

FOOTWEAR MAKER

NSQF LEVEL - 3

TRADE PRACTICAL

Sector: LEATHER

(As per revised syllabus July 2022 - 1200 Hrs)



Directorate General of Training

DIRECTORATE GENERAL OF TRAINING
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
GOVERNMENT OF INDIA



**NATIONAL INSTRUCTIONAL
MEDIA INSTITUTE, CHENNAI**

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Duration : 1 Year

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Developed & Published by



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FOREWORD

The Government of India has set an ambitious target of imparting skills to 30 crores people, one out of every four Indians to help them secure jobs as part of the National Skills Development Policy. Industrial Training Institutes (ITIs) play a vital role in this process especially in terms of providing skilled manpower. Keeping this in mind, and for providing the current industry relevant skill training to Trainees, ITI syllabus has been recently updated with the help of comprising various stakeholders viz. Industries, Entrepreneurs, Academicians and representatives from ITIs.

The National Instructional Media Institute (NIMI), Chennai, has now come up with instructional material to suit the revised curriculum for **Footwear Maker - Trade Practical - NSQF Level - 3 (Revised 2022) in Leather Sector** under Annual pattern. The NSQF Level - 3 (Revised 2022) Trade Practical will help the trainees to get an international equivalency standard where their skill proficiency and competency will be duly recognized across the globe and this will also increase the scope of recognition of prior learning. NSQF Level - 3 (Revised 2022) trainees will also get the opportunities to promote life long learning and skill development. I have no doubt that with NSQF Level - 3 (Revised 2022) the trainers and trainees of ITIs, and all stakeholders will derive maximum benefits from these Instructional Media Packages IMPs and that NIMI's effort will go a long way in improving the quality of Vocational training in the country.

The Director General, Executive Director & Staff of NIMI and members of Media Development Committee deserve appreciation for their contribution in bringing out this publication.

Jai Hind

ATUL KUMAR TIWARI, I.A.S.,

Secretary,
Ministry of Skill Development & Entrepreneurship,
Government of India.

April 2025
New Delhi - 110 001

PREFACE

The National Instructional Media Institute (NIMI) was established in 1986 at Chennai by then Directorate General of Employment and Training (D.G.E & T), Ministry of Labour and Employment, (now under Directorate General of Training, Ministry of Skill Development and Entrepreneurship) Government of India, with technical assistance from the Govt. of Federal Republic of Germany. The prime objective of this Institute is to develop and provide instructional materials for various trades as per the prescribed syllabi under the Craftsman and Apprenticeship Training Schemes.

The instructional materials are created keeping in mind, the main objective of Vocational Training under NCVET/NAC in India, which is to help an individual to master skills to do a job. The instructional materials are generated in the form of Instructional Media Packages (IMPs). An IMP consists of Practical book, Practical book, Test and Assignment book, Instructor Guide, Audio Visual Aid (Wall charts and Transparencies) and other support materials.

The trade practical book consists of series of exercises to be completed by the trainees in the workshop. These exercises are designed to ensure that all the skills in the prescribed syllabus are covered. The trade practical book provides related theoretical knowledge required to enable the trainee to do a job. The test and assignments will enable the instructor to give assignments for the evaluation of the performance of a trainee. The wall charts and transparencies are unique, as they not only help the instructor to effectively present a topic but also help him to assess the trainee's understanding. The instructor guide enables the instructor to plan his schedule of instruction, plan the raw material requirements, day to day lessons and demonstrations.

In order to perform the skills in a productive manner instructional videos are embedded in QR code of the exercise in this instructional material so as to integrate the skill learning with the procedural practical steps given in the exercise. The instructional videos will improve the quality of standard on practical training and will motivate the trainees to focus and perform the skill seamlessly.

IMPs also deals with the complex skills required to be developed for effective team work. Necessary care has also been taken to include important skill areas of allied trades as prescribed in the syllabus.

The availability of a complete Instructional Media Package in an institute helps both the trainer and management to impart effective training.

The IMPs are the outcome of collective efforts of the staff members of NIMI and the members of the Media Development Committees specially drawn from Public and Private sector industries, various training institutes under the Directorate General of Training (DGT), Government and Private ITIs.

NIMI would like to take this opportunity to convey sincere thanks to the Directors of Employment & Training of various State Governments, Training Departments of Industries both in the Public and Private sectors, Officers of DGT and DGT field institutes, proof readers, individual media developers and coordinators, but for whose active support NIMI would not have been able to bring out this materials.

Chennai - 600 032

EXECUTIVE DIRECTOR

ACKNOWLEDGEMENT

National Instructional Media Institute (NIMI) sincerely acknowledges with thanks for the co-operation and contribution extended by the following Media Developers and their sponsoring organisation to bring out this IMP (**Trade Practical**) for the trade of **Footwear Maker - NSQF Level - 3 (Revised 2022)** under the **Leather** Sector for ITIs.

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NIMI records its appreciation of the Data Entry, CAD, DTP Operators for their excellent and devoted services in the process of development of this Instructional Material.

NIMI also acknowledges with thanks, the invaluable efforts rendered by all other staff who have contributed for the development of this Instructional Material.

NIMI is grateful to all others who have directly or indirectly helped in developing this IMP.

INTRODUCTION

TRADE PRACTICAL

The trade practical manual is intended to be used in practical workshop. It consists of a series of practical exercises to be completed by the trainees during the course of the **Footwear Maker** trade supplemented and supported by instructions/ informations to assist in performing the exercises. These exercises are designed to ensure that all the skills in compliance with NSQF Level - 3 (Revised 2022) syllabus are covered.

This manual is divided into Thirteen modules.

Module 1 : Safety

Module 2 : Human Foot and Shoe Size System

Module 3 : Prepare Different Types of Mean Forme & Computer Aided Design (CAD)

Module 4 : Tanning and Maintenance of Machines and Tools

Module 5 : Leather Measurement, Cutting and Stitching

Module 6 : Designing, Pattern Cutting & Template Making of Different Types of Footwear

Module 7 : Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Module 8 : Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Module 9 : Identify Various Types of Molding Machine Their Parts and Section

Module10: Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Module 11: Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Module 12: Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Module 13: Calculate Cost of Production and Quality Assessment of Footwear for Footwear Maker

The skill training in the shop floor is planned through a series of practical exercises centered around some practical project. However, there are few instances where the individual exercise does not form a part of project.

While developing the practical manual a sincere effort was made to prepare each exercise which will be easy to understand and carry out even by below average trainee. However the development team accept that there is a scope for further improvement. NIMI looks forward to the suggestions from the experienced training faculty for improving the manual.

TRADE THEORY

The manual of trade theory consists of theoretical information for the Course of the **Footwear Maker - NSQF Level - 3 (Revised 2022) in Leather**. The contents are sequenced according to the practical exercise contained in NSQF Level - 3 (Revised 2022) syllabus on Trade Practical attempt has been made to relate the theoretical aspects with the skill covered in each exercise to the extent possible. This correlation is maintained to help the trainees to develop the perceptual capabilities for performing the skills.

The trade theory has to be taught and learnt along with the corresponding exercise contained in the manual on trade practical. The indications about the corresponding practical exercises are given in every sheet of this manual.

It will be preferable to teach/learn the trade theory connected to each exercise at least one class before performing the related skills in the shop floor. The trade theory is to be treated as an integrated part of each exercise.

The material is not for the purpose of self learning and should be considered as supplementary to class room instruction.

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LEARNING / ASSESSABLE OUTCOME

On completion of this book you shall be able to

Sl.No.	Learning Outcome	Exercise No.
1	Assist in exigencies and carryout elementary first aid during emergencies following safety precautions. (MAPPED NOS: LSS/N8601)	1.1.01 - 1.1.20
2	Identify different human foot and defects of unfit shoes & practice on size system & last. (MAPPED NOS: LSS/N2101)	1.2.21 - 1.2.32
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4	Identify and use of different tools and equipments and perform various process. (soaking, fleshing, draining and sammying, splitting, buffing etc.) (MAPPED NOS: LSS/N0901)	1.4.37 - 1.4.41
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14	Identify various types of molding machine their parts and section. (MAPPED NOS: LSS/N7501)	1.9.114 - 1.9.119
15	Prepare & perform insole making, drafting, lasting, sole attaching, sole stitching, welt stitching, bottom filling, heal fixing & finishing. (MAPPED NOS: LSS/N3303)	1.10.120 - 1.10.140
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17	Calculate material consumption and reduction of wastage, Testing of footwear and their assessment. (MAPPED NOS: LSS/N1002, LSS/N1003, LSS/N1004)	1.12.149 - 1.12.158
18	Calculate cost of production and quality assessment of footwear products. (MAPPED NOS: LSS/N3406)	1.12.159 - 1.13.164

Introduction of trade skill and work application

Objectives: At the end of this exercise you shall be able to

- **know about the footwear maker trade**
- **know about the trade uses and its related information.**

PROCEDURE

TASK 1: Know all the information about footwear maker trade

- Trainees should specify the known details about footwear maker trade in Table 1.

Instructor may explain the trainees about the footwear maker trade and its usefulness.

Table 1

S. No.	Write what you know about footwear maker trade
1	
2	
3	
4	
5	

TASK 2: Know the usefulness and related information of footwear maker trade

- Table 2 Trainees should specify the usefulness and information in Table 2.

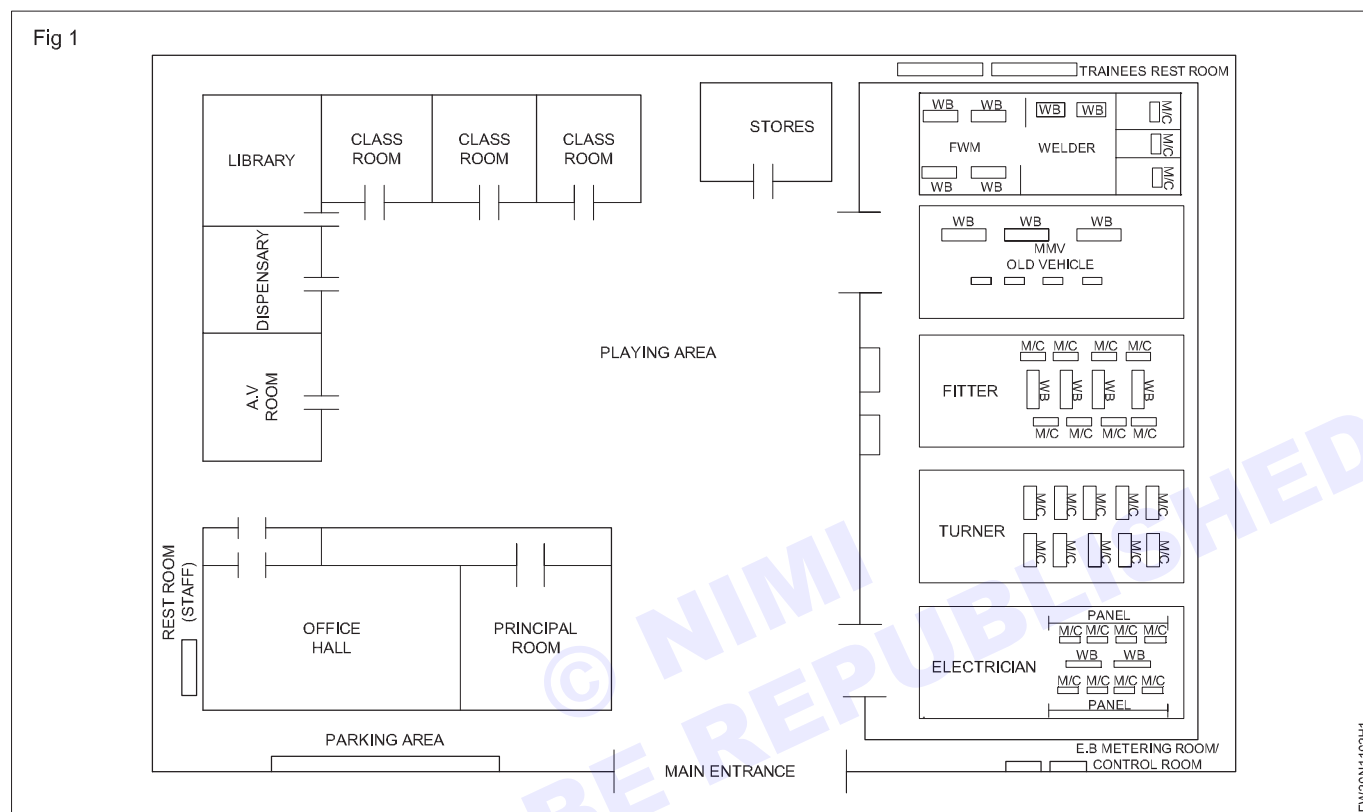
Table 2

S. No.	Write the usefulness and related information of the footwear maker trade
1	
2	
3	
4	
5	

Familiarization with the Institute and study of personal protective equipments

Objectives: At the end of this exercise you shall be able to

- know about the industrial training institute
- know about the personal protective equipments
- identify occupational hazards related to trade.



PROCEDURE

TASK 1: Visit the different sections of the Industrial training institute and draw the layout of the institute (Fig 1)

The instructor has to take the new trainees to different sections of the training institute.

- Visit the different sections of your training institute and identify the sections and record them in your notebook.
- Collect the details of the officials in each department.
- Find the location of railway station and bus stand and know the bus route numbers that go near your ITI.

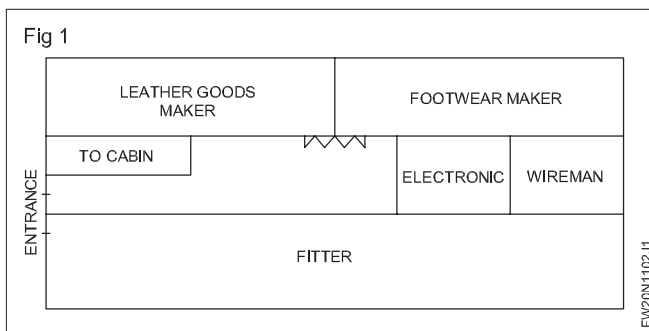
- Collect phone numbers of ITI –office, phone numbers of nearby hospital, police station and fire station.
- Draw the layout of the various trades in your industrial training institute.

Note: Sample layout of ITI is given for your information. Draw the layout of the vocational trades/sections of your industrial training institute.

TASK 2: Draw your Sectional Layout of the industrial training institute (Fig 1 & 2)

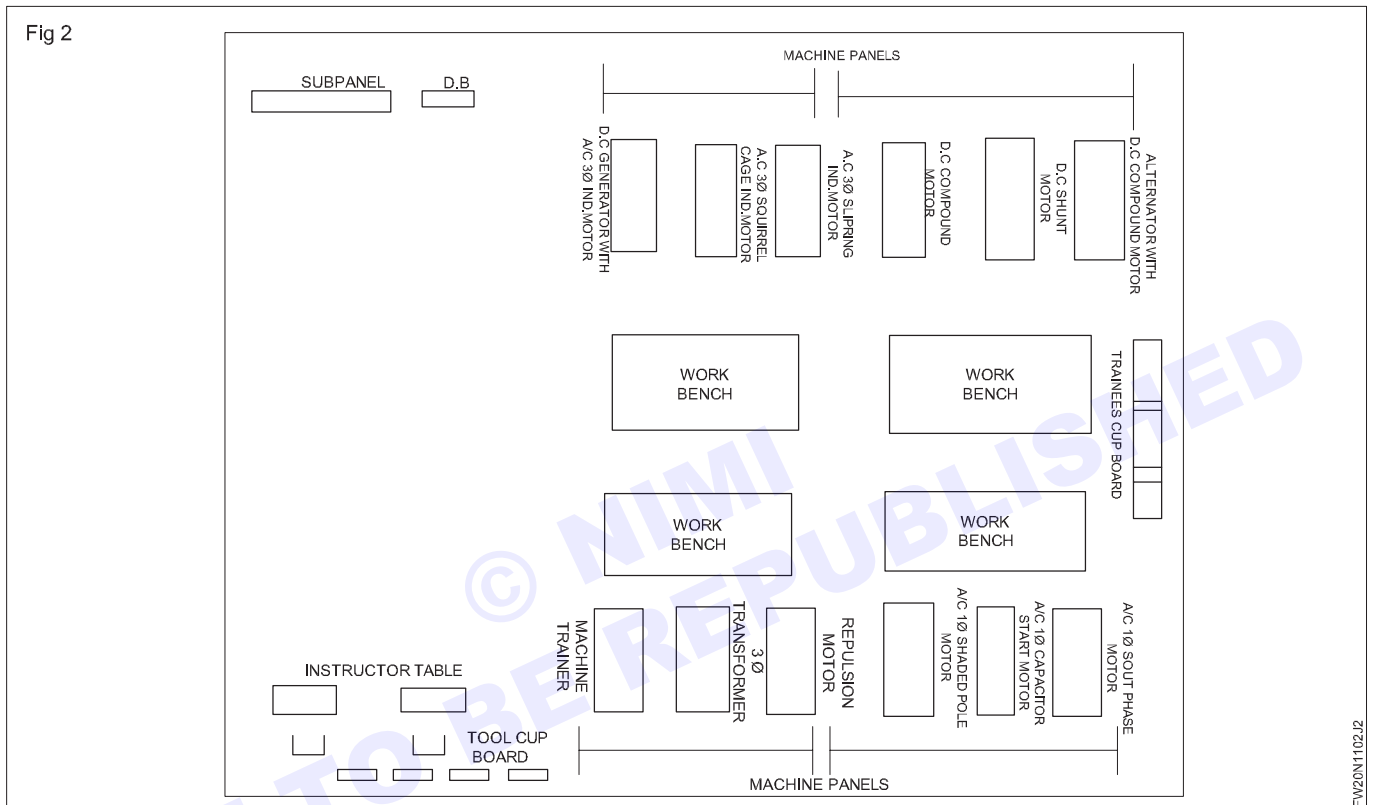
- On a separate sheet of paper (A4 size) draw a diagram of your trade section at a suitable scale.
- Measure the length and width of machine foundations, work platforms, panel wiring cables, doors, windows, furniture, etc.
- Draw the layout of machines, work platforms, panels, chairs and tables etc.

Based on actual location of machine foundation, panel, chair and tables, work platforms etc. section diagram should be same size as in serial number-1. A sample layout of an electrician trade (Fig 2) is given for your information. Draw the layout of the section including the contents of your section.



The instructor should arrange for the various types of PPE to be placed on the table or arrange for a tabular column to display the PPE. Explain the types of PPEs and explain how to use PPE for those that may pose a relevant risk of harm.

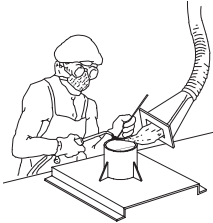
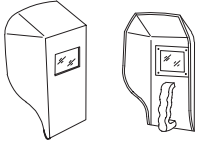
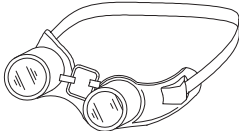
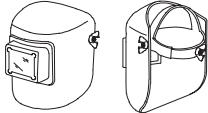
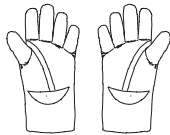
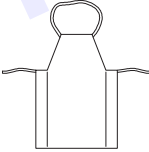
- Identify the types of PPEs and refer to the table or read the PPEs in Table-1 and write the name of the relevant PPEs.
- Write the protective class and use of each PPE in the blank space in Table 1.



- Get it checked by your instructor.

Table 1

S.No.	Figure	Name of PPE	Type of Protection	Usage
1				
2				

S.No.	Figure	Name of PPE	Type of Protection	Usage
3				
4				
5				
6				
7				
8				
9				

Get it checked by your instructor.

— — — — —

Safe disposal of waste materials

Objectives: At the end of this exercise you shall be able to

- **identification of different types of waste materials**
- **segregation of waste materials according to quality and arrangement for depositing in appropriate bins**
- **disposal of salable and non-salable goods separately and maintenance of records.**

Requirements

Materials

- | | | | |
|-------------------------|----------|------------------------------------|-----------|
| • Shovel | - 1 No. | • Brush and glove | - 3 Pairs |
| • Plastic / Metal Tanks | - 4 Nos. | • Basic Safety Code Table-1 | |
| • Trolley with wheel | - 3 Nos. | • Occupational Hazards table chart | - 1 No. |

PROCEDURE

TASK 1: Identify all waste materials in the workshop

Table 1

S.No.	Name of waste material	Weight / Size	Salable or non - salable
1	Leather waste		
2	Buffing dust		
3	Skiving Dust		
4	Rubber waste		
5	Paper waste		
6	Rexine waste		

TASK 2: Collection of various waste materials like Buffing dust, Skiving dust, Leather cutting waste etc. (Fig 1 & 3)

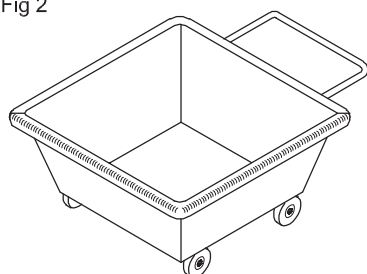
Identification of different types of waste materials

- | | |
|--|--|
| • Collect all waste materials in the workshop. | • Separate salable, non-salable organic and non-organic materials. |
| • Various waste materials such as Buffing dust, Skiving dust, Leather cutting waste scrap, (Chemical dust) etc. Separately identify classify and label it. | • Record the segregated wastes in table 1 |
| | • Prepare 3 trolleys with wheels and label them separately as 'Buffing Dust', 'Skiving Dust' Leather cutting waste and proceed to remove the waste material. |

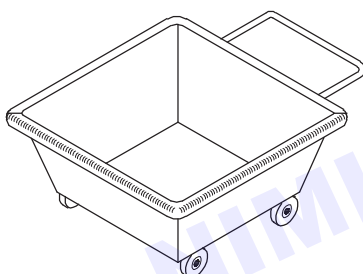
Fig 1



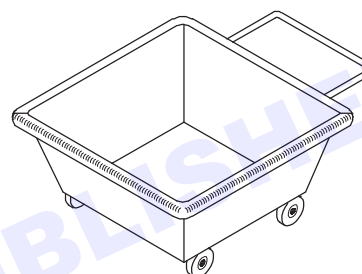
Fig 2



COTTON



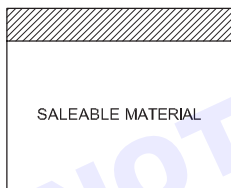
METAL CHIPS



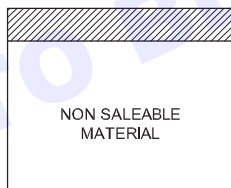
OTHERS

FW20N1103H2

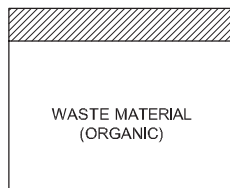
Fig 3



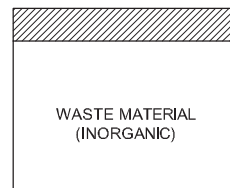
SALEABLE MATERIAL



NON SALEABLE
MATERIAL



WASTE MATERIAL
(ORGANIC)



WASTE MATERIAL
(INORGANIC)

FW20N1103H3

Hazard identification and avoidance

Objective: At the end of this exercise you shall be able to

- **identify occupational hazards and take necessary measures to avoid occupational hazards.**

Requirements

Tools/Instruments

- Knife 150 mm - 1 No.

PROCEDURE

TASK 1: Identify occupational hazards and take necessary measures to avoid occupational hazards

The instructor should explain to trainees the importance of occupational hazards and avoidance during the task.

Safety methods

- Do not enter the workshop without shoes.
- Keep the sharp tools like knife safely.

Table 1

S.No.	Identifying hazards	Avoidance of hazards
1		
2		
3		
4		
5		

Electrical accidents and steps to be taken

Objectives: At the end of this exercise you shall be able to

- **avoid electrical accidents by following safety rules**
- **actions to be taken immediately to save an electrocuted person.**

Requirements

Tools/Instruments

- Thickly insulated screw driver - 1 No.

Materials

- Electrical safety table - 1 No.
- Gloves - 1 No.

- Rubber mat - 1 No.
- Wooden stool - 1 No.
- Ladder - 1 No.
- Safety Belt - 1 No.

PROCEDURE

TASK 1: Practice and observe precautionary safety rules to avoid electrical accidents

- Do not work in live electrical circuits. Use rubber gloves or rubber mats when unavoidable.
- Do not touch an uninsulated wire.
- When changing a live circuit or a fused light bulb stand on a wooden stool or an insulated ladder and work.
- While working on control gear, switch, panel etc., stand on a rubber mat and work.
- Always wear a safety belt when working on a power pole or at a height.
- Use a wood or PVC insulated handle screwdriver when working on electrical circuits.
- Replace or remove the fuse after turning the circuit breakers 'OFF'.
- Open the main switch and de-energize the circuit.
- Do not touch any moving part of the rotating machine with your hands.
- Connect the ground connection for electrically powered devices through a 3-pin socket and plug.
- Do not connect the ground connection to the water pipe.
- Do not pour water on electrical appliances.
- Eliminate static voltage when working on HVline / electrical equipment and capacitors.
- Keep workshop floor clean and tools in good condition.

TASK 2: Implement immediate actions to save the electrocuted victim

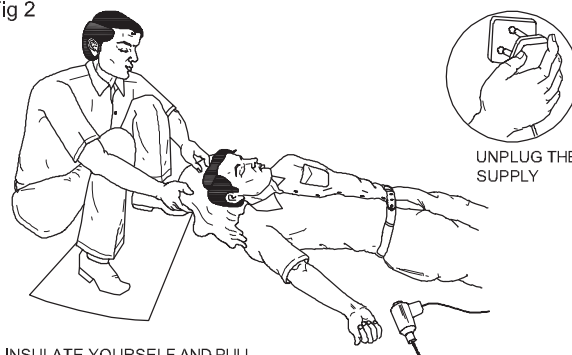
- Start treatment immediately without panicking.
- Turn off the power or remove the plug from the socket and disconnect.

Use a dry piece of wood to free the electrocuted person from the live wire. (Fig 1&2)

Fig 1



Fig 2



INSULATE YOURSELF AND PULL THE VICTIM AWAY FROM SUPPLY

Avoid direct contact with the electrocuted victim. If rubber gloves are not available, cover your hands with dry material. Do not touch a person who has been electrocuted with bare hands.

- Keep the patient calm.

Make way to get him a nice breeze. Take the help of others to move the patient to a safe place. If the patient is in a high place, take safety measures to prevent fall.

- Loosen the fabric around the neck and chest area.
- Keep the patient in a warm place and at rest. (Fig 3)

Fig 3



FW20N1105H3

- Send a person to call a doctor if there is a burn injury.

If the burn is caused by electric shock, the patient will be in a very painful and dangerous condition. Do not give any treatment if there is a large area of the body burned. But give first aid as mentioned below.

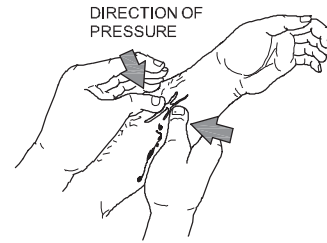
- Wash the burnt area with clean water.
- Clean using a clean cloth or cotton.
- Send a person immediately to bring the doctor.

In case of severe bleeding

- Keep the patient in lying down position.
- Elevate and hold the affected area.

- Apply pressure to the wound until the bleeding stops. (Fig 4)

Fig 4



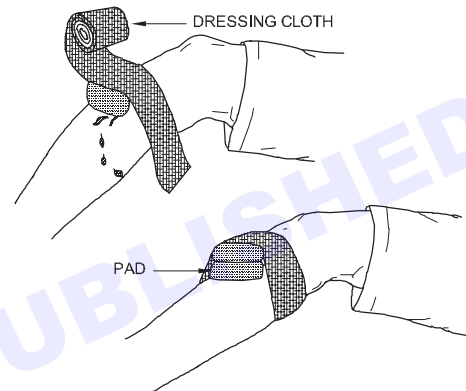
FW20N1105H4

- Apply a clean pad and bandage if the wound is large. (Fig 5)

Apply more than one bandage if bleeding is profuse.

- Continue proper artificial respiration.

Fig 5



FW20N1105H5

Importance of trade training, list of tools and machinery used in the trade

Objectives: At the end of this exercise you shall be able to

- knowing about the importance of footwear maker
- know about the importance of footwear manufacturing training
- identify the list of tools used in footwear manufacturing
- identify the list of machines used in footwear manufacturing.

Requirements			
Tools/Instruments			
• Knife	- 1 No.	• Scale (or) ruler	- 1 No.
• Scissors	- 1 No.	• Shoemaker measuring tape	- 1 No.
• Pincer	- 1 No.	Equipments/Machines	
• Three leg iron last	- 1 No.	• Flatbed sewing machine	- 1 No.
• Nail remover	- 1 No.	• Cylinder bed sewing machine	- 1 No.
• Shoe hammer	- 1 No.	• Post bed sewing machine	- 1 No.
• Wooden mallet	- 1 No.	Materials	
• Hammer	- 1 No.	• Chart paper	- as reqd.
• Eye let fixer	- 1 No.		

PROCEDURE

TASK 1: Know the importance of footwear manufacturing, note down the district in Tamil Nadu state which produce footwear in table 1 (Part - 1) and note down the place in other states which produce footwear in table 1 (Part - 2)

Instructor should show and explain to the trainees, the districts where footwear is produced in Tamil Nadu, and the footwear produced in other states and the tools and machines used by footwear makers.

Mention the footwear producing districts in Tamil Nadu in Table 1 (Part - 1)

Table 1 (Part - 1)

S.No.	Footwear manufacturing district in Tamil Nadu	Remarks
1		
2		
3		

(Part - 2)

S.No.	Places where footwear is manufactured in other states	Remarks
1		
2		
3		

TASK 2: Know the importance of footwear manufacturing training

Mention the places where training for footwear manufacturing is available and its importance in Table 2

Table 2

S.No.	Available footwear manufacturing training place	Importance
1		
2		
3		
4		

— — — — —

TASK 3: Identify tools and machinery used in footwear production

Mention the names and figure of the tools and machines required for foot wear manufacturing in Table 3

Table 3

S.No.	Name of the tool	Figure
1		
2		
3		

S.No.	Name of machines	Figure
1		
2		
3		

— — — — —

Safe use of tools and equipments in the trade

Objectives: At the end of this exercise you shall be able to

- know how to safely use the tools that can be used in the footwear maker trade
- know how to safely operate the equipment used in the footwear maker trade.

Requirements

Tools/Instruments

- Knife - 1 No.
- Pincer - 1 No.
- Nail puller - 1 No.
- Hammer - 1 No.
- Rampi - 1 No.
- Scissors - 1 No.

Equipments/Machines

- Strap cutter - 1 No.
- Eyelet fixer - 1 No.

Materials

- Chart paper - as reqd.

