach the zipper, and then sew the rest of the seam. Sew the elastic into a loop, evenly distribute it around the waist, and secure it in place with stitching.



Fig: - 6.18 attach a zipper

5. **Hem the skirt:** Fold and press the bottom hem of the skirt to the desired length. Depending on the pattern and finish the raw edge before folding and stitching the hem.

6. **Finishing touches:** Trim any loose threads and give the skirt a final press to ensure a professional finish.

Remember to refer to the specific instructions provided with your pattern for detailed guidance and any additional steps specific to the skirt style you are sewing.

Trouser

A trouser, also known as pants in American English, is a garment that covers the lower part of the body, typically from the waist to the ankles or just below the knees. Trousers are designed to be worn by both men and women and are a staple item of clothing in many cultures. They are

usually made of fabric and consist of two separate leg portions that are joined together at the waist with a waistband.

Some common types of trousers for both men and women:

1. **Straight-leg trousers**: These trousers have a straight and narrow cut from the waist to the ankle. They are a classic and versatile option that can be dressed up or down for various occasions.
2. **Boot cut trousers:** Boot cut trousers are fitted through the thigh and knee and slightly flare out from the knee to the hem. They are designed to accommodate wearing boots and provide a balanced silhouette.
3. **Wide-leg trousers**: Wide-leg trousers have a relaxed fit and feature wide, flowing legs from the waist to the hem. They are comfortable and offer a more relaxed and fashion-forward look.
4. **Skinny trousers**: Skinny trousers are form-fitting and have a tight fit from the waist to the ankle. They are popular for their sleek and modern appearance and are often made from stretchy fabrics.
5. **Cropped trousers**: Cropped trousers, also known as capri pants or ankle pants, have a shorter length that hits above the ankle but below the knee. They are a stylish option for warmer weather and can be both casual and dressy.
6. **Pleated trousers**: Pleated trousers have folds or pleats at the waistline, which provide extra room and create a more relaxed fit through the hips and thighs. They offer a classic and sophisticated look.
7. **Chinos:** Chinos are casual trousers made from cotton twill fabric. They have a straight leg and are often characterized by their slimmer fit and a slightly rugged appearance. Chinos are versatile and can be dressed up or down.
8. **Cargo trousers**: Cargo trousers are characterized by their multiple pockets, which are often located on the thighs. They are practical and popular for their utility-inspired design.
9. **Culottes:** Culottes are wide-legged trousers that resemble a skirt or shorts. They are typically knee-length or slightly longer and are known for their flowing and comfortable fit.
10. **High-waist trousers**: High-waist trousers have a waistline that sits above the natural waist. They can come in various styles, such as wide-leg, straight-leg, or skinny, and offer a retro and flattering look.



Fig: - 6.21 types of trouser

Steps of Trouser sewing

1. **Prepare your materials:**

Gather all the materials needed, including fabric, pattern, thread, zipper or buttons, interfacing, and any other notions required. Set up your sewing machine and have other sewing tools such as scissors, pins, measuring tape, and an iron ready.

2. **Prepare the fabric:**

Pre-wash and press the fabric to ensure it won't shrink later on. Lay out the fabric on a flat surface and place the pattern pieces on top, following the layout diagram provided in the pattern instructions. Pin the pattern pieces to the fabric and carefully cut them out, transferring any markings onto the fabric.

Sew darts and shaping:

Fold the fabric along the dart lines, matching the markings, and pin in place. Stitch along the marked lines, tapering to a point at the end. Press the darts flat or to one side, following the pattern instructions.



