REPUBLIC OF SOUTH SUDAN

TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING
NON FORMAL TVET COMPETENCY BASED CURRICULUM

LEARNER'S BOOK

For
CERTIFICATE OF PROFICIENCY
IN
TAILORING AND GARMENT MAKING

SEPTEMBER 2019

DISCLAIMER

This curriculum has been produced by the EMPOWER Project with financial support from European Union. Its contents are the sole responsibility of the EMPOWER Consortium and do not necessarily reflect the views of the European Union.

FOREWORD

Learners are central to the success of any competence-based learning approach. This document is the Learner's Book which has been developed as part of the competence-based learning package of the South Sudan non-Formal TVET Curriculum development assignment. The purpose of this book is to provide essential competence-based learning information to the trainees of the seven priority trades. The document is presented in six sections.

Section one gives general introduction and goes further to give information on learning program, structure, organization of the training course contents, learning strategies in a competency based learning environment and how to use the learner's book. Section two provides for the theory of competence-based learning and its assessment criteria. Section three provides for the competency profile of the Certificate of Proficiency (Level 1) holder and market job opportunities available on successful completion of the training. Section Four gives information on the various learning modules for the trade. Section five gives information on the on-job training during industrial attachment and section six gives the summary notes for theoretical understanding of the various modules theories, trade tools, equipment's and knowledge. This has been provided in the form of learning information sheet.

The competence-based curriculum gives the learners an opportunity for the second chance education through the acquisition of technical and vocational skills. It is my wish to the learners of these curricula to take this life-long journey seriously and make use of the learning opportunities provided to them to be of value addition. These opportunities will enable them acquire skills for direct employment in the relevant industries as well as for self-employment in the practice of trade specific skills.

The Ministry of General Education and Instruction wishes all the users of this Learner's Book the very best in their quest for discovering knowledge through competence-based learning.

Hon. Deng Deng Hoc Yai
Minister of General Education and Instruction

ACKNOWLEDGEMENT

Development of this leaner's guide for Tailoring and Garment making trade has been a consultative process with participation from different stakeholders. The Ministry of General Education and Instruction wishes to thank everyone who played a role in one way or the other in the process of developing this harmonised National Technical and Vocational Skills Competency-Based training learner's guide in Tailoring and Garment making Competency-Based curriculum for South Sudan.

We wish to acknowledge the generous support from European Union for funding this initiative through the EMPOWER Consortium. We thank Finn Church Aid (FCA) South Sudan team through the leadership of the Country Director, Mr. Berhanu Haile, Thematic Senior Education Advisor, Ms. Carita Cruz, and Education Advisor, Mr. Moses Leviticus Omara, for leading the curriculum development process.

We are grateful to the collaboration between UNESCO and EMPOWER that conducted South Sudan Labour Market Assessment in 2018. This market assessment led to the identification of trades that formed the foundation upon which tailoring and garment making trade was selected. Appreciation goes to Afri-Project Management Consultants, under the leadership of Mr. Joseph Odhiambo Ndaga who were contracted by Finn Church Aid to undertake this important national assignment.

We wish to appreciate the role played by the Minister of General Education and Instruction, Hon. Deng Deng Yai Hoc, the Minister of Labour, Public Service and Human Resource Development, Hon. James Hoth Mai, the Minister of Culture, Youth and Sports, Hon. Nadia Arop Dudi, for their commitment throughout the entire curriculum development process. Their commitment and visionary messages for strengthening TVET delivery in South Sudan kept the team on course.

We wish to recognise the great involvement and participation of the Director Generals in the MoGEI, MoLPSHRD, and Ministry of Culture, Youth and Sports, and all the technical teams in their ministries. We thank you in a special way and wish to recognise the contributions of trainers/instructors from Juba Multi-Purpose Training Centre (MTC), Juba Technical School, SSOPO, St. Vincent and Don Bosco vocational centres, all of whom played a key role in revising and making the curriculum module content relevant to the South Sudan Context.

Appreciation is extended to development partners and private actors who participated throughout this curriculum development process. Specifically, we recognise the contributions from United Nations Development Programme (UNDP), EMPOWER Consortium members (NRC, FCA, ACROSS, Nile Hope, BBC Media Action and VOSDO), Academy for Professional Development, World Vision, Save the Children, AAHI and Dorcas Aid International.

Through this learner's guide, we look forward to a great future in developing Tailoring and Garment making skills for the South Sudan labor market and beyond.

ACRONYMS AND ABBREVIATIONS

AAH	Action Africa Help International
ACROSS	Association of Christian Resource Organisation Serving Sudan
BBC MA	BBC Media Action
CBET	Competence Based Education and Training
DACUM	Developing A Curriculum
ICT	Information Communication Technology
FCA	Finn Church Aid
MoGEI	Ministry of General Education and Instruction
MOG	Module Outcome Guide
MoLPSHRD	Ministry of Labour, Public Service and Human Resource Development
MTC	Multi-Purpose Training Centre
NGO	Non-Governmental Organization
NRC	Norwegian Refugee Council
NVQF	National Vocational Qualifications Framework
OJT	On-The-Job training (OJT)
OHS	Occupational Health and Safety
PLAR	Prior Learning Assessment and Recognition
RPL	Recognition of Prior Learning
SSOPO	South Sudan Older People's Organization
TAR	Training Achievement Record
TVET	Technical Vocational Education and Training
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
VOSDO	United Nations Educational, Scientific and Cultural Organization

TABLE OF CONTENTS

LIST OF TABLES

1.0 SECTION ONE: INTRODUCTION TO LEARNER'S BOOK

1.1 INTRODUCTION TO LEARNER'S BOOK

This learners' book is an information booklet that provides learners of Certificate of Proficiency in Tailoring and Garment making trade with the key and strategic information that they need to know as they go about their competency-based learning experiences. The curriculum learning experience has been designed such that the trainees learn both at the IBTVET and EBTVET. The South Sudan Non-Formal Competency-Based TVET curriculum has been designed to facilitate learning at three places namely: Theory classes at the IBTVET; Practical classes at the IBTVET practical wokshop; and on-the-job training experience in the place of work within the respective industry of the trade.

This document provides learners with the key information about the competency-based learning for the COP in Tailoring and Garment making. It gives the specific objectives for each of the competencies development learning modules as derived from the learning outcomes in the main curriculum training syllabus and the associated Trainers' Guide. The learning activities for each module are reflected in the Learners' Guide only in order to avoid unnecessary repetition and also with the understanding that each activity can only be executed effectively under the guidance of the trainer who is the facilitator of learning.

The document gives a sample revision questions and self-competency assessment questions. These are provided within the Learner's Guide to enable learners to gauge the extent to which they have digested the material associated with each module and learning outcomes as contained in the training syllabus.

The learners are advised not to set the limit of his/her scope of subject knowledge and competence to the few sample questions provided in this booklet. They should read wider so as to gain more knowledge and competencies. This is a life-long learning journey experience and learners are encouraged to be motivated and learn to learn the skills that will increase their chances of getting sustainable livelihood within their communities, and be motivated to continue with this life-long learning journey, so as to contribute to the attainment of SDG 4 in South Sudan.

Learning Information Sheet comprising of summarised notes for each unit of the module has been provided in this Learners' book only. The notes in the information sheet are only meant to complement other additional references and reading materials provided by the trainer. Learners are also advised to obtain further reading materials from school/college libraries, as well as from the internet and other prescribed text books.

1.2 PRESENTATION OF COP IN TAILORING AND GARMENT MAKING LEARNER'S BOOK

The specific trade occupation skills that once acquired will lead to the award of Certificate of Proficiency in Tailoring and Garment making trade are organised in the form of Modules which are in themselves self-contained complete Basic Employable Skills Training (BEST) programs capable of being offered and certified upon their successful completion as single modules, only with the exception of module I that cuts across all the trades. The module one covers the issues surrounding specific trade theory, trade tools and equipment, occupational health and safety. Fundamentals of trauma awareness and understanding of competency-based learning and its assessment criteria.

The course comprises of five modules of competencies, with each module being a certifiable basic industry employable skill in the practice of occupation of Tailoring and Garment making skills in the Tailoring and Garment making related work environment.

The course aims at formal, non-formal and informal training for persons who wish to acquire the right knowledge, attitude and skills that will enable them to either engage in salaried employment in Tailoring and Garment making business operating firms at junior level or be self-employed by managing their own business within the trade of tailoring and garment making course.

The course training curriculum has been designed and developed to achieve the objectives of providing multi-skilled workers for the occupation of tailoring and garment making industry in South Sudan, and beyond.

1.3 ORGANIZATION AND PRESENTATION OF THE LEARNERS BOOK CONTENTS

The competency based learning course for the Cetficate of Profficiency in Tailoring and Garment making comprises of life skills, trade theory, modules of technical competency in tailoring and garment making, workshop practical training skills and on job training industrial attachment. The course is structured into Core competencies attainment modules and Cross Cutting Skills Modules. Modules are subdivided into Units of Learning specific competencies which are further sub-divided into Learning Outcomes with

Assessment Criteria. Each module is a comprehensive self- contained employable skills short course training capable of being offered alone. Each modules training has been designed to last for about 80-120 hours. The course has been designed to allow for practical on the job training industrial attachment on completion of each module or with an option of industry attachment at the end of the IBTVET training on all the prescribed modules.

1.4 TRAINING AND LEARNING STRATEGIES FOR A COMPETENCY-BASED LEARNING AND TRAINING CURRICULUM

Competency-based training delivery is based on the defined competency standards, which are established by the national industry standards or trade occupation standards. The traditional role of a trainer in delivery of this kind of training program changes and shifts towards facilitation of learning. A facilitator encourages and assists trainees to learn by themselves. Trainees learn at their own pace. Individual differences are considered. Trainees present themselves for assessment only when they are ready. As trainees learn at different paces, they might well be at different stages in their learning, thus learning must be tailored to suit individual needs of the learners.

1.5 HOW TO USE THIS CERTIFICATE OF PROFICIENCY IN TAILORING AND GARMENT MAKING LEARNER'S BOOK

This is a learner's book, and as the name suggests, focuses on facilitating learning. Its aim is to guide the learners in conducting self-paced study that will enable them gain competencies and be certified with the skills for each module, and with the entire modules on completion of all the qualifying modules of competency for award of Certificate of Proficiency in Tailoring and Garment making trade.

This book is to guide learners of this important skills development program on the key learning testing questions, competency assessment criteria of self-assessment, formative assessment and summative assessment.

The learner's book also provides information on fundamentals of competency-based learning, and the differences between the traditional knowledge-based approach to Education and competency-based education and training approaches. It goes further to show learners on the key competencies profile for Certificate of Proficiency in Tailoring and Garment making trade and job profile of the COP holder in Tailoring and Garment making trade.

1.6 PRESENTATION OF THE LEARNER'S BOOK FOR COP IN TAILORING AND GARMENT MAKING

The document is presented in six sections, with section one providing for the introduction to the learner's book and goes further to give information on learning program structure, organisation of the training course content, learning strategies in a competency-based learning environment, how to use the learners book, and presentation of the learner's book. Section two provides for the theory of competency-based learning and its assessment criteria. Section three provides for the competency profile of the Certificate of Proficiency holder in Tailoring and Garment making and market job opportunities available on successful development of the competencies upon the completion of the training.

Section Four gives information on the various learning modules for the Tailoring and Garment making trade. Section five gives information on the job training during industrial attachment; and section six gives the summary notes for theoretical understanding of the various modules' theories, trade tools, equipment and Occupational Health and Safety. This has been provided in the form of learning information sheet which appears at the end of this document.

2.0 SECTION TWO: COMPETENCY BASED LEARNING AND ASSESMENT

2.1 What is a Competency Based Learning Approach?

Many learners and stakeholders of TVET learning eco-system have taken their education and learning experience through the use of traditional approach. As such, most people are not familiar with system requirement for effective competency-based learning approaches. This section of the learner's book is meant to provide you with basic answers to some of the most frequently asked questions about competency-based education learning, training, assessment and certification. The term competency-based education is an approach to designing learning programs with a focus on learners demonstrating that they attained module specific competencies as a result of going through their respective learning system. These competencies are related to knowledge, skills and abilities rather than time spent in a classroom to achieve the competencies.

According to the Competency-Based Education Network (C-BEN) 2017, the term competency-based education combines an intentional and transparent approach to curricular design with an academic model in which the time it takes to demonstrate competencies varies and the expectations about learning are held constant. Learners acquire and demonstrate their knowledge and skills by engaging in learning exercises, activities and experiences that align with clearly defined programmatic outcomes. Students receive proactive guidance and support from faculty and staff. Learners earn credentials by demonstrating mastery through multiple forms of assessment, often at a personalised pace.

Competency-based education therefore is an approach to teaching and learning that clearly identifies the competencies that students must master on a module for them to be declared competent and awarded with module of competency completion certificate. The certificate is issued on a gradual process, and upon completion of the entire prescribed modules, the learners are awarded with Certificate of Proficiency for that respective trade. Each module is designed to be a basic employable skills training module. Certificate is issued on the completion of each module because this can be an exit point to some learners who would feel that they gained something and would opt to first get an employment with what they have already learned, and then return later to continue with the acquisition of skills.

The modern use of competency-based approach to education and training concept has its origin in the United States of America in the late 1960s and 70s. Since then, many countries of the world are using the approach in the delivery of their education system and especially in the area of TVET programs. The individual and gradual training module certification received by the learners will later on qualify the learners for prior learning experience assessment when they wish to join other courses that could have similar modules to those that they have been trained on and certified to be competent in.