PROCEDURE

TASK 1: Know how to safely use equipment that can be used in Footwear maker trade

Instructor should explain and demonstrate to use knife, hammer and three leg iron last.

- Trainee should write the safety method against the used tool name in Table 1.

Table 1

S.No.	Name of the instrument used	Safety method
1	Knife	
2	Hammer	
3	Three leg iron last	

TASK 2: Learn to safely operate equipments used in footwear manufacturing department, draw and explain in Table 2

Table 2

S.No.	Name of equipments	Image of equipments

Familiarization with the Institute

Objectives: At the end of this exercise you shall be able to

- know about other trades in the industrial training institute
- know the name and designation of the officials working in the industrial training institute.

PROCEDURE

TASK 1: Take to various trades in the industrial training institute and learn about the trades

The instructor should take the trainees to other trades in the industrial training institute and inform them about the other trades and sections, official names etc.

Trainees need to mention the trade name and its detail in Table 1

Table 1

S.No.	Name of the trade	Known about trades
1		
2		
3		

TASK 2: Know the name and designation of the officials working in the industrial training institute

Trainees need to mention the name and designation of the officials in Table 2

Table 2

S.No.	Name of the trade	Name of Official	Position of Official
1			
2			
3			

Make the trainees familiar with the shop discipline, layout of the shop

Objectives: At the end of this exercise you shall be able to

- know the workshop rules & regulations
- drawing the layout of the foot wear maker trade section of the industrial training institute.

Requirements			
Tools/Instruments		Materials	
• Pencil	- 1 No.	• Chart paper	- as reqd.
• Rubber	- 1 No.		
• Scale- 12"	- 1 No.		

PROCEDURE

TASK 1: Know the rules & regulations of workshop

Instructor should describe the rules and regulations of the workshop to trainees.

Mention the rules & regulations of the workshop in Table 1

Table 1

S.No.	Write down the rules of the workshop
1	
2	
3	
4	
5	
6	

TASK 2: Drawing the layout of the footwear maker trade section of the industrial training institute

The instructor should escort the newly joined trainees to different trades section of the industrial training institute.

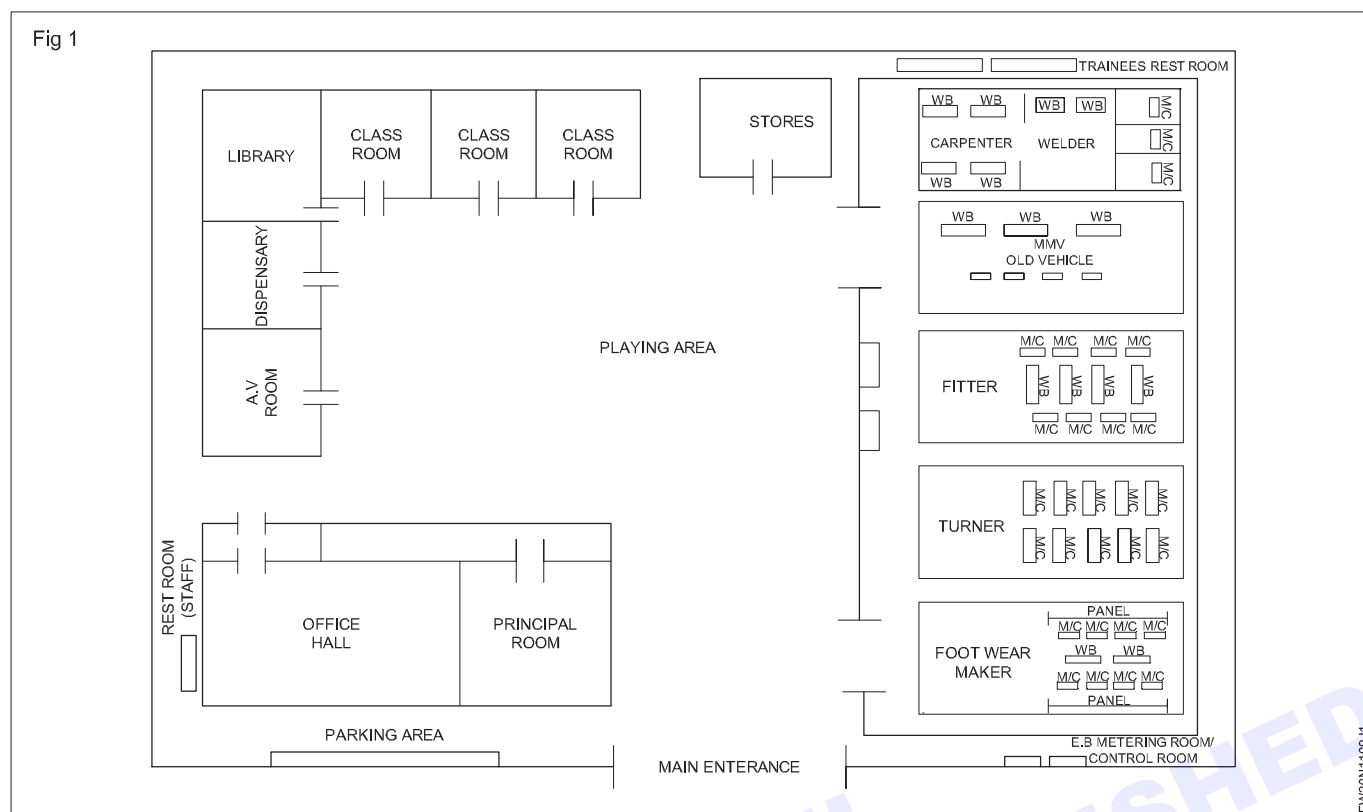
- Visit the different trade sections of your institute, identify the trades and record them in your notebook.
- Collect details of officials in each trade.
- Find the location of railway station and bus station and know the bus route numbers that go near your ITI.

- Collect the ITI Office Phone Numbers, phone numbers of nearby hospitals, police stations and fire stations etc.
- Draw the layout of the various trade sections of your institute.

Note: Sample layout of ITI is given for your information. Draw the layout of your trades/ sections.

S.No.	Trade wise mark the sections of the industrial training institute
1	Fig 1 Fig 2 1 Identify footwear maker trade and mark it Machinery name Flat bed sewing m/c Hydraulic clicking m/c Cylinder bed sewing m/c Upper leather skiving m/c Combined finishing m/c 1 Punching and eyeleting device 2 Sewing m/c post bed 3 Stamping m/c 4 Air stuck - Pneumatic cementing press m/c 5 Manual sole pressing m/c 6 Clicking m/c 7 Skiving m/c 8 Decorating m/c 9 Sewing m/c double needle flat bed

TASK 3: Drawing the Layout of the industrial training institute by viewing different sections of the institute (Fig 1)



Newly enrolled trainees should be escorted by instructors to various areas of the industrial training institute.

- Visit the different sections of your institute, identify the trades and record them in your notebook.
- Collect details of officials in each trade.
- Find the location of railway station and bus station and know the bus route numbers that go near your ITI.

- Collect the ITI office phone numbers of nearly hospitals, police station and fire station etc.
- Draw the layout of the various trade sections of your institute.

Note: Sample layout of ITI is given for your information Draw the layout of your trade/ sections.

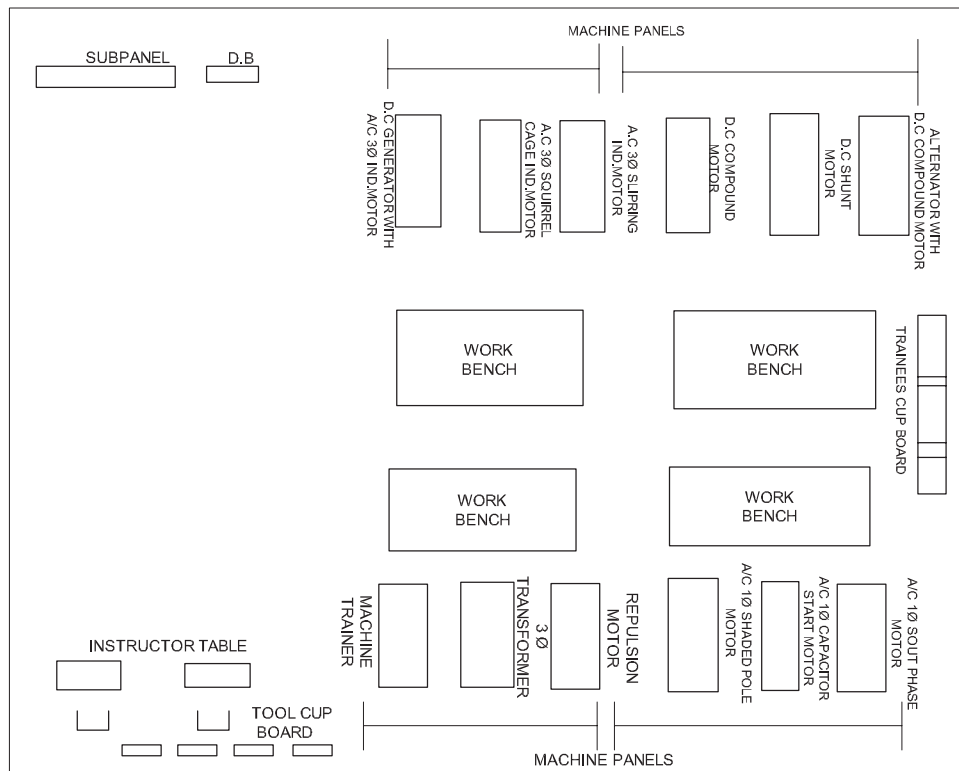
TASK 4: Drawing your trade section layout of the training institute (Fig 1)

- On a separate sheet of paper (A4 size) draw a diagram of your trade section in a suitable scale.
- Measure the length and width of machine foundations, work platforms, panel wiring cubicles, sheds, windows, furniture, etc.
- Draw the layout of machines, work platforms, panels and chairs and tables etc.

Machine foundations, panels, chairs and tables work platforms based on location of actual etc, the section diagram should be in the same scale as in S.No.1.

A sample layout of an electrician trade (Fig 1) is given for your information. Draw the layout of the section to include the contents of your section.

Fig 1

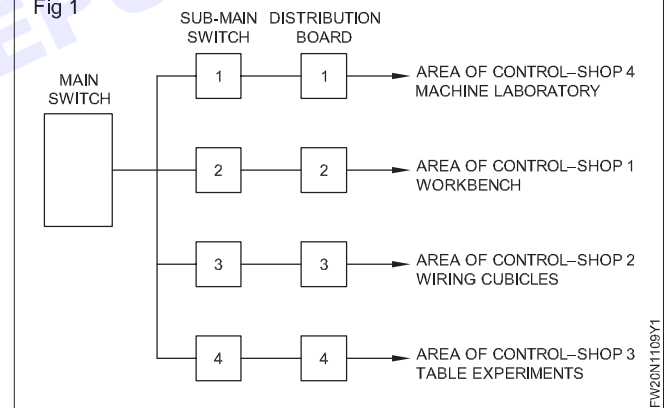


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TASK 5: Locating Electrical Installations (Fig 1)

- Locate the main switch and mark its location on the layout. (Fig 1)
- Locate each auxiliary mains switch and mark on the outlet which position they control in the section.
- Find 3 or 4 places in different locations on the electrical section layout and locate the auxiliary main switches for them.
- Training should be carried out to locate the electric shock victim in an imaginary way and stop the control switches.

Fig 1



FW20N1109Y1

Identify different types of hand tools

Objectives: At the end of this exercise you shall be able to

- identify different types of hand tools
- identify the uses of each tool in the types of hand tools.

Requirements

Tools/Instruments

- **Measuring Tools:** Scale, measuring tape, Leather Thickness Gauge
- **Cutting tools:** Knife, scissors, rampi
- **Designing decorating tools:** Ruler, Divider, Compass, Try square, Diagonal, Pencil, Rubber

Materials

- Chart paper - as reqd.
- Pencil, rubber - as reqd.

PROCEDURE

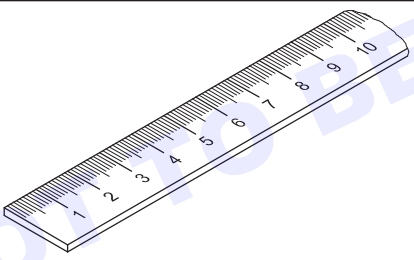
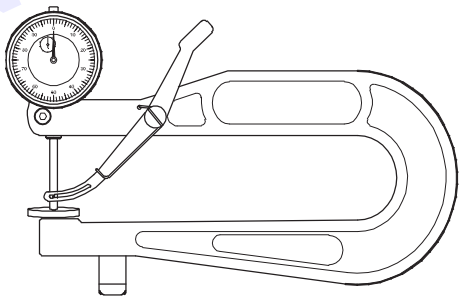
TASK 1: Sort the tools by their type and place them on the table and identify them

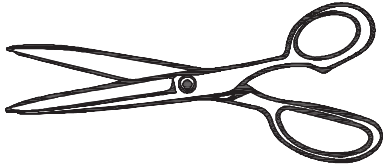
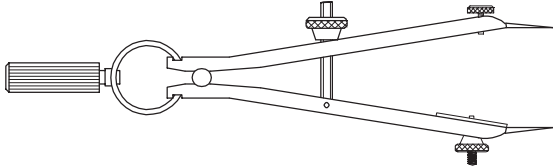
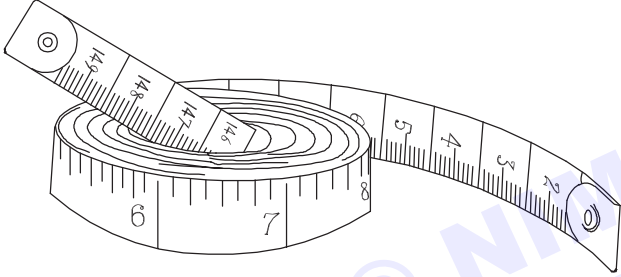
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TASK 2: Identify the nature of each tool in the category of hand tools

Record the names and uses of the tools you have identified in table 1

Table 1

S.No.	The structure of the instrument	Name of the hand tool	Uses of hand tool
1			
2			
3			

S.No.	The structure of the instrument	Name of the hand tool	Uses of hand tool
4			
5			
6			

Selection of proper tools for operation and precautions in operation

Objectives: At the end of this exercise you shall be able to

- selecting the right tool for a specific job
- precautions to be followed while performing work.

Requirements			
Tools/Instruments		Equipment/Machines	
• Knife	- 1 No.	• Grinding machine	- 1 No.
• Scale	- 1 No.	Materials	
• Cutting sheet (or) Mat	- 1 No.		
• Grinding stone	- 1 No.		
		• Chart paper (or) piece of leather	- as reqd.

PROCEDURE

TASK 1: Selecting the right tool for the task (e.g. cutting leather)

Record the safety precautions observed by the trainees during the work performed in Table 1.

Write down the working and precautions of the tools/machines used during the trainee training.

Table 1

S.No.	Name of tools or machinery used for work	Work done	Precautionary measures observed
1	Knife		
2	Cutting mat		
3	Grinding machine		
4	Grinding stone		

TASK 2: Know and practice the safety precautions to be followed while cutting leather

- Handle the knife carefully while cutting the leather
- Cut carefully so that the knife does not go over the scale.
- Be careful not to cut your fingers when cutting the leather.
- Do not apply too much pressure when cutting the leather.
- Always use a cutting sheet when cutting the leather.
- Sharpen the knife as and when required when cutting the leather.
- Be careful not to break the grindstone while sharpening the knife.
- Do not waste while cutting the leather.
- Be careful while sharpening the knife on grinding machine.
- While sharpening the knife in grinding machine dip the knife in water as and when required.
- Sharpen the knife in grinding stone whenever required.

Care and maintenance of hand tools

Objectives: At the end of this exercise you shall be able to

- proper care of different types of hand tools
- proper maintenance of all hand tools.

Requirements

Tools/Instruments

Measuring Tools

- Scale
- Measuring tape
- Leather Thickness Gauge

- 1 No.
- 1 No.
- 1 No.

- Compass
- Divider
- French Curve Set

- 1 No.
- 1 No.
- 1 No.

Cutting tools

- Knife
- Scissors
- Rampi

- 1 No.
- 1 No.
- 1 No.

Punching tools

- Hammer
- Drilling Tools
- Wood piece

- 1 No.
- 1 No.
- 1 No.

Designing tools

- Protractor
- Diagonal

- 1 No.
- 1 No.

Materials

- Chart paper

- as reqd.

PROCEDURE

TASK 1: Learn the methods of securing different types of hand tools

- Trainees should learn the methods of securing different types of hand tools

TASK 2: Proper maintenance of different types of hand tools

The instructor should demonstrate the methods of preserving and maintaining different types of hand tools.

- Trainees should mention the method and maintain different types of hand tools in Table 1.

Table 1

S.No.	Name of the tool	Type	Protect system	Maintenance method
1				
2				
3				
4				
5				
6				

Identify layout of the machinery, tool and equipment, etc. installed in the shop

Objectives: At the end of this exercise you shall be able to

- identifying the machines installed in the workshop
- practice drawing the tools
- practice drawing the devices.

Requirements			
Tools/Instruments			
• Pincer	- 1 No.	• Screw driver	- 1 No.
• Hammer	- 1 No.	• Folding hammer	- 1 No.
• Grinding store	- 1 No.	Equipments/Machines	
• Iron Last	- 1 No.	• Eyelet fixing device	- 1 No.
• Wooden piece	- 1 No.	• Drilling equipment	- 1 No.
• Kadapa stone	- 1 No.	Materials	
• Protractor	- 1 No.	• Chart paper	- as reqd.
• Compass	- 1 No.		
• Cutting pliers	- 1 No.		

PROCEDURE

TASK 1: Identify the machines installed in our trade workshop

- The trainees may visit the workshop and list the name of the machines installed in the workshop and record their uses in Table 1
- Get it checked with the instructor.

Table 1

S.No.	List of machines	Uses/Applications
1		
2		
3		
4		

TASK 2: Draw of the tools

- The instructor may display the tools or tool image used in the workshop.
- The trainees may draw the tools and get it checked with the instructor in Table 2.

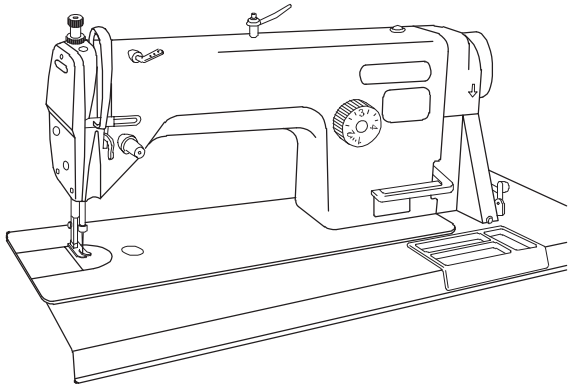
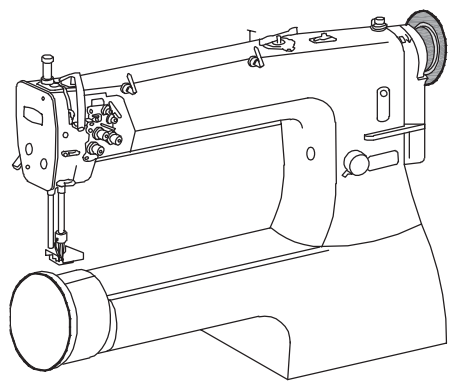
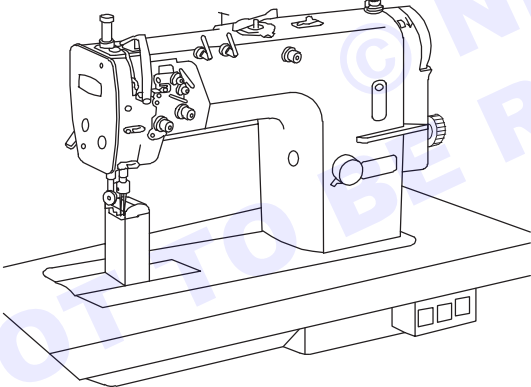
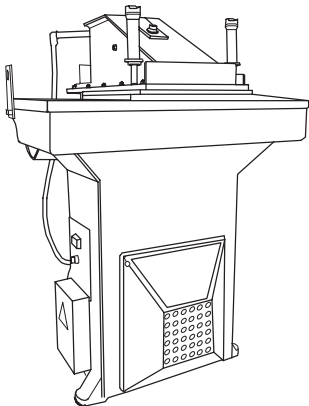
Table 2

S.No.	Draw the hand tools	Write the names
1		
2		
3		
4		

TASK 3: Draw the devices

- Identify the list of devices in Table 3 and write their names and uses.
- Get it checked by the instructor.

Table 3

S.No.	System of machines	Write the name	Uses
1			
2			
3			
4			

Practice different types of tools specification, size and symbol while working in fitting job

Objectives: At the end of this exercise you shall be able to

- practice handling various tools
- know the measurement specifications of various instruments
- know the meaning of symbols during fitting work.

Requirements		
Tools/Instruments	Materials	
• Drilling punch • Hammer • Leather thickness measurement tool	- 1 No. - 1 No. - 1 No.	• Chart paper - as reqd.

PROCEDURE

TASK 1: Specify how to use the tools given below. Write down the tool usage method in Table 1

Table 1

S.No.	Tools	Method of use
1	Knife	
2	Drilling punch	
3	Scissors	
4	Hammer	
5	Leather thickness measuring tool	

TASK 2: Enter the dimensions of the tools given in the left column in Table 2 in the right column write the name and size of any four tools

Table 2

S.No.	Name of the tool	Size
1	Punch	
2	Scissors	
3	Hammer	
4	Pincer	

TASK 3: In Table 3, indicate the explanation of the symbol given in the left column on the right, mention the action for the symbol below

Table 3

S.No.	Symbol	Action
1	'O' - Punch	
2	Size- 6 punch	

Types of practical training to be followed, maintenance and handling of tools and equipment of the section

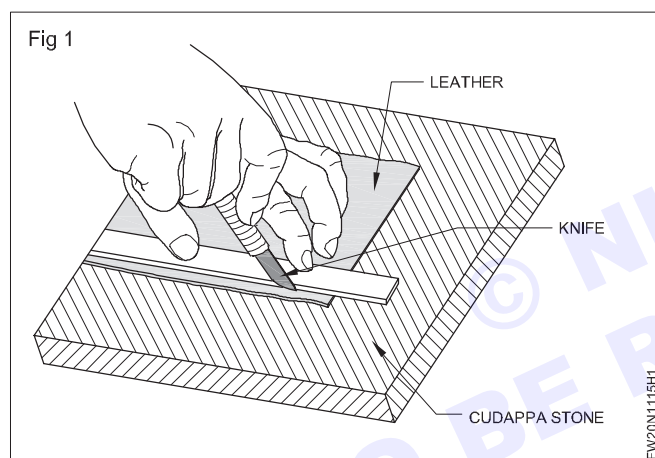
Objectives: At the end of this exercise you shall be able to

- maintain and protect the tools and equipment used
- handling tools and equipment.

Requirements		
Tools/Instruments		Materials
• Knife	- 1 No.	• Upper leather - as reqd.
• Kadapa stone	- 1 No.	
• Grinding stone	- 1 No.	

PROCEDURE

TASK 1: Practice skiving, then knowing how to maintain and protect tools used for practice (Fig 1)



- Hold the knife in the right hand as shown in Fig 1 and push from back to front with moderate pressure.

Safety system

- While skiving, do it safely without piercing or tearing your hands.
- Do not put too much pressure on the leather while skiving.
- Skiving safely, carefully without tearing the leather while skiving.

Instructors should explain how to handle tools and equipments properly.

- Place the leather on the kadapa stone.
- Sharper the knife and keep it ready
- Put the left hand on the leather placed on the kadapa stone and press it to hold.

TASK 2: Handling of tools and equipment during and after training

- List the tools and equipment used by trainees for skiving training in Table 1.

Table 1

S.No.	Name tools and equipment	Handling methods
1	Knife	
2	Skiving machine	
3	Kadapa Stone	
4	Grinding stone	

Practice on safety precautions including fire fighting equipments

Objectives: At the end of this exercise you shall be able to

- identify four basic types of safety signs
- record the meanings of safety signs
- identify different types of personal protective devices from the chart (read and interpret).



Fig 1



Fig 2



Fig 3

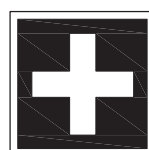


Fig 4



Fig 5



Fig 6



Fig 7



Fig 8



Fig 9



Fig 10



Fig 11



Fig 12



Fig 13



Fig 14



Fig 15



Fig 16



Fig 17



Fig 18



Fig 19



Fig 20

--	--	--	--	--	--	1.1.16
NO.OFF	STOCK SIZE	SEMI-PRODUCT	MATERIAL	PROJECT NO.	PART NO.	EX. NO.
SCALE	IDENTIFY THE CATEGORIES OF THE SAFETY SIGN				DEVIATIONS	TIME: 1Hr
					CODE NO. FW20N1116E1	

PROCEDURE

TASK 1: Identify the four basic types of safety signs

The instructor gives different types of safety signs and explain the meanings, definitions etc. to trainees. He will ask the trainees to identify the sign and record it in the table.

- Identify the safety sign from the chart
- Record the name of the category in Table 1
- List the safety signs, their meaning, details in the table.

Table 1

Fig. No.	Basic Categories/ Safety Sign	Meaning/ Description
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Fig. No.	Basic Categories/ Safety Sign	Meaning/ Description
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Get it checked by your instructor.

TASK 2: Recording the meaning of safety sign

The instructor will give or arrange different types of personal protection equipment or personal protection equipment chart to trainees and explain, how to identify and select the appropriate PPE equipment for the job and ask the trainees to write the names in the given chart.

- Read and understand personal protective equipment, either by looking at the actual equipment or by looking at the chart.
- Identify and select appropriate type Personal Protective Equipment (PPE) (Fig 1)

Fig 1



FW20N116H1

Table 2

S.No.	Name of PPE	Hazards	Safety type
1			
2			
3			
4			
5			
6			
7			
8			
9			

Get it checked by your instructor.

— — — — —

TASK 3: Read and interpret the different types of personal protective devices from the chart.

Instructor will tell you the occupational hazards and the reasons.

- Identify the occupational hazard for the corresponding situation with the potential harm listed in Table 3.

Table 3

S.No.	Source or Hidden Harm	Types of Occupational Hazards
1	Sound/Noise	
2	Explosive	
3	Virus	
4	Sickness	
5	Smoking	
6	Non-control device	
7	No earthing	
8	Poor house keeping	

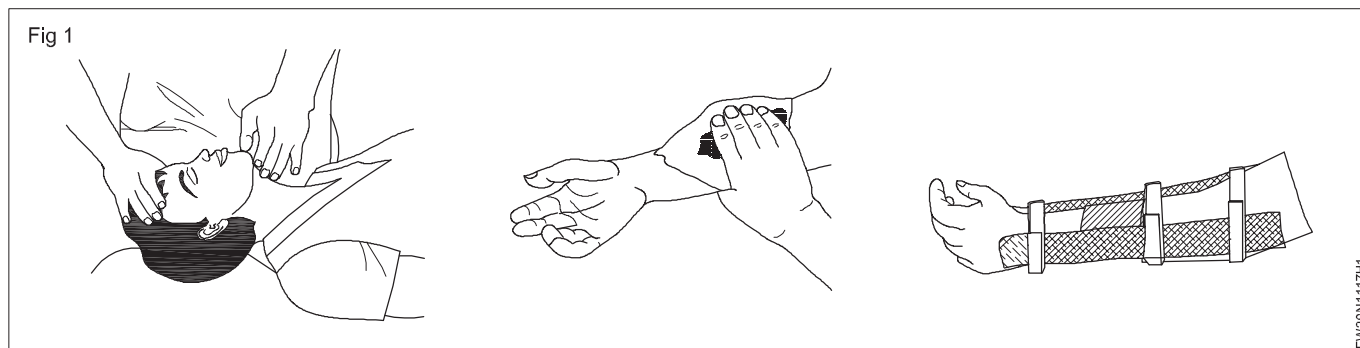
Complete and get it checked by your instructor.

— — — — —

Accidents, first aid practice and treatment, first aid method and basic training

Objectives: At the end of this exercise you shall be able to

- helping the unconscious victim to breathe in different stages (rescue breathing)
- treatment to stop bleeding.



PROCEDURE

Assumption - For easy management, the instructor can divide the trainees into groups and ask each group to demonstrate the resuscitation method.

TASK 1: Prepare the victim for artificial respiration

- Loosen tight clothing as it may restrict the victim's breathing.
- If there is any foreign material stuck in his mouth, remove it and keep the affected person's mouth open
- Bring the affected person to level ground safely, taking necessary safety measures periodically.
- Immediately, without any delay in time start artificial resuscitation by trying out loosening the tight clothes (or) to open the tightly closed mouth.
- To avoid happening internal injury to the victim, never pull (or) push the victim in a random way.
- Arrange to call a doctor immediately.

TASK 2: Resuscitate the casualty with Nelson's arm-lift back method

Nelson's arm-Lift back pressure should not be used for that person if there are injuries in the chest and abdomen.

- Place the affected person, (face down) with his (upper arms) folded and palms (palms) on top of each other, place the head on the chin with the palms on top. Kneel next to the victim's arm, place your hands on the victim's back, armpits, line, beyond. Then let your fingers spread outwards and downwards, thumbs touching each other as shown in Fig 1.
- Keeping your arms (upper arms) straight until they are nearly vertical, slowly rock them forward to expel air from the victim's (lungs) as shown in Fig 2, press the back of him.
- The above mentioned movement (rocking backwards) sliding your hands downwards. Then make it run together with the victim's arms and hold the victim's upper arm just above the elbows as shown in Fig 3. Keep rocking back.

- As you move backwards pull the victim's upper arms towards you. Do this until you feel tension in his shoulders. To complete this movement, lower the victim's arms and return your hands to the starting position.