Fig: - 6.22 Sew darts and shaping:

3. **Prepare and assemble side pocket**

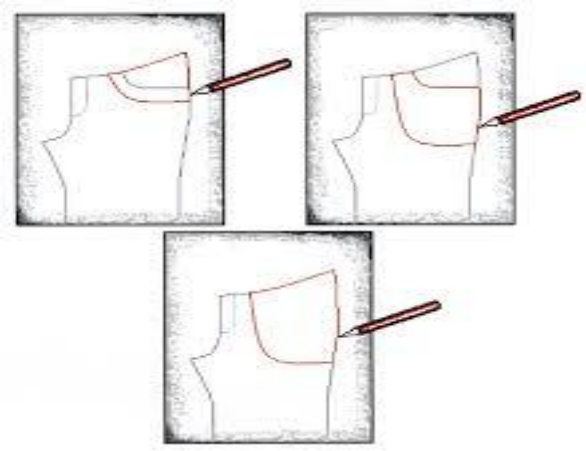


Fig: - 6.23 assemble side pocket

4. Assemble the trouser panels:

Sew the front and back panels together at the inseams, with right sides facing each other. Press the seams open or to one side.

5. Insert a zipper:

6. With a zipper closure, follow the pattern instructions to insert the zipper into the front or side seam. This may involve basting the seam closed, attaching the zipper, and then sewing the rest of the seam.



Fig: - 6.24 insert a zipper

7. Sew back pocket to back

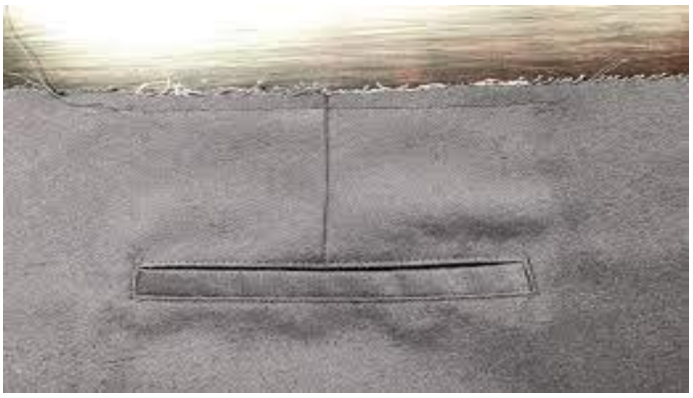


Fig: - 6.25 Sew back pocket

8. Sew the side seams:

With right sides together, align the edges of the front and back panels. Pin or baste the side seams, matching the waistline, hip, and leg edges. Sew the side seams, starting from the waistline and continuing down to the hem. Press the seams.

9. Hem the trousers:

Fold and press the bottom hem of the trousers to the desired length.

10. Finishing touches:

Trim any loose threads and give the trousers a final press to ensure a professional finish.

The Difference between Woven and Knitted Fabric

Textile or fabric is a flexible material that consists of a network of natural or artificial yarns. Fabrics are formed by weaving, knitting, crocheting, knotting or felting. Fabrics are made from sources like animals (wool, silk), plants (cotton, flax, and jute), minerals (asbestos, glass fiber) and synthetic materials (nylon, polyester, and acrylic). Weaving is a textile production method which involves interlacing of a set of long threads.

Knitting, looping and crocheting involves interlacing loops of yarns which are formed either on a knitting needle, normal needle or a crochet hook. Braiding involves twisting threads together into a cloth. Felting involves pressing a mat of fibers together and working them together, until they tangle. Non-woven textiles are manufactured by bonding of fibers to make fabric. To notice a needle creating loops, dipping in and out of each stitch is fascinating; but after distinguishing a fabric into different categories can be relatable.

a. Knit Fabric

Knit fabric is produced by using one set of yarn by inter looping. Process of knit fabric manufacturing is knitting. Knit fabric is flexible, and can be readily used for constructing small pieces, making it ideal for socks and hats. Knit fabric is more durable. These fabrics can be as thin as mesh or as thick as sweatshirt fleece. Because of the symmetry of yarns on both sides of knit fabric, they curl a little on the edges.

- **Sew Knits Fabrics**

Knits are one of the most comfortable fabrics to sew into garments, but their seemingly mysterious ways can frustrate a someone who's new to sewing. This complete beginner's guide to sewing with knit fabrics will demystify them and allow you to successfully finish any project.



Fig: - 6.26 Sew Knits Fabrics

- **Knit fabric**

When it comes to fabric, you generally have two options: woven or knits.