2.2 INFORMATION ON HOW TO CONDUCT COMPETENCY ASSESSMENT

Attainment of competency is undertaken through competency-based assessment. There are different kinds of assessment that are administered to the learners of these programs, and the most popular ones are:

Table 2.1 Information on Different types of Assessment Criteria for Competency Based training

SNo.		
1	**Initial assessment:**	This kind of assessment is taken on the admission to the vocational training centre. Its aim is to engage the occupation of interest and level of trauma based on the learner's background. South Sudan is one of the conflict-affected countries of Africa. The learners being admitted into these programs come from various traumatised backgrounds and experiences. This assessment will help the institution, trainer and the sponsor to gauge the motivation for learning and identify any learning difficulty or challenge likely to be faced by the learners. This assessment will also inform on the need of giving learners numeracy and literacy skills.
2.	**Prior learning experience assessment:**	This is carried out by the teacher who is engaged with the training of the learner. Since learners come from different backgrounds, the aim of this assessment is to establish if the learner had previously acquired some competencies such as through learning on-the-industry job working environment. In such a case, the learner will apply for prior learning experience assessment and if they meet the requirement, then such prior learning experience will be recognised and exempted. The form for this application is provided for in the trainer's guide.
3.	**Self-assessment guide:**	This is done by the learner on completion of each module. If the learner is convinced that he or she is now ready to be assessed, then the learner will inform the trainer that he or she is ready to be assessed. Samples of these self-assessment guides for each module have been developed.
4.	**Formative Assessment:**	This is the assessment provided by the trainer to certify that the learner has attained the competencies. The trainee's performance in the formative assessment will be recorded on the trainee's achievement record. Instructors of this curriculum need to be trained on how to administer a competency-based assessment. This is because in a competency-based learning assessment, the learner is either competent or not yet competent. When assessed and proved competent, then they are awarded with certificate of competency in that respective module or modules. If the assessment result shows that they are not yet competent, then the communication is made to the learner who will repeat the learning on those modules until when they have attained competency and are ready for the assessment. The learning progression is individualised and each learner progresses at his or her own pace

5	**Summative assessment:**	This is done at the end of the training by an external assessor from the industry. In most cases it is done practically when the learners are practicing their acquired skills through on -job training. This curriculum design has provided for 20 hours on-the-job training industrial attachment after each and every module or with an option of taking the on-Job training upon completion of all the prescribed modules. South Sudan needs to put down systems and policies to govern this kind of assessment practice, and there is a need to identify professionals from each trade who can be used to administer this important assignment. This will also require active industry participation. In the absence of these, the trainers might be allowed to use the IBTVET assessment as the country prepares to roll-out this kind of assessment. There is also a great need for this training curriculum to be supported by EBTVET training guide. These will be two. One for supporting the learner; and the other one for supporting the on-job training instructor.
6.	**Competency Attainment Verification:**	This is done both internally and externally by the verifiers to confirm that indeed the competency has been attained by the learners.

2.3 INFORMATION ON CERTIFICATION SYSTEM FOR COMPETENCIES ATTAINED.

Learners who demonstrate the attainment of competencies will be issued with respective modules of competency certificate that shows that the learner has attained the competencies in the respective level occupation module and modules. There is no certificate being issued for module 1 as it is not an employable skills training. The certification is issued on a module by module basis and there will be gradual certification for each module where competencies have been attained. On completion of all the prescribed modules for the level training program, the learner will then be awarded with a final competency certification with the issue of Certificate of Proficiency in Tailoring and Garment making trade.

3.0 SECTION THREE : COMPETENCY PROFILE FOR COP HOLDER IN TAILORING AND GARMENT MAKING

3.1 COMPETENCY PROFILE

The term competency profile refers to the key learning skills experience areas that trainees of the curriculum program are expected to demonstrate competence in as a proof that they have acquired learning though the occupation learning system and environment. The competence profile informs the formulation of learning outcomes, contents of design of modules of competency, application of Blooms taxonomy learning experience action verbs, self-assessment guide, formative assessment, summative assessment, verification and certification. In this document the competency profile has been classified into 3 categories namely:

1. Core, Technical / functional or hard skills
2. Soft skills or self / personal skills
3. Business skills

The table below shows the competency profiles of the Certificate of Proficiency holder in Tailoring and Garment making occupation.

Table 2.1 Competency profile of certificate of proficiency in tailoring and garment Making occupation.

Technical competencies	Soft skills competencies	Business skills
1. Sewing Machine Operator 2. Basic Sewing Machine Servicer and Repairer. 3. New Sewing Machine Assembler 4. Assistant Patterns Drafting and Development 5. Perform basic Garments Cutting 6. Perform basic Garment repairs 7. Perform basic sewing	1. Manage interpersonal communication 2. Self Trauma awareness and management skills 3. Skills for Managing and dealing with e difficult customers 4. Environmental safety awareness 5. Knowledge of basic equipment's and tools for tailoring vocation. 6. Occupational Health and safety for tailoring and garment making. 7. Learning to learn and self-study skills	1. Garment shop business sales assistant 2. Perform basic Customer care services in tailoring and garment making trade. 3. Self-entrepreneur in tailoring and garment making business operations 4. Tailoring and Garment Making Business information and records keeping

3.2 POTENTIAL LABOR MARKET JOB OPPORTUNITIES

The holder of Certificate of proficiency in Tailoring and Garment Making trade will be able to do the following jobs in the market.

- ◊ Serve as Assistant Tailor
- ◊ Assistant Tailoring and Garment making
- ◊ Assistant Sewing machines installer
- ◊ Perform customer care services assistant in tailoring and Garment making industry.

4.0 SECTION FOUR : SYLLABUS FOR CERTIFICATE OF PROFICIENCY IN TAILORING AND GARMENT MAKING VOCATION

4.1 LEARNING MODULES OF COMPETENCY FOR CERTIFICATE OF PROFICIENCY IN TAILORING AND GARMENT MAKING

Table 4.1: Modules of Competency for COP Tailoring and Garment Making

CODE	MODULES	NOMINAL HOURS	ON-THE-JOB TRAINING/ INDUSTRIAL ATTACHMENT HOURS
4.1	Trade Theory, Safety, Tools and Equipment in Tailoring and Garment Making	80	20
4.2	Sewing Machine Operator	80	20
4.3	Patterns Drafting and Developer	80	40
4.4	Garments Cutting and Making	80	40
4.5	Basic Sewing Process	100	20
TOTAL		**420**	**160**

4.2 MODULE 4.1: TRADE THEORY, SAFETY, TOOLS AND EQUIPMENT IN TAILORING AND GARMENT MAKING

Table 4.2: Trade Theory, Safety, Tools and Equipment in Tailoring and Garment Making Module

A: MODULE CODE	4.1	TTH	PTH	OJT
Module level	1	24	56	20

B: UNITS OF MODULE

Unit of Learning 4.1.1: 4.1.1.: Introduction to Trade Theory

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/or requirements:

4.1.1.1 Describe Trade theory in Tailoring and Garment making
4.1.1.2 Examine the essence of occupational safety and health
4.1.1.3 Identify and explain hazards associated with Tailoring and Garment Making
4.1.1.4 Classify the basic principles and techniques of accident prevention and safety measures
4.1.1.5 Explain First Aid procedures
4.1.1.6 Explore the basic provisions for occupational safety and health under South Sudan legislation
4.1.1.7 Exhibit trauma awareness
4.1.1.8 Self-competency Assessment
4.1.1.9 Understand concept of competency based training
4.1.1.10 Exhibit knowledge on trade tools and equipment used in the practice of Tailoring and Garment Making

C: Sample Questions

1. Explain the different types of hazards and ways to minimise them.
2. What is the importance of maintaining a clean and safe working environment?
3. State the importance of first aid kit at the work place.
4. Predict possible emergency cases that may happen in a Tailoring and Garment Making setup.
5. Identify different wastes products of Tailoring and Garment Making.
6. Why is it important to observe the danger and safety signs importance?
7. State the organisational safety and health protocol
8. List South Sudan regulations on occupational health and safety
9. State the advantages of waste separation

Resources	Learners guides, Teachers guides, Manual sewing machine, Electric sewing machine, Fabric pieces. Thread, Flat needles, round needles, twin needles, sharp-point needles, ball-point needles, wedge-point needles, paper notebook, hand-outs, whiteboard, text books, pens, fabric or material pieces, hand needles, threads, thimble, lubricating oil, seams ripper, razor-blade, pliers, flat and star screw drivers, tweezers, cloth dusters, scrap fabrics (materials), assorted sewing machine needles, sewing machine spare parts, needles, bobbin, hook, threader wires, and lint brush, tool box, spanners, file, duster, dust din, dusters, scrap book, pieces of fabric (materials).
Assessment Method	1. Oral Questioning, 2. Presentations by Trainees 3. Written tests (Short questions) 4. Simulation, 5. Performance Assessments 6. Observation 7. Projects

4.3 MODULE 4.2: MODULE 4.2: SEWING MACHINE OPERATOR

Table 4.3: Sewing Machine Operator Module

A:MODULE CODE	4.2	TTH	PTH	OJT
Module level	I	24	56	20
B: UNITS OF MODULE				

Unit of Learning 4.2.1: Straight Stitching Machine operator

Upon completion of this learning unit, the trainee should be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.2.1.1 Identify parts of a sewing machine

4.2.1.2 Thread the sewing machine

4.2.1.3 Winding the bobbin

4.2.1.4 Inserting sewing machine needle

4.2.1.5 Test the sewing machine output on double pieces of fabric

Unit of Learning 4.2.2: Set up a Sewing Machine

On completion of this learning unit, the trainee should be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.2.2.1 Prepare a manual sewing machine

4.2.2.2 Prepare an electric sewing machine

Unit of Learning 4.2.3: Adjust Machine Settings/Parts for Good Stitching

On completion of this learning unit, the trainee should be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.2.3.1 Correct machine stitching faults

Unit of Learning 4.1.4: Perform Preventive Maintenance

On completion of this learning unit, the trainee should be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.2.4.1 Care for sewing machine

Sample Questions

1. Identify tools used for cutting out fabrics
2. List tools used for measuring
3. Name the tools used for sewing
4. List types of machine needles
5. State the function of the following tools; seam ripper, bodkin, stiletto, thimble
6. Name sewing machine parts
7. Draw a sewing machine and label the parts
8. Outline the procedure of threading a sewing machine.
9. List the care measures for a sewing machine.
10. Explain the factors to consider when selecting a sewing machine
11. State the causes and remedies of the following machine stitching faults:

- Skipped stitches
- Upper thread breaking
- Thread clogging
- Loose stitches on underside of fabric
- Needle breaking
- Fabric not moving
- Missing stitches
- abric puckering

12. Highlight three points to be considered when choosing each of the following:
    - Sewing needles
    - Tape measure
    - Ironing board
    - Working top / table.
13. State the function of each of the following machine parts:
    - Stop motion screw
    - Thread take-up lever
    - Feed dog
    - Pressure bar
    - Needle clamp
    - Presser foot
14. List two pieces of pressing equipment

Resources	Manual sewing machine, Electric sewing machine, Fabric pieces. Thread, Flat needles, round needles, twin needles, sharp-point needles, ball-point needles, wedge-point needles, paper notebook, hand-outs, whiteboard, text books, pens, fabric or material pieces, hand needles, threads, thimble, lubricating oil, seams ripper, razor-blade, pliers, flat and star screw drivers, tweezers, cloth dusters, scrap fabrics (materials), assorted sewing machine needles, sewing machine spare parts, needles, bobbin, hook, threader wires, lint brush, tool box, spanners, file, duster, dust bin, dusters, scrap book, pieces of fabric (materials).
Teaching/Training Methodology	Lecture, demonstration, simulation, discussion, practical assignments
Assessment Method	1. Oral Questioning, 2. Presentations by Trainees 3. Written tests (Short questions) 4. Simulation, 5. Performance Assessments 6. Observation 7. Projects

4.4 MODULE 4.3: DRAFT AND DEVELOP PATTERNS

Table 4.3: Sewing Machine Operator Module

A: MODULE CODE	4.3	TTH	PTH	OJT
Module level	1	24	56	40

B: UNITS OF MODULE

Unit of Learning 4.3.1: Draft Block Patterns

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.3.1.1 Draft block patterns in full scale

Unit of Learning 4.3.2: Manipulate Block Patterns

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.3.2.1 Develop patterns for various styles

Unit of Learning 4.3.3: Prepare Final Patterns

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.3.3.1 Indicate pattern instructions on final patterns

C: Sample Questions

1. 1. List the measurements required for drafting each of the following:
   - Blouse
   - Sleeve (Short)
   - Skirt
   - Short / sport wear
   - Dress
2. State the factors to consider when developing patterns for a particular garment style
3. State the difference between a block pattern and a final pattern.
4. With the aid of a diagram, show the information contained on final patterns.
5. Explain three ways of storing patterns.
6. Draft the following blocks:
   - Bodice
   - Skirt
   - Trouser
   - One-piece dress
   - One-piece sleeve
7. Develop final patterns:
   - A-line Skirt
   - Six-gored Skirt
   - Flared skirt
   - Puff sleeve
   - Bishop sleeve
   - Double-breasted front

Resources	Large tables, Whiteboard, text books, French curves, metre rule, squares, pattern hooks, Notebook, Hand-outs, pencil, rubber, browing papers, manila paper pieces, pattern hooks, paper scissors, cello tape, pins, tracing wheel, seams ripper and shear scissors
Assessment Method	1. Oral Questioning, 2. Presentations by Trainees 3. Written tests (Short questions) 4. Simulation 5. Performance Assessments 6. Observation, Projects

4.5 MODULE 4.4: CUTTING AND MAKING GARMENTS

Table 4.5: Cut and Make Garments Module

A: MODULE CODE	4.4	TTH	PTH	OJT
Module level	I	24	56	40
B: UNITS OF MODULE				

Unit of Learning 4.4.1: Lay and Cut out Fabric for Garment Making

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.4.1.1 Estimate fabric required for a particular garment

4.4.1.2 Cut out fabrics

Unit of Learning 4.4.2: Assemble various Garments

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.4.2.1 Make a skirt and blouse
4.4.2.2 Make a pair of shorts
4.4.2.3 Make one-piece dresses

Unit of Learning 4.4.3: Perform Finishing Processes

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.4.3.1 Attach buttons
4.4.3.2 Trim hanging threads
4.4.3.3 Make buttonholes by hand needle
4.4.3.4 Attach labels on garments
4.4.3.5 Final press garment
4.4.3.6 Package the garment

Unit of Learning 4.4.4: Repair and Modify Garments

On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:

4.4.4.1 Mend torn/worn out garment parts

C: Sample Questions

1. Calculate the amount of fabric required to make 100 trousers, if one trouser takes one and a quarter metres of fabric.
2. State the factors considered when preparing to lay fabric for cutting out.
3. Explain three ways of folding fabric for cutting out garments.
4. 4Explain three ways of determining/estimating the amount of fabric required for a garment.
5. State the factors to be considered when choosing fabric for a particular garment style.
6. State factors to consider when choosing each of the following:
   - Buttons
   - Laces/ribbons
   - Interfacing
   - Zips
   - Binding
7. Define the following terms used in garment making:
   - Under stitching
   - Notching/snipping
   - Pressing
   - fusing
8. Outline the procedure of assembling each of the following garments:
   - Shirt
   - Skirt

• Blouse • Short • Dress	
Resources	Large tables, Whiteboard, text books, French curves, metre rule, squares, pattern hooks, Notebook, Hand-outs, pencil, rubber, browing papers, manila paper pieces, pattern hooks, paper scissors, cello tape, pins, tracing wheel, seams ripper and shear scissors
Assessment Method	1. Oral Questioning, 2. Presentations by Trainees 3. Written tests (Short questions) 4. Simulation 5. Performance Assessments 6. Observation, Projects