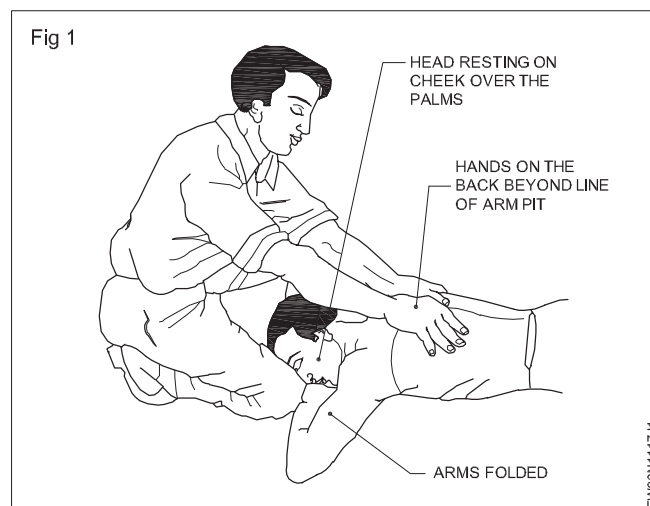
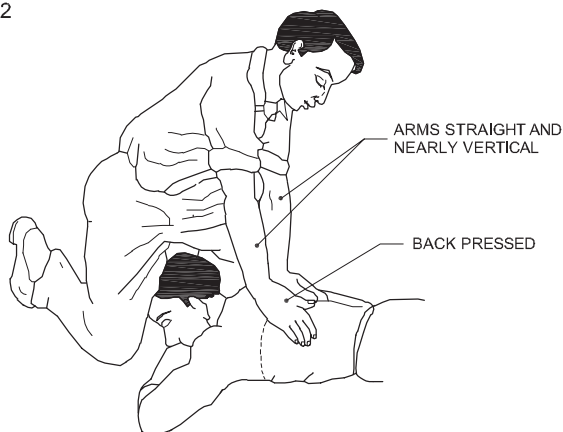


Fig 2



FW20N117J2

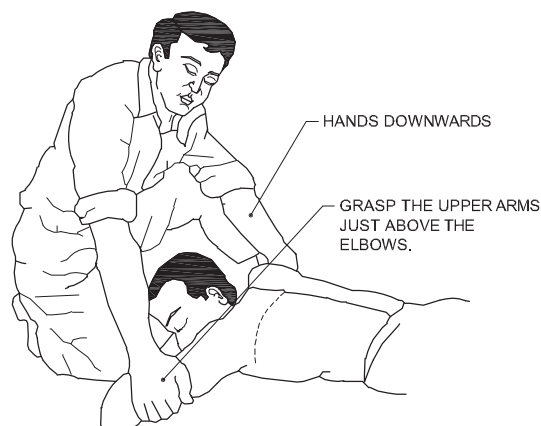
- Continue artificial respiration until the victim breathes normally, please note that in some cases it may take more time.
- While the victim is being revived, keep the victim warm with hot water bottles or a blanket wrapped up with warm bricks. The inside of the upper arms

(arms) and the legs move gently towards the heart and blood flow. (stimulate circulation)

- Keep the person lying down and do not allow him to try on his own.

Do not give him any stimulants until he regains consciousness.

Fig 3



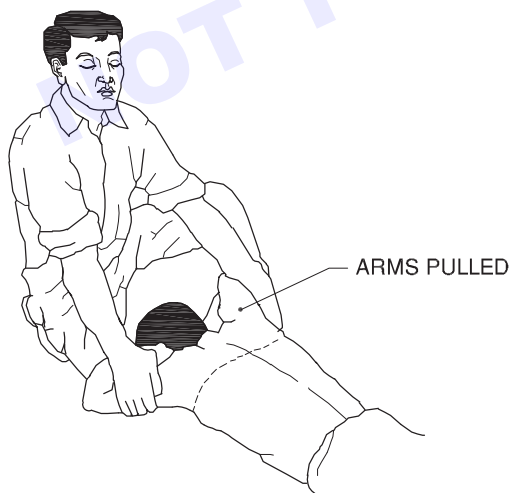
FW20N117J3

TASK 3: Resuscitate the victim in Schafer's method

Do not use this method if the victim has chest and abdominal injuries.

- Lay the victim on his stomach with one arm extended straight ahead and the other (fore arm) bent at the elbow with the face turned to the side as shown in Fig 1, hand or fore arm also kept for support.
- With your fingers and thumbs as shown in Fig 1, kneel astride on the victim with both thighs between your knees.

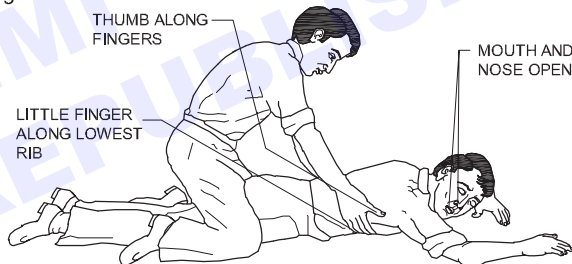
Fig 1



FW20N117S1

- Keeping the forearms (arms) straight (held straight), slowly swing forward so that the weight of your body is supported by the victim's lower ribs and let the air come out from the lungs. (Fig 2)

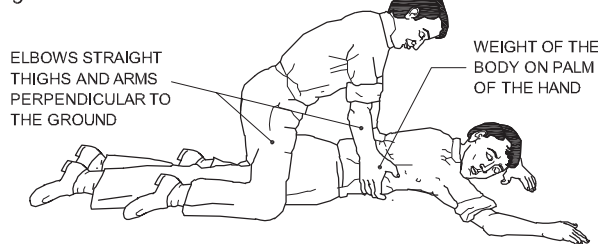
Fig 2



FW20N117S2

- Now immediately swing back (bend) to release all pressure from the victim's body as shown in Fig 3 thereby allowing the lungs to fill with air.

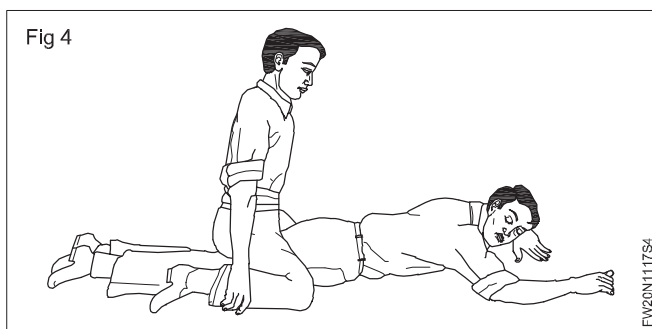
Fig 3



FW20N117S3

- After two seconds, bend forward again and repeat the above cycle 12 to 15 times per minute.
- Continue giving artificial respiration until the victim regains normal breathing. (Fig 4)

Fig 4

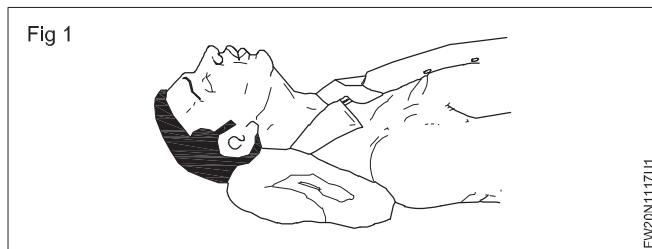


FW20N117S4

TASK 4: Resuscitate the victim using the mouth-to-mouth method

- With the victim lying flat on his face, place a roll of clothing under his shoulders ensuring that his head is well back (Fig 1)

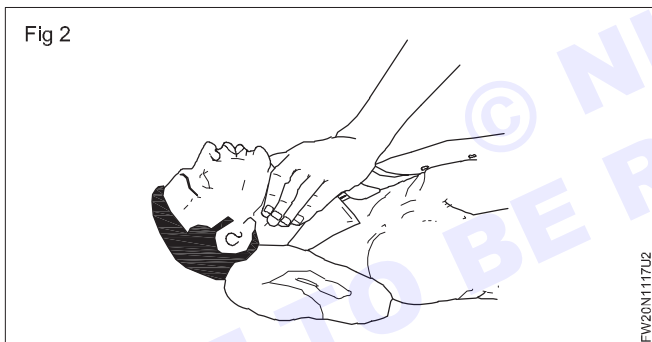
Fig 1



FW20N117U1

- Turn the victim head back so that the chin is straight up. (Fig 2)

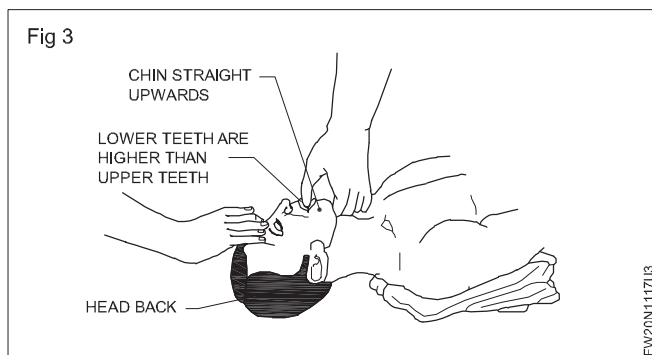
Fig 2



FW20N117U2

- Hold the victim's jaw tightly as shown in Fig 3 and raise it until the lower teeth are higher than the upper teeth, or place your fingers on either side of the jaw near the ear lobes. Pull up.

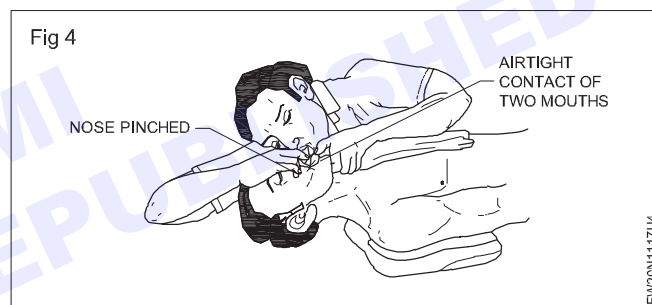
Fig 3



FW20N117U3

- Maintain the jaw position throughout artificial respiration to prevent the tongue from obstructing the airway.
- Take a deep breath and place your mouth over the victim's mouth as shown in Fig 4. Make airtight contact by pinching the victim's nose with thumb and fore finger. If you don't want direct contact, place a porous cloth between your mouth and the victim's mouth. If it is a small battery, then place your mouth over the baby's mouth and nose.

Fig 4



FW20N117U4

- Blow into the victim's mouth until the chest is raised; (Blow gently if it's a child) Remove your mouth and release the grip over the nose and allow the person to exhale, then turn your head and listen for the sound of air escaping. The first 8 to 10 breathings should be as fast as the victim responds. Then the rate can be reduced to about 12 times per minute (20 times if it is a baby).

If air cannot get in, check the position of the victim's head and jaw and recheck the mouth for obstructions, then try again forcefully. If the chest is still rising, turn the victim's face down and strike the victim's back to dislodge the obstruction. Sometimes, air will enter the victim's stomach and the stomach will be swollen. While exhaling, squeeze the abdomen gently to expel the air.

TASK 5: Resuscitate the victim by mouth-to-nose method

Use this method when you cannot open the victim's mouth or there is a blockage that you cannot remove.

- Use the fingers of one hand to firmly shut the victim's lips and close the victim's nostril with your lips. Check that the victim's chest is moving up and down. (Fig 1)
- Repeat this exercise until the victim responds repeat at a pace of 10 to 15 times per minute.
- Continue this exercise until the Doctor arrives.

Fig 1



FW20N117X1

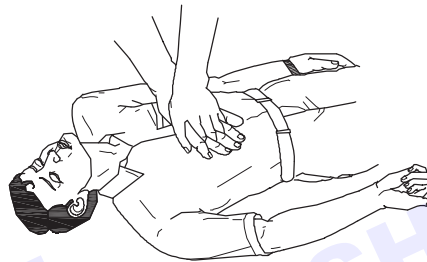
TASK 6: Cardiac Arrest (CPR) Cardiopulmonary Resuscitation

You should act immediately in cases of cardiac arrest.

- Quickly check if the victim is in cardiac arrest.

Check for cardiac arrest by looking for absence of cardiac pulse in the neck (Fig 1), bluish color around the lips and pupil of the eyes! can feel.

Fig 3



FW20N117Y3

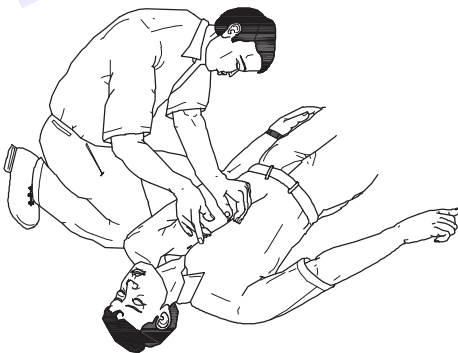
Fig 1



FW20N117Y1

- Lay the victim on his back on a firm surface.
- Kneel alongside the chest and locate the lower part of the sternum. (Fig 2)

Fig 2



FW20N117Y2

- Place the palm of one hand in the center of the lower part of the sternum, with your fingers past the ribcage. Cover the palm with your other hand and lock your fingers as shown in Fig 3.

- Extend your arms straight and press down on the lower part of the breastbone, then release the pressure. (Fig 4) Repeat step 5 15 times at a rate of once per second.

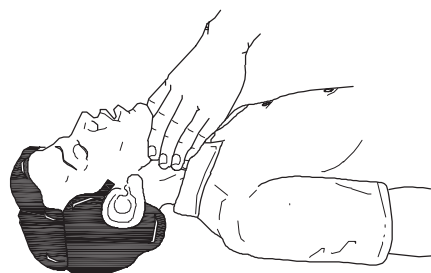
Fig 4



FW20N117Y4

- Check the cardiac pulse (Fig 5)

Fig 5



FW20N117Y5

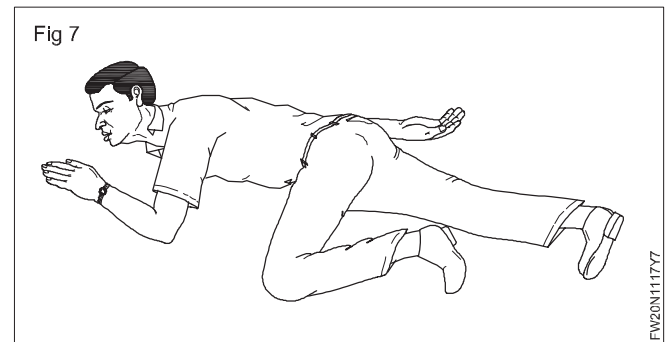
- Move to the victim's mouth and give two breaths (mouth-to-mouth resuscitation) (Fig 6)



In this way, give 15 more compressions to the heart, followed by two breaths, mouth to mouth, and resuscitate. Check the pulse at frequent intervals.

- As soon as the heart returns, stop compressions immediately. But continue the mouth-to-mouth resuscitation and spasm until normal breathing is fully restored.

- Place the victim in the recovery position as shown in Fig 7. Keep him warm and get medical help as soon as possible.

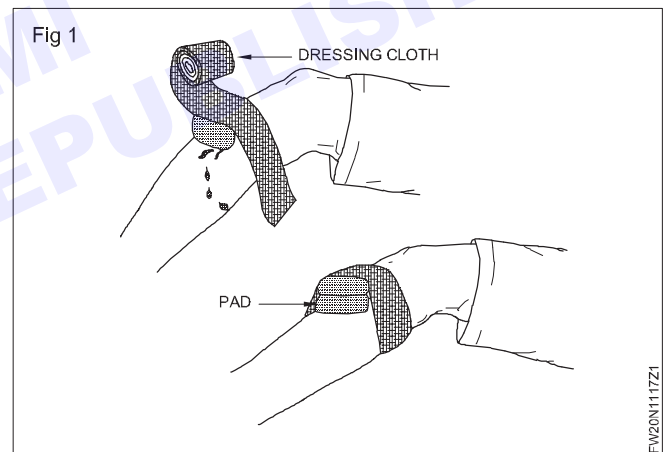


Other steps

- Arrange to call a doctor immediately.
- Keep the victim warm with hot water bottles or a blanket wrapped up with warm bricks. Stimulate circulation by stroking the inside of the upper arms and legs towards the heart.

TASK 7: Treatment for bleeding victim

- 1 Locate the bleeding area.
- 2 Elevate the injured area above the heart if possible.
- 3 Apply direct pressure to the bleeding area with a sterile cloth.
- 4 Press and hold for 5 seconds.
- 5 Check if the bleeding stops and if not apply pressure for another 15 minutes.
- 6 Clean the wound.
- 7 Bandage the wound with a soft material. (Fig 1)
- 8 Advise the affected person to seek medical attention.



Identification of safety signs for danger, warning caution and personal safety message

Objectives: At the end of this exercise you shall be able to

- identify the four basic types of safety signs
- read and interpret different types of personal protective devices from chart.

PROCEDURE

TASK 1: Identify the basic types of safety signs

Instructor gives different types of safety signs and explain their meaning describes definition etc. He asks the trainees to identify the sign and record it in the table.

- Identify the safety sign from the chart.
- Record the name of the category in Table 1.
- List the safety signs with their meaning and details in the table.

Table 1

Fig. No.	Basic Categories/ Safety Sign	Meaning/ Description
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Fig. No.	Basic Categories/ Safety Sign	Meaning/ Description
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Get it checked by your instructor.

TASK 2: Read and interpret the different types of personal protective devices from the chart

The instructor will provide or arrange different types of personal protective equipment / chart and explain how to identify and select the appropriate PPE for the job and ask the trainees to write the names on the chart provided table.

- Read and understand personal protective equipment, either by looking at the actual equipment or by looking at a chart.
- Identify and select appropriate personal protective equipment (PPE) for the appropriate type of protection. (Fig 1)

Table 2

S.No.	Name of PPE	Hazards	Safety type
1			
2			
3			
4			

S.No.	Name of PPE	Hazards	Safety type
5			
6			
7			
8			

Get it checked by your instructor.

TASK 3: Identify occupational hazards and their causes

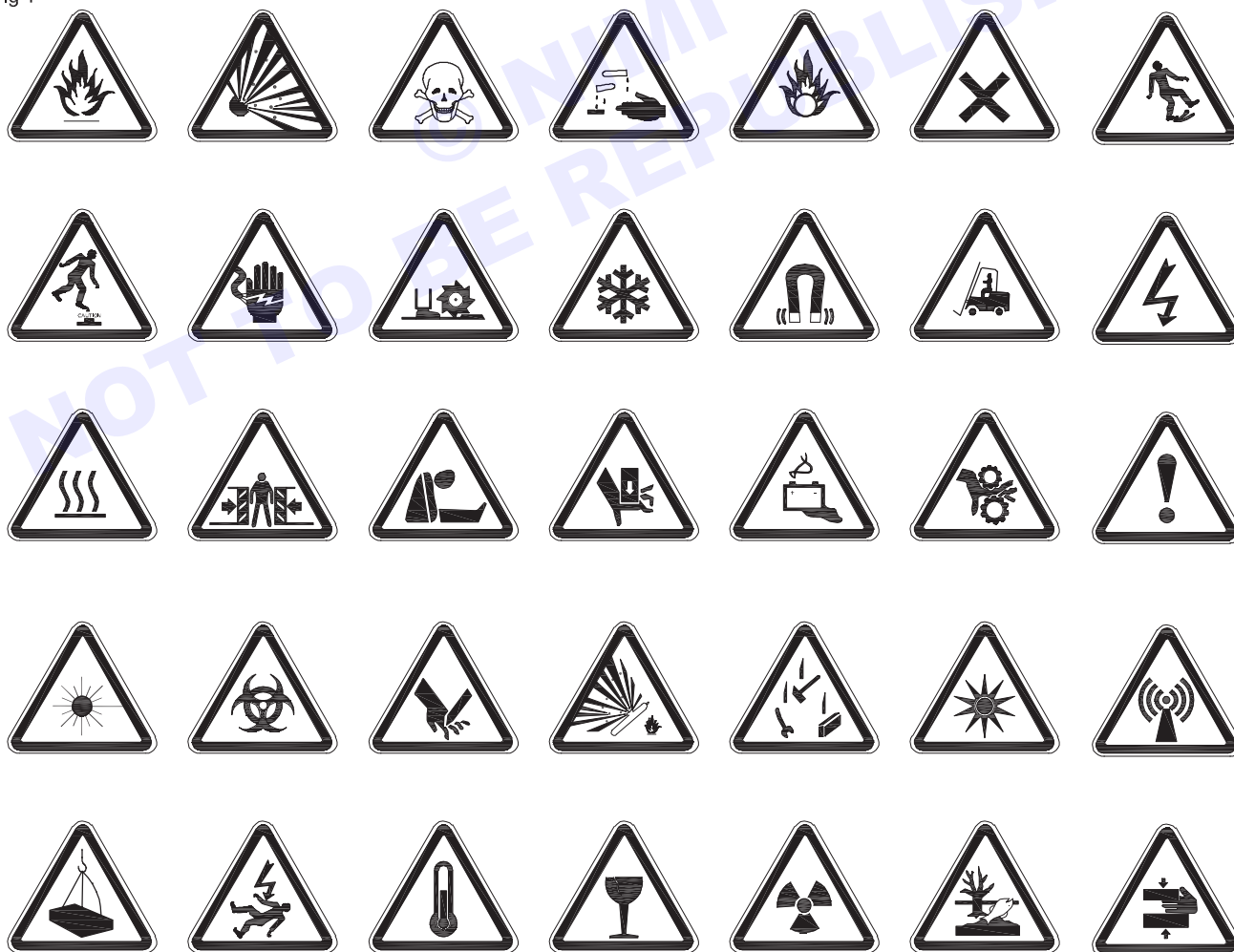
Instructor will tell you the occupational hazards and their causes.

- Identify the risk for the corresponding scenario with potential harm.

Table 3

S.No.	Source or Hidden Harm	Types of Occupational Hazards
1	Noise	
2	Explosive	
3	Virus	
4	Sickness	
5	Smoking	
6	Non-control device	
7	Earthing	
8	Poor house keeping	

Fig 1



FW20N118H1

Use fire extinguishers

Objectives: At the end of this exercise you shall be able to

- selection of fire extinguisher according to type of fire
- operation of fire extinguisher
- fire fighting.

Requirements

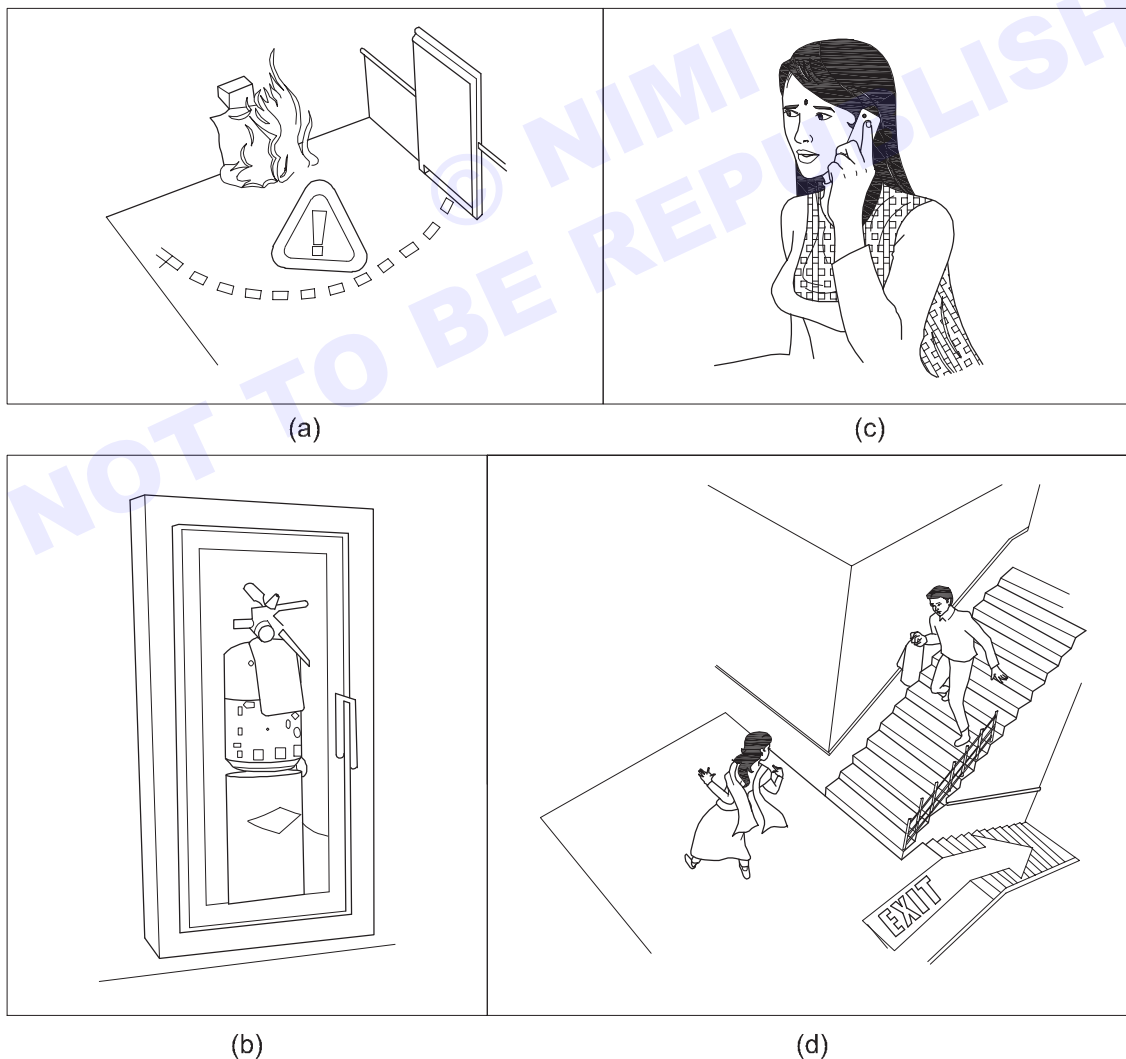
Tools/Instruments

- | | | | |
|-------------------------------------|---------|----------------|---------|
| • Fire Extinguisher CO ₂ | - 1 No. | • Mobile phone | - 1 No. |
| • Scissor 100 mm | - 1 No. | | |

PROCEDURE

- If you see a fire, shout 'Fire', 'Fire', 'Fire' to make an alarm and warn nearby people. (Fig 1a + 1b)
- Inform the fire station immediately. Or arrange to inform. (Fig 1)
- Open the emergency exit and tell everyone to evacuate. (Fig 1d)
- Disconnect the power supply.

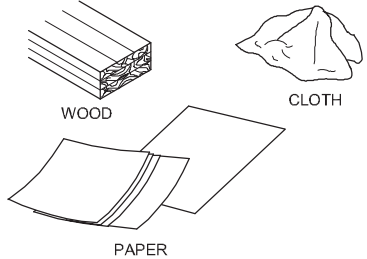
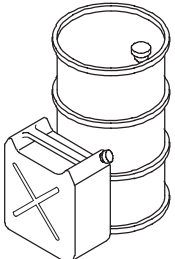
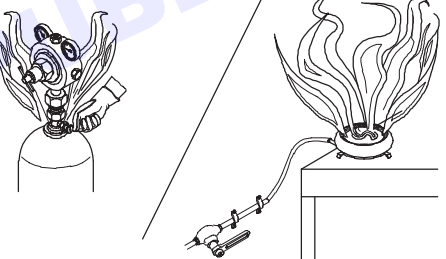
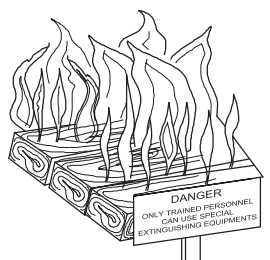
Fig 1



Do not allow anyone near the fire.

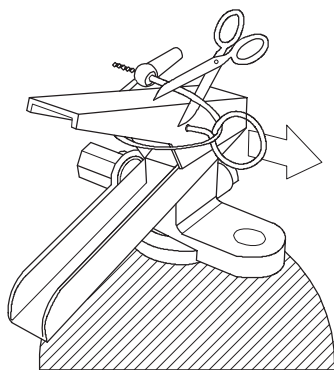
- Examine and identify the type of fire. See Table 1.

Table 1

Type 'A'	Wood, paper, cloth, solid material	CLASS 'A' FIRE  WOOD CLOTH PAPER
Type 'B'	Oil type fire, (grease, gasoline, oil) solid in liquid state	CLASS 'B' FIRE  FLAMMABLE LIQUIDS AND LIQUIFIABLE SOLIDS
Type 'C'	Gases in gaseous and liquid state	CLASS 'C' FIRE  LIQUIFIED GAS GAS
Type 'D'	Metal fittings and Electrical devices	CLASS 'D' FIRE  DANGER ONLY TRAINED PERSONNEL CAN USE SPECIAL EXTINGUISHING EQUIPMENTS METALS

- Assume 'D' category fire. (Fire caused by electricity).
- Choose a carbon dioxide (CO₂) extinguisher.
- Select CO₂ fire extinguisher and check its expiry date.
- Break the seal. (Fig 2)
- Pull the safety pin from the handle. (Fig 3). (The pin is on the top back of fire extinguisher)

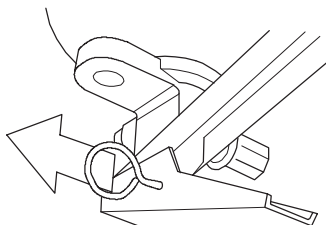
Fig 2



BREACKING OF SEAL

FW20N119H2

Fig 3

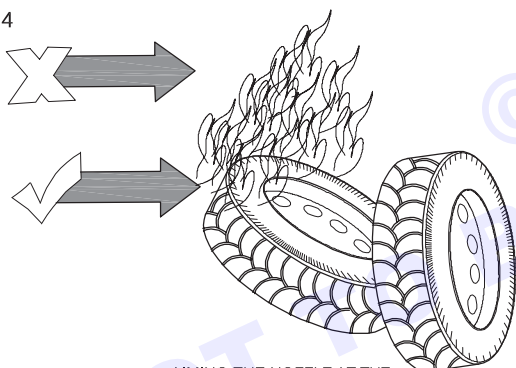


PULLING THE SAFETY PIN

FW20N119H3

- Turn the nozzle or hose of the fire extinguisher aimed at the base of the fire. (By doing this, the fuel required for the fire is removed. (Fig 4)

Fig 4



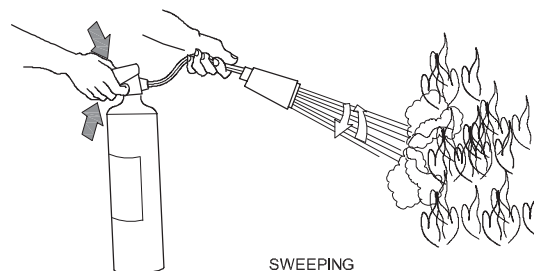
AIMING THE NOZZLE AT THE BASE OF THE FIRE

FW20N119H4

You please stay safe below.

- Slowly twist the handle lever to release the fire extinguisher. (Fig 5) Swing from side to side approximately 15 cm until the fuel fire is extinguished. (Fig 5)

Fig 5



SWEEPING

FW20N119H5

Fire extinguishers are designed to be operated at a distance.

Caution

- When extinguishing, the fire may burn further.
- Do not panic until the fire is completely extinguished
- If the fire does not go out even after using the fire extinguisher, move away from the area.
- Do not attempt to extinguish a fire that emits toxic fumes. Leave it to skilled people to do the job.
- Your life is more important than your property. So you don't take risk.