Woven fabrics are, as you might guess, woven on a loom, with vertical and horizontal threads (called the warp and the weft). Knit fabrics, on the other hand, are knitted, meaning the fabric is made up of interlocking loops.

There are many weights of knit fabrics, and each stretches a different amount.

1. Jersey

The most common type of knit fabric is jersey, which is what most basic T-shirts are made of. Jersey fabric is made with a single needle that works approximately like knitting needles, putting together knit and purls in rows.

- Jersey is typically very lightweight and has a lovely drape, so it hangs well on the body.
- Jersey will stretch fairly well, but may not recover well from stretching.
- Jersey has a right and wrong side. The V shapes of the knit stitches are the right side.

- When pulled, its edges tend to curl toward the right side (perpendicular to the grain line) and to the wrong side (along the selvedges).

This kind of knit fabric is perfect for sewing clothes to wear on the top half of the body: T-shirts, blouses, pullovers, T-shirt dresses.

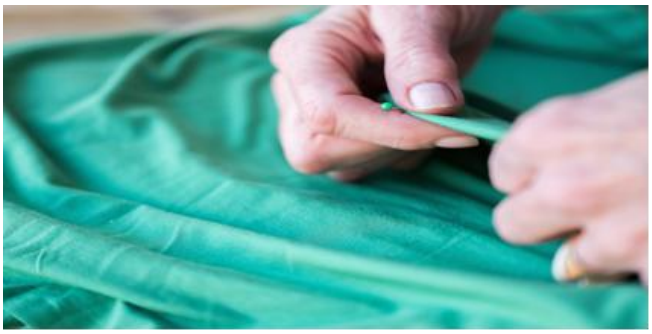


Fig: - 6.27 Jersey

2. Double knit

Double knit fabrics are created with multiple needles, resulting in essentially. Two layers of fabric. This means that both sides are identical and the fabric is a bit sturdier. Double knits (which have many other names, including interlock, heavy knit, etc.) are a great starting point for beginners since they are a little easier to handle.

Because double knit fabric is fairly sturdy, it works well for garments that need a little more body, like structured dresses, skirts or lightweight jackets. It's also great for closer-fitting garments like leggings or trousers.



Fig: - 6.28 Double knit

3. Sweater knits

- It's typically made with a thicker yarn, so you may be able to see the individual stitches clearly.
- It's much more stable and thicker than jersey or double knit.

- It doesn’t have as much stretch and doesn’t recover very well after being stretched.
- Sweater knits may fray or unravel.



Fig: - 6.29 Sweater knits

4. Novelty knits

This last category is sort of a “catch-all” for all the other knits out there. If a fabric doesn’t fall into one of the three categories listed above, it’s likely a novelty knit. These typically have a unique texture, pattern or material.

1. Fiber content of knit fabrics

Any of the above types of knit fabric can be made with a number of different fibers, and fiber content can have a big impact on the finished piece. Think of the fabric in a swimsuit: It’s technically a knit, but you probably wouldn’t use that fabric to make a blouse to wear to work. The quick-drying nylon and lycra blend that’s used for swim and sportswear isn’t well-suited for everyday wear.

2. Sewing machine to sew knits

A singer (as it’s called in the U.S.) or an over locker machine (its name outside the U.S.) is the ideal machine for sewing knits.

A singer stitch usually looks like the image above, with loops going around the edge of the seam allowance, and two straight stitches a long side of the loops. A blade inside the machine also cuts off the excess seam allowance as you sew. Singer stitches naturally stretch, so when you pull on your seams, the stitch moves along with the fabric.

I. Cover stitch machines

Cover stitch machines make stitches similar to singer. One side of the stitch has two parallel straight stitches (like sewing with a twin needle on a regular machine) and the other side has thread loops that hook between the straight stitches, which allows the stitch to stretch when pulled. A cover stitch is great for hemming knits.

II. Conventional sewing machine

Any topstitching on a knit fabric is best done on a conventional machine. Though a cover stitch can do some lovely topstitching on necklines, most of the time you would use your regular machine.