4.6 MODULE 4.5: PERFORM BASIC SEWING PROCESSES

Table 4.5: Cut and Make Garments Module

A: MODULE CODE	4.5	TTH	PTH	OJT
Module level	I	30	70	20
B: UNITS OF MODULE				

Unit of Learning 4.5.1: Make Hand Stitches and Seams
On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:
4.5.1.1 Work hand stitches
4.5.1.2 Make seams

Unit of Learning 4.5.2: Construct Garment Details/Features
On completion of this learning unit, the trainee should be able to demonstrate the following competencies according to industry standards and/ or requirements:
4.5.2.1 Dispose of fullness
4.5.2.2 Attach pockets
4.5.2.3 Construct openings
4.5.2.4 Attach zips
4.5.2.5 Attach fasteners
4.5.2.6 Attach facings
4.5.2.7 Attach collars
4.5.2.8 Attach sleeves
4.5.2.9 Attach waistbands
4.5.2.10 Finish hems

Unit of Learning 4.4.3: Perform Finishing Processes
On completion of this learning unit, the trainee will be able to demonstrate the following competencies according to industry standards and/ or requirements:
4.4.3.1 Attach buttons
4.4.3.2 Trim hanging threads
4.4.3.3 Make buttonholes by hand needle
4.4.3.4 Attach labels on garments
4.4.3.5 Final press garment
4.4.3.6 Package the garment

C: Sample Questions

1. Name the three classes of hand stitches
2. Name three joining stitches
3. Name four neatening stitches
4. Name five decorative stitches.
5. Name five types of seams
6. Explain the procedure of making an overlaid seam
7. Explain the procedure of making a double-stitched seam
8. Explain the procedure of making a French seam
9. State the qualities of a well-made seam.
10. List three methods of neatening the raw edges of a seam.
11. State the important points to note when working stitches.
12. Outline the procedure of preparing and attaching each of the following:

- Patch pocket
- Placket opening
- Neck facing
- Open-end zip
- Semi-concealed zip
- Set-in sleeve

• Shirt sleeve with cuffs
• Shirt collar with separate stand
• Peter pan collar
• Waistband
• Gathers
• Shirring
13. Explain the procedure of cutting and joining crossway strips.
14. State the difference between box pleat and inverted pleat.
15. Sketch the front and back view of a girl's dress to show the following features:
  • Puff sleeves
  • Sailor's collar
  • Frilled hem
  • Tie belts
  • Circular skirt.
16. List the finishing processes done of garments.	

Resources	Notebook, Hand-outs, Whiteboard, text books, pens, fabric pieces, Scissors, fabric pieces, tailor's chalk, interfacing cross way strips, pins, seam ripper, threads, machine needles, hand needles, thimble, Samples of functional and decorative trimmings, Sewing tools, Scrap book, Pieces of fabric.
Assessment Methods	1. Oral Questioning, 2. Presentations by Trainees 3. Written tests (Short questions) 4. Simulation, 5. Performance Assessments 6. Observation, Projects

5.0 SECTION FIVE : ON JOB TRAINING GUIDE

Table 5.1: Industrial Attachment Sheet

Module Code:	4.6	
Module Level:	1	
Total Hours:	160	
Pre-requisite	Modules of Level 1	
Learning Outcomes	Performance Criteria	Assessment Criteria
2.5.1 Familiarise with the workplace tools/ equipment and OHS procedures	2.5.1.1 Exposure to workshop tools/equipment 2.5.1.2 Observation of safety at workplace 2.5.1.3 Involvement in workshop activity	Direct observation Practical demonstration
2.5.2 Demonstrate an understanding of Quality Control procedures	2.5.2.1 Exposure to quality inspection/sampling 2.5.2.2 Observation of safety at work place 2.5.2.3 Involvement in quality control activities	Direct observation Practical demonstration
2.5.3 Perform Cutting	2.5.3.1 Experience in handling cutting tools/ equipment 2.5.3.2 Checking fabric for defects 2.5.3.3 Methods of dealing with fabric defects 2.5.3.4 Spreading many plies 2.5.3.5 Practical cutting 2.5.3.6 Bundling and ticketing of cut components 2.5.3.7 Storage and transportation of cut garment parts 2.5.3.8 Observation of safety at work place	Direct observation Practical demonstration
2.5.4 Prepare patterns	2.5.4.1 Drafting patterns 2.5.4.2 Cutting out patterns 2.5.4.3 Labeling 2.5.4.4 Pattern storage	Direct observation Practical demonstration
2.5.5 Participate in garment assembly activities	2.5.5.1 Make through garment assembling 2.5.5.2 Semi section/progressive bundle assembling 2.5.5.3 Final pressing 2.5.5.4 Packaging	Direct observation Practical demonstration
2.5.1 Take and file records	2.5.6.1 Keeping records of daily activities in various departments 2.5.6.2 Exposure to record keeping documents	Oral Questioning Presentations by trainees

Sessional assessment will be adopted and the following guidelines should be followed regarding Industrial attachment marks:

1.	Participation	25%
2.	Attendance	10%
3.	Time Management	10%
4.	Log book	15%
5.	Safety	5%
6.	Communication skills	5%
7.	Creativity	5%
8.	Customer care	5%
9.	Cleanliness and hygiene	5%
10.	Readiness to be corrected	5%
11.	Team work	5%
12.	General conduct	5%

Internal Evaluation &Total internal marks is 100.

Marks shall be awarded at the end of every module of the Supervised Industrial Training

6.0 SECTION SIX : LEARNER'S INFORMATION SHEET

6.1 INFORMATION SHEET

6.1.1 OPERATE SEWING MACHINE

Sewing tools and equipment

The essential sewing tools and equipment can be divided into two groups

- Small sewing tools/equipment
- Large sewing tools/equipment

Small Sewing Tools/Equipment

These include various types of scissors, needles, tape measure, dressmaker's pins, thimbles, tailor's chalk, measuring card, metre rule, tracing wheel, seam ripper, bodkin, stilleto.

Large Sewing Equipment

These include the sewing machine, pressing equipment such as an iron, ironing board, a workshop, a long dressing mirror, storage cupboards and drawers.

TYPES OF SEWING MACHINES

There are three basic types of sewing machines:

- Hand-operated sewing machine-is worked by means of a drive wheel which is turned by hand. The great disadvantage of hand-operated machine is that only one hand can be used to control the piece of work being machined. If the piece of work needs adjustment, the machine comes to a stand still because adjustment of the piece of work normally requires both hands.
- Treadle sewing machine- is worked by foot. By means of drive belts, the movement of the treadle plate is transmitted to the sewing machine, therefore two hands are available for fabric adjustment.
- Electric sewing machine- is operated using electricity. It works faster than the treadle and hand-operated machines but it is more expensive. After the machine has been plugged in, the supply of the power to the electric motor is controlled by means of a foot switch/ pedal. This allows the operator to stop and start the machine at will without taking the hands off the work being done. The disadvantage of these electric machines is that they cannot be used where there is no electricity supply.

There are many makes and models of sewing machines, but the basic principle of operation behind them all is the same. It is difficult to generalise about the use of a particular sewing machine, therefore you should refer to the appropriate manufacturers's handbook/ manual or seek advice from a skilled machinist. The following is a brief guide to the principles of machine sewing:

- Make sure that the needle and thread are of a size appropriate to the fabric being sewn.
- Make sure that the machine is correctly threaded. The way of threading depends on the machine. The thread must be passed through the appropriate thread guides, thread take-up lever and tension disks, before it is passed through the eye of the needle.
- After threading the machine, test stitch on a piece of fabric. The fabric should be the same type as the one to be sewn.
- If necessary adjust the tension and/ or stitch length by using the appropriate controls.
- The work to be sewn should be positioned so that the bulk of it is to the left side of the needle.
- To turn corners, let the needle remain in the

fabric. Lift the presser foot, adjust the position of the fabric as required, lower the presser foot again and continue sewing.

- Let the feed dog move the fabric automatically. Do not try to rush by pulling the fabric.
- When you have finished stitching, make sure that the needle is as high as possible, then lift the presser foot
- Remove the work from under the presser foot. Then pull both threads gently away from you, making sure you leave long ends.

SOLVING COMMON MACHINE PROBLEMS

During machine stitching, some problems may be encountered such as:

Problem	Cause(s)	Remedy
Needle breaking	• Wrongly inserted needle • Using incorrect presser foot • Presser foot or throat plate may be loose • Bent needle • Needle may be too fine for the fabric being sewn • Pulling the fabric too hard while stitching • Machine settings may be wrong	• Check the needle • Check the presser foot • Check the throat plate • Check machine settings
Thread breaking	• Machine may be operating too fast • Settings may be incorrect • Wrong threading • Damaged needle • Poor quality thread • Tight upper tension	• Operate machine at moderate speed • Check the threading • Check machine settings • Change needle if faulty • Change thread if of poor quality • Loosen the upper tension
Fabric not feeding in a straight line/feeding unevenly	• Presser foot pressure may be too heavy or too light/insufficient pressure on presser foot • Stitching light-weight fabrics • Presser foot may be loose • Needle may be bent • There may be a defect in the machine feed • Pulling or pushing fabric to the point of interfering with machine feed	• Adjust the pressure on the presser foot • Use paper when stitching very lightweight fabrics • Tighten presser foot • Check the needle • Seek professional advice in the case of defective feed mechanism • Do not pull or push the fabric too hard
Fabric puckering	• Stitching a sheer fabric with too much pressure on presser foot • Stitch length too long or too short • Thread may be too thick for the fabric • Needle may be too coarse for fabric • Bobbin may be wound unevenly • Stitch tension may be unbalanced • Faulty feed dog	• If fabric is sheer or very light weight, the stitch length should not be too long, so pressure on the presser foot should be lessened • If stitching tightly woven or knitted fabrics • Check the thread • Check the needle • Seek professional help incase of faulty feed dog

6.1.2 SEWING MACHINE MAINTENANCE

Introduction

Maintenance can be defined as a process done to keep or enable items to have a longer life span

Types of maintenance

There are two major types of maitenance, namely

(i) Preventive maintenance- service maintenance

(ii) Corrective maintenance- breakdown maintenance

In the workshop, a maintenance department does many different types of work which are inter-dependent and must therefore be coordinated. The following types of work are associated with workshop maintenance:

(i) Administration

(ii) Preventive maintenance

(iii) Corrective maintenance

(iv) Modification

(v) Replacement

Administration: The functions of maintenance administration consists of designing and putting into effect the various systems of maintenance in the organisation. The following systems are frequently employed in maintenance departments:

(a) Machinery records

(b) Spare parts system

(c) Preventive maintenance system

(d) Work sequence system

Maintenance administration also entails the purchasing of spare parts, consumable items and services.

i. **Preventive maintenance:** this type of maitenance includes all types of programmed maintenance or all measures aimed at the prevention of faults or at the discovery of faults before any serious damage can take place

ii. **Corrective maintenance:** Even with a well-developed preventive maintenance system, there is always need for corrective action.The term

" Corrective maintenance" relates to any work with the purpose of correcting faults

iii. **Modification:** In many cases, modifications have to be carried out in order to adapt the production equipment to current requirements.

iv. **Replacement:** For any workshop to remain efficient, equipment will have to be replaced from time to time. This is another area in which the maintenance department normally carries out such work as is necessary.

Preventive maintenance means an action is done before fault occurs. Preventive maintenance can be divided into two parts:

i. Direct preventive maintenance - doing something like replacing, oiling machines, planned replacement and renewal. Direct maintenance is often carried out after a certain number of operating hours or calendar months.

ii. (Indirect preventive maintenance - knowledge, condition monitoring. Covers all operations intended to determine the need for direct preventive maintenance measures of repairs

Corrective maintenance. Also known as replacement maintenance, describes measures, with the purpose of correcting faults ie. to restore damaged equipment to its proper functional state. Corrective maintenance is often refered to as ' repair work'

Importance of maintenance

Preventive maintenance yields numerous benefits including:

1. Minimum maintenance costs
2. Maintenance performed when convenient
3. Ability to conduct maintenance
4. Less downtime- If the job can be done before removal of the equipment from service, the time that the equipment is out of service can be minimised
5. Minimum spare parts inventory
6. Less disruption through emergency maintenance
7. Less standby equipment needed
8. Less overtime needed
9. Increased safety
10. lLess pollution

Every maintenance cycle leads to new experience, which may have to be taken into account at the planning stage. If this is done, maintenance can be directed towards the general aim "to ensure adequate operational reliability and personal safety at minimum expenditure"

SEWING MACHINE MAINTENANCE PLAN.

It is good to check the worthiness of the machine taking into account the following areas and frequency. Faulty parts should be replaced or maintained regularly.

No.	SEWING MACHINE		FREQUENCY				
	Component	Instructions	Daily before use	Weekly	Monthly	Six months	Yearly
1	Sewing machine needle	i. Check for bluntness ii. Check for bending iii. Replace with a new one					
2.	Needle clamp screw	i. Check for tightness ii. Request for a new one					
3.	Presser foot	i. Check for type attached ii. Look out for worn/broken foot					
4.	Presser foot screw	i. Check for tightness ii. Replace in case of looseness					
5.	Presser foot lifter	i. i. Inspect the level, test for misalignment or spring stretch capacity for 2 step lifters					
6.	Feed dog	i. Check if activated/de-activated ii. Listen for noisy or cracking sounds iii. Clean using brush to remove fluff iv. Check for blunt teeth v. Replace with a new one					

7.	Throat plate	i. Check for looseness ii. iReplace with a new one					
8.	Tension Discs	ii. Check for functioning and adjustment iii. Replace with a new one					
9.	Bobbin case	i. i. Check strength of thread tension ii. Replace with a new one					
10.	Shuttle cock	i. Clean with brush to remove fluff ii. Oil moving parts					
11.	Bobbin winder	i. Clean with brush ii. Oil moving parts					
12.	Bobbin	i. Check size and type in case there are a variety of sewing machines in the workshop					
13.	Balance wheel	i. Check presence / absence of motor ii. Tighten all screws and nuts if motor not in use					
14.	Sewing Machine belt	i. Check for strength and adjustment ii. Replace with a new one					
15.	Peddle	i. i. Check position and-adjustment ii. Check nuts and tighten					
16.	Motor, plug, socket, extension wire	i. Open and clean using vacuum cleaner or dry cloth ii. Tighten all nuts iii. Check plugs and flexes for fraying or loose connections iv. Replace when required					
17.	Major machine service						

METHODS OF CARING FOR SEWING MACHINES

A. Cleaning Upper and lower sections

- Remove needle, , presser foot and needle plate with a screw driver before cleaning.
- Organise cleaning apparatus
- Use soft cloth to remove dust from the extension of sewing machine. Use a feather or paint brush when cleaning intricate parts.
- Lift machine head and wipe mechanism beneath.
- Follow instruction in the sewing machine manuals carefully.
- Clean all necessary parts wtih a brush while turning hand wheel towards the front.
- Make sure cleaning is done thouroughly.
- Put machine back together (re-assemble) and fix the machine parts.