Remember to stop the following for easy fire extinguisher operation.

Keep in mind

P.A.S.S It helps to use fire extinguisher.

P for Pull

A for Aim

S for Squeeze

S for Sweep

Practice and understand precaution to be followed while working in fitting jobs

Objectives: At the end of this exercise you shall be able to

- precautions to be followed while operating a sewing machine
- precautions to be followed while operating a skiving machine.

Requirements			
Tools/Instruments		Equipment/Machines	
• Screw driver 100 mm	- 1 No.	• Sewing machine	- 1 No.
• Screw driver 200 mm	- 1 No.	• Skiving machine	- 1 No.
• Spanner (6-22)	- 1 Set.	Materials	
• Allen key (No.1 to 10 mm)	- 1 Set.		
• Wooden Mallet	- 1 No.		
• Hammer 250 gm	- 1 No.		
• Cutting plier 100 mm	- 1 No.	• Cotton fabric waste	- as reqd.
		• Pieces of leather	- as reqd.

PROCEDURE

TASK 1: Safety to be followed while operating the sewing machine

Instructor, should explain the trainees about the precautions to be taken while operating the sewing machine.

- Wear shoes while operating the sewing machine.
- Hold the job tightly while sewing.
- Be careful not to touch the needle.

- After finishing the work, turn off the machine
- Do not wear rings or watches on hands.
- Full-sleeved shirts and clothing that may get entangled to the machine should not be worn.

Note: Trainees operate the sewing machine and show it to the instructor and follow the safety measures.

TASK 2: Precautions to be followed while operating a skiving machine

- Be careful to watch that the leather is not getting cut while skiving.
- Wear shoes when operating the machine
- Be careful about knife not touch your hands while skiving.
- Full-sleeved shirts and clothing that can get entangled on the machine should not be worn.

- Keep in mind the gap between feed roller and bell knife.

Note: Trainees should operate the skiving machine and show it to the instructor and follow the safety measures.

Identify function of bones, arches, joints, ligament problems in human foot

Objectives: At the end of this exercise you shall be able to

- identify human foot bones and movements
- identify foot arches, joints and ligaments
- identify defects in the human foot.

Requirements

Tools/Instruments

- Shoe Makers Measuring Tape - 1 No.

Materials

- Chart paper - as reqd.
- Pencil - 1 No.
- Rubber - 1 No.

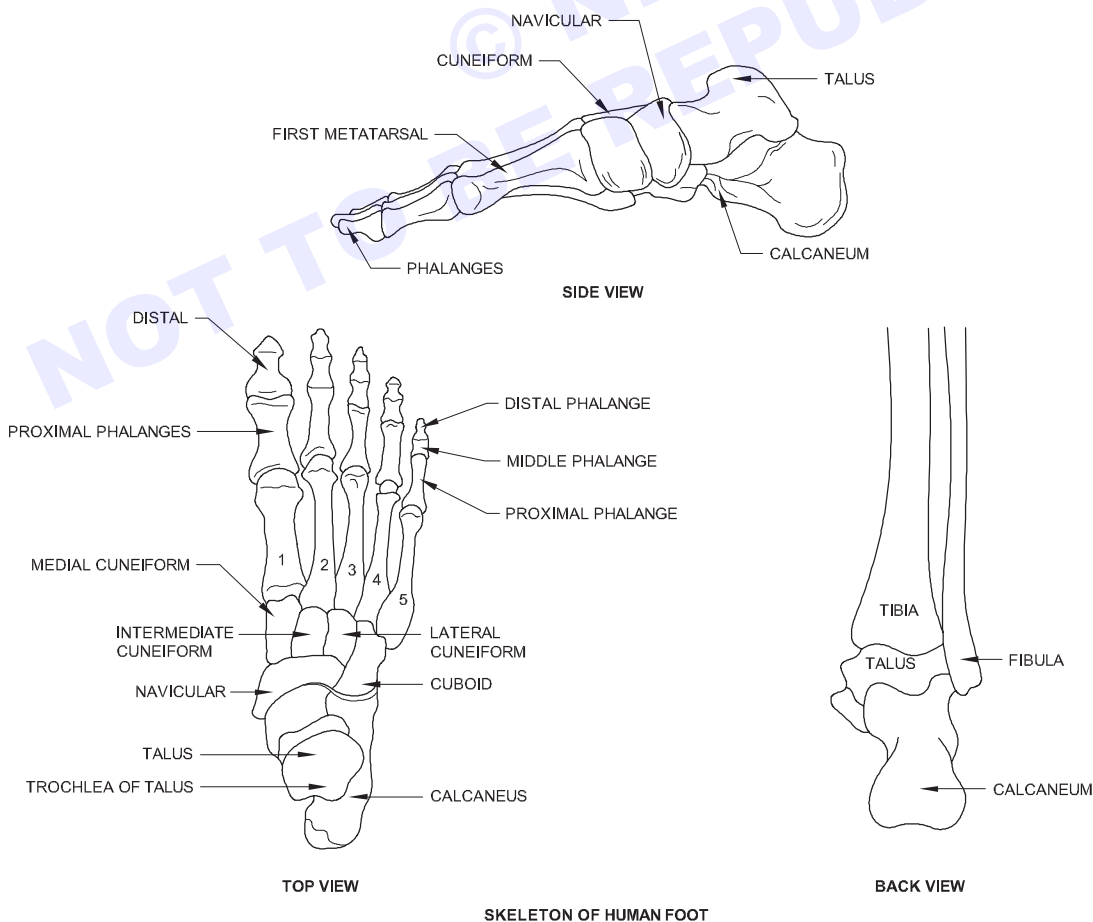
PROCEDURE

TASK 1: Identify Human Foot Bones and Movements (Fig 1)

- Instructor should explain the human foot bones and movements to trainees. (Fig 1)
- Trainees have to look at the feet of other trainees and identify the different parts of the foot and mark it in Table 1.

Note: Trainees should show the filled in Table 1 to the instructor for approval

Fig 1



FW20N122/H1

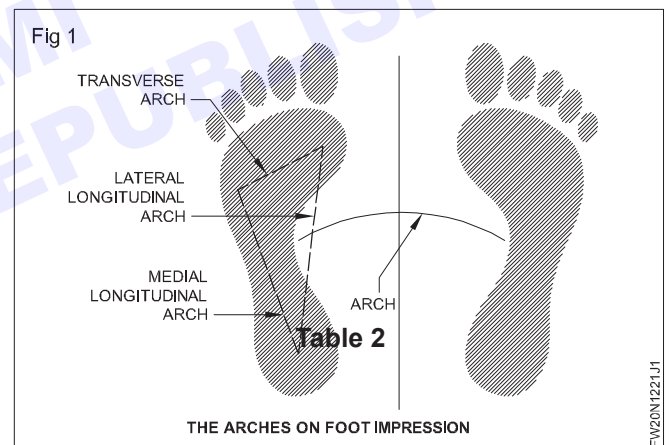
Table 1

S.No.	Names of Foot Bones	Type of foot bone

TASK 2: Identify Foot Arches, Joints and Ligaments

- Instructors should identify and explain the human arch, joints and ligaments to the trainees. (Fig 1)
 - Trainees should measure the various dimensions of foot arch and mark them in Table 2.
- Upper metatarsal.
 - Inner longitudinal section.
 - Outer longitudinal section.
 - Cross section.

Note: Trainees should show the foot arch measurements to the trainer for approval.



S.No.	Measurements of foot arch	Types of foot arch
1		
2		
3		
4		
5		

TASK 3: Identify defects in the human foot

- Instructor should explain the causes of various defects. (Fig 1)
- Trainees have been given various feet defects in Table 3, they have to draw the form against the defect name.

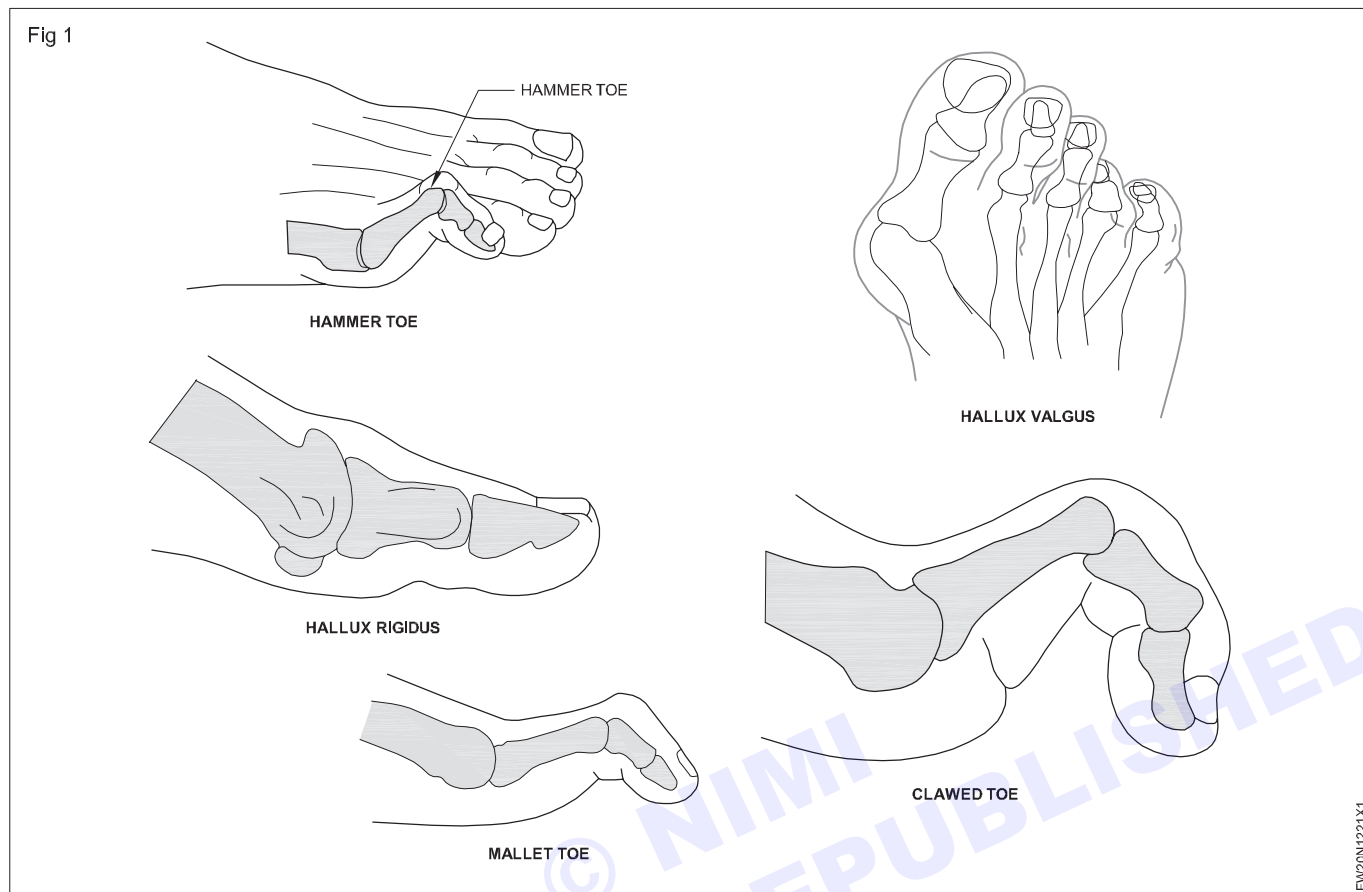


Table 3

S.No.	Foot defects	Forms
1	Hammer Toe	
2	Hallux Rigidus	
3	Hallux Valgus	
4	Mallet Toe	
5	Clawed Toe	

Practice measurement of human foot

Objectives: At the end of this exercise you shall be able to

- identify the main parts of the human leg
- measure the human leg with the help of a measuring tape
- draw the human foot and mark the main points
- measure the marked parts with the help of a measuring tape.

Requirements

Tools/Instruments

- Shoe Makers size tape - 1 No.

Materials

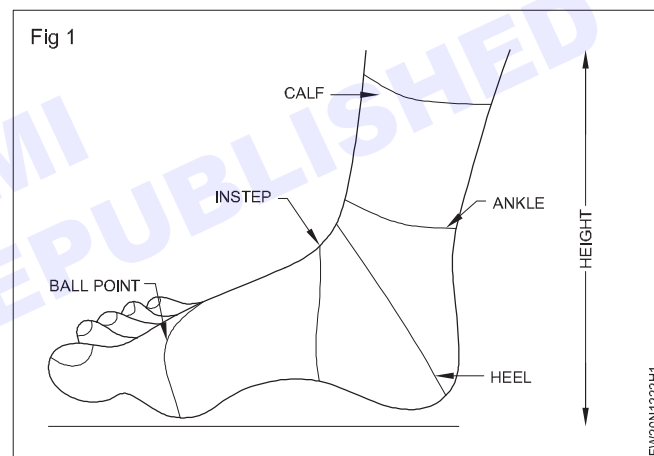
- Chart paper - as reqd.
- Pencil - 1 No.
- Rubber - 1 No.

PROCEDURE

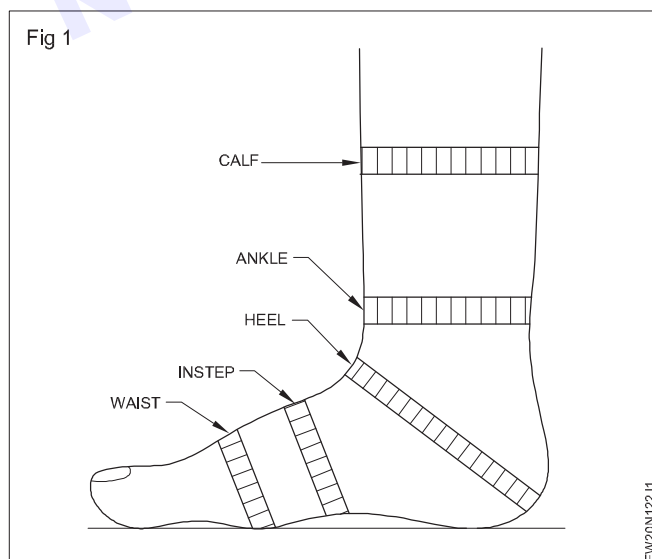
TASK 1: Identify the main parts of the human leg

- Identify the main parts of the Human leg. (Fig 1)

Note: Instructor should explain various parts by showing the leg of a trainee in his trade.



TASK 2: Measure the human leg with the help of a measuring tape (Fig 1)



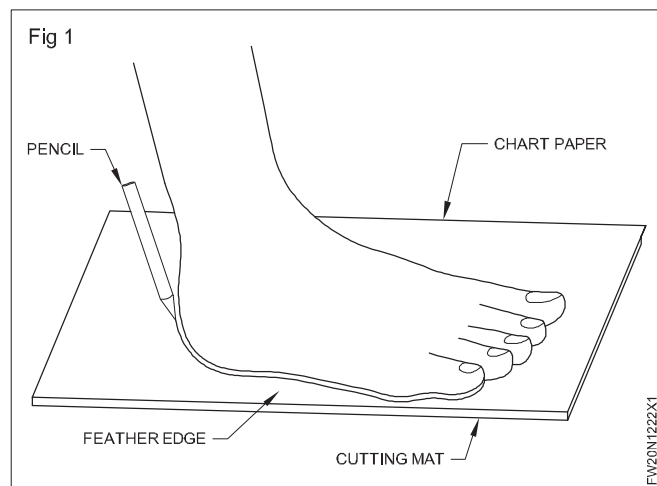
- Measure the identified areas with the help of a measuring tape and write them in Table 1.

Table 1

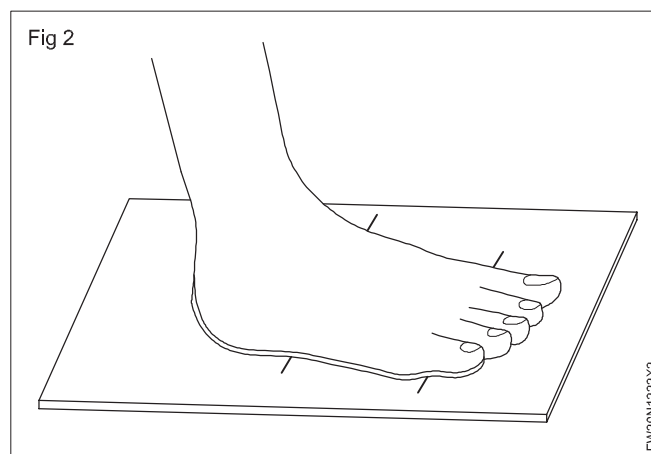
S.No.	Parts of leg	Sizes
1	Ankle	
2	Calf	
3	Ball point	
4	Instep	
5	Heel	
6	Waist	
7	Height	

TASK 3: Draw the human foot and mark the main points (Fig 1&2)

- Clean the floor first.
- Then place the cutting mat.
- Place the chart paper on cutting mat.
- Place the leg of the person to be measured straight on the chart paper.



- Take a pencil and hold it at the back part of the leg at 90° by hand and outline the leg with pencil (feather edge)
- Mark the girth point (thumb and last finger) on both sides of the chart.
- Mark both sides (vamp point) on the chart.



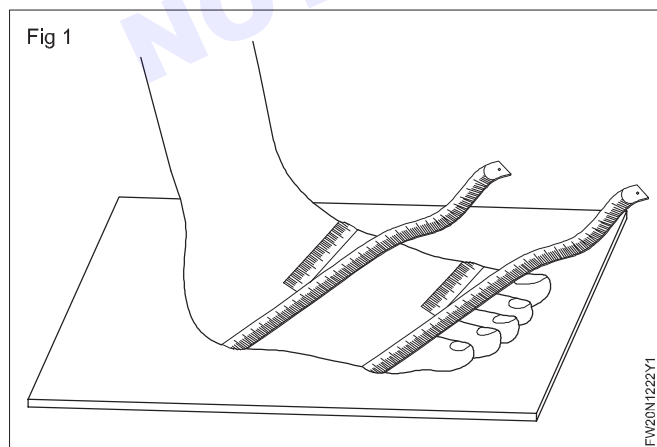
TASK 4: Measure the marked parts with the help of measuring tape (Fig 1)

- Take the measurements of girth point using measuring tape.
- To measure the vamp point, use the measuring tape as shown in the Fig 1.
- Mark the middle point on the marked feather edge.
- Mark the highest point of toe-point.
- Then measure the distance between the two with measuring tape.
- Measure all the dimensions with the help of measuring tape as shown in the Fig 1.

- Mark the measurements taken in Table 2.

Table 2

S.No.	Foot Points	Sizes
1	Girth Point	
2	Vamp Point	
3	Toe Point	



Identify biometry of human foot and leg

Objectives: At the end of this exercise you shall be able to

- identify the different parts of the foot
- take different measurements of the foot.

Requirements

Tools/Instruments

- Measuring tape - 2 meters - 1 No.
- Shoe Marker tape - 1 No.
- Steel rule - 300 mm. - 1 No.

Materials

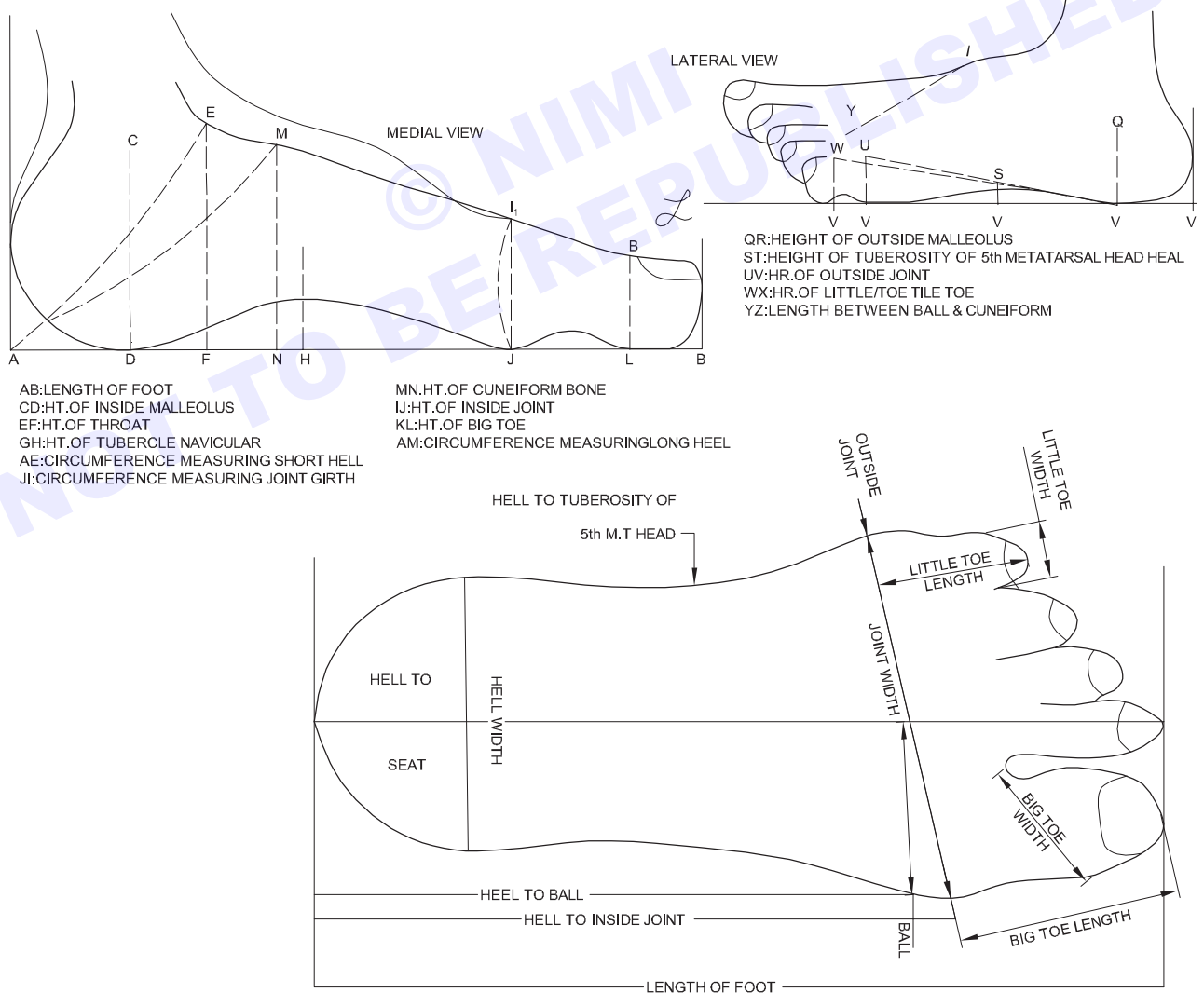
- Chart paper - as reqd.

PROCEDURE

TASK 1: Identify the different parts of the foot

Instructor should show the various parts of the foot and explain it. (Fig 1)

Fig 1



FW20N1223H1

- Trainees should identify the various parts of the foot and mark it and get the approval from the instructor.

Table 1

S.No.	Various parts of the foot
1	
2	
3	
4	
5	

TASK 2: Take different measurements of the foot

The instructor will measure the different measurements of the foot (Fig 1) and train the trainees.

- Trainees should measure the foot measurements of other trainees and mark it in Table 2

Trainees should show the foot measurements in Table 2 to the instructor and get his approval.

- Instructors train trainees to take measurements of feet several times.

Table 2

S.No.	Foot measurements	Foot size
1	Foot length	
2	Foot width	
3	Joint girth	
4	Instep girth	
5	Short heel	
6	Long heel	
7	The height of the big toe	
8	Height of small toe	

Identify biomechanics of human foot and leg

Objectives: At the end of this exercise you shall be able to

- get training about the various bio mechanics of the foot and leg.

Requirements

Tools/Instruments

- Steel rule (300 mm) - 1 No.

Materials

- Chart paper - as reqd.
- Pencil - 1 No.
- Rubber - 1 No.

PROCEDURE

TASK 1: Get training about the various biomechanics of the foot and leg

- Instructors will train the trainees on various bio mechanics of the foot and leg. (Fig 1)
- Trainees will take other trainees various foot and leg biomechanics and mark it in Table 1.
- H - Heel, LA - Lateral Border of Arch, MA - Medial Border of Arch, F - Bore Boot

Note: Trainees should show the marked table to the instructor and get his approval

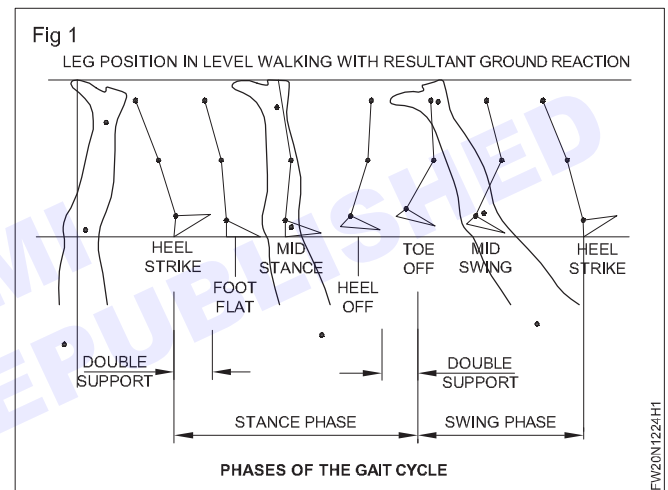


Table 1

S.No.	Base of Walking		Normal	
			Left (Wt)	Right
1	Standing on both feet	H		
		LA		
		MA		
		F		
2	Left foot - Heel strike	H		
		LA		
		MA		
		F		
3	Left foot - Foot flat	H		
		LA		
		MA		
		F		

S.No	Base of Walking		Normal	
			Left (Wt)	Right
4	Left foot - Mid-stance	H		
		LA		
		MA		
		F		
5	Right foot - Heel strike	H		
		LA		
		MA		
		F		
6	Right foot - Foot flat	H		
		LA		
		MA		
		F		
7	Right foot - Mid-stance	H		
		LA		
		MA		
		F		

Identify different types of systems and fitting system

Objectives: At the end of this exercise you shall be able to

- foot length size measurement using clark's foot gauge (foot length - size, length systems)
- foot circumference measurement using clark's foot gauge
- knowing how to collect foot details.

Requirements

Tools/Instruments

- Scale 12 inches - 1 No.
- Shoe Size tape - 1 No.

Equipments/Machines

- Clarks foot gauge - 1 No.

Materials

- Chart paper - as reqd.

PROCEDURE

TASK 1: Measure and mark the child's foot length on the Clark's children's foot gauge, to know the number of last in number to be selected and the instep circumference of the foot

Note: Instructor should demonstrate the method of measuring feet and measuring instep circumference in a foot gauge.

- To determine the last instep size of five children using Clark's foot size tool given in Table 1.

Fig 1

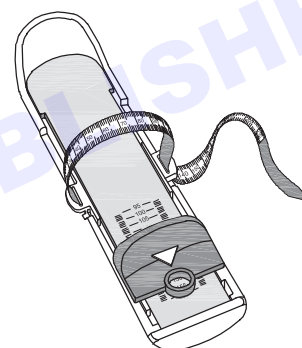


Table 1

S.No.	Foot length	Last in size	Foot instep size
1	Infant 1		
2	Infant 2		
3	Infant 3		
4	Infant 4		
5	Infant 5		

TASK 2: Determine male foot size, length, last size, foot instep size using the given Clark tool

- Measure and mark male foot length, five size, foot size, instep size using Clark's instrument and mark in Table 2.

Table 2

S.No.	Foot length	Last in size	Foot instep size
1			
2			
3			
4			
5			

— — — — —

TASK 3: Make measurements with the help of given Clark instrument

- In Table 3, find the foot length of several children, select the size of the last, instep circumference of their size foot, using the Clark foot tool and mark the measurement.

Table 3

S.No.	Foot length	Last in size	Foot instep size
1			
2			
3			
4			
5			

— — — — —

Identify size system by foot length and foot width system

Objectives: At the end of this exercise you shall be able to

- identify different shoe size systems.

Requirements

Tools/Instruments

- Steel rule (300 mm) - 1 No.
- Measuring tape - 1 No.
- Shoe size tape - English - 1 No.
- Shoe size tape - French - 1 No.
- Shoe size tape - America - 1 No.

Equipments/Machines

- Brannock device - 1 No.

Materials

- Shoes in different sizes

PROCEDURE

TASK 1: Identify different shoe size systems

Note: Instructors should explain the various shoe size settings to the trainees as a demonstration.

- Trainees to select US shoes and note the corresponding English size in Table 2.

Table 2

S.No.	American shoe size system	English size
1		
2		
3		
4		

Table 1

S.No.	English shoe size system	French size
1		
2		
3		
4		

Identify different types of sizes and inch (infant to adult boys and girls)

Objectives: At the end of this exercise you shall be able to

- know the English size system for men, women, children and boys, girls
- know the French size system for men, women, children and boys, girls
- know the American size system for men, women, children and boys, girls.

Requirements			
Tools/Instruments		Materials	
• English Shoe size tape	- 1 No.	• Chart paper	- as reqd.
• American Shoe size tape	- 1 No.	• Marking pencil	- as reqd.
• French Shoe size tape	- 1 No.	• Scrap shoes	- as reqd.

PROCEDURE

TASK 1: Know the English sizes of different types of shoes

Instructor should explain English sizes with English shoe scale. (Fig 1)

- Trainees should mention the sizes of shoes using English scale in Table 1.

Fig 1

(FOOT SIZES) ENGLISH SIZE STICK	0	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	8	9	10	11
INCHES	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2

ENGLISH SIZE TAPE

FW20N1227H1

Table 1

S.No.	English shoe size	Size in inches
1	Infant 1	
2	Infant 2	
3	Infant 3	
4	Infant 4	
5	Gents 8	
6	Gents 9	
7	Gents 10	
8	Ladies 5	
9	Ladies 6	

TASK 2: Know the French sizes of different types of shoes

Instructor should explain the shoe sizes to the trainees using French size scale. (Fig 2)

- Trainees should measure and identify the shoes and mark their sizes in Table 2.

Fig 2

CENTIMETERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
FRENCH (PARIS) POINTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

FRENCH SIZE TAPE

FW20N1227H2

Table 2

S.No.	French shoe size	Size in cm.
1	Size No : 20	
2	Size No : 25	
3	Size No : 35	
4	Size No : 40	
5	Size No : 41	
6	Size No : 22	
7	Size No : 23	
8	Size No : 44	

TASK 3: Know the US sizes of different types of shoes

Instructor should explain the shoe sizes to the trainees using the US size chart. (Fig 3)

- Trainees should measure and identify the shoes and mark their sizes in Table 3.