When it comes to sewing knit fabrics (the stretchy material that is used for T-shirts and other comfy clothing), it's important to choose the right needle for the job.

III. Sew a test run.

Layer small scraps of your knit, just as they would be when you are sewing your garment. This is usually two layers, but you can also test a hem or topstitch with three or more layers.

Stitch using your chosen stretch stitch following the direction of stretch you will use on your garment. Test a few stitches until you are happy with the results. This little test can save you a lot of trouble and lots of time unpicking a troublesome seam!

When you're just getting started with sewing knits, it can be a big challenge. If you're having trouble sewing kits, one of these common problems might be the problem!

b. Woven Fabric

Textile formed by weaving is a woven fabric. Woven fabric is generally produced on a loom and made on many threads, woven on warp or weft. Woven fabric only stretches diagonally in bias direction. Woven fabric can be produced from hand loom to power loom.

Fibers of a woven fabric are wound in such a way that they create crisscross patterns. Woven fabrics are often used for sewing and their edges need to be finished properly, since they unravel easily. Shirt, trousers and jeans can be made up of woven fabric. Woven fabric is comparatively thick, because of the use of two or more yarns.

Woven and knit fabric can be further distinguished on the basis of:

1. Look

The basic difference between woven and knit fabric is the yarn that they are composed of. Knit fabric is made up of single yarn, looped continuously to produce braided look. However, multiple yarns comprise of woven fabric that are wound in such a way that they create criss-cross pattern.

2. Stretch

Stretching a fabric is also one of the ways to distinguish between woven and knit fabric. Woven fabric will not stretch along its width, but it may stretch along its length. However, knit fabric stretches easily along its width with a slightly less stretch along its length.

3. **Wrinkle**

Woven and knit fabric behaves differently towards wrinkle resistance. Knit fabric can be easily pressed, but they retain their shape after some time. While woven fabric, on being pressed, has wrinkles on its surface.

Wavy seams

1. Press with an iron



Fig: - 6.31 Press with an iron

A wavy seam will benefit greatly from a good press. This is different from ironing, where you move the iron back and forth over the fabric.

2. Change the presser foot pressure



Fig: - 6.32 presser foot pressure

3. Try the tissue paper trick

6 Self-Check -6.1

Part I. Matching

A	B
1. Knit fabric	A. the yarn that they are composed of.
2. Looping.	B. One of the ways to distinguish between woven and knit fabric.
3. Textile formed	C. Produced by using one set of yarn by inter
4. The basic difference between woven and knit	D. Weaving is a woven fabric.
5. Stretching a fabric	E. behaves differently towards wrinkle resistance.

Part II. Define briefly

1. Knit fabric
2. Woven Fabric
3. Stretch fabric

Part III. Give Short Answer

1. Write the difference between Woven and Knitted Fabric
2. What types of sewing machine to sew knits?

Operation Sheet 6.1

Operation Title:	**Prepare shirt components**
Purpose:	To know shirt components
Conditions Or Situations For The Operation:	Trainees should know the shirt components
Equipment, Tools And Materials:	Front panel, back panel, sleeves, collar cuffs, placket, pockets
Precautions:	• Prepare all needed materials, • Use the right maintenance tools when required
Quality Criteria:	• All steps were completed in the correct sequence, • All shirt component should be prepared • Your work should be neat and accurate.

PROCEDURES

i. Prepare shirt components

STEP

1. Receive bundle form cutting room
2. Separate each parts with the size
3. Correct the size
4. Set full components to sew.

PRECAUTIONS:

- Adjust the machine as per the specification i.e. SPI, Tension, needle type and size etc.
- Make sure that all cut pieces are supplied.
- Use the right sewing aids if necessary.

QUALITY CRITERIA:

1. The finished collar should be symmetry.
2. Collar spread should be equal when finished.
3. No sewing defect like, broken stitch, staggered stitch, uneven inlay etc.
4. The finished collar should be as per the required size.