B. Lubrication/oiling machine

- Machines should be given a good oiling with regular sewing machine oil
- All movable parts should be oiled.
- A slight turn of the balance wheel will make these parts more visible
- Replace head of machine in position and insert a drop of oil into small holes in the arm of machine
- After oiling a piece of fabric should be placed under foot of machine foot. Run the machine without thread to distribute the oil. Leave fabric underfoot of machine to collect excess oil from needle bar.
- Machine should be oiled on a regular basis, depending on how often it is used
- Some machines come with manuals on how to oil – follow the instruction carefully.

Note: Do not over oil machine. Never allow part or parts of the machine to become dry.

Oiling completes the cleaning of the machine. Oiling has to be done regularly to prevent rusting and to make the parts easy to move.

SEWING MACHINE ATTACHMENTS

Definition of Sewing machine attachments/accessories

Attachments are tools designed to serve different purposes. Some attachments are included when the machine is bought. Newer Models are equipped with built-in features, so most attachments are not needed for these types of machines.

Attachments for the different types of machines include:

Lock stitch	Chain stitch	Serger/overlocker
Roller foot Seam guide Zipper/cording foot Invisible zipper foot Tucker Zig zagger Button holder Gathering Foot Ruffler Teflon coated pressure foot Pressure foot Open-toe/ all purpose presser foot	Roller foot Seam guide	Seam guide Gathering foot Ruffler Teflon coated pressure foot Hemmer foot with folder

Needles

Machine needles should be sharp and of correct size in order to produce very good stitching.

Needles come in different types and sizes namely:

Regular Needles (Flat or round)	Ball point Needles	Wedge –Point needles	Twin + tripple needles
– Numbered from 11-14 – Have sharp points – Used for woven and plain weaves fabric – Have plain weaves	– Used mainly on knits, pass between the threads of fabric without damaging the yarm	– Specially designed to be used on stretchy,leather and furlike fabrics and viny/backing, vinyl	– Are a combination of 2/3 needles joined together at the shark and are used especialy for sewing tucks and double or tripple stitching.

Needle faults

Faults	Cause
Bent needles	• Improper breaking of thread from the machine needle • Wrong needle for sewing certain fabrics • Timing of machine is wrong • Loose presser foot • Wrong presser foot
Blunt needles	• Puckered seam
Wrong sized needles	The size of the needle selected depends on the fabric being worked on. Different fabrics require different size needles. Failure to use the correct needle may result in a. needle leaving a hole in fabric b. Needle being to fine for thread, causing thread to fray/break

Bobbins

The bobbin is a small spool used to hold thread in the lower part of the sewing machine. There are many different types of bobbins made to exact sizes and with specific features to fit specific machines. Bobbins made for domestic machines will not fit industrial machines, and should not be used in them.The bobbin tension should be adjusted by tightening the screw.

Hand equipment and accessories

Hand equipment can be classified in three broad groups, namely:

Cutting	Measuring	Marking
There are 2 major types 1. Shears 2. Scissors Types of shears 1. Pinking/Scalloping 2. Knife edge shears 3. Lingerie shears 4. Heavy weight shears with serrated cutting edges Types of scissors 1. Ripping Scissors 2. Light trimmers 3. Thread clips 4. Electric scissors	1. Tape measure 2. Yard sticks/rulers 3. Adjustable gauges 4. Tailors squares 5. (L-shaped wooden, plastic or metal squares)	

Care of shears and scissors

i. They should be used only to cut fabric. Paper scissors should be used for cutting paper
ii. They should be stored in a dry place with blades closed
iii. The insides of blades should be occasionally wiped with sewing machine oil to prevent rusting
iv. A little machine oil should be placed on the screw between the blades
v. Excess oil must be removed before using shears
vi. Sharpening should be done by the manufacturer or by a competent sharpening service provider

Care of sewing machines

1. A sewing machine must be kept covered when not in use to protect it from dust and damp weather conditions
2. Loosen the machine belt and stop the motion screw when machine is not in use
3. Replace the broken parts immediately to prolong the life of the machine
4. Have the machine checked by the mechanic regularly
5. Oil the machine regularly

HAND-STITCHING

Hand-sewing is necessary when assembling a garmet. There are general principles that apply to hand sewing of any kind. These principles are concerned with the following:

a. aThreading tips-Cut thread at an angle using asharp scissors. Never break or bite thread as this tcauses the thread to fray and makes it difficult to pass through the eye of the needle.To thread the needle hold the needle in the left hand and the thread end in the right hand between thumb and index finger. Pass thread end through the needle eye and with the same motion, transfer the needle to the right thunb and index finger. Then with left hand draw thread end out from the eye about one-third of the way down the remaining thread supply. Hand sew with a comparatively short thread. For permanent stitches use a working length of 18 to 24 inches; for basting and tacking, the thread can be longer. For buttonholes, buttons, hooks and eyes you will use a double thread.

b. Needle choice- select a hand needle that is suitable to the thread and fabric , and comfortable for you and for the kind of work being done.

c. Thread colour and type-For basting and thread marking use white or a light coloured thread that contrasts with the fabric. Dark thread can leave marks on a light-coloured fabric. For permanent handstitchingthread can match or contrast as you prefer.

d. Twisting and knotting – Can be a problem in hand sewing with any thread, but particularly with those that are made entirely or partly of synthetic fibres. To keep the problem to a minimum, use a short length of thread and do not pull tightly on the thread. It is also helpful to thread the needle with the end cut from the spool and to wax the thread before starting to sew. When twisting does occur,allow the thread to untwist itself in this way: First let the thread dangle, with the needle end down, then slide your fingers gently down the thread.

e. Securing stitching at beginning and end- This can be done by tieing a knot or backstitching. Most hand stitching is secured at the beginning with a knot at the end of the thread. In tacking/ basting the knot can be visible but in permanent stitching it should be placed out of sight against an inside layer. Backstitching can be used to secure the beginning and the end of a row of stitching, especially in garment areas where a knot could leave an indentation after pressing e.g in tailoring where a thread knot within a section that has been padstitched would show on the right side. The shorter the bacckstitch, the more secure it will be

CLASSIFICATION OF HAND STITCHES

Hand stitches are classified into two main groups:

a. a) Temporary stitches e.g (tacking,basting,running). These are used to temporarily hold pieces of fabric together in place before the fina stitching is done. Temporary stitches are removed when permanent stitching has been done.

b. b) Permanent stitches-e.g (Hemming, backstitch, blanket, buttonhole, overcast, padding). Permanent stitches are further classified into the following:

- Joining stitches e,g backstitch, paddind,hemming, running, chain
- Neatening stitches e.g buttonhole, blanket,overcast.loop.
- Decorative stiches e.g satin, herring bone,arrow head, fly, feather,cross

SEAMS

Seams are defined as fastening together two or more layers of materials neatly and securely or joining two or more layers of fabric. Choice of seams depends on:

a. The type of fabric/ material being used- For sheer fabrics choose self- neatening seams, so that the raw edges do not show on the right side. Heavy fabrics require seams that reduce bulk e.g. open seam and fraying type of fabrics require seams that enclose the raw edges e.g. French seam.

b. The type of garment being made- Some garments require stronger seams than others depending on their use (e.g. double stitched seams is suitable

for jeans but not for a cotton dress).

c. Style of the garment-The style of the garment influences the selection of a seam; for example, on a princess line type of dress, one could choose to emphasize the style feature by topstitching the seam. In such a case, an open seam would be more appropriate.

d. The position of the seam (e.g. a French seam is used successfully for the side seams of slips but is not suitable for attaching the midriff section to the upper bodice).

e. The shape of the seam (e.g. a French seam is quite suitable for the straight side seams of blouses but is not so easily worked on the curved seams sometimes required for attaching yokes).

f. The effect desired- If a seam is to be seen on the right side, one can choose overlaid, slot, etc. for a decorative effect. For example, on jeans trousers and skirts a double stitches seam looks attractive

QUALITIES OF A WEL-MADE SEAM

A well-made seam should be:

- Strongly stitched to last long
- Accurately stitched to maintain a good line, so that the drape and shape of the garment are not distorted
- Neatly stitched to enhance appearance
- Matched where they cross each other
- Of appropriate width and equal in all parts of a garment
- Well pressed and flat

General rules for working seams

1. Threads used must be suitable for the material
2. The width of the seam depends on the seam allowance. This will however, depend on whether the material frays easily, or is particulary loosely woven.
3. All seams of the same type on a garment must be of similar widths
4. The strength of the seam will depend on the firmness or otherwise of the stitching. Hand-worked stitches must be frequent and regular and those worked by machine must be of a suitable tension and length for the material. (This must be tested on a double piece of the same material first)
5. To avoid puckering of seams on very delicate fabrics it is adivisable to place a piece of tissue paper behind hte layers of material before stitching them.

BASIC TYPES OF SEAMS

There are many types of seams; however the basic seams are:

- Plain/open seam

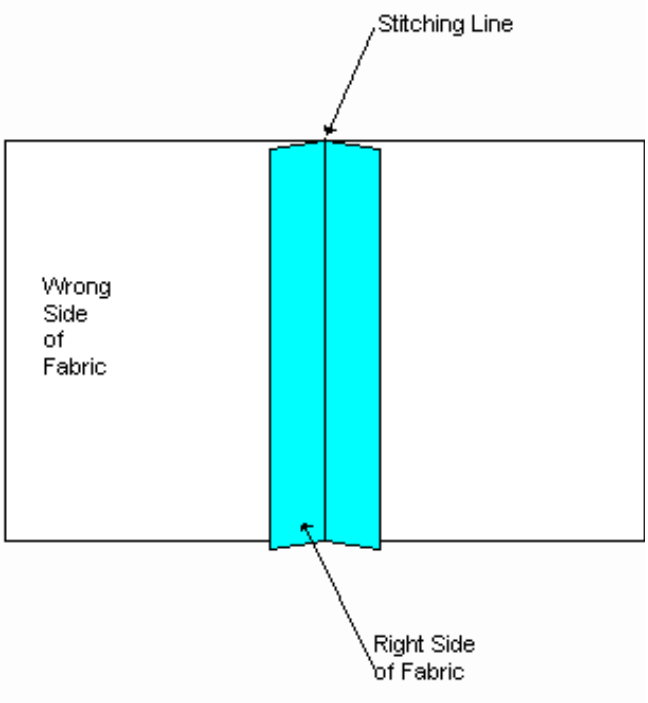
Terms used in working seams includes:

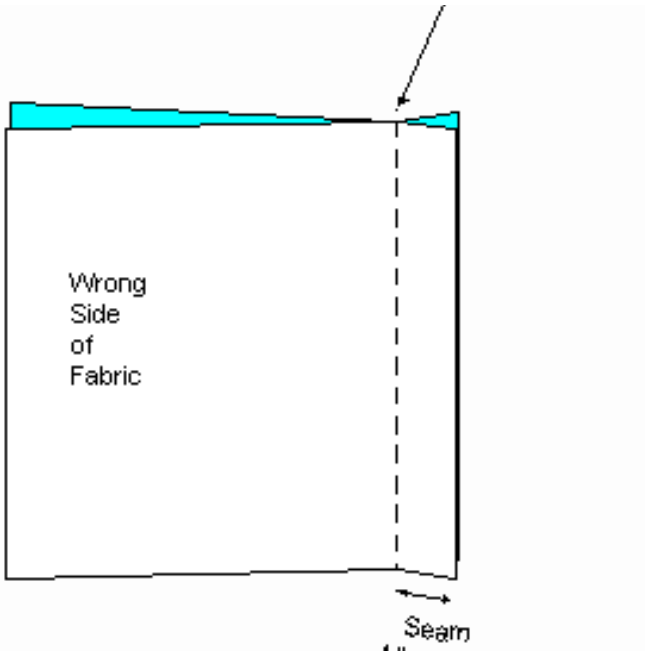
- CUTTING LINE: the line on which the garment is cut out
- STITCHING LINE/SEAM LINE: the line on which the seam is sewn
- SEAM ALLOWANCE: the area of fabric between the stitching line and the cutting line. This is usually 1.5cm. Some patterns allow more in some areas, and some allow less. Always check before making up a pattern.

PROCEDURE FOR MAKING BASIC SEAM TYPES

PLAIN OPEN/FLAT SEAM

This is the basic seam used as a basis for many of the others, and still the best option for a wide range of garments and fabric types. It is very good on fabrics that do not fray and can be made on straight, curved and cornered areas of a garment. The raw edges can be neatened separately or together. It is also the standard seam for sewing any garment that is to be lined.





Procedure for making plain/ open seam

- To sew this seam, place the fabric right sides together, and sew 1.5cm from the cut edge, using a straight stitch.
- Neaten the raw edges as desired (by overlock/ pinking shears/ binding/zigzag/ edge stitching)
- Press the seam allowance open.

1. OVERLAID SEAM

This seam is more appropriate for areas that are cut straight. It is often used to fix yokes on shirts and blouses, to fix laces, frill and ribbons. It is suitable for fabrics that do not fray easily.