Fig 3

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AMERICAN SIZE TAPE

FW20N1227H3

Table 3

S.No.	US shoe size	Size in inches
1	Infant 1	
2	Infant 2	
3	Infant 3	
4	Infant 4	
5	Gents 8	
6	Gents 9	
7	Gents 10	
8	Ladies 5	
9	Ladies 6	

Practice on wooden last and measurement on the basis of material, design, size and uses

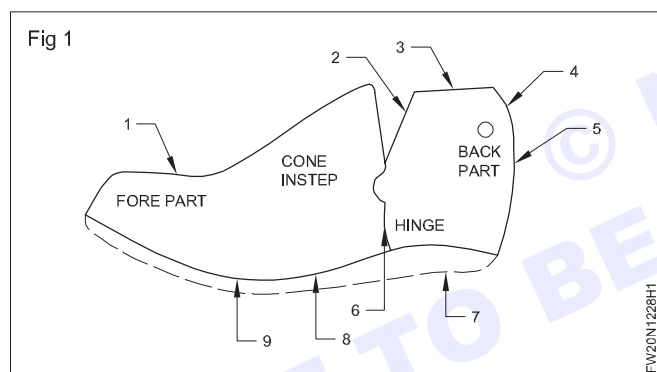
Objectives: At the end of this exercise you shall be able to

- masking, marking logging, cutting insole patterns for men's measurements on wooden lasts
- masking, marking logging, cutting insole patterns for women's measurements on wooden lasts
- masking, marking logging, cutting insole patterns for boys on wooden lasts
- masking, marking, logging, cutting insole patterns for girls on wooden lasts.

Requirements			
Tools/Instruments		Materials	
• Wooden lasts for all people	- as reqd.	• Pencil (HB)	- 1 No.
• Size tape 2 meters	- 1 No.	• Eraser	- 1 No.
• Steel rule	- 1 No.	• Chart paper	- 1 No.
• Knife 200 mm	- 1 No.	• Masking tape -1 inch	- 1 No.
		• Sharpener	- 1 No.

PROCEDURE

TASK 1: Identifying the various parts of a Wooden Lasts (Fig 1)

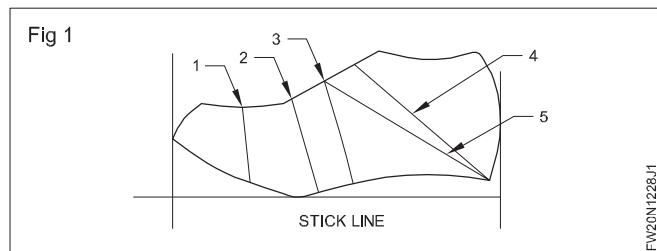


- 5 Back part.
- 6 Heel curve.
- 7 Seat.
- 8 Waist.
- 9 Feather edge.

Note: Instructor should spread the items on the Wooden Lasts on work bench and explain their parts and handling method to trainees.

- 1 Vamp point.
- 2 Vent.
- 3 Thimble or socket.
- 4 Top line point.

TASK 2: Measuring different sizes of Wooden Last with measuring tape (Fig 1)



- 1 Ball girth (By using tape measuring around the last)
- 2 Waist girth (By using tape measuring around the last)
- 3 Instep girth (By using tape measuring around the last)
- 4 Long heel girth (By using tape measuring around the last)
- 5 Short heel girth (By using tape measuring around the last)

- Identify the parts given in the table in Wooden Last. (Table 1)

Table 1

S.No.	Parts of Lasts
1	Vamp point
2	Vent
3	Thimble or socket
4	Top line point
5	Back part
6	Heel curve
7	Seat
8	Waist
9	Feather edge

- Measure the parts of the identified last with the help of tape and write in the table. (Table 2)

Table 2

S.No.	Name of the parts	Measurement
1	Ball girth	
2	Waist girth	
3	Instep girth	
4	Long heel girth	
5	Short heel girth	

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Identify human foot and last

Objectives: At the end of this exercise you shall be able to

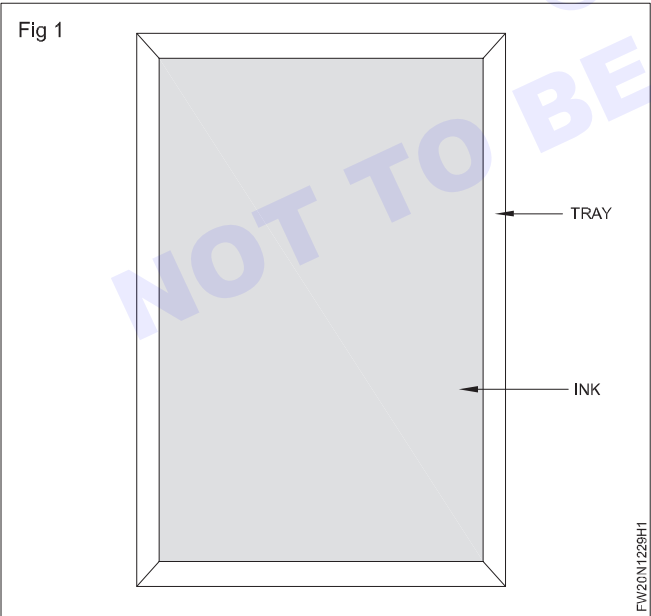
- identification of different types of feet
- identification of different types of lasts.

Requirements			
Tools/Instruments		Materials	
• Wooden Last	- 1 No.	• Chart paper	- 1 No.
• Fiber or PVC Last	- 1 No.	• Blue ink	- 1 ltr.
• Metal Last	- 1 No.	• G.I. tray	- 1 No.

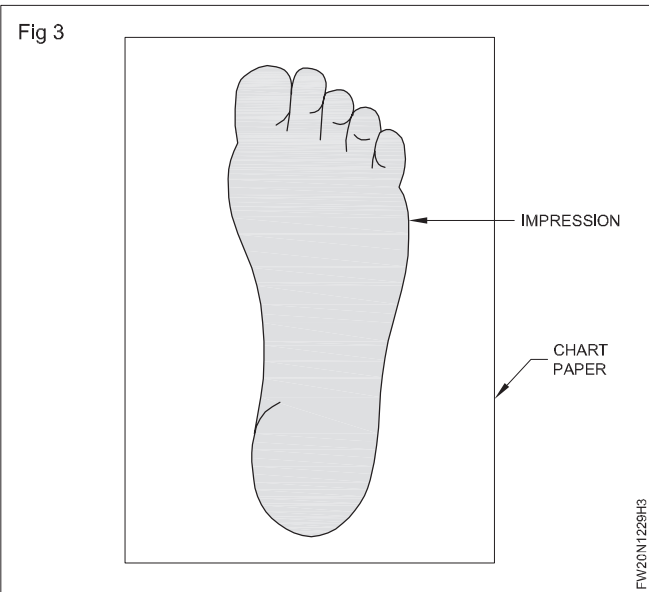
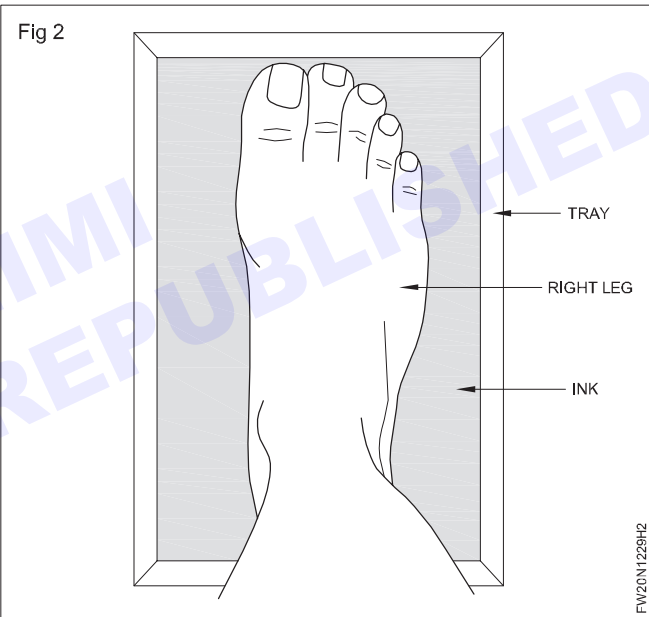
PROCEDURE

TASK 1: Identifying different feet (Figs 1, 2, 3)

- The instructor should explain about the different feet with figures to the trainees.
- Instructor should call one trainee to clean his right foot well.
- Then Pour the Blue ink into the G.I tray.
- Trainee should dip the cleansed right foot thoroughly in ink.
- Spread the chart paper on the ground and place the foot with ink on it.



- Then take the feet out.
- Similarly, record the feet of other trainees in different chart paper.
- Take the printed chart paper and mark the differences on it.

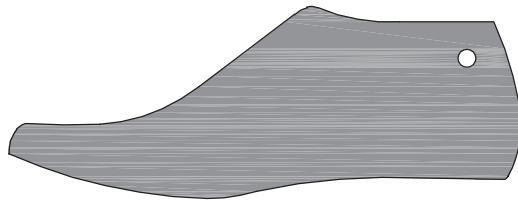


TASK 2: Identify different types of last

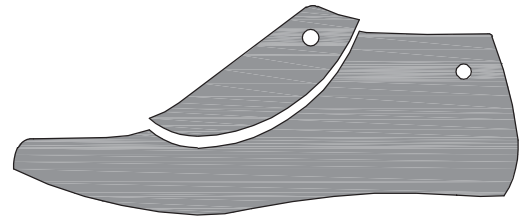
Instructor should explain to the trainees by showing different types of last.

- Look at the different types of last in Fig 1 and compare and find it with the last shown by the instructor.

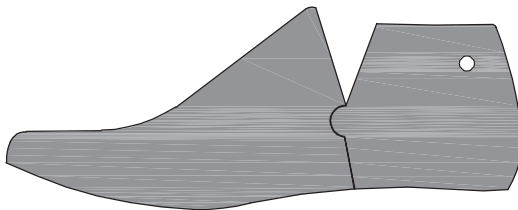
Fig 1



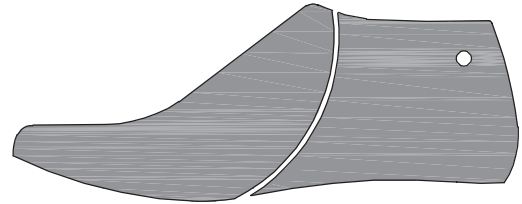
SOLID BLOCK LAST



SCOOP BLOCK LAST



CONVENTIONAL HINGE LAST



TELESCOPIC HINGE LAST

FW20N1229.11

Materials used for last manufacture - wood, metal and plastic

Objective: At the end of this exercise you shall be able to
 • identify various lasts.

Requirements			
Tools/Instruments		Equipments/Machines	
• Wood Lasts	- 1 No.	• Last Slipping lever	- 1 No.
• Metal Lasts	- 1 No.		
• Plastic Lasts	- 1 No.		

PROCEDURE

TASK 1: Identifying various lasts

Instructor should explain the method, structure, uses of various lasts.

Note: Take the approval by showing the marked table to the instructor.

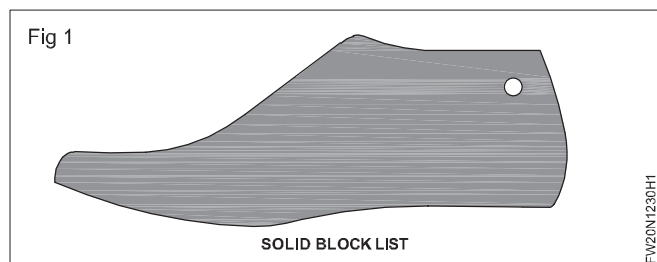
- Trainees should mark the last system, material produced and uses in Table 1

Table 1

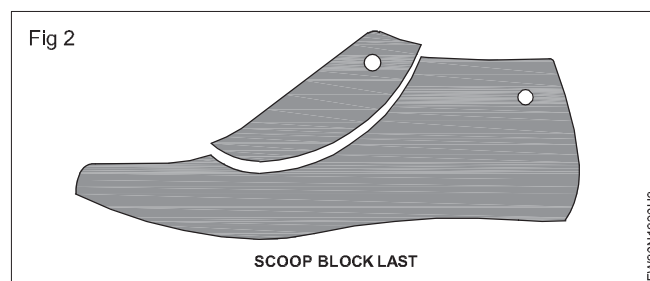
S.No.	Last system	Last material	Benefits
1			
2			
3			
4			

There are four types of last used in the shoe manufacturing industry.

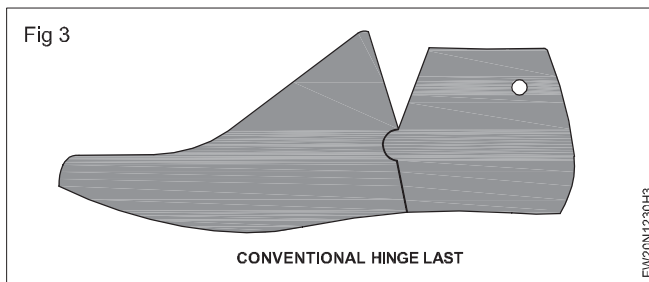
- Solid block last.
- Scoop block last.
- Ordinary (or) conventional hinge last.
- Telescopic hinge last.
- **Solid block last:** (Fig 1) It will be seen as a single part (or) piece. Especially used in designing and chappal production.



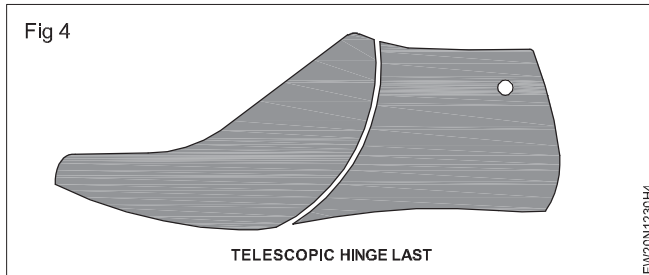
- **Scoop block last:** (Fig 2) It is seen in two parts. The last-top (cone) area is cut with a cutting machine. This part should be connected with plug piece. Shoe is easy to get separated from the last.



- **Ordinary (or) conventional hinge last:** (Fig 3) It will be done in two parts. (back part and fore part) will be cut in V shape in the block to fit the hinge. It will be fitted with a hinge. Thus, the last can be squeezed and extended. These types of last are widely used in industries.



- **Telescopic hinge last:** (Fig 4) This is found in parts. V shape will not be seen.



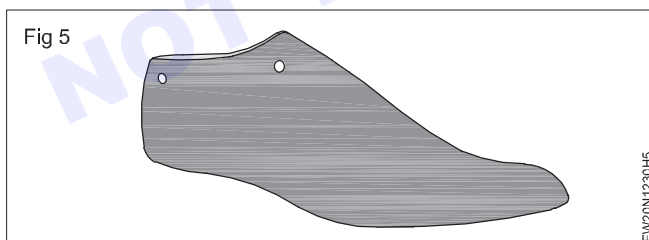
The last is divided into 4 types based on the method used in shoe production.

- Finishing (or) threading last.
- Making last.
- Pull over last (design block).
- Metal last (mould).
- **Finishing (or) threading last:** This last is used more in finishing room. It helps the shoe to maintain the required shape after lasting and it is also made of thin wood.

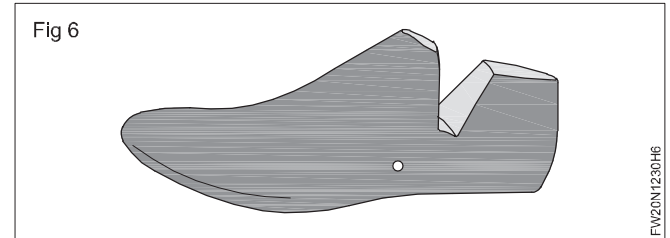
Some shapes of model (Fig 5) (Fig 6) Used to prepare shoes.

Wooden Last

PVC Last



- Pattern means we have to prepare patterns

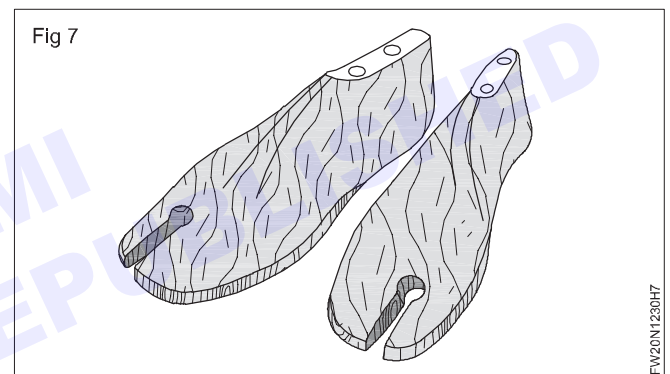


according to the type or style of footwear we want to make. For example, the front part of the shoes (Toe portion of the last) is narrow and the front parts are broad and curve.

- When preparing models with a square front, the front part of the pattern should be square. Thus, patterns should be prepared according to the models of closed shoes.

Patterns

Some of the patterns used to prepare the closed shoes (Last) (Fig 7)



Leather Footwear Maker - Human Foot and Shoe Size System

Exercise 1.2.31

Identify different types of human foot and last

Refer Exercise No. 1.2.29

Measure body weight distribution over different segments of feet during different phases of walking

Objectives: At the end of this exercise you shall be able to

- measure the weight of the foot while "walking"
- measure the weight of the foot while "jogging"
- measure the weight of the foot while "running"
- measure the weight of the foot while "jumping".

Requirements			
Tools/Instruments		Equipments/Machines	
• Knife	- 1 No.	• Electronic scale	-1 No.
• Scale	- 1 No.	Materials	
• Measuring tape	- 1 No.		
		• Gray board	- as reqd.
		• Blue ink	- as reqd.

PROCEDURE

TASK 1: Measuring the weight bearing of foot while walking

The trainer should allow a trainee to walk on the scale for three times and mark the weight.

- When walking on the electronic scale, mark the 3 weight readings in kilogram.
- Record the following three times measurements in Table 1, and mark the average weight for the three.

Table 1

S.No.	Level-1	Level-2	Level-3	Average weight in kilograms
1	----- kg	----- kg	----- kg	----- kg

TASK 2: Measuring the weight bearing of foot while jogging (slow running)

- Measure and mark 3 different weights while jogging (slow running) on an electronic scale. Register the average scale weight in Table 2

Table 2

S.No.	Level-1	Level-2	Level-3	Average weight in kilograms
1	----- kg	----- kg	----- kg	----- kg

TASK 3: Measuring the weight of the foot while running

- Record the 3 weight measurements while running on an electronic scale. Record the average weight in Table 3

Table 3

S.No.	Level-1	Level-2	Level-3	Average weight in kilograms
1	----- kg	----- kg	----- kg	----- kg

— — — — —

TASK 4: Measuring the weight of the foot while jumping

- Record the 3 weight measurements while jumping on an electronic scale. Record the average weight in Table 4

Table 4

S.No.	Level-1	Level-2	Level-3	Average weight in kilograms
1	----- kg	----- kg	----- kg	----- kg

— — — — —

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Footwear Maker - Prepare Different Types of Mean Forme & Computer Aided Design (CAD)

Making of "Mean" forme and standards

Objectives: At the end of this exercise you shall be able to

- practice masking
- practice marking and tracing
- practice cutting and attaching
- practice making mean forme.

Requirements

Tools/Instruments

- Measuring tape - 2 mtr. - 1 No.
- Scale 12 inch - 1 No.
- Divider - 1 No.
- Knife - 200mm - 1 No.
- Cutting mat A3 - 1 No.

Equipments/Machines

- Men Last No 8 - as reqd.

Materials

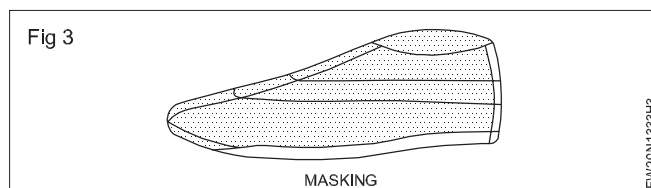
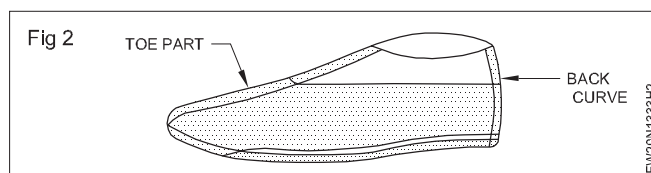
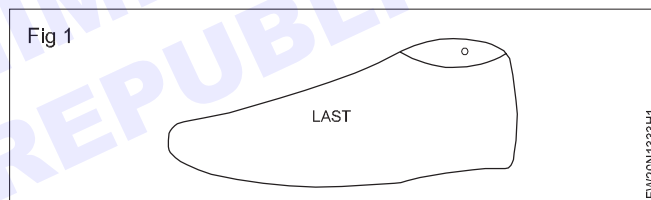
- Work bench - 1 No.
- Masking tape-1 inch - 1 No.
- Pencil (HB) - 1 No.
- Rubber - 1 No.
- Chart paper - as reqd.

PROCEDURE

TASK 1: Masking (Figs 1-3)

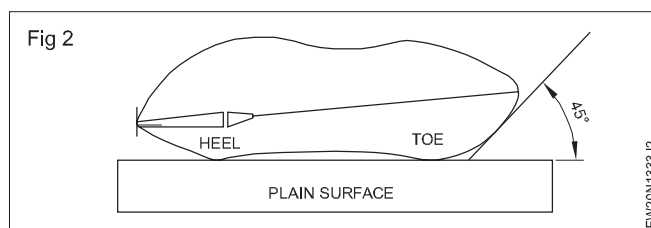
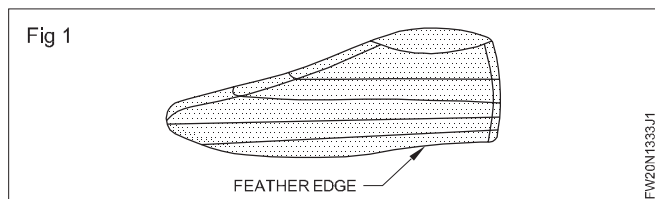
- Take a model Men's Last (No 8).
- Paste the measuring tape on Last- feather edge.
- Then paste the masking tape up to toe part, cone area- center.
- Paste the tape on Back curve, center line.
- Paste the marking tape from toe part to back curve line.

Note: After sticking, the tape should be rubbed to make the surface wrinkle free.

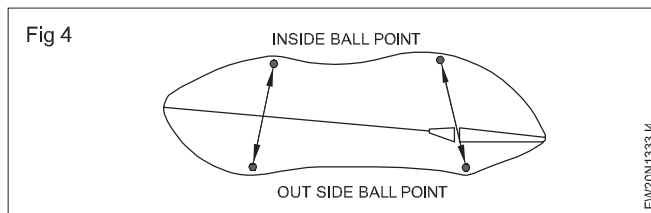
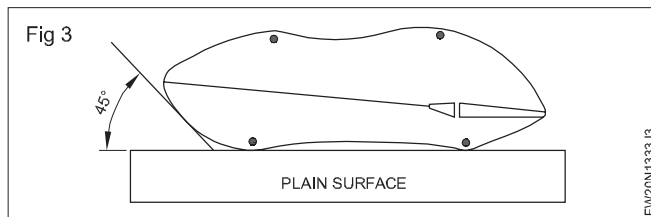


TASK 2: Marking and Tracing (Figs 1-8)

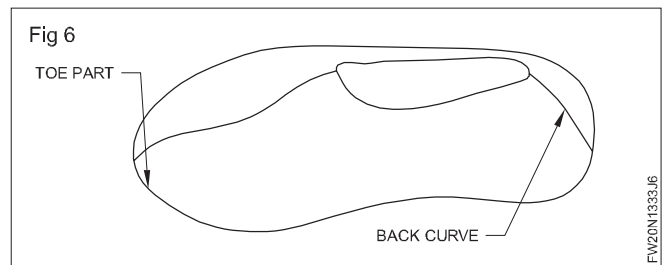
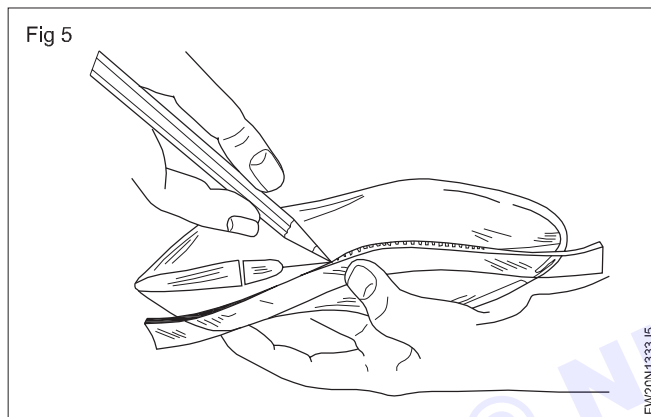
- After masking over the last feather edge cut the tape outside the edge.
- On a table with a plain surface, mark the toe and heel part by keeping the masking last touching the feather edge at a 45° angle.



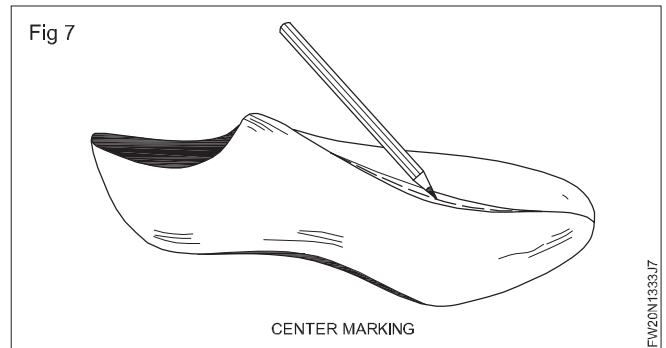
- Similarly, mark toe and heel point inside the last.



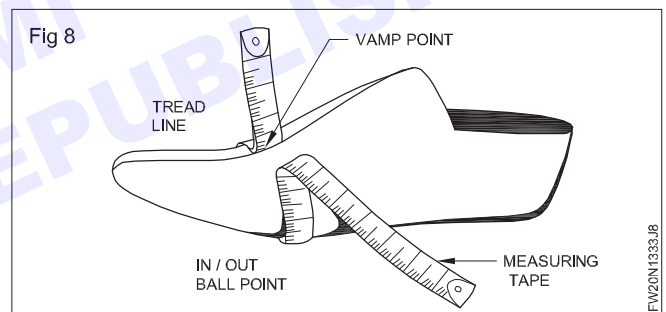
- Up to toe and cone area to center line
- Similarly, back part and up to center curve line.



- Toe and back curve and up to center line (dotted).

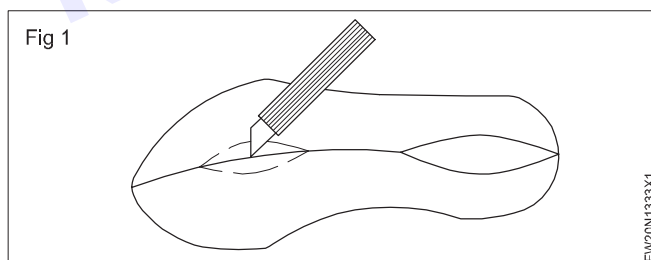


- Connect with measuring tape to touch inside, outside side, ball point tread line.
- Name the point connecting the two lines as vamp point.
- Mark the back height given for 8 size.

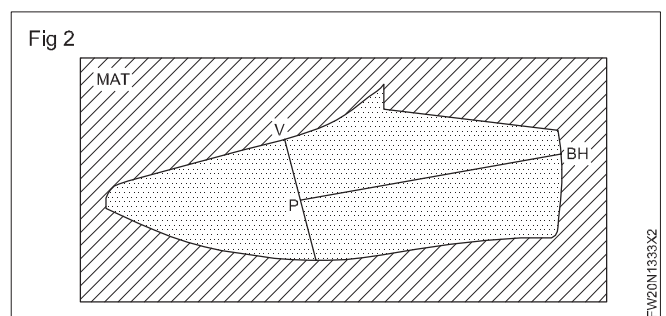


TASK 3: Cutting and Attaching (Figs 1-6)

- Full toe to cone area - cut at tread line center mark

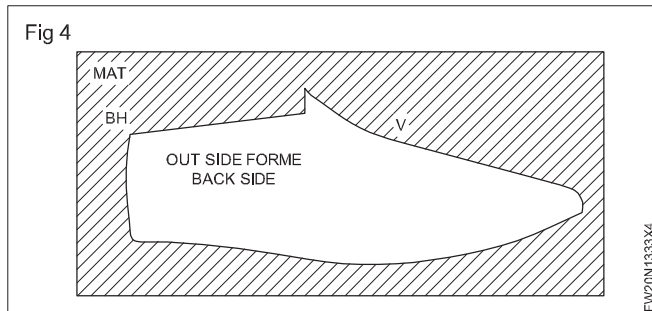
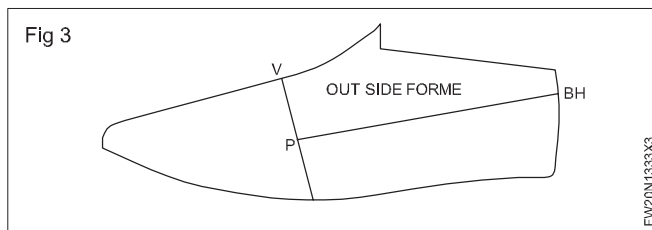


- Then cut the back curve center line.
- First take the outside side tape and paste it on the mat.



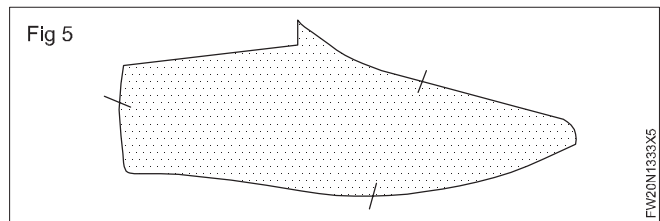
- Then take the tape in the mat and paste it on the chart and rub it without wrinkles.

- Cut the edge of the masking tape pasted on the chart. This is the outer forme.

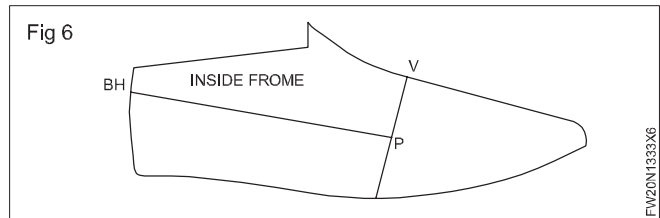


Note: Handle the knife carefully.

- Turn the outer forme to the back and mark the vamp and back point on the mat.