7 Operation Sheet 6.2

OPERATION TITLE: Preparation of **Skirt**

PURPOSE: To show how to prepare Skirt

CONDITIONS OR SITUTATIONS FOR THE OPERATION:

- Trainees should know different kinds of Skirt
- Switch off the main switch before commencing the adjustment.
- Trainees should know how to operate SNLS industrial sewing machine.

EQUIPMENT,TOOLS AND MATERIALS: SNLS Industrial sewing machines, Cut piece of Skirt part, Sewing thread, Thread trimmer (Weaver's scissor), Ironing with board, Dice/ template (optional!)

PROCEDURES:

Steps

1. Prepare and sew dart on front and back
2. Attach zipper at back
3. Sew front with back at side seam
4. Prepare waist band and attach waist
5. Prepare button hole and attach button to back
6. Iron and finish

PRECAUTIONS:

- Adjust the machine as per the specification i.e. SPI, Tension, needle type and size etc.
- Make sure that all cut pieces are supplied.
- Use the right sewing aids if necessary.

QUALITY CRITERIA:

5. The finished collar should be symmetry.
6. Collar spread should be equal when finished.
7. No sewing defect like, broken stitch, staggered stitch, uneven inlay etc.
8. The finished collar should be as per the required size.

8 Operation Sheet 6.3

OPERATION TITLE: Preparation of **Trouser**

PURPOSE: To show how to prepare Trouser

CONDITIONS OR SITUTATIONS FOR THE OPERATION:

- Trainees should know different kinds of Trouser
- Switch off the main switch before commencing the adjustment.
- Trainees should know how to operate SNLS industrial sewing machine.

EQUIPMENT,TOOLS AND MATERIALS: SNLS Industrial sewing machines, Cut piece of Trouser part, Sewing thread, Thread trimmer.

PROCEDURES:

Steps

1. Prepare and sew side pocket on front
2. Attach zipper at front and sew lining
3. Prepare and sew Welted pocket to back
4. Sew front with back at side seam
5. Prepare loop, waist band and attach to waist
6. Prepare button hole and attach button to front
7. Iron and finish

PRECAUTIONS:

- Adjust the machine as per the specification i.e. SPI, Tension, needle type and size etc.
- Make sure that all cut pieces are supplied.
- Use the right sewing aids if necessary.

QUALITY CRITERIA:

9. The finished collar should be symmetry.
10. Collar spread should be equal when finished.
11. No sewing defect like, broken stitch, staggered stitch, uneven inlay etc.
12. The finished collar should be as per the required size.

9 Lap Test 6.1 Practical Demonstration

Time started: _____ Time finished: _____

- **Instructions:** Given necessary templates, tools and materials you are required to perform the following tasks within 8 hour for Shirt, Skirt, Trouser

Task 1- determine forward and back stitching & use SPI standards

Task 2- Prepare and attach different kinds of pockets, cuff, zipper and side pocket

Task 3- Prepare and assemble side seam, sleeve, button and button hole

Task 4- apply finishing touches /shirt, skirt and trouser/

Task 4- Prepare label and dispatch all item

Unit Seven: Complete Work

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Garment inspection
- Completing production records and package

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Inspect and check garment products
- Record inspected results and action taken
- Record Preventative action taken.
- Complete production records and package
- Direct completed work to next work task

7.1 Inspecting and checking garment products

Inspecting and checking garment products is an essential part of the quality control process in the textile and apparel industry. It ensures that the garments meet the required standards and specifications before they are shipped to customers. Here are some steps inspect and check garment products:

1. **Familiarize with Specifications:** Review the specifications provided by the manufacturer or client, including details such as fabric type, color, measurements, stitching requirements, labeling, and packaging instructions. This will serve as your reference during the inspection process.
2. **Visual Inspection**: Begin by visually inspecting each garment for any obvious defects or irregularities. Look for issues like fabric flaws, stains, discoloration, loose threads, uneven stitching, incorrect labels, or any damage to the garment.



Fig: - 7.1 Visual Inspection

Measurement Check: Use appropriate measuring tools, such as a tape measure, to check the garment's dimensions. Measure critical areas like chest, waist, hip, sleeve length, and inseam to ensure they meet the specifications provided.