Procedure for making and overlaid seam

- Mark the fitting line on the two pieces of fabric to be joined
- Fold and press the seam allowance on the overlay
- Place the folded edge of the overlay along the fitting line of the underlay
- Stitch close to the folded edge
- Press the seam
- Neaten the raw edges together by overlocking/overcasting/over sewing

SEAM FINISHES/ NEATENING

The method of finishing the raw edges of a seam must be chosen carefully as they affect the durability and appearance of the seam. They are chosen according to the weight of the fabric, whether the fabric frays or not as well as the use of the garment. The methods used are:

a. Pinking with pinking shears on non-fraying and heavy fabrics
b. Overlocking with an overlock sewing machine on light, medium and heavy weight fabrics
c. Overcasting by hand stitching on light and medium weight fabrics
d. Machine zig-zag on medium and heavy weight fabrics
e. Binding-on heavy fabrics and light weight fraying fabrics
f. Edge stitching on light weight fabrics

EDGE FINISHES

Main edge finishes includes:

- Hem finishes
- Lace finishes
- frills finishes

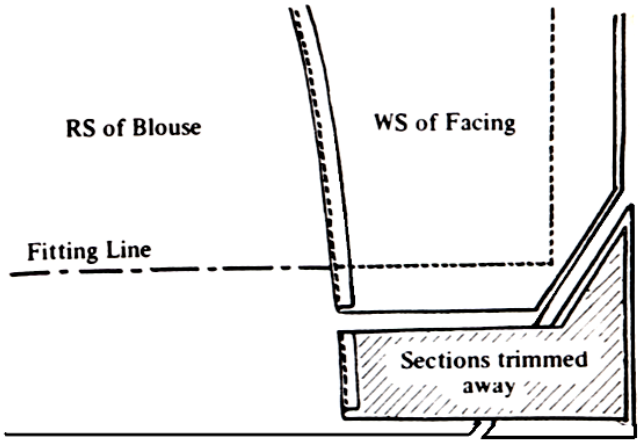
STEPS IN EDGE FINISHING

1. Select tools for the task, such as:-Sewing machine, iron and ironing board, cutting shears, small scissors, tape emasure, thimble, hand and machine needles, seam ripper

2. Explain and demonstrate the uses of Edge finishes
   i. Edge finishes are used an articles and garments
      - To neaten and protect the raw edges; and
      - To provide a decorative or smart finish
   ii. The edges on garments that have to be given such as well as the hem edges of these garments
   iii. When choosing edge finishes always bear in mind
   - The kind of material being used
   - The kind of garment; and
   - The edge finish for the particular edge
   - The different edge finishes are hem finishes, binding, facing, bands, lace edgings and elastic casing.

3. Explain the General rules for making edge finishes
   - They must be strong to withstand constant wear
   - Edge finishes must be neat and flat when finished
   - Turnings must be of even width throughout
   - The curved edges must be evn and smooth.

4. Explain and demonstrate the types of edge finishes and how to apply them
   - Fold the facings with raw edges neatened on the R.S of the blouse and machine stitch across the base fo the facing along the fitting line
   - Trim the turnings of the facing to 0.6 cm below the machine stitching. Trim across the corners of both the blouse and the facing (Diagram (i).
   - Fold back the facings on to the W.S. ease out the corners and press.
   - Wtih the R.S of the blouse flat on the table, fold hte hem up on to the W.S along the fitting line and prepare the hem figure 2 (i) below.
   - Slip hem the fold into position and oversew the facing to the hem (Diagram (ii). Remove the tackings and press.



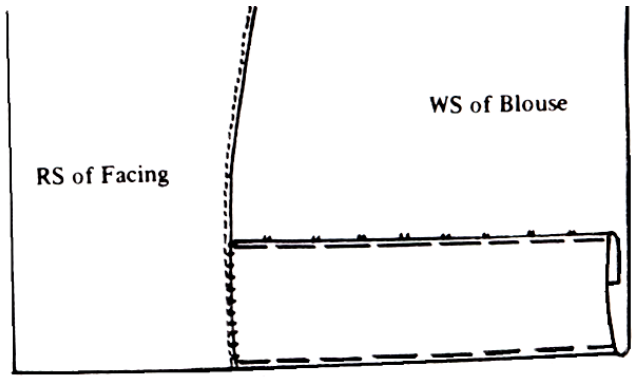


Fig i above adopted from Shonen. M & Ward (2000) pattern making, pg 204

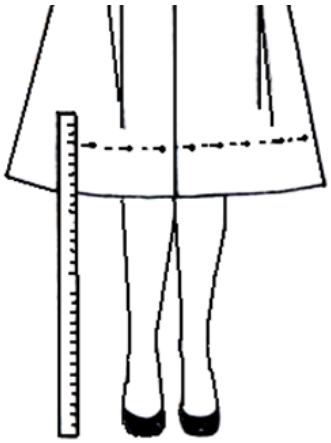
To mark the hem

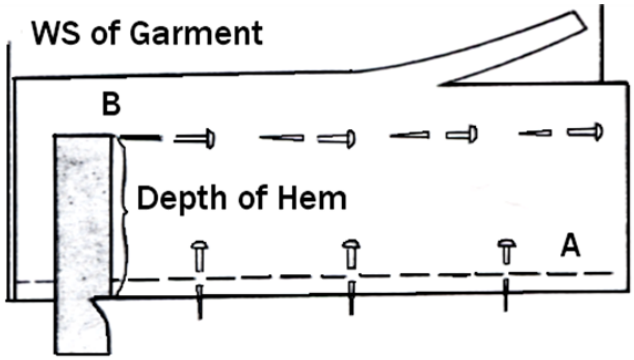
The assistance of a second person is essential as the hemline measured up from the floor with the help of a hem marker or yardstick held in a vertical position (Diagram (i). The wearer should put on the garment, together with the shoes to be worn, and stand on a firm table with the weight placed evenly between both feet.

1. Using a hem marker or yardstick, mark the hemline with chalk or pins, marking not more than 10 cm apart. Teh wearer should check in a mirror that hte desired length has been marked.
2. Take off the garment and re-mark the herm with a tack-line.

Preparation of the hem

1. Lay the garment flat on the table with W.S outwards. Turn up the hem from the tack line, match seam lines and pin vertically at intervals. Tack through the fold 0.6 cm up from the edge (Diagram ii point A).
2. With a marker card or tape measure mark the depth of the finished hem with a horizontal line of pins or with tacking taken through the single fabric only (Diagram II, point B)
3. Trim away surplus fabric, leaving a 0.6 cm turning allowance beyond the marked line (Diagram II) Complete the hem as is most suitable Diagram 3 shows a slip hemming worked in alternative manner.





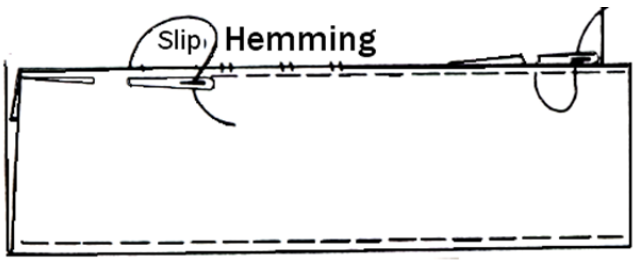


Fig2(iii) adopted from Aldrich, W (2007), page 69

Straight Hemlines: finishes

First match and pin seam lines, then the sections between seams.

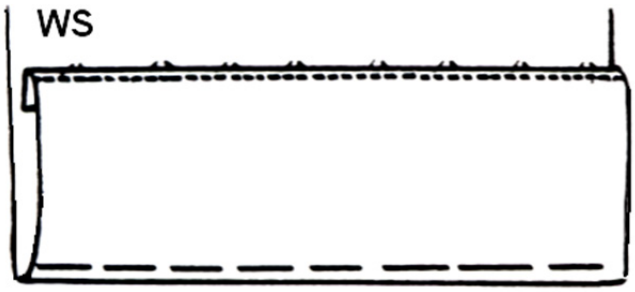
Slip hemming:

For general use on lightweight fabrics

1. Turn the raw edge under to the marked line, then tack in position
2. Slip the hem, the fold picking up one thread of R.S fabric. Remove the tacks and press carefully from R.S in each case.

Edge Stitched Hem

1. Turn the raw edge under to the tacked line, tack and edge stitch the fold
2. Pin and tack the stitched line into position
3. Slip hem the fold. Remove tacks and rpess



Bound Hem

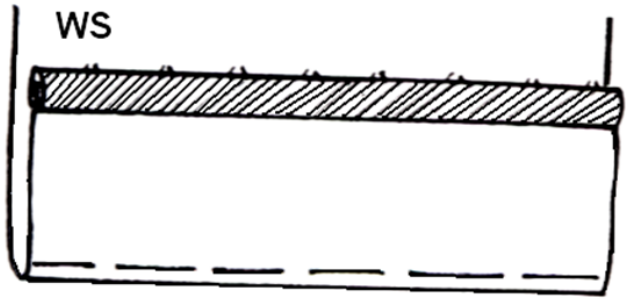
Suitable for thick fabrics that fray easily. Using silk or fine nainsook, bind the raw edge of hem, following the method for blinding and complete as for an edge stitched hem.

Herringbone Edge

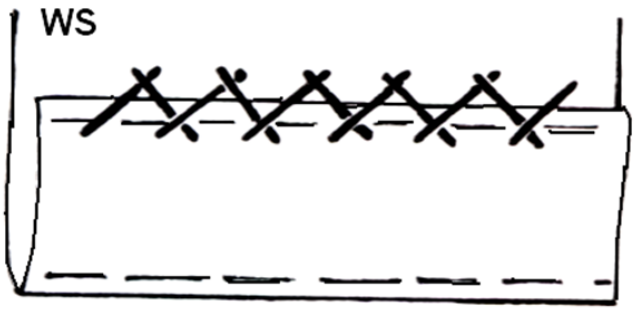
Suitable for thick fabrics

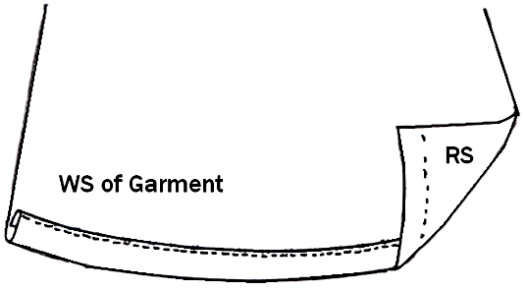
1. Trim turnings to marked line, ie the width of hem. Pin and tack into position.
2. Work herringbone stitch, picking up one thread on the R.S of fabric and stitch normally on the hem turning.
3. Remove tacks and press

i.



ii.

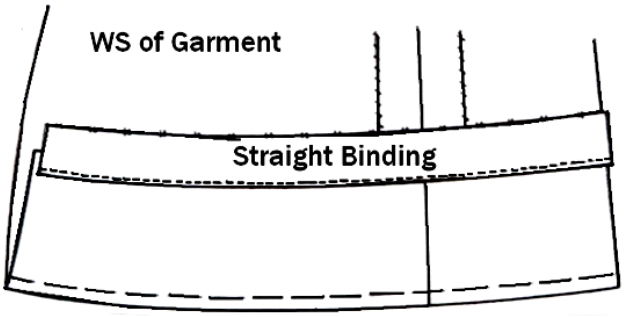




The hem is usually 0.6 cm deep as otherwise there would be too much fullness to disperse owing to the width of the flare.

1. Measure 0.6 cm down from the marked hemline and turn hem to W.S on this line: tack
2. Edge stitch along the fold and trim away the surplus fabric: then press (Diagram 1)
3. Turn up hte hem on to W.S on the marked line and tack
4. Either edge stitch the fold (Diagram 2), or slip hem stitched fold into place (diagram 3)

iii.



1. Shrink away fullness by pressing with a famp cloth and a hot iron (only on the edge). Remove the pins at seam and centres.
2. Place the edge of the Paris binding up to the hem depth line. Pin and tack it ot the hem only. Machine stitch the lower edge of the binding.
3. Pin and tack up the hem with the binding flat and slip hem into the garment and flat edge of the binding. On a very flared skirt, a crossway strip should be used instead of the Paris binding

CONTROLLING FULLNESS

Introduction

Fullness is any extra width or material which makes the garmentnot to fit the wearer well. The garment fits well when the fullness is well distributed and controlled on a garment. The fullness is controlled by applying the following.

1. Pleats
2. Gatehrs
3. Darts
4. Tucks
5. Easing
6. Shirring

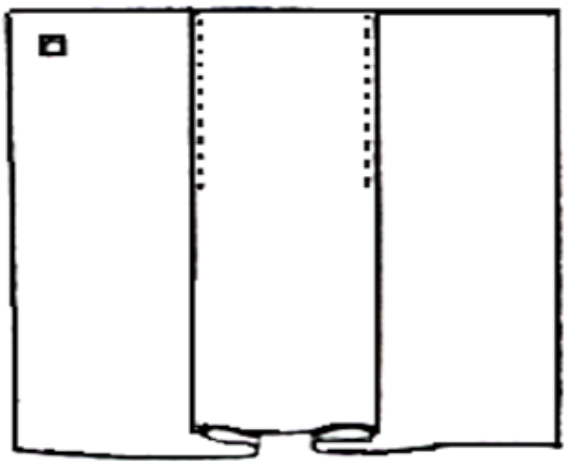
BOX PLEATS

Introduction:

The box pleat are two knife pleats folded away from each other and form an inverted pleat on the wrong side.

To make such pleat the following step have to be followed.

1. Prepare the material (work piece)
2. Mark the position of pleats
3. Measure the normal pleat width 3,4,5 cm wide plus fold width 3, 4,5 the same as pleat width.
4. Fold the pleat to line baste diagonally to ensure the turnings are firmly basted.
5. Stitch with machine



Safety

Pleats are difficlt t o place in position, without being tacked or basted to position and pressed. To avoid spoiling the fabric through ironing as well inguiring our self teh following tools have to be used.

a. Thimble for easy needle pushing and protecting sewing tinger
b. Damp cloth for preventing shy marks on the fabric or garment on the right side

THE PLEATS

Pleats are the common techniques applied in controlling teh fullness and are also made as fashion.

Definition: Pleat is a layer of folded material to form a pleat.

Pleats are categorized into three main

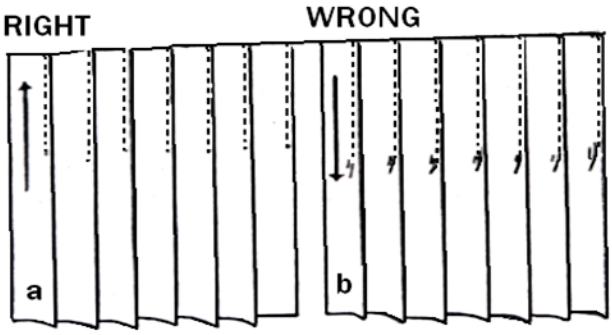
1. Knife pleat
2. box pleat
3. inverted pleat

THE KNIFE PLEAT

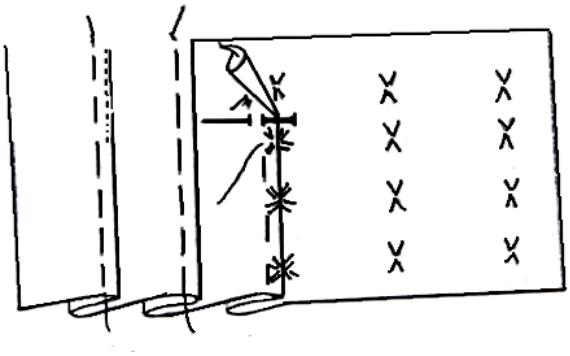
Knife pleats is the simplest pleat or garment construction. The pleats fold in the same direction.