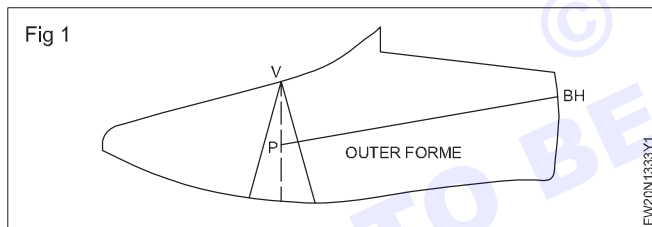
- Take inside tape and paste it on mat-tread line-vamp point and back height point to match and rub it without shrinkage.



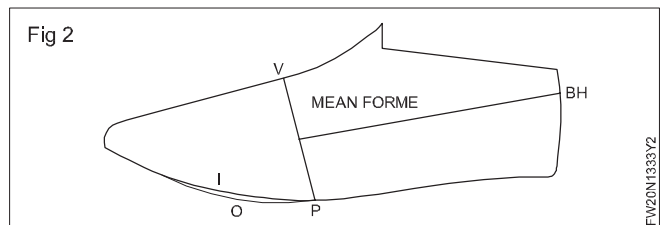
- Draw the inner forme on the chart and mark the points as done in mat.
- Then take the tape from the mat and paste it on the chart and rub it without wrinkles.
- Cut the edge of the masking tape pasted on the chart. This is the inner forme.

TASK 4: Taking Fish Forme (Fig 1 & 2)

- First take the outer forme and draw it on the chart



- Take the inner forme on the outer forme by matching the main points (vamp point, back height point) on the outer forme and connect the two ball points.
- Mark the dimensions between vamp point in/out, ball point and mark half of their size. This point is called the pivot point.



- Join both Pivot point and back height point.
- This is mean forme standard.
- The cut from mean forme standard is called mean forme.

Footwear Maker - Prepare Different Types of Mean Forme & Computer Aided Design (CAD)

Perform pattern cutting

Objectives: At the end of this exercise you shall be able to

- practice masking
- practice marking and tracing
- practice cutting and attaching
- practice taking mean forme.

Requirements

Tools/Instruments

- Measuring tape 2 meters - 1 No.
- Steel rule 300 mm. - 1 No.
- Cutting mat A3 - 1 No.
- Knife - 1 No.

Equipment/Machines

- Women's last number 6 - as reqd.
- Working table - 1 No.

Materials

- Masking tape -1 inch - 1 No.
- Chart paper - as reqd.
- Pencil - 1 No.
- Rubber - 1 No.
- Sharpener - 1 No.

PROCEDURE

Take a model women's last of size 6.

Fig 1

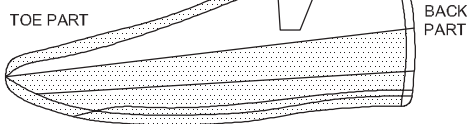


FW20N1334/H1

TASK 1: Masking (Figs 1-3)

- First paste the masking tape on last feather edge.
- Then paste the masking tape from toe part and upto cone-area centre.
- Paste tape on back curve, center line.

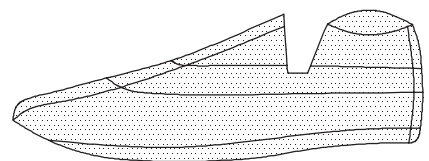
Fig 1



FW20N1334/J1

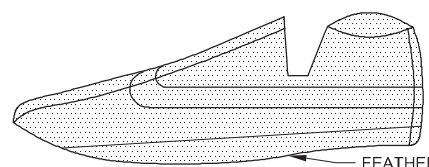
- Paste tape from toe part to back curve line.

Fig 2



FW20N1334/J2

Fig 3



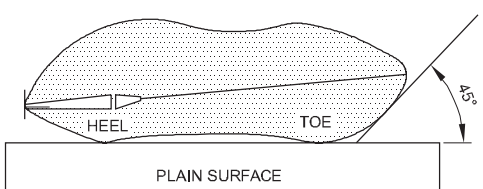
FEATHER EDGE

FW20N1334/J3

TASK 2: Marking and Tracing (Figs 1-7)

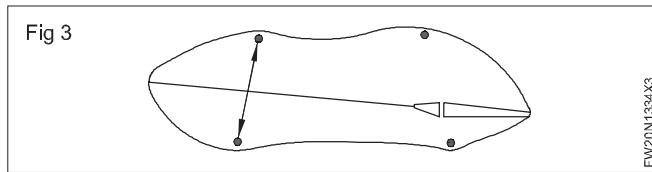
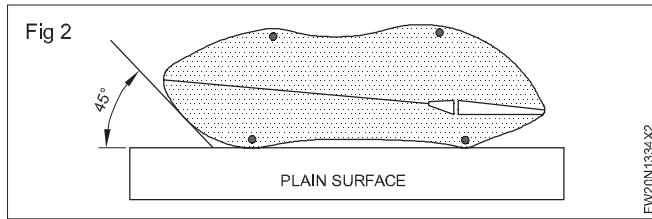
- After masking over the last curve, cut the tape outside the feather edge.
- Mark the toe and heel part by placing the masked last on a plain surface table touching the feather edge at a 45° angle.

Fig 1

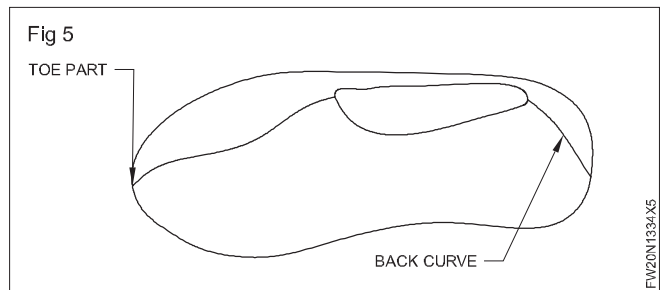
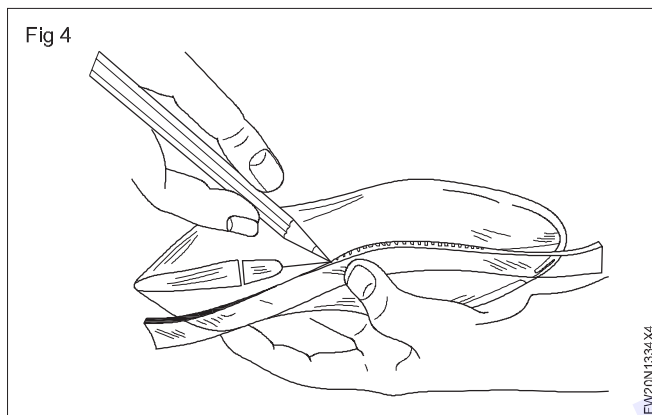


FW20N1334/X1

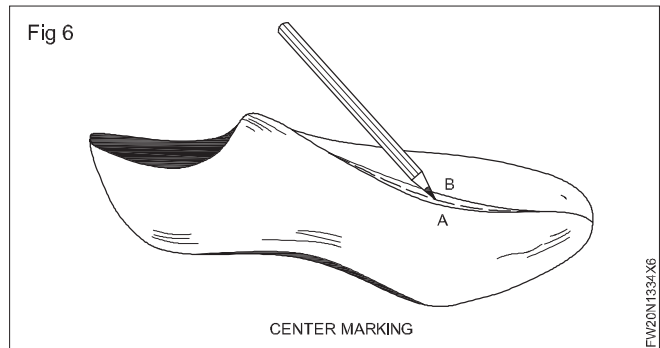
- Similarly, toe and heel point-mark inside the last.



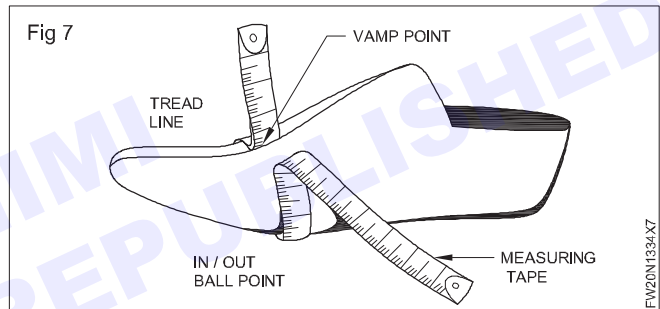
- Draw center on toe and cone area.
- Same way draw center curve line on back part.



- Draw center line (dotted) to toe and back curve line.



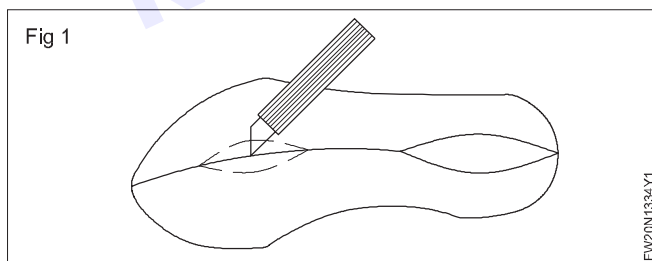
- Using measuring tape connect inside, outside side, ball point touching the tread line.



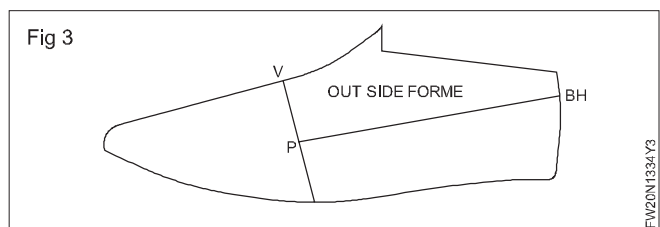
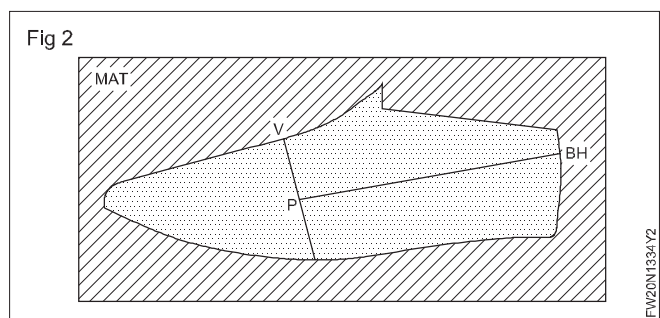
- Name the point joining the two lines as vamp point.
- Mark the back height given for size - 6.

TASK 3: Cutting and Attaching (Figs 1-6)

- Cut on tread line center mark on toe to cone area.
- Then cut on back curve center line.

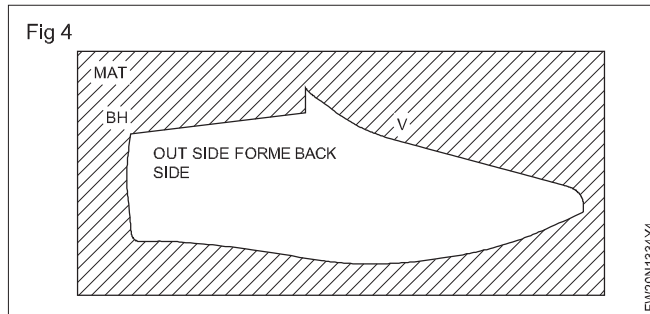


- First take the outside side tape and stick it to the mat.
- Then take the tape from the mat and paste it on the chart, then rub it to eliminate wrinkles.
- Thus cut the edge of the masking tape pasted on the chart. This is the outer forme.



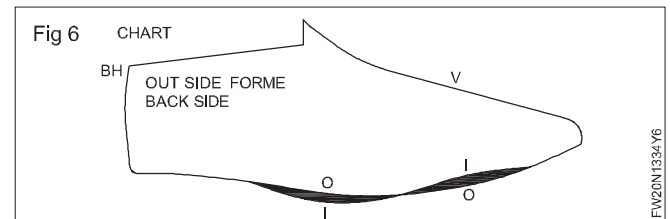
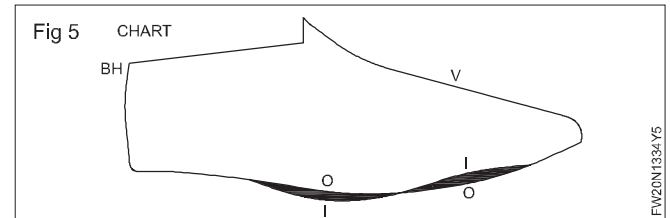
Note: The knife should be handled with care.

- Turn the Outer forme to back side and draw out line on the mat.



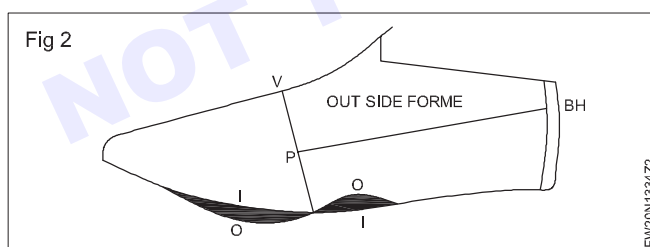
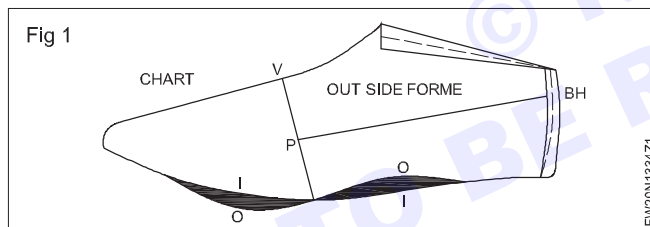
- Mark vamp and back point.
- Take inside tape and paste it on tread line- vamp point and back height point both match then rub it to eliminate wrinkle.
- Draw the inner forme on the chart and mark the points as done in Mat.

- Then take the tape from the mat and paste it on the chart. Rub it to eliminate wrinkles.
- Thus cut the edge part of the masking tape pasted on the chart.
- This is the inner forme.

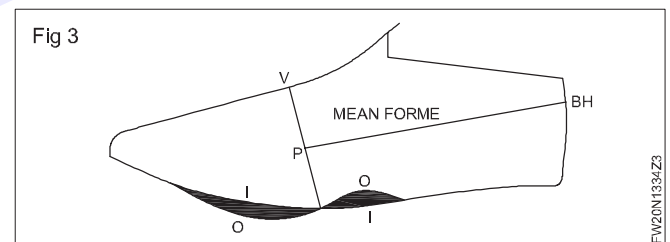


TASK 4: Taking mean forme (Figs 1-3)

- First take the outer forme and draw it on the chart.
- Then take the inner forme on the outer forme by matching and draw the main points (vamp point, back height point) on the outer forme and connect the two ball points.



- Mark the dimensions between vamp point in/out, ball point and mark half of their size. This is called the pivot point
- Joint both pivot point back height point.
- This is mean forme standard.
- The cut from mean forme standard is called mean forme.



Footwear Maker - Prepare Different Types of Mean Forme & Computer Aided Design (CAD)

Make different types of mean forme, bottom insole and shoe standard making

Objectives: At the end of this exercise you shall be able to

- practice masking
- practice marking and tracing
- practice cutting
- practice taking the insole pattern.

Requirements

Tools/Instruments

- Steel rule - 1 No.
- Shoe Maker tape - 1 No.
- Compass - 1 No.
- Divider - 1 No.
- Measuring tape 2 mtr. - 1 No.
- Cutting mat A3 - 1 No.
- Knife 200 mm. - 1 No.

Equipment/Machines

- Last size 8 - 1 No.
- Work bench - 1 No.

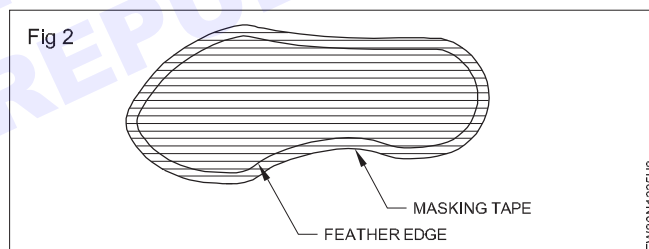
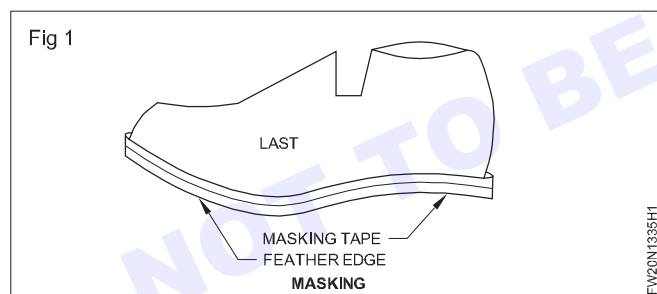
Materials

- Chart paper - as reqd.
- Gray board - 1 No.
- Pencil - 1 No.
- Rubber - 1 No.
- Masking tape (Inch-1") - 1 No.

PROCEDURE

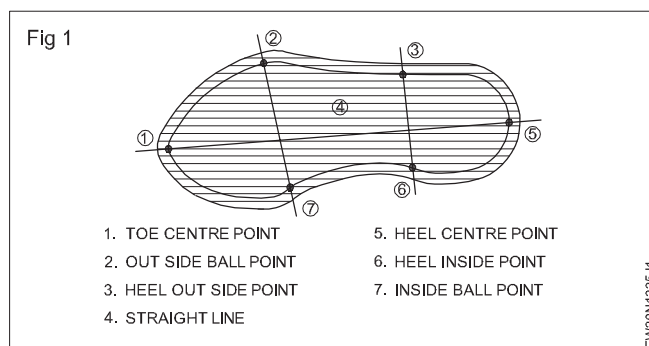
TASK 1: Masking (Fig 1 & 2)

- At the bottom of the last stick masking tape covering the entire feather edge.



TASK 2: Marking and Tracing (Fig 1)

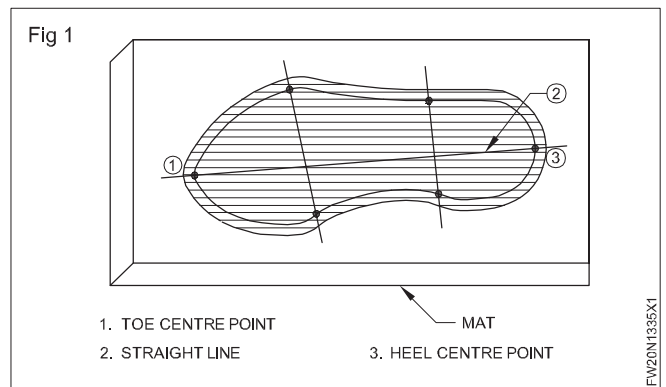
- After masking Mark and connect Heel center point, toe center point, inside ball point, outside ball point, Heel In/out point.



TASK 3: Cutting (Fig 1)

- Draw a straight line on cutting mat
- Separate the masking tape from the last and paste it on the cutting mat- toe center point, heel center point matching in a straight line.

Note: Paste without wrinkles.

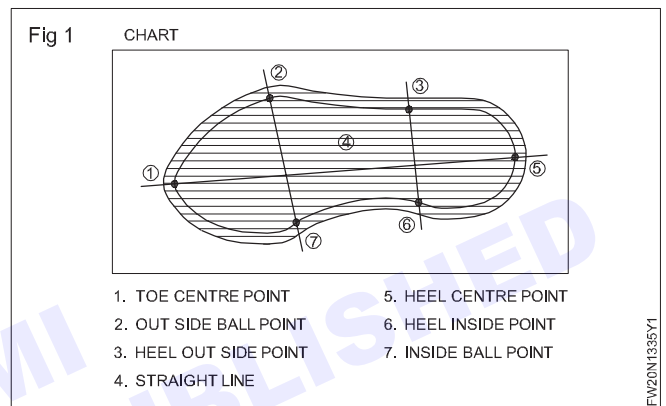
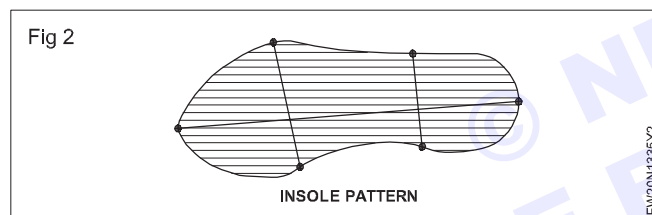


TASK 4: Taking the Insole Pattern (Fig 1 & 2)

- Draw a straight line on chart paper.
- Remove the masking tape from the cutting mat and paste it on the chart paper. Mark the feather edge.
- Cut the feather edge using knife.

Note: Care should be taken while handling the cutting knife.

- Prepare the Insole pattern like this.



Make computer aided design

Objectives: At the end of this exercise you shall be able to

- practice drawing straight lines, curves with the help of computer
- practice drawing squares and rectangles with the help of computer
- practice drawing triangle with the help of computer
- practice drawing circles and ellipse with the help of computer
- practice drawing cones with the help of computer
- practice drawing cylinders with the help of computer.

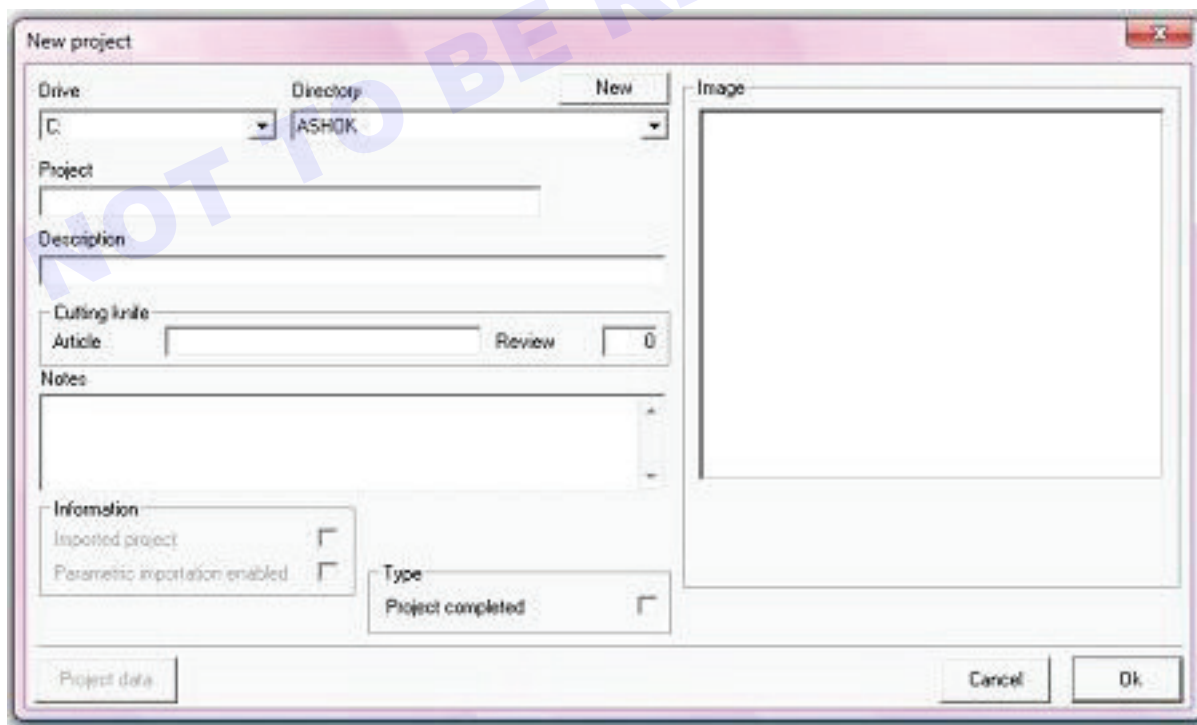
Requirements	
Equipments/Machines	
• Personal Computer	- 1 No.
• Shoe software	- 1 No.

PROCEDURE

TASK 1: Draw a straight line and an arc using CAD (Figs 1-4)

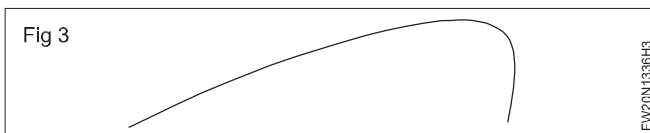
- Press the start button. Select a program.
- Program → Shoe software CAD 2D → Shoe software CAD 2D V₃.
- From the Project menu, select New option shoe software. CAD 2D will be displayed in dialog box. (Fig 1)
- Enter project name, select drive and directory. Then Click the ok button. (Fig 1)
- Select Insertion tool bar from the view menu.
- Go back to the view menu. Select Modify tool bar.
- Select the style line tool from the Insertion tool bar.

Fig 1



- Now left click the mouse. This will help draw a straight line. Then right click to exit the tool selected. (Fig 2 & 3)

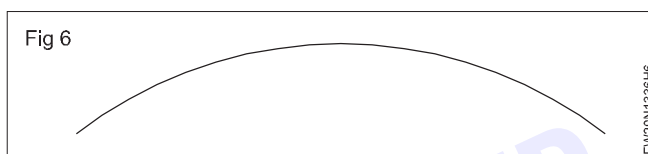
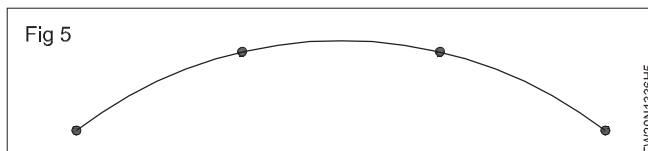
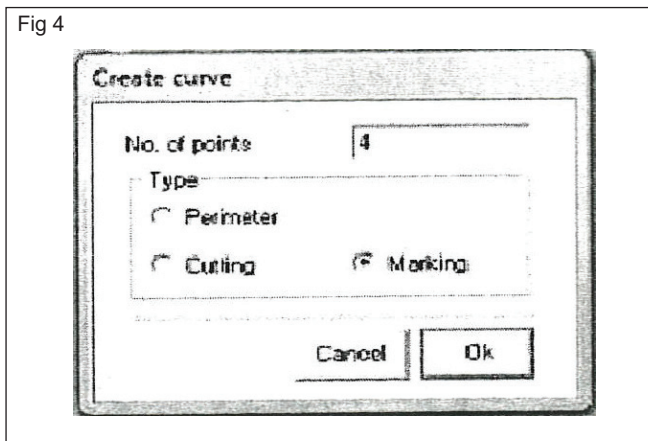
Fig 2



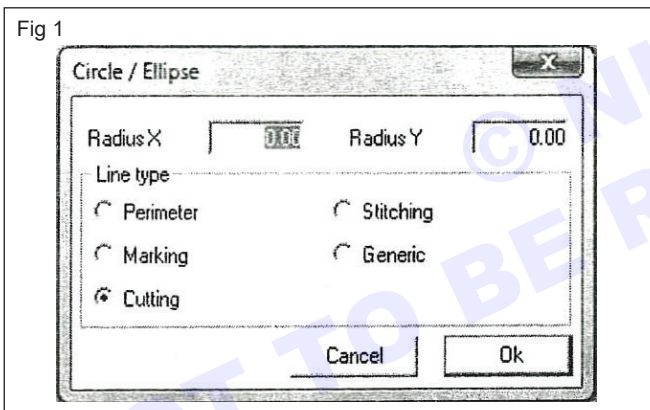
Note: The same tool can be used to draw curved lines.

An alternative method of drawing curve lines

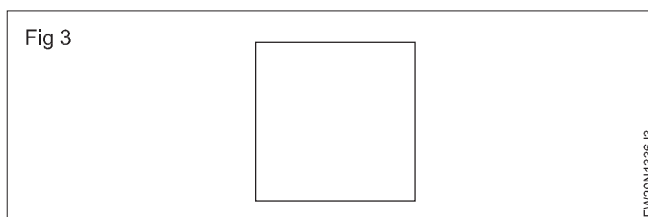
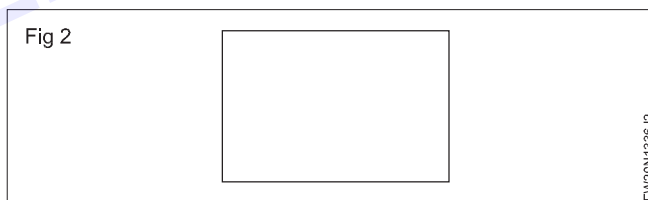
- Select creative curve tool from the insertion tool bar. Shoe software CAD 2D will be displayed in dialog box.
- Record the number of points. For example, select the number of points as 4 points and select Perimeter. Then click OK.
- Click on the lines between the points to create the required curve.
- Through the points (Figs 4,5 & 6) the desired curve should be fixed and obtained.
- Right click to exit the selected tool.



TASK 2: Drawing Squares and Rectangles Using CAD (Figs 1-3)



- Enter the height and width of the rectangle or square. Then press OK button (Fig 1)
- Now you have to left click to paste the square or rectangle. Right click to exit the selected tool. (Fig 2 & 3)



- Follow the first three steps of Task 1
- Select the insertion tool bar from view menu.
- Again go to view menu and select modify tool bar.
- Select Insert rectangle tool from the insertion tool bar. Now the dialog box will display shoe software cad 2D.

TASK 3: Drawing a Circle or Ellipse using CAD (Fig 1 & 2)

- Follow the first three steps of Task - 1
- Select the insertion tool bar from view menu.
- Again go back to the view menu and select modify tool bar.
- Select the circle tool from the Insertion toolbar. Dialog box will display shoe software cad 2D.
- State the radius of the circle in cm/mm. Then click OK button. (Fig 1)
- Now select circle or ellipse. Left click to paste it. Right click to exit the selected tool. (Fig 2)

Note: Use the same tool for the ellipse.