Functional Testing: Perform functional tests on the garment to ensure it performs as intended. For example, if it's a zipper, check if it opens and closes smoothly. If it's a button, ensure that it is securely attached.

Fit and Wear ability: If possible, try on a sample of the garment or use a fit model to assess its fit and wear ability. This step helps identify any fit issues or discomfort that may arise when the garment is worn.

Labeling and Packaging: Verify that the garment has the correct labels, including brand labels, care labels, size labels, and country of origin labels. Also, inspect the packaging to ensure it is intact, clean, and meets the specified requirements.

Documentation and Reporting: Maintain detailed records of the inspection findings, including photographs if necessary. If any defects are found, document them along with their locations on the garment. Prepare a comprehensive report summarizing the inspection results.



Fig: - 7.3 Documentation and Reporting

ii. **Follow Quality Control Standards**: Adhere to industry-standard quality control procedures and guidelines during the inspection process. This includes following any specific protocols outlined by the manufacturer or client.

- **Random Sampling**: In large-scale production, it may not be feasible to inspect every single garment. Instead, adopt a random sampling method where a representative sample of garments is selected for inspection. This statistical approach ensures a reasonable level of confidence in the overall quality of the production batch.



Fig: - 7.4 Random Sampling

- **Take Corrective Actions**: If defects or issues are identified during the inspection, communicate the findings to the appropriate personnel, such as production managers or

quality control supervisors. Collaborate on implementing corrective actions, which may involve reworking or repairing the defective garments or adjusting the production process to prevent similar issues in the future.

There are different types of inspection following by inspectors as requirement of consumers.

I. ***Pre-Production check:***-This is done before production starts. Where then is a final verification of the material used; style, cut and workmanship of the garment or pre-production sample as per the customer Requirements.

II. ***Initial production check:***-This is done at the start of production where a first batch of garments is inspected; to distinguish possible discrepancies/variation and to allow fro the necessary corrections to be made bulk production. The inspection is a preliminary stage covering mainly style and general appearance, workmanship, measurements, quality of fabrics, components, weight, color and/or printing.

iii. ***During production check:***- This is done during production to ensure initial discrepancies/variations have been rectified. This inspection is in fact the follow -up of the initial production check and is generally carried out a few days after the initial inspection, especially if discrepancies have been detected at that time.

iv. ***Final Random Inspection:*** -This is carried out when the production of the total quantity of an order or partial delivery is completed. A sample lot will be selected from the order and a percentage of the garments will be inspected, this percentage usually being stipulated by the buyer. The sampling inspection may be applied or another inspection system designed by the buyer.

v. **Sewing Faults with Causes and Remedies:** There are so many defects found in sewing process. But some of the remarkable and most commonly occurred defects are as below.

7.2 Completing production records and package

Completing production records and packaging are crucial steps in the garment production process. Here's a guide on how to carry out these tasks effectively:

1. **Completing Production Records:**

Gather Necessary Information: Collect all relevant information related to the production process, such as production order details, quantity produced, production start and end dates, machine and operator details, and any other specific requirements or instructions.

A. **Verify Production Data**: Cross-check the actual production data against the planned quantities and specifications. Ensure that the quantities produced match the order requirements and that the garments meet the desired quality standards.
B. **Record Production Information**: Enter the production data accurately into the production records or manufacturing database. This may include using digital systems or physical production sheets. Include information such as garment style, sizes, colors, production quantities, and any other relevant details.
C. **Document Any Deviations**: If there were any deviations or issues during the production process, document them in the production records. Note any challenges, delays, or quality concerns that may have occurred and require attention or resolution.
D. **Sign and Approve**: Once the production records are completed, review and sign them to indicate that the information is accurate and verified. Obtain the necessary approvals from supervisors or designated personnel responsible for sign-off.

2. **Packaging:**

E. **Review Packaging Requirements**: Refer to the packaging instructions provided by the manufacturer or client. Familiarize yourself with the specific packaging requirements, including packaging materials, labeling, folding techniques, and any additional accessories or inserts.