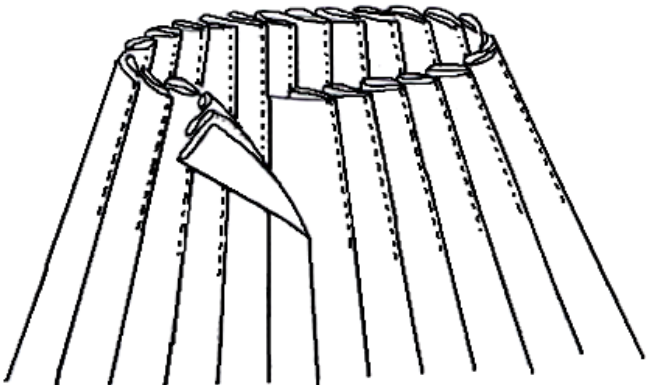
To make the knife pleats you must follow these steps:

1. prepare teh work piece (fabric) about 1 meter use plain colouir cotton material
2. Mark position or pleats with tailors chalk tack the lines, on straight thread.
3. the position between pleat line should be twice the depth or the pleat size
4. lay all pleats turning in one direction from right to left to cover the pocket
5. tack the folded from bottom up to avoid stretching the fabric when tacked from up down wards
6. stitch machine stitching to required lenght on the folded edge to make the fold hold firmly.



Stitching Pleats

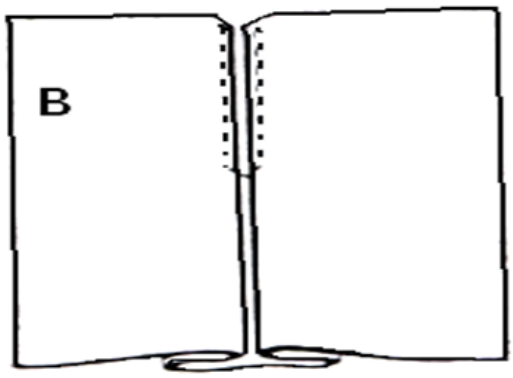




7. The pleat width range to size of garment and style the normal knife pleat range 1 ½ cm - 4cm

MAKING THE INVERTED PLEAT

1. Prepare the workpiece (fabric) about imeta
2. Mark the position of peats
3. Measure the wdith of pleat equal to depth of the pleat
4. fold the pleats awy from each other and tack
5. stitch the entire length to make the pleat hold firmly



DARTS

Definition

Dart is fold of material stitched to taper to a narrow point.Darts are used to make a garment fit smoothly or darts are used to help to mould the garment fabric to fit the body.Darts are also arranged to form part of hte style lines of thegarment. Darts on waist line and neck are always pressed towards centre front or back-except those darts which are slashed and pressed open.Bodice under arm and sleeve darts are pressed down. Darts are worked on thewrong side of the garmetn and pressed to make as icon-spricuous as possible

Types of Darts:

There are four types of darts used on the garmetn construction. These are

a. Convex dart or straight dart
b. Concave dart or double dart
c. Curved dart
d. Dart tuck

Converted darts

Fold and pin on straight centre line. Stitch from either end to the other on curved line. Slash through centre of fold and press open if the dart is wide and fabric does not ravel trim.

Dart tuck or released dart

This is an inverted dart with fullness released within the garment.Fold and pin on straight centre line. Stitch on slanted lines from point ot wide end and across the wide end to the fold.Press to one side.

Precaution

- Waist darts should be pressed to face the centre.
- Bust darts should be to face down ward toeards waist
- Armhole dart to face down wards
- Elbow darts to face the wrist end
- Neck and shoulder darts to face the centre
- Darts on fulllenght dress from bast to hip which are wide must be snipped at hte centre and neated with loop stitch on raw edge.
- Darts made on thich material which are thich to layflat cut along the bred to open and stitch raw edge.

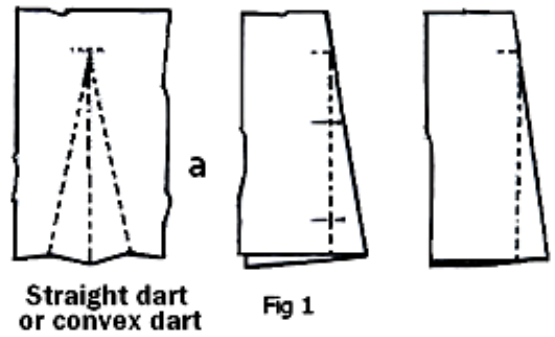


Fig 1

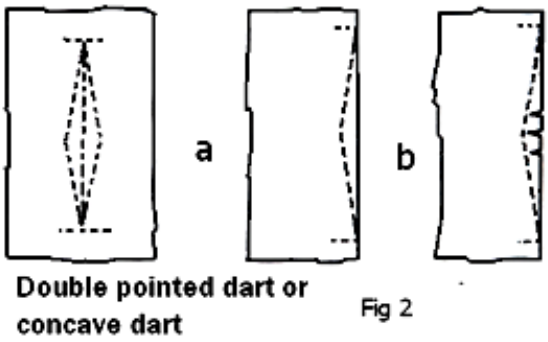


Fig 2

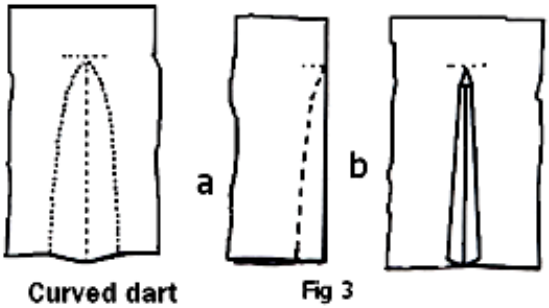
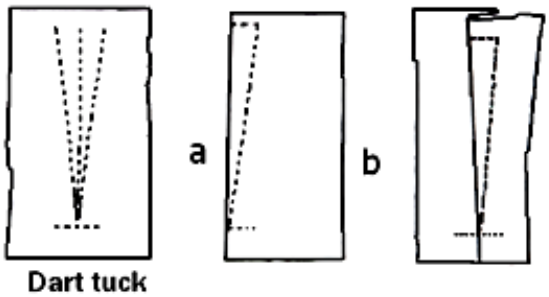
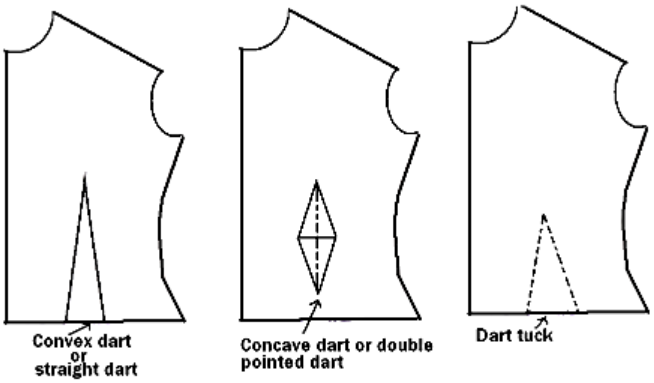


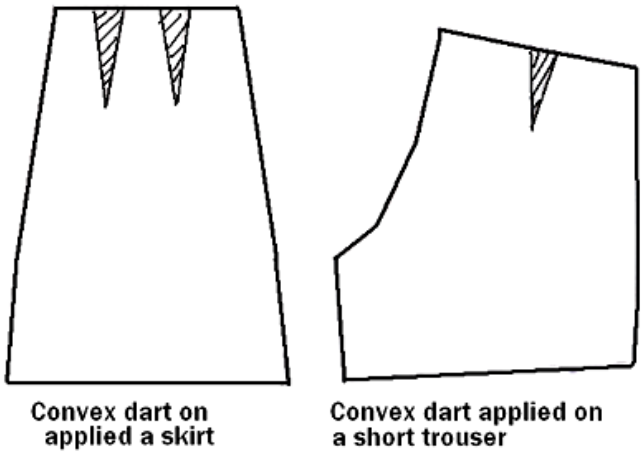
Fig 3

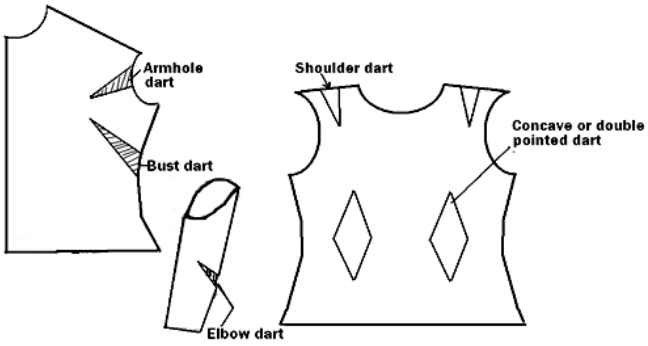


Making darts

1. **STRAIGHT DART:** Fold on straight centre line and pin. Stitch on slanted lines from point ot wide end to point or stitch from wider point to narrow point. Remove the pins as you sew. See fig 1
2. **DOUBLE POINTED DARTS.** Fold on straight centre line and pin. Stitch from either point to hte other on slanted lines. Clip thorugh fold at centre and at both side of centre. (suip or clip) this must be done to make the dart lay flat and before pressing







Adopted from WestFall,M.G (2012) Successful sewing, page 73-75

ATTACHING FASTENERS

Introduction

Fastenings are the means of closing up an openign to retain the original shape and fit of a garment.

Type of openings to be applied so that they show on the right side of the garment or they may be concealed between the overlap and the huder lap of opening. Buttons and button holes, or button and loops, eyelet tie tapes and zip fasteners can be applied either way. Hooks and eyes or hooks and bars, press studies. These are always concealed.

Choice of fasterners

The choice or fastening depends on

i. Type of opening
ii. Type of garment (for children or adults)
iii. Type or fabric, light weight, heavier, colour

Precautions:

To avoid spoiling the garment, selection of fastening must be made carefully by observing these precaution:

i. Chose the fastening to suit the opening for narrow wrap opening- select small fastenings.
ii. Avoid metal fastening for childrens garment and underwear as they rust and loose their shape when washed constantly
iii. Avoid bound button holes for overall, uniforms or garments which are washed constrantly
iv. Avoid bound button holes for overalls, uniforms or garments which are washed daily.
v. Do not make bound button holes on transparent fabric as they can be seen through on the fight side.

Tapes and ribbons

These are used on faced slit openings, bound slit openings, babies, bivs, vest, appron, pillow slips and utility bags.

Types of tape and ribbon:

i. tie tapes on openings without wraps
ii. tie tapes an openings with wraps
iii. Loop tape
iv. Hanger tape

How to make : Tie tapes without wrap

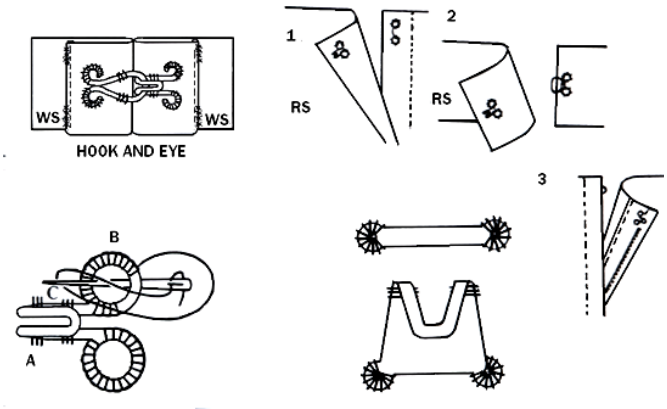
1. Cut the tape strap to the required length and width and crease 0.6 or 7 m turning into the right side
2. Crease another line opposite the turning to make a square
3. place the right side of the tape with the turning on wrong side of the edge of the article
4. tack into position and hem round hte three sides.
5. Fold back the tape level with the edge and top sew the tape to the edge.
6. turn a narrow hem at the other end or hte tape on to the wrong side and hem it. Top sew the two ends

Hooks and eyes

These are fastenings used on openings without wraps on faced slit opening

To sew hook and eye

1. Prepare the hooks and eye
2. Prepare piece of fabric or a garment to be applied. Thred the hand needle with double thread
3. Thread the hand needle with double thread
4. Place the hook on position of the work piece to be sewn and stitch witer button hole stitch on the wrong side of overlap about 0.3cm from the edge. Make strong stitch.
5. Place the eye on the other side on the wrong side and stitch around the eyes with the button hole stitch.



Buttons

Buttons are types of fastenings used on many garments. Buttons are made from different materials like metals, wood, plastic, rubber and leather.

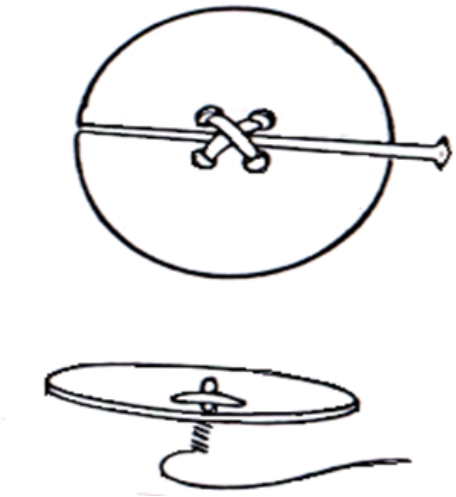
There are two types of buttons-flat buttons and dome buttons.

1. The Flat buttons:

These have two or four holes pieced and have no shanks.

2. The Dome buttons:These have shanks leaving space between the material and the button and providing for the tickness of the overlap when the button is fastened.