Fig 1

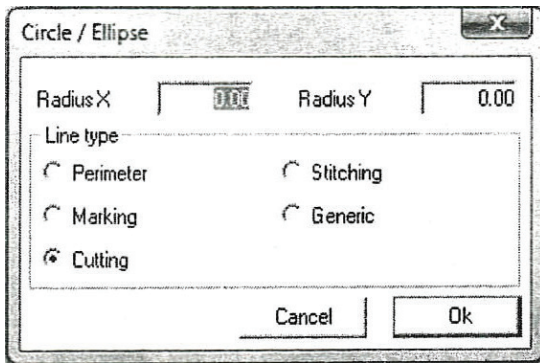
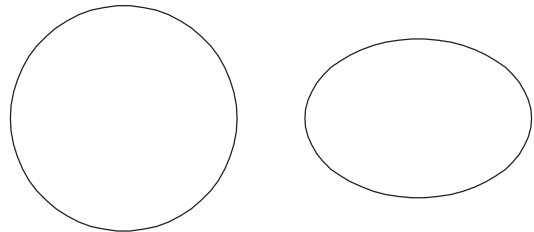


Fig 2

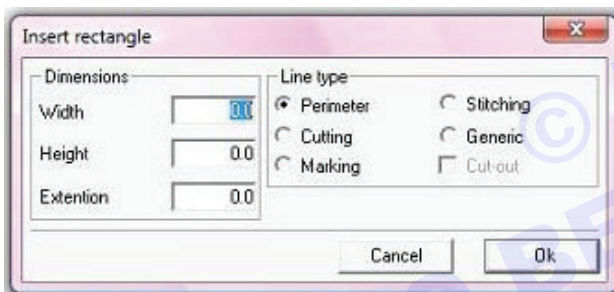


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TASK 4: Drawing a Triangle using CAD (Figs 1-6)

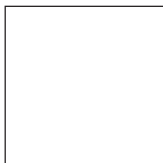
- Follow the first three steps of Task 1
- Select insertion Tool Bar from the View menu
- Again go back to the View menu and select modify tool bar.
- Select insert rectangle tool from the insertion tool bar. Dialog box- will display shoe software cad 2D.
- Enter the height and width of the rectangle or square. Then click OK button. (Fig 1)

Fig 1



- Now you have to left click on the mouse. Required square or the rectangle will get pasted. Right click to exit the selected tool. (Fig 2)

Fig 2

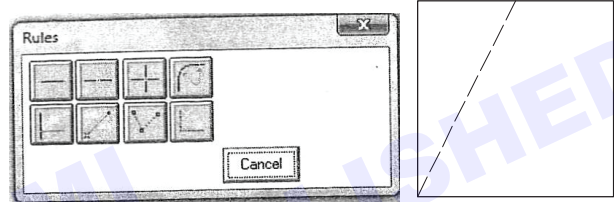


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- Select style line tool from the insertion tool bar.
- Select the midpoint. Drag diagonally from the top to the bottom left corner while clicking through the line from the midpoint while holding down the R button. (Fig 3)
- Press the R button again. Select the End point option and click on the line. (Fig 3)

- Select mirror tool from the modify tool bar. If a line is drawn from the center line to the bottom left, a mirror line will be drawn on its opposite side as shown in Fig 4 & 5.

Fig 3

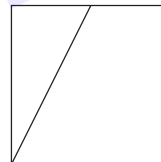


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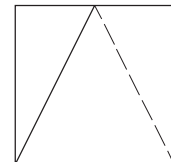
- Now select the center line and the mirror line.

Fig 4

(a)

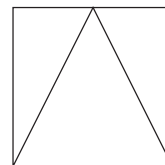


(b)



FW20N1336X4

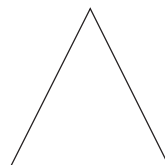
Fig 5



FW20N1336X5

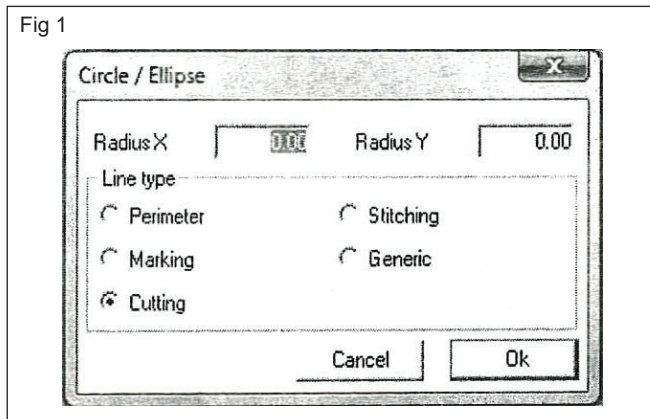
- Delete the unwanted areas using the Delete tool. Now we get a triangle. (Fig 6)

Fig 6



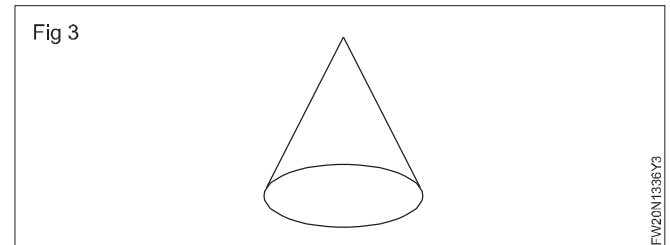
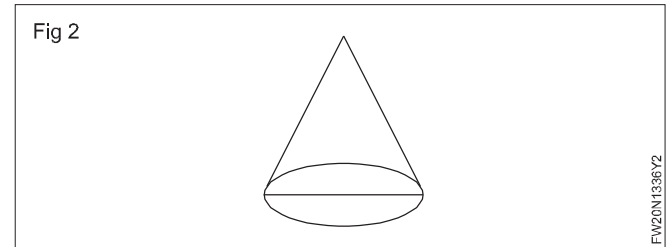
FW20N1336X6

TASK 5: Practice drawing Cones with computer (Figs 1-3)

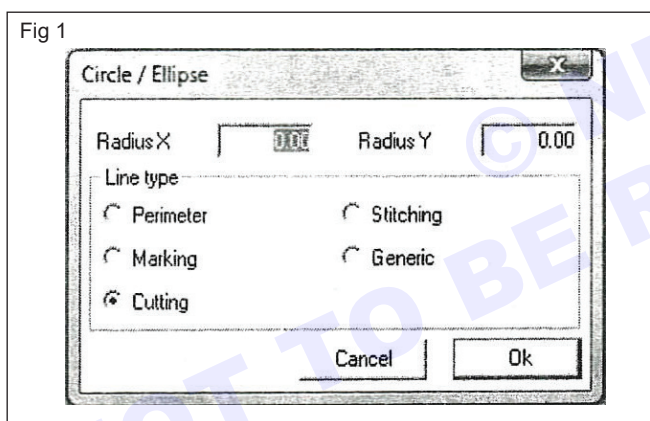


- Follow Task 2 completely.
- Select- circle / ellipse tool – from the insertion tool bar. Now shoe software CAD 2D will be displayed.
- State the size of the radius of the circle. Then click OK button. (Fig 1)
- Now press the R button, select the center point and click on the line.

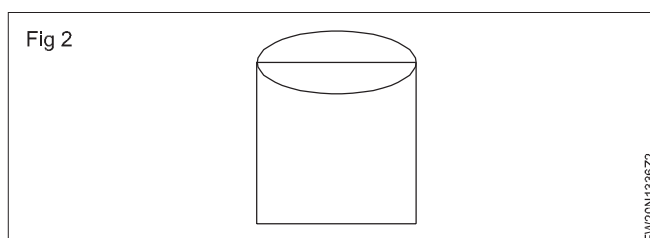
- By clicking left the mouse will paste the ellipse. Then right click to come out of the selected tool. (Fig 2)
- Delete the center line using the Delete tool. Now we get the cone. (Fig 3)



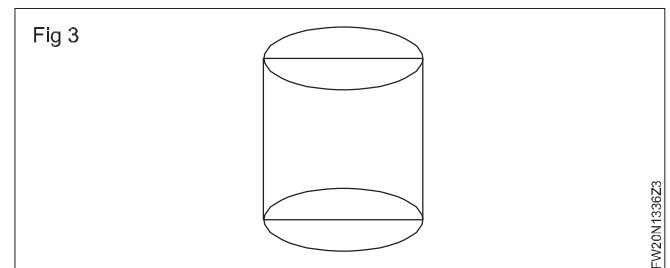
TASK 6: Drawing a Cylinder using CAD (Figs 1-4)



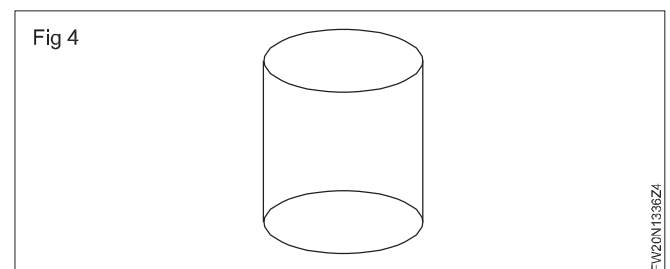
- Follow Task 2 completely.
- Select- circle tool from the insertion tool bar. Dialog Box will display shoe software CAD 2D.
- Specify the radius of the required circle/ellipse. Click the ok button. (Fig 1)
- Press the R button and select the midpoint. Then click on the line.
- By clicking left the mouse will paste the ellipse. Right click to come out of the selected tool. (Fig 2)



- Select mirror tool from the modify tool bar.
- The ellipse drawn in Fig 2 from the upper side will be reflected on the lower side.
- Now select the center line and the mirror ellipse. (Fig 3)



- The middle line of the ellipse should be deleted by using the delete tool. Accordingly, you will get the cylinder. (Fig 4)



Identification and application of different hand tools used in the shop, indenting of tools from store

Objective: At the end of this exercise you shall be able to

- indent of tools from stores as per requirement and entry in various registers related to the same.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Indent book	- 1 No.
• Pincer	- 1 No.		
• Divider	- 1 No.		
• Nail puller	- 1 No.		

PROCEDURE

TASK 1: Indent of tools from stores as per requirement and entry in various registers related to the same

- Prepare an indent slip as if the tools were taken from the stores as per the following sample indent slip.
- Material indent book consists of one original + 2 copies. It has three sides. Each page is lined. Its model is as follows

Footwear manufacturer division/ Indent slip					S.No.1
Training officer sign					
S.No.	Name of material	Required quantity	Technical data	T.R.P.No.	Note
1	Knife	18 Nos.	8"	T.R.P. 4	
2	Pincer	18 Nos.	8"	T.R.P. 8	
3	Divider	9 Nos.	10"	T.R.P. 9	
4	Nail puller	10 Nos.	8"	T.R.P. 12	
5	Hammer	10 Nos.	250 gms. (Cast iron)	T.R.P. 15	
Received (5) (Five numbers only)					
Instructor sign		Storekeeper sign		Principal sign	

- As above, from the stores, write down the tools to be received on the indent slip.
- Write the reqd numbers, technical notes. Get approval from the in-charge of the training department.
- Get approval from the training officer. Obtain the tools by showing 3 copies of carbon sheets to the store keeper with the approval of the Principal / Officer-in-Charge of the institute.
- Of that, the store keeper will take one of the original copies, enter and preserve in his register.
- 2nd copy will be maintained by the office.
- 3rd copy in the indent book will be maintained by you as you are the training officer for the concerned trainees.
- T.R.P. on the page number of the tools taken as per the indent slip under his charge is entered in his tools register at the bottom of the page.
- Post in order.
- Maintain it.

Identify different types of footwear raw-materials - leather and synthetic / artificial leather

Objectives: At the end of this exercise you shall be able to

- identify different leathers, synthetic leathers
- know the names of rexins
- know the names of synthetic/leather materials
- know the properties of leather.

Requirements

Tools/Instruments

- Knife - 1 No.
- Scissors - size 8" - 1 No.

Materials

- Cow upper leather - 2 sq.ft.
- Goat upper leather - 2 sq.ft.

- Sheep upper leather - 2 sq.ft.
- Cow lining leather - 2 sq.ft.
- Foam rexin - 1 No.
- Banian rexin - 1 No.

Instructor will demonstrate and thoroughly explain all types of leathers, rexins and other footwear materials.

PROCEDURE

TASK 1: Identify different leathers, synthetic leathers

Find the names of the models shown in Table 1 to you and write them in order. Specify the thickness.

Table 1

S.No.	Given model	Leather model names	Rexin model names
1	Model 1		
2	Model 2		
3	Model 3		
4	Model 4		

TASK 2: Know the names of rexins

Mention the names of the rexins explained to you in Table 2.

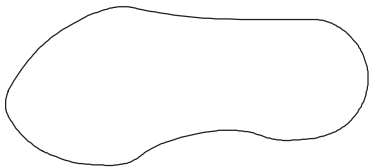
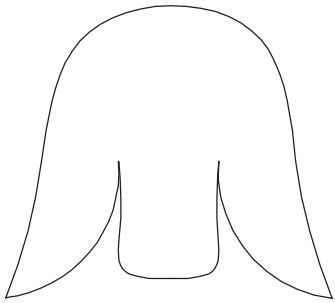
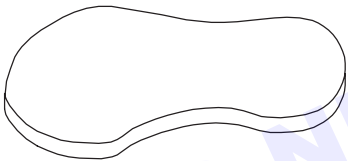
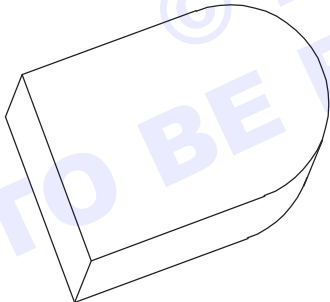
Table 2

S.No.	Types of Rexin	Names of Rexin
1	Model 1	
2	Model 2	
3	Model 3	
4	Model 4	

TASK 3: Know the names of synthetic and leather materials

Write the names of the footwear components shown in Table 3.

Table 3

S.No.	Image footwear of component	Write the components name
1		
2		
3		
4		

TASK 4: Know the properties of leather

List the requirements of leather to be an upper leather in Table 4.

Table 4

S.No.	Name of upper leather	Properties
1	The cow	
2	The goat	
3	Sheep	
4	Buffalo	

TASK 5: Know the properties of leather and rexins

Compare the properties of leather and rexin in Table 5.

Table 5
Analogy of Leather & Rexin

S.No.	Leather properties	Properties of rexin
1		
2		
3		
4		
5		

— — — — —

TASK 6: Know the thickness of different leather and synthetic materials

Write down the thickness of shoe upper leather, lining leather, insole (or) top sole, toe-puff, back-stiffener shown in Table 6.

Table 6
Thickness of various materials

S.No.	Name of leather material	Thickness
1	Upper leather	
2	Lining leather	
3	Insole (or) Top sole	
4	Toe puff	
5	Back stiffener	

— — — — —

Process of soaking, fleshing, unhairing, deliming, bating, pickling and tanning

Objectives: At the end of this exercise you shall be able to

- visit to the factory in person and getting to know about how the necessary finished leather required for shoe productions are made
- know the tanning processes before tanning.

Requirements		
Tools/Instruments		
• Knife	- 1 No.	• Paddle unhairing machine
Materials		
• Tanks/drums		• Fleshing machine (Scudding machine)
		• Hair removal machine

Note: The instructor should take the trainees to the tannery and explain the details of tanning, the names of the tanning machines, the way they work, etc.

PROCEDURE

TASK 1: Know the process of leather making

Write the usage in the box opposite to the name mentioned in tannery factory Table 1

- Instructor should explain about tanning methods and all the machinery used for it.

Table 1

S.No.	Appliances/Tanks	Operation/Procedure
1	Tanks/Drums	
2	Paddle	

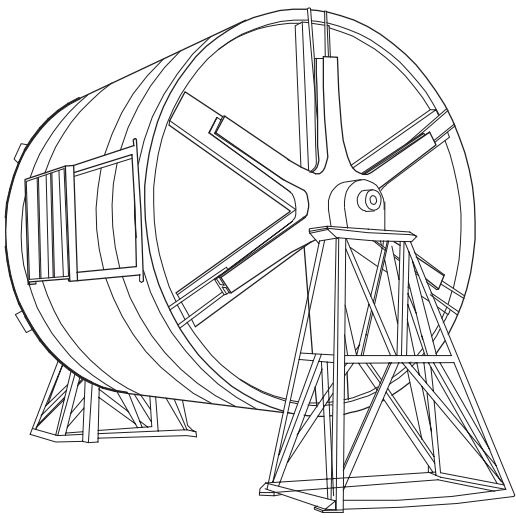
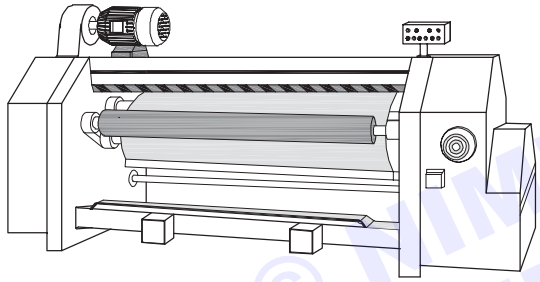
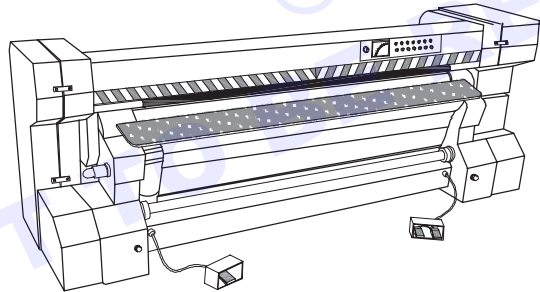
Table 2

S.No.	Name of machines	What is it used for?
1	Unhairing machine	
2	Fleshing machine	
3	Scudding machine	

TASK 2: Know the working of tanning machines

In Table 3, write the usage of machine against the space given.

Table 3

S.No.	Image of machines	Usage
1		
2		
3		

TASK 3: Know the chemicals used in tanning

In Table 4, write the proportions of chemicals required for a particular tanning process.

- Instructor should explain the chemicals required for tanning process and demonstrate it to the trainees.

Table 4

S.No.	Process	Required materials with proportions for tanning
1	Pickling	%
2	Chrome tanning	%

Footwear Maker - Tanning and Maintenance of Machines and Tools

Process of draining, samming, splitting, retanning/ dyeing/ fat liquoring, draining and setting, drying, conditioning, staking, drying , flattening and buffing

Objective: At the end of this exercise you shall be able to

- know the processes that take place after tanning.

Requirements

Equipments/Machines

- | | | | |
|---------------------|---------|-------------------|---------|
| • Drum | - 1 No. | • Shaving machine | - 1 No. |
| • Paddle | - 1 No. | • Buffing machine | - 1 No. |
| • Splitting machine | - 1 No. | • Setting machine | - 1 No. |

PROCEDURE

TASK 1: Know the processes that take place after tanning

- In the following Table 1 mention the benefits of tanning operations next to them.

Table 1

S.No.	Technical terms	Usage
1	Vegetable tanning	
2	Chrome tanning	
3	Draining	
4	Samming	
5	Splitting	
6	Shaving	
7	Retanning	
8	Dyeing	
9	Fat liquoring	
10	Setting	
11	Drying	
12	Buffing	

Perform leather finishing, aniline finish, semi aniline finish, resin finish, cellulose/ lacquer finishes

Objectives: At the end of this exercise you shall be able to

- practice aniline finish, resin finish, semi- aniline finish.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Various colored dye powders	- as reqd.
• Scissors	- 1 No.	• Various color pigments	- as reqd.
Equipments/Machines		• Thickness	- as reqd.
• Spray booth	- 1 No.	• Lacquer	- as reqd.
• Sprinkler	- 1 No.		
• Plastic tub	- 1 No.		

PROCEDURE

TASK 1: Practice aniline finish

- Take a plastic tub and add the following ingredients in it,

Dissolution	- 100 ml.
Protein binder	- 100 ml.
Wax	- 20 ml.
Ammonia	- 10 ml.
Filler	- 10 ml.
Remaining water	- 760 ml.
- Mix these and prepare the seasoning.
- Spread the dyed leather to be finished in a spray booth, pour the season into the spray gun and spray 3 times.
- Then mix formaldehyde with water and spray on the leather to fix the season.

TASK 2: Practice resin finish

- Take a plastic tub and add the following ingredients in it,

Resin binder	- 300 ml.
Pigment	- 200 ml.
Dissolution	- 40 ml.
Wax	- 30 ml.
Filler	- 25 ml.
IPA	- 10ml.
Ammonia	- 5 ml.
Remaining water	- 430 ml.
- Mix these and prepare the seasoning.
- Then pour into the spray gun and spray as needed.
- Then mix water with lacquer and spray it on the leather to fix the season.

TASK 3: Practice semi-aniline finish

- Take a plastic tub and add the following ingredients in it,

Dissolution	- 75 ml.
Protein binder	- 75 ml.
Resin binder	- 40 ml.
Wax	- 30 ml.
Pigment	- 30 ml.
Filler	- 10 ml.
Remaining water	- 730 ml.
- Mix these and prepare the seasoning.
- Then pour into the spray gun and spray as needed.
- Then mix formaldehyde water to fix the season and spray it on leather.

Care and maintenance of hand tools and machines. Safety precautions

Objectives: At the end of this exercise you shall be able to

- practice maintenance before operating the machine
- practice maintenance after running the machine.

Requirements			
Tools/Instruments			
• Screw driver 150 mm	- 1 No.	• Toe part lasting machine	- 1 No.
• Allen key 1-10 mm	- 1 Set.	Materials	
• Spanner 6-32 mm	- 1 Set.	• Cotton waste	- as reqd.
Equipments/Machines		• Oil	- as reqd.
• Insole lasting machine	- 1 No.		

PROCEDURE

TASK 1: Practice maintenance before operating the machine

- Before operating the Insole Lasting Machine, check that all its parts are in proper condition.
- Then make sure the pneumatic system is working properly.
- Fix it if not working.
- After completion of all these works, clean thoroughly with waste cloth or cotton waste.

Table 1

S.No.	Name of the machine	Maintenance operations to be performed before operating the machine
1	Insole lasting machine	
2	Toe part lasting machine	

TASK 2: Practice maintenance after running the machine

- After start and finish the job, first switch off the machine then disconnect the power supply.
- Reaffirm that the machine is disconnected from power supply.
- After confirming this, ensure that the parts are in proper condition.
- If there is any change / rectification, fix it properly.
- If you are not in a position to repair it then inform either through your instructor (or) the higher official to get it repaired.
- After everything has been done, clean the machine thoroughly with a clean cloth.

Table 2

S.No.	Name of the machine	Maintenance operations to be performed after running the machine
1	Insole lasting machine	
2	Toe part lasting machine	

Care and maintenance - its importance and cleanliness of the shops

Objectives: At the end of this exercise you shall be able to

- identify the places / machines / devices to be cleaned
- collect the required cleaning materials /devices
- clean the equipments / devices installed in your trade section.

Requirements

Tools/Instruments

- Hand-held vacuum cleaner / blower (vacuum cleaner/blower) - 1 No.

Materials

- Emery sheet 'O' grade - as reqd.
- Cloth - as reqd.
- Dust bin - 3 (Labeled).

PROCEDURE

Before starting to clean all the machines / devices, power to the equipment must be turned off. Cover your mouth and nose with a cloth.

Instructor need to explain the basic Japanese 5's principles before starting the work to the trainees.

- 1S - Sort**
- 2S - Set in order**
- 3S - Shine**
- 4S - Standardize**
- 5S - Sustain**

- Identify the surfaces/devices/machines to be cleaned.
- Group the materials that may be moved from place to place, in a designated place.

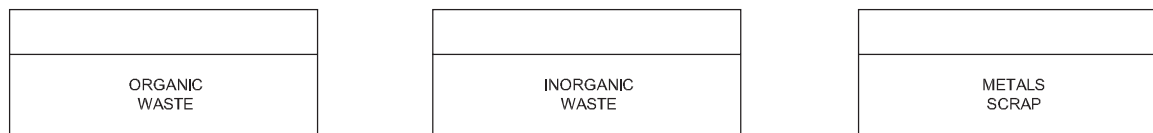
- While cleaning the dust using a cloth, no parts should be damaged / connections of the machines should not be damaged.
- Use a damp cloth to polish the surface to be cleaned.
- Remove the rust from the parts of the machine/equipment using an emery sheet.

While cleaning the machines, the lubricants used for working of the machine should not be wiped or cleaned.

- A vacuum cleaner should be used to clean dust in places where a brush or cloth cannot enter.
- Collect the waste materials in the laboratory in the dustbin.

The trainees should be divided into groups and the dust removal and cleaning should be done under the supervision of the instructor.

Fig 1



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- Clean up water and oil spills on the floor.

If you find anything out of the ordinary while cleaning, note it down and tell the instructor to fix it.

- Return the objects and equipment used for cleaning and put them back in their place.
- After cleaning, inspect all the machines in the presence of the instructor to ensure they are working properly.

- Prepare a report on your findings and submit the same to your instructor for discussion.

Instructor should instruct the trainees about area wise cleaning of their section to be performed on a daily basis. The disposal of waste materials to be carried out through stores whenever needed.

Service and calibrate various types of machines/instruments

Objectives: At the end of this exercise you shall be able to

- practice servicing and calibrating measuring instruments
- practice servicing and calibrating sewing machines.

Requirements

Tools/Instruments

- Leather thickness measuring gauge - 1 No.
- Steel rule - 12 inch - 1 No.
- Screw driver - 100 mm - 1 No.
- Screw driver - 200 mm - 1 No.
- Spanner (6-32 mm) - 1 Set.
- Hammer - 100 gm - 1 No.

Equipments/Machines

- Post bed sewing machine - 1 No.

Materials

- Chart paper - as reqd.
- Scrap leather pieces - as reqd.
- Sewing machine oil - as reqd.
- Emery sheet - as reqd.

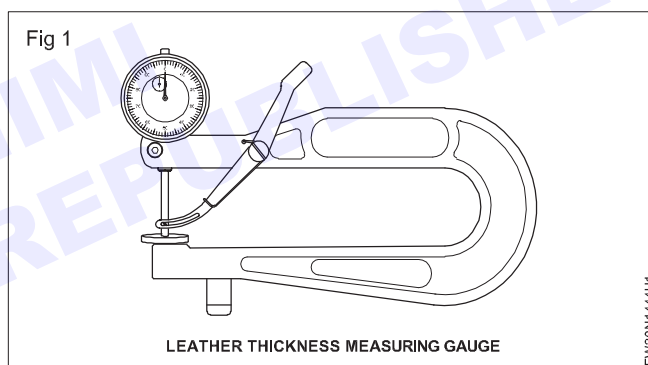
PROCEDURE

TASK 1: Practice servicing and calibrating measuring instruments

- First, take the leather thickness measuring gauge. Before measuring leather, see if the dial is at 'O'.
- Measure the thickness of the scrap leather with the instrument. Similarly measure the thickness of several scrap leather pieces. (Fig 1)

Note: Check that the pin on the dial is at 'O' each time while taking measurements.

- Adjust the leather thickness gauge dial by loosening the screws to keep the pin in the dial at 0.
- Take the piece of scrap leather and measure the thickness again and check that the leather thickness gauge is in proper calibrated condition.



TASK 2: Practice servicing and calibrating a sewing machine

Instructor should explain to the trainees about the working of various parts in the post bed sewing machine.

- Trainees need to mention the various parts of the post bed sewing machine and the functions of each part in Table 1.

Table 1

S.No.	Sewing machine parts	Functions of parts
1	Needle bar	
2	Balance wheel	
3	Thread take up lever	
4	Bobbin	
5	Stitching length adjuster	

Instructor should show various defects in post bed sewing machine, and explain how to correct them.

- Trainees need to mention the fault / repairs happened in various sewing machines in Table 2.

Table 2

S.No.	Name of the machine	Fault / Repairs in machine
1	Post bed sewing machine	a) b) c) d)

Trainees to show the specific fault / repairs in Table 2 to the instructor and know the method of fixing the same and correct the defects in the machine.

- Check if the repairs have been done by stitching the scrap leather on the repaired machine.
- Trainees need to mention how the deficiencies in Table 2 were rectified by them in Table 3

Table 3

S.No.	Engine repairs	Corrected method
1	Loop stitch	
2	Needle breakage	
3	Thread gets cut	
4	Tearing of sewing part	

Footwear Maker - Tanning and Maintenance of Machines and Tools

Identify and carry out maintenance and preventive maintenance of different machines

Objectives: At the end of this exercise you shall be able to

- know about the maintenance of various machines
- know the safety precautions to be taken while working on various machines.

Requirements			
Tools/Instruments		Equipments/Machines	
• Screw driver - 100 mm	- 1 No.	• Flat bed sewing machine	- 1 No.
• Screw driver - 200 mm	- 1 No.	• Post bed sewing machine	- 1 No.
• Spanner (6-32 mm)	- 1 Set.	• Insole lasting machine	- 1 No.
• Allen key (No. 1 to 10 mm)	- 1 Set.	• Toe part lasting machine	- 1 No.
• Wooden mallet	- 1 No.	Materials	
• Hammer - 100 gm	- 1 No.		
• Cutting plier - 100 mm	- 1 No.		
• Oil can (100 ml)	- 1 No.		
		• Scrap leather pieces	- as reqd.
		• Cotton fabric waste	- as reqd.

PROCEDURE

TASK 1: Know about the maintenance of various machines

Instructor need to explain separately the maintenance methods of various machines used in shoe manufacturing.

Note: Instructor need to mark the maintenance work done by him on each machine in a separate Table.

- Trainees need to write the maintenance procedures performed by him on each machine in Table 1.

Table 1

S.No.	Name of the machine	Maintenance work
1	Flat bed sewing machine	
2	Post bed sewing machine	
3	Insole lasting machine	
4	Toe part lasting machine	

TASK 2: Know the precautions to be taken in various machines

- Instructor need to explain the trainees about the precautions to be taken in machinery used in shoe manufacturing.
- Trainees need to write the early warning procedures carried out by him in each machine in Table 2.

Note: Trainees need to mark the pre-warnings carried out by him on each machine in a separate Table.

Table 2

S.No.	Name of the machine	Precautionary methods
1	Flat bed sewing machine	
2	Post bed sewing machine	
3	Insole lasting machine	
4	Toe part lasting machine	

Study the construction operation and use of machines/instruments

Objectives: At the end of this exercise you shall be able to

- know the various constructions of shoe manufacturing
- know the machines and tools used in various constructions.

Requirements

Materials

- Artificial material - as reqd.
- Leather waste - as reqd.

PROCEDURE

TASK 1: Know the various constructions of shoe manufacturing

The instructor need to take the trainees to a nearby shoe factory and explain the shoe constructions done at the training center.

- Instructor has to check that the marked constructions by the trainees in Table-1 are correct.

Table 1

S.No.	Constructions of shoes
1	
2	
3	

- Explain to the trainees individually the different constructions of shoes.
- Instructor has to give shoes made of different shoe constructions to trainees, ask them to inspect and mark different types of footwear construction in Table 1.

TASK 2: Know the machines and tools used in various constructions

The instructor need to takes the trainees to the construction machinery at the workshop and the nearby factory and explain the various machinery and tools used in shoe construction.

- Ask the trainees to mention the various machines and tools used in shoe manufacturing in Table 2.

Table 2

S.No.	Name of construction	Machine for construction	Tool
1	Molded construction		
2	Cemented construction		
3	Good year - welded construction		
4	Molded construction		

Identify different parts/section its function and operation of machines/ instruments

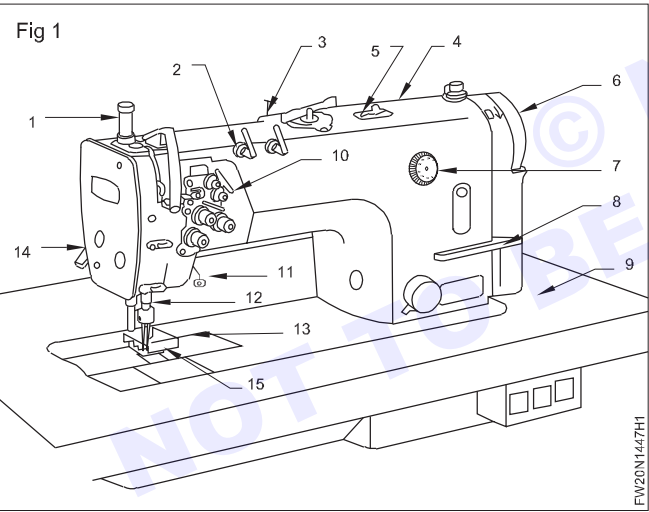
- Objectives: At the end of this exercise you shall be able to
- know the different parts of flat bed sewing machine
 - know the working and operation of flat bed sewing machine.