F. **Prepare Packaging Materials:** Gather the necessary packaging materials, such as boxes, polybags, hangtags, labels, and any protective wrappings or fillers. Ensure that the packaging materials are clean, in good condition, and meet the specified standards.

G. **Check Garment Integrity**: Before packaging, visually inspect each garment again to ensure they are free from defects, stains, or any other quality issues. This step helps ensure that only acceptable garments are packaged.

H. **Fold or Hang the Garments**: Follow the prescribed folding or hanging techniques based on the garment type and packaging instructions. Pay attention to maintaining the garment's shape, avoiding wrinkles, and keeping them organized.

I. **Labeling and Tagging**: Attach the required labels, hangtags, and any other branding or informational materials as per the packaging instructions. Ensure that the labels are accurate, properly positioned, and securely attached.

J. **Packaging and Sealing:** Place the folded or hung garments into the appropriate packaging materials, such as boxes or poly bags. Arrange them neatly and securely to prevent damage during transit. Seal the packaging using tape or other suitable methods.

K. **Quality Control Check**: Perform a final visual inspection of the packaged garments to ensure they meet the desired presentation and quality standards. Verify that all required packaging elements are in place and that the overall appearance is professional.

   Record Packaging Details: Document the packaging information in the production records or packaging logs. Include details such as the packaging materials used, quantities packed, and any other relevant information.

L. **Store or Ship**: Depending on the production schedule and logistics arrangements, store the packaged garments in a designated area or prepare them for shipping. Follow the appropriate procedures for organizing, storing, or loading the packages onto transportation vehicles.

M. **Maintain Records**: Keep a record of the packaging details for future reference or for quality control audits. This information can be useful to track production progress, monitor packaging efficiency, or address any customer inquiries or concerns.

Remember to follow any specific packaging guidelines provided by the manufacturer or client, as they may vary depending on the product, market, or industry requirements.

Self-Check -7	Written Test

Part I. Directions: Matching Question

A	B
1. Overcast	A. a very strong, secure stitch.
2. Featherstitch (Briar)	B. a decorative as well as a functional stitch
3. Diagonal basting stitch	C. A custom tailoring term for a longer form of the pad
4. Backstitch (Prick stitch)	D. Primarily a decorative hand stitch that can be used on the inside or outside of a garment.
5. Cross-stitch tacks raveling	E. is used primarily as a seam or edge finish preventing

Part II. Choosing Question

1. _____ a custom tailoring term for a longer form of the pad stitch. It is used to hold the interfacing to the facing.

a. Diagonal basting
c. Catch stitch
b. Cross-stitch tack
d. Pad stitch

2. _____ a custom tailoring stitch.

a. Diagonal basting
c. Catch stitch
b. Cross-stitch tack
d. Pad stitch

3. _____a decorative as well as a functional stitch.

a. Diagonal basting
c. Catch stitch
b. Cross-stitch tack
d. Pad stitch

4. _____ worked from left to right from one edge of the fabric to another creating an X-like formation.

   a. Cross-stitch tack
   b. Catch stitch
   c. Pad stitch
   d. French tack

5. _____a thread connection securing separate garment segments to one another

   a. Cross-stitch tack
   b. Catch stitch
   c. Pad stitch
   d. French tack

Part III. True or False

1. Featherstitch primarily a decorative hand stitch that can be used on the inside or outside of a garment.
2. A blind catch stitch is small stitch is taken ¼-inch down from the hem edge.
3. A flat catch stitch is worked with the hem edge turned back approximately ½-inch.
4. Running -- an in-and-out even stitch.

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Developer's Profile

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1	MELKIE ERKYIHUN	MSC	Garment Engineering	A.A	Bole manufacturing college	0925755581
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3	DEMEKSA FIROMSA	BSC	Garment Technology	Oromia	Sebeta polytechnic college	0917656793
4	FUFA DIRIBA	MSC	Garment Technology	Oromia	Adama polytechnic college	0912006604
5	CHERU GEREMEW	MSC	Garment Technology	Sidama	Aleta wondo polytechnic college	0915612805