3. Buttons must be sewn with shank to allow movemetn of the loop or buttonhole between the button and the garment. gArmetn made wtihout shanked buttons make the button not stay fastened. They pull out easily. The buttons must provides stem a space between the garment adn the button



To sew buttons without shank or loops

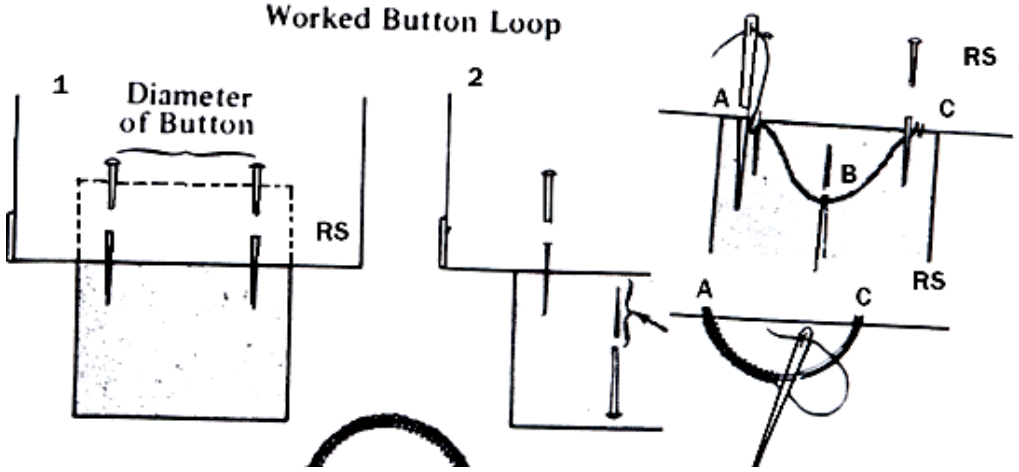
1. Mark a button position on a work piece (garment)
2. Thread the needle with double thread the same colour to fabric.
3. Fasten on thread at the button position, make knot at beginning
4. Place the button centre over fastened on thread, bring thread through first hole in button to right side of button
5. Place across the button a pin or a match stick or knitting needle according to the length of shank-required. (for thicker material use thicher needle or pin to provide longer shank)
6. Pass the thread over pin and through the second hole repeat this as often as possible
7. remove the pin, and bring the needle out between button and material and full the button to the end of the long stitches formed.
8. Wind the thread 3 or 4 times round the stem or stitches formed and take the needle through to the back of hte material and fasten off.

Loops

There are hands or several rows stitched on a straight or curve and lath stitched around wtih bottonhole stitching to form a loop. Usualy are loose to allow the button to fasten when it is completed made.

How to make loop

1. Prepare the material (sewing thread)
2. Mark the position of a loop
3. Thread the hand needle with the same colour of the garment use double thread.
4. Measure the size of loop the size the button plus 0.3 cm or 3 mm.
5. Make the loop length by sewing three to six hand. The move the trands the spot the loop.
6. stitch button hoke stitch around the trand until the loop is completed.



Worked loops for buttons:

Phase loops made for the garments edge opening meet. Such as back neck opening of blouse/bodice or over lap under the collar.

1. To sew the loop

1. Prepare a piece of cloth
2. Mark the position to fasten the loop
3. Thread the needle with double thread and fasten the thread from point to point to make a loop.
4. Make three or four thread loops and stitch around them a button hole stitch until the loop is complete

2. Buttons with shanks or loops.

The buttons are made with shanks. To sew these button few steps used on buttons withiut shanks have to be omited.

The steps to omit are:

- Needle across the button
- Passing the needle up and down

Sewing the button with shank

1. Prepare the garment
2. Mark the button position
3. Fasten the needle thread and fasten through the position to left the needle out.
4. Place the button with shank and pass the needle side ways through hole or shank
5. Reepat passing the thread while the button shank touches the material.
6. Fasten the thread under the material
7.

Button holling

Button holling are made in two methods

i. Worked button hole by hand or machine
ii. Bound button hole

Button holes

Generaly button holes are worked after the garment is completed.

The button hole are made in a

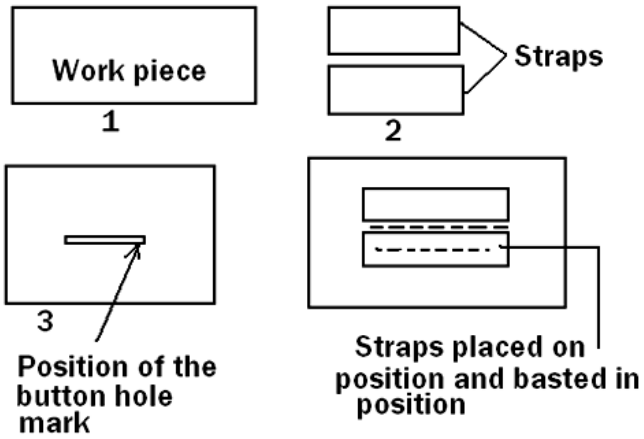
i. Horizontal position
ii. Vertical position

Horizontal button holes take the strain in that direction such as cuffs, yokes and bodices

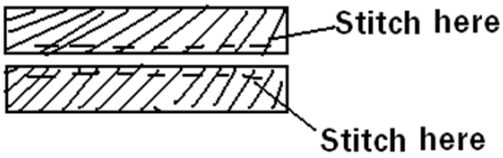
Vertical button holes are made when the strain

- is in a vertical direction such at hte waist of a blouce or trousers, skirt and shirt
- When the hem or facing of the opening is on the right side of the garment.
- Teh length of the button hole is equal to the diameter of the button plus 0.3 mm
- The length of the button hole is equal to the diameter or the button plus 0.3 mm

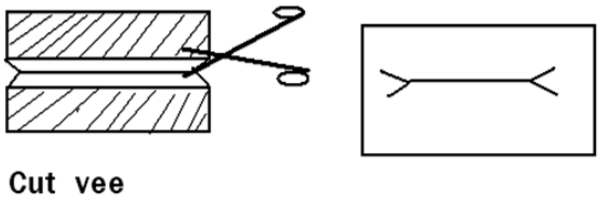
1. The button hole should be atleast half fthe width of hte button away from the edge of the opening



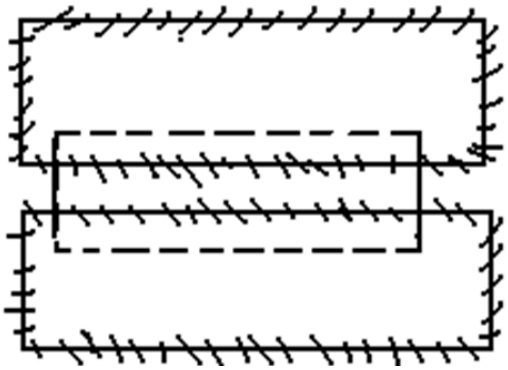
2. Stitch 0.3 cm each side fo the strap leave 0.5 for allowing turning and smooth finish

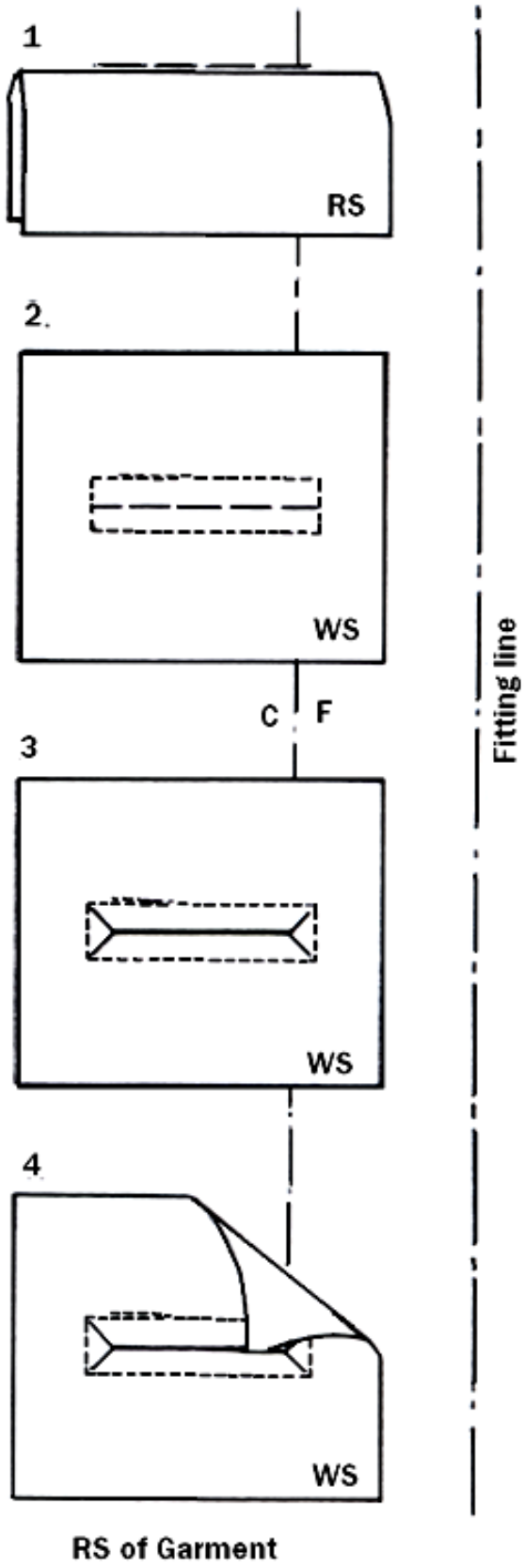


3. Cut the opening of Bound with Vee cut near the corner of each strap to easy turning of strap and from tiny binding or jet.



4. Pull or place both straps or binding to wrong side of the work piece and press each strap seam to open or turn back to wrong side both straps.
5. Make binding or jet by folding each straps. Use hand tacking until the strap form a jet. Repeat the same on the next strap. Make sure the edge neat together and are equal size.
6. Make machine stitching on the wrong side. Stitching together the straps against the seam line inside.
7. Pull the vees or slits to wrong side and stitch them firmly.
8. Stitch the straps with overcast in the wrong side.





Adopted from Aldrich, W (2007) forms & flat pattern cutting, page 83

Making button holes by machine.

i. Prepare the machine with thread matchine to fabric
ii. Prepare work piece
iii. Mark the button hole on hte material (garment/ piece of cloth)
iv. Set the machine with button hole stitching device.
v. Allign the material underneat the pressure foot
vi. Drawn the needle into the button hole position
vii. (Place the pressure foot on top or the material
viii. Begin stritching with moderate machine speed to size of the button hole.

Precautions

Test the stitch before stitching

- Long stitches will not give better effect
- Avoid high speed
- Do not pull hte fabric while sewing
- Avoid cutting the thread with fingers
- Do not use separate thrad colour when stitching buttonhole. Use matching colour to fabric.

Zip Fasterner

1. Zip fasteners are purchased in sizes according to the garmetn been made. Zip fasteners are found in different types are

i. Metal zip
ii. Nylon

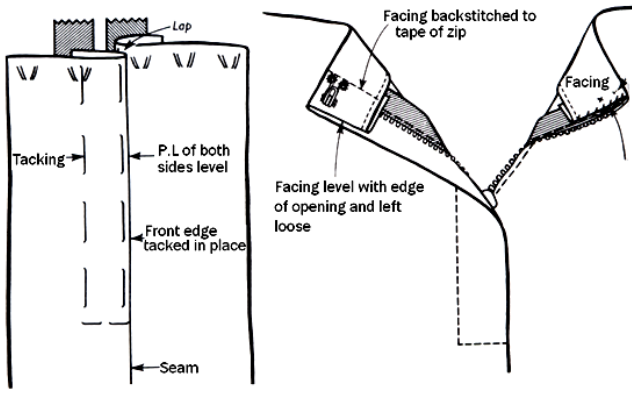
2. When buying a zip the following points have to be observed.

a. Choose a good brand (nylon/metal)
b. Test to see that the zip glides easily and smoothly
c. Choose hte suitable elngth for the opening
d. The color of the tape of the zip must match the material
e. The texture of hte zip must amtch teh height of the material. Thus fine zip for fine material course zip for thick heavy weight material
f. Choose zip with self lock.

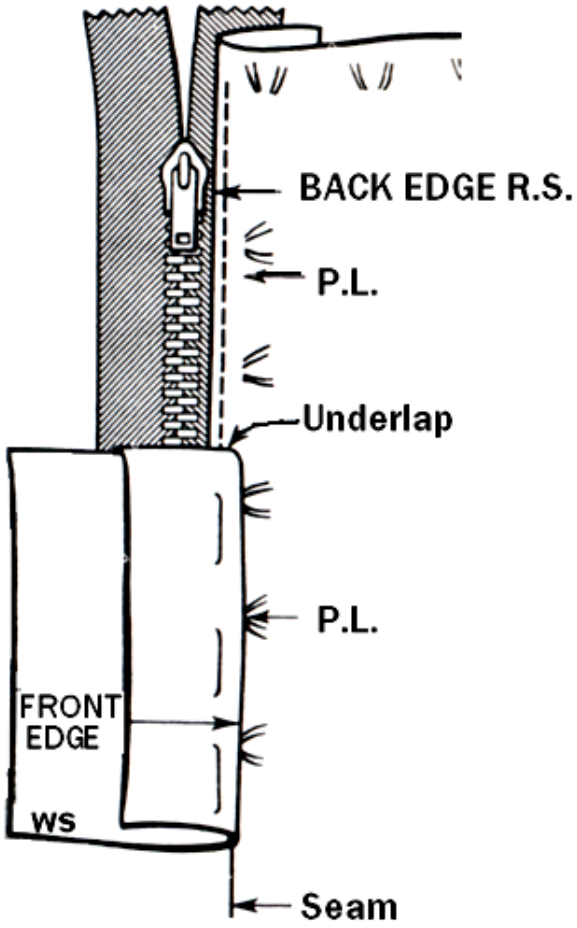
3. Zip fastening is a combination of opening zip have more advantage in wear they easily open and fasten. Zip are more pupular on dresses, skirt, shorts, longtrouses, children's wear garment, bags, loose cools and shoes .Always use a zipper foot to machine zip opening

Fixing a zip

1. 1The proceures are the same as semi concealed in step 1, 2,3
2. Unzip the zip and place teh right side of hte zip against the wrong side of the seam with the base of the teeth of the zip in line with the join.
3. Pin and tack from the garment side, close to the edge and across the base of the opening.
4. Fasten the zip, pin and tack upwards on the second side away from the join of the seam. The edge of the seam should meet.
5. Machine on both sides and across, keep close to tacking threads
6. Strengththen on the right and wrong sides as with the semi-concealed opening.



Adopted from WestFall, M.G (2012) Successful sewing, page 94



Precautions (Safety precaution)

- Zip are supplied in different make (Nylon and metal zip)
- Avoid pressing over Nylon zip with key hot hwn this will melt the nylon
- Avoid stitching closely to metal zip teeth this can damage the needle or break the needle. Alway stitch away from metal teeth.
- Stitch carefully on zip base on metal zip, otherwise you will hit and break the needle.

MAKING SIMPLE POCKETS AND FLAPS

There are several types of pockets both decorative and functional. It is essential that a pocekt is strongly made and large enough for its purpose. Inseam (straight) pocket is applied along the side seams of

a garment. Mostly suitable for dresses. Skins and women troussers and shorts.

Types of pockets:

a. Patch pocket: Entirely visible, the style can vary from all rounded, square shaped, pointed angles or detailed facing with top stitch on top.

b. In seam pockets: Entirely invisible, sewn at side seams of troussers, skirt, jacket and shorts

Making of a patch pocket. This kind of a pocker ia pplied on a jacket, shirt, dress and skirt. The pocker can be on single piece of fabric or tined at worng sides.

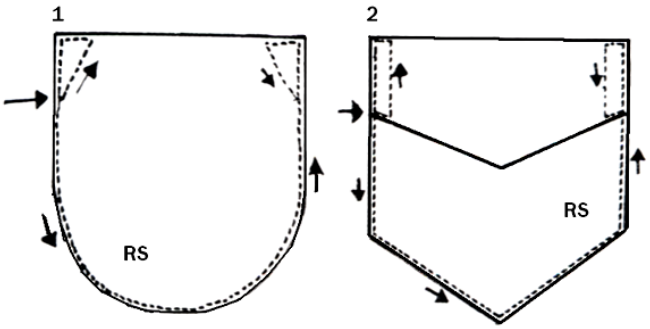
Steps

1. Tracing of the working patern from a ready made pattern
2. Laying out of pattern on fabric following hte direction of the notiff
3. pinning, marking and indicating seam allowance and hemming of the pocket

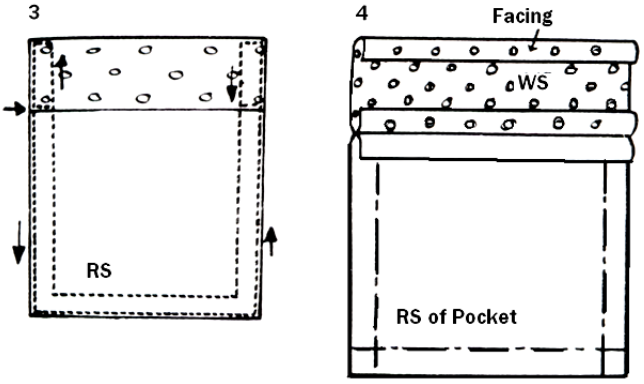
Cutting

Construction steps

1. The pocket is formed by top stitching a patch of fabric on to the R.S of the garment. The top edge is heated by: -
   a. Turn a plain hem approx. 1.25cm on to W.S and hemming in place
   b. Turning a plain or shaped herm on to the R.S and top stitching the hem in place, styles such as indicated in diagram



c. Attaching a straight or shaped facing of self-fabric on or of a constructing decorative fabric as indicated on diagram

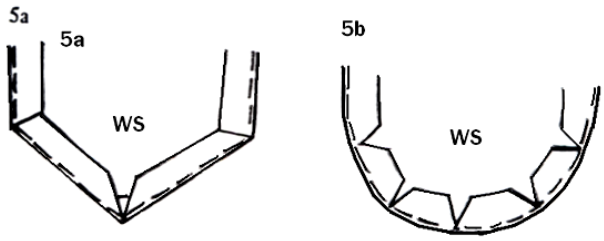


To apply a facing place R.S. of a facing to W.S. of pocket, matching fitting likes of top edge, and talk and machine stitch. Remove tacks, press stitching and turnings, open and trim to 0.6 cm

Turn facing to R.S and turn under 0.6 cm along lower edge, tack into position and top stitch.

To attach pocket

1. Complete the top edge as required
2. Fold turnings of the pockets to W.S on fitting line and tack. Trim turnings to 0.6 cm. on square corners and points pleat as in diagram (5a) on curved edges snip turnings to reduce bulk (diagram)



3. Matching balance marks, place the pocket in position on the garment and tack.
4. Following one of the methods indicated above in diagram 1,2,3, start machine stitching where indicated by arrow and work support of corner first, proceed around edge of pocket to finish with the support of second corner

CUTTING PRELIMINARIES

Before cutting out fabrics, it is important to:

- Identify right side of fabric-often it is obvious to identify the right side of the fabric, but sometimes careful examination is needed to tell the right and wrong side of fabric. One means of identification is the way the fabric is foldede.g cottons and lines are folded right side out;wools wrong side out. If the fabric is rolled on a tube, the face/right side is to the inside. Other clues include; smooth fabrics are shinner on the right side,textured fabrics aremore distinctctly on the right side while printed fabrics are sharper on the right side

- Select pattern layout-to find the correct pattern layout, look for the layout that corresponds to the fabric width and size. Atrial layout may be necessary

- Fold the fabric using either a standard lengthwise fold,partial lengthwise fold, double lengthwise fold,crosswise fold or combined fold.

- Pin the patterns to fabric following the grainlines marked on the pattern pieces. For pinning patterns, the general order is left to right and fold to selvedges. Place pattern pieces as close together as possible. Ensure that the layout is designed to use the fabric economically.

- For accurate cutting results,always keep fabric flat on the cutting surface, and use the proper shears and techniques. Be sure that blades are sharp, if the scissors action is stiff, adjust the blade screw slightly; or apply greaseless lubricant.

6.1.4 DRAFT AND DEVELOP PATTERNS

Before drafting patterns, body measurements of the client should be carefully taken,while examining any figure problems that the client may have. This is important when making garments for individual clients. However, at times standard body measurements can be used, especially in mass production. In some other cases the standard body measurements can be used if the client is not within reach or if some of the client's measurements are missing. In this case it is important to compare the client's body measurements with the standard measurements. The table below shows standard body measurements.

Size Charts

The construction of a size chart is determined y two main factors: the type of garment and the market for which the garment is being made for.

a. Type of garment- different size charts are required for different types of garments e.g shirts-based on neck size; blouses-based on bust size; casual or sports wear-based on chest measurement
b. Market- The actual measurements that complete a size chart are determined by the type of person(s) the garment is designed e.g young man/ woman, teenagers, tall or short man/ woman

Principles of pattern making

1. There are different types of patterns that are used when drafting patterns. It is necessary to know the difference. These include:
   - **Block pattern**- this is the basic pattern that is used as abasis for all adaptations. The lock pattern is traced or wheeled onto pattern paper to produce the working pattern.
   - **Working pattern**-is used for marking out the basic style lines and design features (e.g pockets, collars,yokes, panels etc). Pattern sections are traced off and may be further adapted. Complicated styles may need a number of trials at this stage.
   - **Final pattern**- is the pattern from which the garment will be cut. It must be clearly marked with all the information required for making up the garment

- Before commencing any adaptation, the following points should be considered:
- Choose the correct blocks e.g if a baggy trouser style is required; use an esay fitting trouser block
- **Decide the length:** lengthen or shorten the block
- Decide if an easy fitting armhole is required or a tight fitting armhole; the lower or raise the armhole respectively.Good lines and curves-when drafting patterns it is essential that lines and curves are smoothly drawn by esuring that:
- When acurved line meets a straight line it must run into it smoothly
- Neck and armhole curves must be perfect
- All design curves must be beautifully shaped using french curves
- Pattern pieces that are cut and spread can give an uneven outline, therefore they should be redrawn as smooth even lines'

The base of the dart on close-fitting bodice should be shaped downwards/outwards to compensate for the part that is drawn up when the dart is stitched. To avoid sharp points at the bust on a close fitting bodice, shorten the length of the bust dart and front waist dart by 2cm. To achieve a fitted shape around the diaphram, curve the side seam slightly inwards and the bust and waist darts slightly outwards. Do not use this method on skirt darts.

Seam allowances Guide

Manufacturers require finished patterns to have seam allowances. To ensure economy it is advisale that :

- Enclosed seams allowance- 0.5 cm
- Side seams allowance-2.5cm
- Hem allowance- 2.5cm -3cm
- Shoulder seams- 1.5cm

Methods of Manipulating/transferring darts

- Pivoting-involves marking the new dart position, pinning the dart point in place, tracing round the sections of the pattern that will not be affected , then swinging the pattern to close the unwanted dart.
- Slashing- drawing line to mark the new dart position, cutting the line, cotting the lines of the dart to be closed, then closing dart by moving the cut section

STANDARD BODY MEASUREMENTS CHART IN HIGH STREET FASHION FOR WOMEN (IN CENTIMETRE)

SIZE DESCRIPTION SIZE SYMBOL	SMALL S	MEDIUM M	LARGE L	EXTRA LARGE XL
Bust	82	88	94	100
Waist	64	70	76	82
Hips	88	94	100	106
Back width	32.8	34.5	36	37.6
Chest	30.6	32.4	34.2	36
Shoulder	11.8	12.2	12.6	13
Necksize	35.5	37	38.5	40
Dart	6.1	7	7.9	8.8
Top arm	26.4	28.4	30.4	32.4
Wrist	15.3	16	16.7	17.4
Ankle	23.1	24	24.9	25.8
High ankle	20.1	21	21.9	22.8
Nape to waist	40.4	41	41.6	42.2
Front shoulder to waist	40.4	41	41.6	42.2
Armscye depth	20.4	21	21.6	22.1
Waist to knee	57.7	58.5	59/3	60.1
Waist to hip	20.2	20.6	21	21.4
Waist to floor	102.5	104	105.5	107
Bodyrise	27	28	29	30
Sleeve length	57	58	59	60
Sleeve length (Jersey)	51	52	53	54

STANDARD BODY MEASUREMENTS-REGULAR MEN'S SIZES (Mature Figures)

Height 170 cm-178cm (5ft 7 inches- 5ft 10 inches)

Chest	88	92	96	100	104	108	112	116	120
Seat	92	96	100	104	108	114	118	122	126
Waist	74	78	82	86	90	98	102	106	110
Low waist	77	81	85	89	93	100	104	108	112
Half back	18.5	19	19.5	20	20.5	21	21.5	22	22.5
Natural waist length	43.4	43.8	44.2	44.6	45	45	45	45	45
Scye depth	22	22.8	23.6	24.4	25.2	26	26.4	26.8	27.2
Neck size	37	38	39	40	41	42	43	44	45
Sleeve length, one piece	63.6	64.2	64.8	65.4	66	66	66	66	66
Sleeve length, two piece	79	80	81	82	83	83.5	84	84.5	85
Inside leg	78	79	80	81	82	82	82	82	82
Body rise	26.8	27.2	27.6	28	28.4	28.8	29.2	29.6	30
Wrist	16.4	16.8	17.2	17.6	18	18.4	18.8	19.2	19.6
Sleeve length for shirts	87	88	88	89	89	90	90	90	90
Shirt length	76	78	80	81	81	82	82	82	82
Trouser bottom	23.5	24	24.5	25	25.5	26			
Jeans bottom	20.5	21	21.5	22	22.5	23			

CUTTING SPECIAL FABRICS

Certain fabrics involve special considerations in pattern selection and layout. Such fabrics include:

- Directional fabrics such as striped fabrics, plaids and geometric fabrics-these fabrics must be laid in one direction and the stipes or plaids must be matched
- Fabrics with a large motif/unusual prints- these fabrics require careful placement and sometimes matching
- Border print fabrics- the borders must be carefully placed so that they either be vertical on each side of the centre front or can be placed at the garment hem
- Napped/pile fabrics e.g velvet/ corduroy- the patterns must be placed facing the same direction to avoid colour shade variation resulting from light reflection.

PROFESSIONAL TIPS IN PINNING AND CUTTING TECHNIQUES

The following tips are supplements to basic pinning and cutting techniques, ideas based on experience:

- To keep the fabric from slipping, and also protect the cutting surface, cover the cutting surface with felt or a folded sheet.
- For better control and more comfortable cutting, have cutting surface accessible from at least three sides. If this is impossible, separate pattern sections so that you can turn pieces around if necessary.
- For bulky fabrics, which are often difficult to

pin, or delicate fabrics that could be marred by pins, consider pin substitutes such as upholstery weights, masking tape, or aerosol pattern holder.

- Heavy or bulky fabric can be cut more accurately if you cut through one layer at a time
- When cutting from a single layer, cut each pattern piece once with printed side up, and once with printed side down, to obtain right and left side of the garment.
- A very thin or slippery fabric such as chiffon or light-weight knit will shift less if you pin it to tissue paper (the same tissue can be used later to facilitate stitching). Such fabrics are also easier to cut with serrated scissors which grip the fabric.
- For fewer seams to finish, place the edge of any pattern piece that corresponds to straight grain, directly on a selvedge. If selvedge is light and tends to pull, clip it every two or three inches.
- Keep shears sharp by cutting nothing but fabric with them (cutting paper makes the shears dull/ blunt).
- Save fabric scraps left from cutting; they are often usable for making small items, testing stitches and pressing techniques

MARKING METHODS

Marking is the transfer of notations to fabric and is done after cutting and before removing pattern. The following methods can be used to transfer pattern markings:

- Tracing paper and wheel- is a fast method that works best on plain mopque fabrics. It is less satisfactory for multi-coloured fabrics, and not recommended for others because marking shows through to the right side. It is preferred to most methods for its convenience. While tracing, keep cardboard under fabric to prevent marring of the surface beneath. Use serrated wheel for most fabrics, smooth wheel for those that are delicate, hard to mark, or napped. With fabric folded wrong sides together, both layers can be marked at once, using double faced paper or two sheets back to back.
- Tailor's chalk- is also a quick marking device. The wax type is more durable but cannot be removed from some fabrics
- •Tailor's tacks- take the most time and effort of all the marking methods. They are indispensable, however, for sheer or delicate fabrics, and also for spongy or multicoloured types, on which neither tracing paper nor chalk will make a sufficiently distinct mark

REFERENCE

Aldrich, W., (2012). *Metric Pattern Cutting for Men's Wear.* Wiley

Aldrich, W., & Aldrich, J., (2007). *Fabric: Forms and Flat Pattern Cutting.* Wiley

Cock, V., (1978). *Dressmaking Simplified* (2nd Edition). Wiley.

Cock, V., (1991). *Dressmaking Simplified* (3rd Edition). Wiley

Dillon, R. B., (2003). Secondary Home Science: Form One Trainees' Book (3rd Edition). Kenya Literature Bureau, Nairobi.

Linker, S., Lamely, A. S. A., & Brown, M. S., (1978). *Quick & Easy Guide to Sewing Techniques. Butterwick Publishers*

MacArthur, A., (2004). *Maximise The Trainer Mark: Textiles Technology Revision Guide*. Nelson Thornes.

Nelms, I., (1976). *Fashion and Clothing.* Habersham

Rohr, M., (2006). *Pattern Drafting and Grading: Women's and Misses Garment Design*. M. Rohr, Pennsylvania State University.
Westfall, M. G., (2012). *Successful Sewing.* Goodheart-Willcox Co.