Requirements			
Tools/Instruments		Materials	
• Screw driver 150 mm	- 1 No.	• Cotton waste	- as reqd.
Equipments/Machines		• Oil	- as reqd.
• Flat bed sewing machine	- 1 No.		

PROCEDURE

TASK 1: Know the various parts of flat bed sewing machine

The instructor will demonstrate the flat bed sewing machine and explain its parts and operation.



- Trainers have to mention the names of the parts of the flat bed sewing machine shown in Fig 1 in Table 1.

Table 1

S.No.	Parts of the machine
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

TASK 2: Know the working and operation of flat bed sewing machine

- Trainees have to mention the mode of working and operations of parts shown in Fig 1 in Table 2.

Table 2

S.No.	Working mode	Operating mode
1		
2		
3		
4		
5		

Safety mode

Thoroughly wipe and clean this machine before operating it.

- Check that all the parts of the machine are in their proper positions.

- As this is a high-speed machine, press the pedal carefully and slowly while sewing.
- Be careful not to poke your fingers while sewing.
- Be careful not to damage the material being sewn while sewing.

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Practice sharpening of tools, scissors, knives and other cutting tools

Objectives: At the end of this exercise you shall be able to

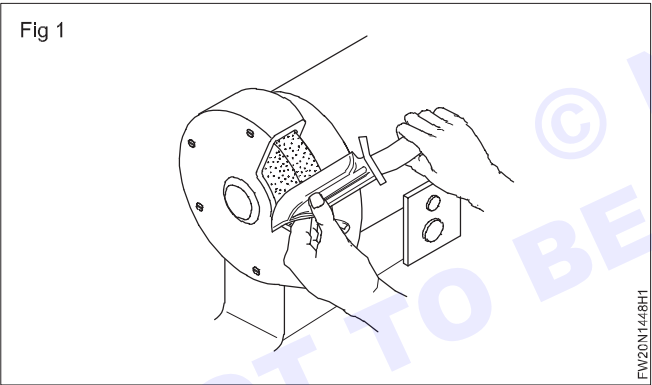
- sharpening the knife, scissor and the punch.

Requirements			
Tools/Instruments		Equipments/Machines	
• Knife 150 mm • Scissors 300 mm • Punch size -3 • Oil stone (6" x 2" x 1")	- 1 No. - 1 No. - 1 No. - 1 No.	• Bench grinder	- 1 No.
		Materials	
		• HSS (High speed stainless steel) Blade	- as reqd.

PROCEDURE

TASK 1: Sharpening the knife (Fig 1)

- Cut the HSS Blade to a length of 150 mm.
- Then grind the blade tooth smoothly from one side with the help of a bench grinder.
- After that sharpen the blade part of the knife in a bench grinder. (Fig 1)



- HSS blade gets very hot while grinding. During the grinding cool the blade by dipping in water.

Note: Wear gloves while grinding.

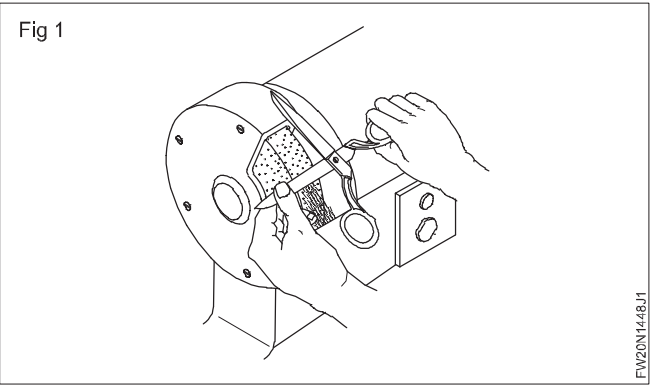
- After grinding well in the bench grinder, put some lubricating oil on the oil stone and grind it by hand.
- When cutting leather or other materials with a knife, always keep the oil stone on the right side of the table. Grind when necessary.

Note: While grinding knife, be careful not to touch the blade part by hands.

TASK 2: Sharpening the scissor (Fig 1)

- When the blade part of the scissors used for cutting becomes dull, grind it with the help of a bench grinder.
- Separate the two blades of the scissors and grind each blade in a bench grinder. (Fig 1)
- Scissors get very hot while grinding. Hence cool it with water.

Note: Wear gloves while grinding.

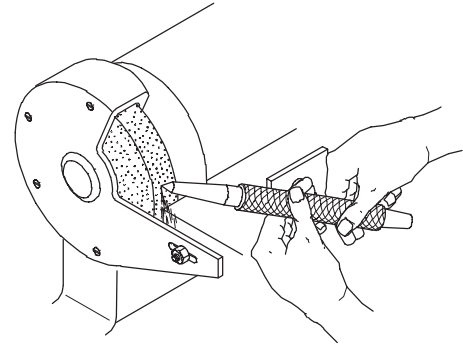


TASK 3: Sharpening the punch (Fig 1)

- When the tip of the punch that can be used for drilling becomes dull, grind it using a bench grinder.
- Run the Bench Grinder and grind the sharp edge of the Punch to be ground touching the Grinding wheel. (Fig 1)
- Rotate and grind the tip of the punch to sharpen it all the way around.
- While grinding, the punch gets too hot, cool it with water.

Note: Wear gloves while grinding.

Fig 1



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Identify and apply various method and process of holding the tools

Objectives: At the end of this exercise you shall be able to

- identify and handle hand tools required for leather cutting
- identify and handling of drilling tools.

Requirements

Tools/Instruments

- Scissors 200 mm - 1 No.
- Knife 150 mm - 1 No.
- Zig zag knife - 150 mm - 1 No.
- Punch 1-10 mm - 1 No.
- Hammer - 1 No.
- Steel rule -300 mm - 1 No.
- Cutting mat - A3 size - 1 No.

Equipment/Machines

- Polypropylene board - 1 No.
- Working table - 1 No.

Materials

- Leather pieces - as reqd.
- Lining pieces - as reqd.

PROCEDURE

TASK 1: Identify and handle hand tools required for leather cutting (Fig 1-7)

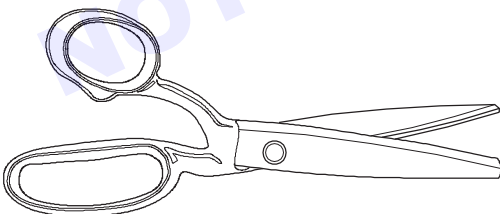
- The instructor will explain the hand tools required for leather cutting and how to handle it.

The trainees have to select the tools used for leather cutting among the various tools kept on the table and draw their shape against their name in Table 1.

Table 1

S.No.	Name of the hand tool	Structure / shape
1	Knife 150 mm	
2	Zig zag scissors-150 mm	
3	Scissors 200 mm	

Fig 1



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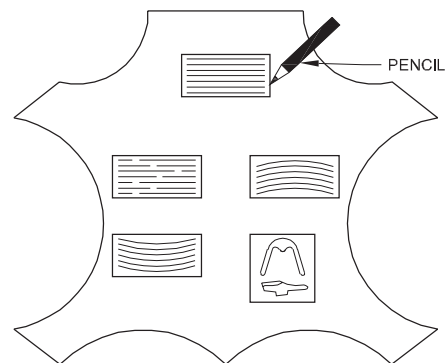
Identify the hand tools required for leather cutting

- Spread the leather on the cutting table.
- Mark the defects in leather.

Note: Mark and show the leather to the instructor for approval.

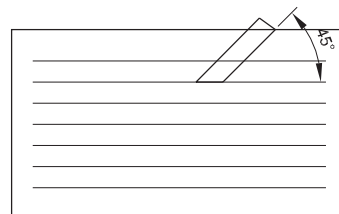
Note: When cutting leather, press the knife and cut without shrinks.

Fig 2

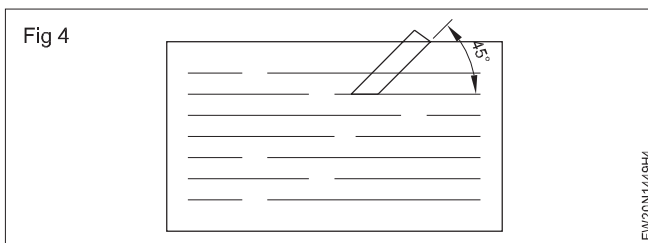


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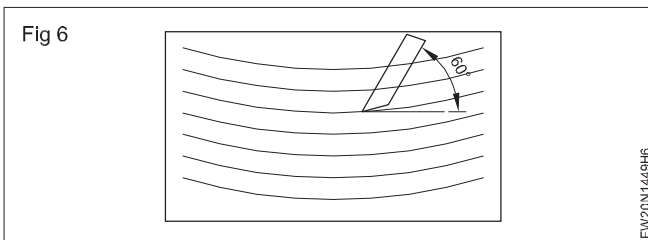
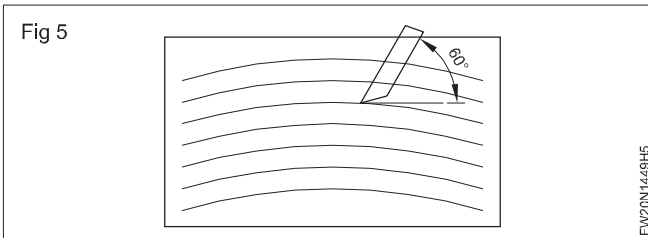
Fig 3



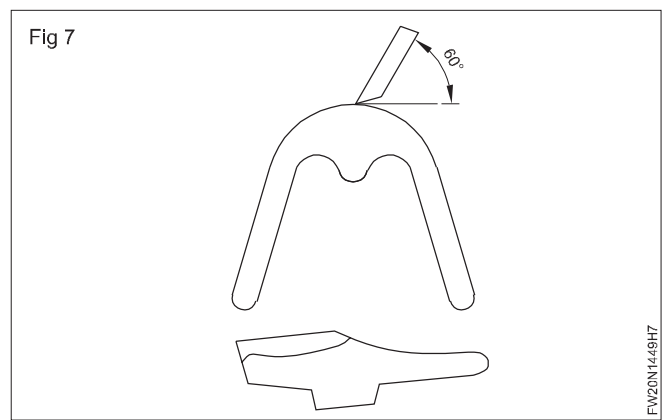
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Note: Clicking knife should be sharpened often in oil stone.



Note: While cutting the leather, it should be done without shrinks.



Note: Show the clicked leather pieces to the instructor and get approval.

- Handling zig zag scissors and scissors.

Instructor need to explain how to handle zig zag scissors and scissors.

- Trainees to cut strips of leather using zig zag scissors and scissors.

Show the cut leather strips to the instructor and get approval.

TASK 2: Identify and handling of drilling tools (Fig 1)

- Instructor need to explain the various drilling tools and how to handle them.
- Trainees to identify the hand tools in Table 2.

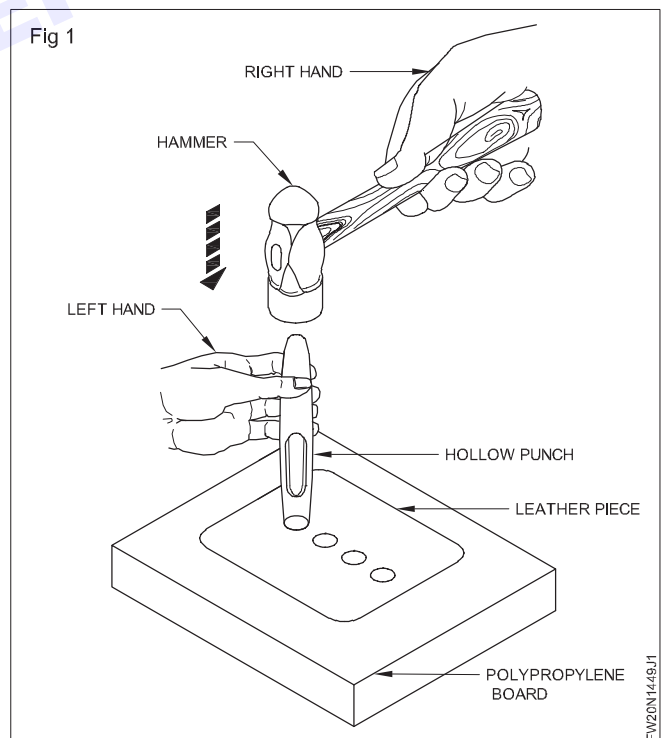
Table 2

S.No.	Name and size of the hand tool
1	Drilling punch - 5 mm
2	Drilling punch - 10 mm
3	Drilling punch - 3 mm

Handling of drilling tools

Select the hole punch according to the size of the leather to be pierced by the trainee and get approval from the instructor.

- First, keep the poly propylene board on work bench.
- Place the cutting mat- on poly propylene board.
- Place the leather to be pierced on cutting mat.
- Mark the place to be drilled.
- Select the required hole punch.
- Hold the hole punch straight at the place to be punched with the left hand as shown in the Fig 1.
- Hold the hammer in the right hand.
- Hit the head of the punch with hammer quickly.
- Now the punch would have drilled the leather.



- Gently pull the punch out of the hole.
- Check if the drilled hole is correct.

Note: Show the drilled piece to the instructor to get his approval

Identify sources of leather and their characteristic - calf leather, hides leather, kid leather, goat skins and sheep skin

Objectives: At the end of this exercise you shall be able to

- identify leather
- identify the properties of leather.

Requirements			
Tools/Instruments		Materials	
• Leather thickness measuring tool	- 1 No.	• Large animal skin (Hide)	- 1 sq.ft.
Equipment / Machines		• Kid leather	- 1 sq.ft.
• Working table	- 1 No.	• Calf leather	- 1 sq.ft.
		• Goat skin	- 1 sq.ft.
		• Sheep skin	- 1 sq.ft.

PROCEDURE

TASK 1: Identify leather

Table 1

S.No.	Leather name
1	
2	
3	

Instructor to lay out different types of leather on the table and explain the trainees how to identify them. Then ask the trainees to mark the names of the leather in Table.

- Identify the leathers spread on the work bench.
- Mention the name of each leather with serial number in Table 1.

TASK 2: Identify the properties of leather

Table 2

S.No.	Properties of leather
1	
2	
3	

The instructor will show the trainees different leathers and explain their properties. Then ask the trainees to mark the properties of leather in the table.

- Learn the properties of rendered leather
- Mention each characteristic in Table 2 with serial number.

Verify properties of different types of coated fabrics - PVC coated fabrics, direct coating, transfer coating, polyurethane coated fabrics

Objectives: At the end of this exercise you shall be able to

- know the properties of coated fabrics.

Requirements			
Tools/Instruments		Materials	
• Steel rule - 12"	- 1 No.	• PVC coated fabrics	- as reqd.
• Knife	- 1 No.	• Polyurethane coated fabrics	- as reqd.
Equipments/Machines			
• Working table	- 1 No.		

PROCEDURE

TASK 1: Know the properties of coated fabrics

Instructor has to spread various coated fabrics on the work bench and explain their properties to trainees. Then ask the trainees to mark the properties of coated fabrics in table.

- Know the properties of coated fabrics spread on the work bench.
- Mention the properties of each coated fabric directly by their name in Table 1.

Table 1

S.No.	Name of coated fabrics	Properties
1	PVC coated fabrics	
2	Polyurethane coated fabrics	

Carry out maintenance, servicing and tolerances of precision measuring instruments

Objectives: At the end of this exercise you shall be able to

- maintenance and zero setting of leather thickness gauge
- maintenance and setting of brannock device.

Requirements			
Tools/Instruments		Materials	
• Screw driver - 100 mm	- 1 No.	• Chart paper	- as reqd.
Equipment/Machines		• Cotton waste	- as reqd.
• Leather thickness gauge	- 1 No.	• Emery paper	- as reqd.
• Brannock device	- 1 No.	• Waste leather pieces	- as reqd.

PROCEDURE

TASK 1: Maintenance and “zero” setting of leather thickness gauge (Fig 1)

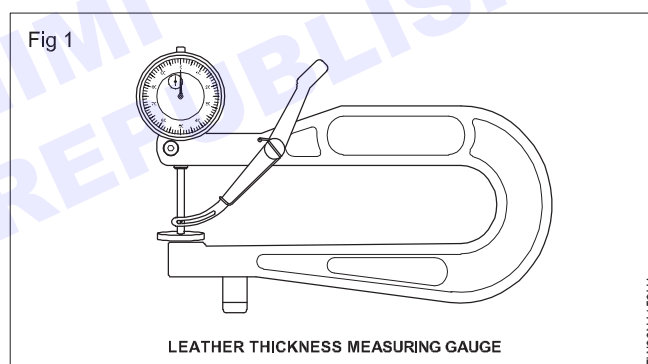
- First take the leather thickness gauge.

Note: When no leather is measured in the Leather thickness gauge, the pin on the dial should be it 'O' mm.

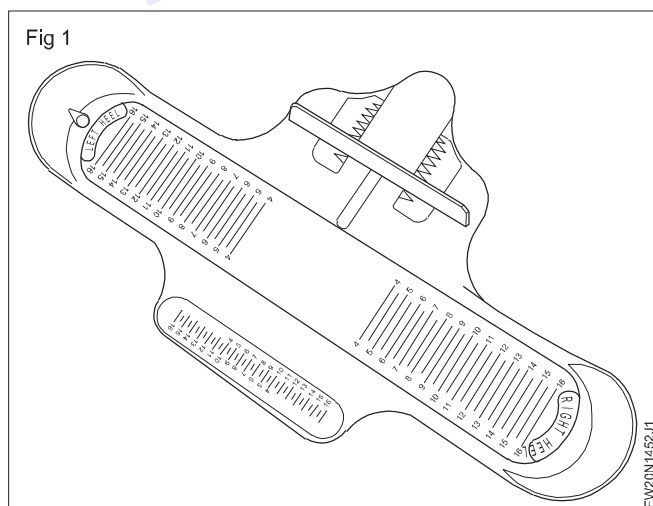
- Before measuring the thickness of a leather piece, if the dial on the leather thickness is not showing “O” mm, then it has to be “O” setted.
- Adjust the leather thickness gauge dial by screwing the nut back and forth on each of the 2 pins and aligning the pin on the dial with 'O'.

Note: Show the corrected leather thickness gauge to the instructor and get his approval.

- Place the scrap leather on the corrected leather thickness gauge and measure the thickness several times and check if the gauge is correct.



TASK 2: Maintenance and setting of Brannock device (Fig 1)



- Explain to the trainees how the various parts of the brannock device work. (Fig 1)
- Trainees have to draw the image of brannock device and list its components in Table 1.

Table 1

S.No.	Various parts
1	
2	
3	
4	
5	

- Trainees have to keep the feet of other trainees on Brannock device and take foot measurement and mark in Table 2.

Table 2

S.No.	Trainee name	Foot size
1	A	
2	B	
3	C	
4	D	
5	E	

Note: The feet should be clean while measuring feet in Brannock device.

- If the screws in the Brannock device are loose, fix them with a screw driver.
- The scale in the Brannock device should be cleaned frequently with a cotton cloth to remove dirt and dust.

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Perform quality thickness are obtained in uniform colors in a wide range

Objectives: At the end of this exercise you shall be able to

- measuring and checking the thickness of leather
- checking and correcting leather tone.

Requirements			
Tools/Instruments		Materials	
• Leather thickness measuring tool	- 1 No.	• Waste leather pieces	- as reqd.
• Knife	- 1 No.	• Sponge	- as reqd.
Equipments/Machines			
• Working table	- 1 No.		

PROCEDURE

TASK 1: Measuring and checking the thickness of leather

- First take scrap leather pieces.
- Take the leather thickness measuring gauge and measure at different places on the leather piece.

Table 1

S.No.	The name of the skin	Required thickness
1	Cow	
2	Goat	
3	Sheep	
4	Buffalo	

Instructor has to explain to the trainees the different thickness of leather needed to make a leather material.

- Trainees have to choose the required thickness of leather for making various leather goods and write it in Table 1

TASK 2: Checking and correcting leather tone

The instructor has to explain about the color of the leather used to make the leather material and how to examine it to trainees.

- The trainees have taken a piece of scrap leather and cut the skin crosswise with the help of a knife.
- Check that the color has not penetrated the entire thickness of the cut skin.
- Separate the leather that do not penetrate the color.

Note: Don't tan with skins that don't penetrate well.

- Take skins that have been penetrated throughout the leather mass and check whether the color on their grain side is uniform.
- Separate the discolored leathers and sponge the dye solution of the same color on the mane of the leather and allow it dry for some time.
- After drying, check whether the color of the other skins is the same as the skin on which the dye solution is applied.

Practice on various supplied in rolls, multiple layer cutting using a beam clicking press is feasible

Objectives: At the end of this exercise you shall be able to

- know the working of Beam clicking press machine.

Requirements			
Tools/Instruments			
• Knife • Steel rule • Cutting dies	- 1 No. - 1 No. - 1 Set.	• Leather thickness gauge	- 1 No.
		Materials	
Equipments/Machines		• Lining fabric • Synthetic rexin	- as reqd. - as reqd.
• Beam clicking press	- 1 No.		

PROCEDURE

TASK 1: Know the working of Beam clicking press machine (Fig 1)

The instructor should take the trainees to the nearest shoe factory and explain and train them on the parts and working of the Beam clicking press (Fig 1).

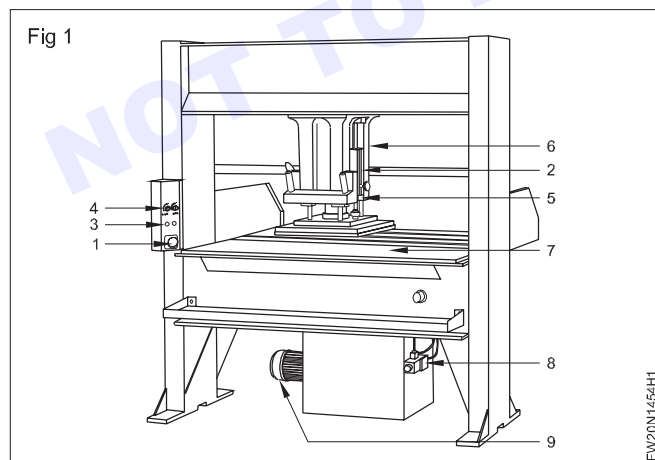
- Trainees to identify the parts of Beam clicking press machine mentioned in table-1 and mention its uses
- The instructor has to talk on the advantages and disadvantages of hydraulic clicking machine cutting and beam clicking machine cutting to trainees and train them.

Table 1

S.No.	Parts of the machine	Uses of parts
1		
2		
3		
4		
5		

Main parts

- 1 Main switch
- 2 A switch used to move the head to the left
- 3 A switch used to move the head to the right
- 4 Light switch
- 5 Micro switch
- 6 Traveling head
- 7 Cutting table
- 8 Oil tank
- 9 Motor



Prepare and practice on various component direction of cutting

Objectives: At the end of this exercise you shall be able to

- selection of different parts of the skin for cutting
- fitting and cutting of shoe parts according to the tight line, stretch line and direction of the leather.

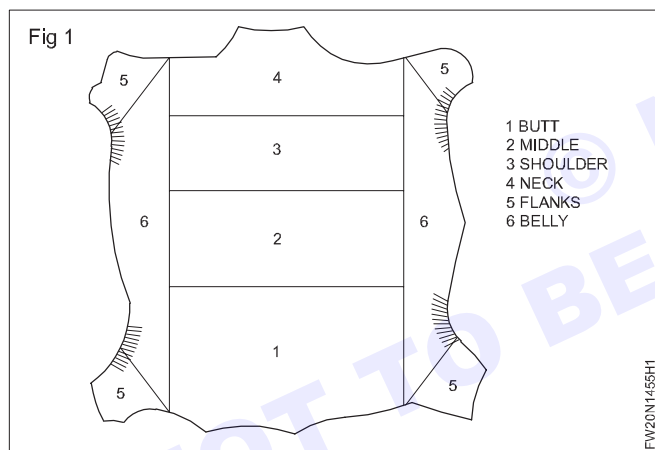
Requirements			
Tools/Instruments		Materials	
• Knife 150 mm	- 1 No.	• Leather	- as reqd.
• Scale 12 inch	- 1 No.	• Chart paper	- as reqd.

PROCEDURE

TASK 1: Selection of different parts of the skin for cutting (Fig 1)

The instructor has to spread the leather on the work bench and explain the quality of its various parts.

- Note the quality of various components in Fig 1.



Grading of parts of the skin

- Butt - first grade
- Middle - second grade
- Solder - third grade
- Neck - fourth grade

Blanks - fifth grade

Belle - sixth grade

- Cut the vamp, towing and toe caps from the Grade 1 section. It also includes butt, middle and shoulder.
- Make outside quarter and inside quarter cutting from Grade 2 area, and cut from middle, shoulder, neck area.
- Cut counters in grade 3. Cut the middle, shoulder and blanks from this.
- Cut the tung and planks from the grade 4 belly area.

Note: Trainees should mark the shoe cutting parts in table-1 according to the quality of the leather parts next to them.

Table 1

S.No.	Name of the skin	Shoe cutting parts
1	Butt	
2	Middle	
3	Shoulder	
4	Neck	
5	Blanks	
6	Belle	

TASK 2: Fitting and cutting shoe parts according to the direction of the tight line and stretch line of the leather (Fig 1-2)

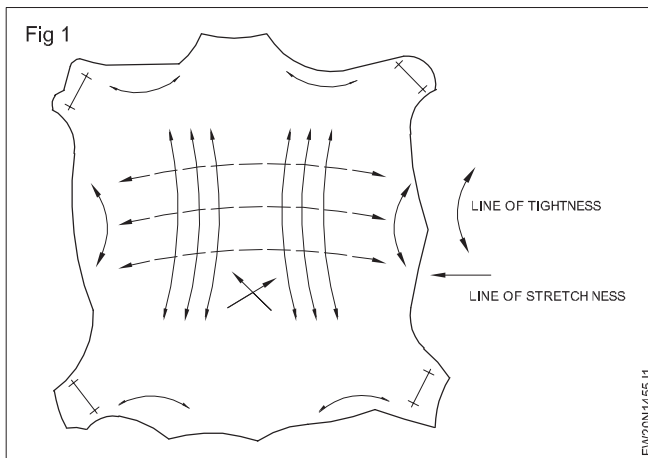
Instructor has to spread the skin on the work bench and describe its line of tightness and line of stretchness.

- Mark the tight line and stretch line of the skin in Fig 1.

Line of tightness

- Generally, in cow and buff (cow/buff) hide and side skins, the line of tightness is located in the butt region in four directions.
- The line of tightness is longitudinal in middle, shoulder and neck areas.

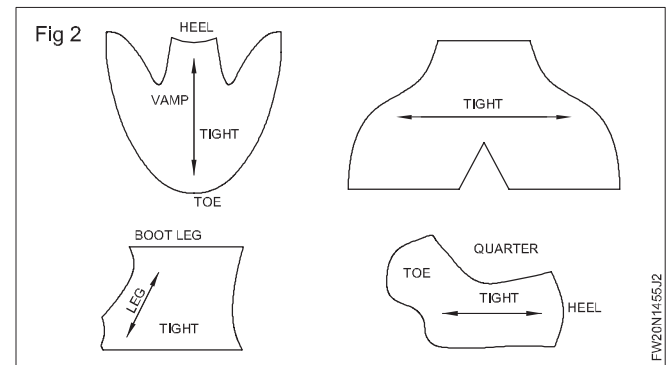
- The line of tightness in the plank and belly areas is in lateral side.



Line of stretchiness

- The line of stretchiness is located opposite the line of tightness in all skins.

- Cut the various shoe upper parts according to the direction of the tight line and stretch line of the leather. (Fig 2)



Note: The trainees should show the cut upper parts to the instructor to get it checked and approved by him.

Identify different parts, its function and operation of leather cutting machines

Objective: At the end of this exercise you shall be able to

- know the parts, working and operation of hydraulic clicking machine.

Requirements			
Tools/Instruments		Equipments/Machines	
• Scale 12 inches	- 1 No.	• Hydraulic clicking machine	- 1 No.
• Knife	- 1 No.	Materials	
• Cutting dies	- 1 Set.	• Leather	- as reqd.

PROCEDURE

TASK 1: Know the parts, working operation of hydraulic clicking machine (Fig 1)

Instructor has to explain about hydraulic clicking machine to the trainees.

Trainees have state the working of the machine in Fig 1 in Table 1.

- 1 Arm
- 2 Clicking button
- 3 Clicking press
- 4 Fiber board
- 5 Steel body
- 6 Motor

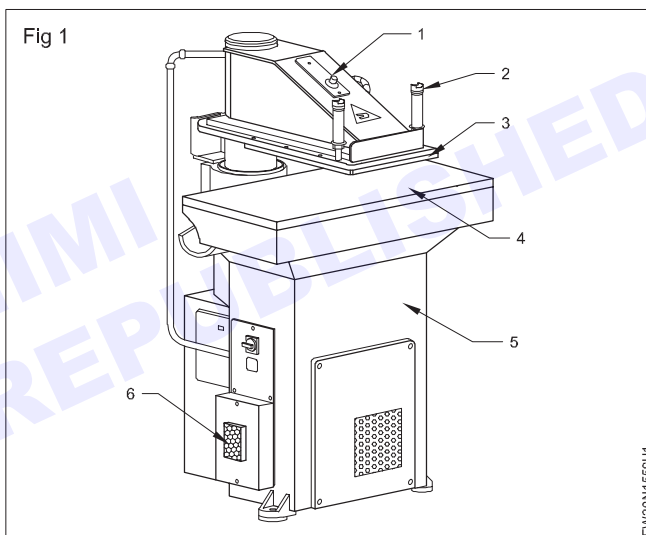


Table 1

S.No.	Machine parts	Way of working
1		
2		
3		
4		
5		
6		

Footwear Maker - Leather Measurement, Cutting and Stitching

Identify the skiving machine / instrument specifications

Objectives: At the end of this exercise you shall be able to

- know the structure, parts and working of skiving machine, safety methods.

Requirements

Tools/Instruments

- Scale 300 mm - 1 No.
- Leather thickness gauge - 1 No.
- Screw driver 200 mm - 1 No.

Equipments/Machines

- Skiving machine - 1 No.

Materials

- Shredded leather - as reqd.

PROCEDURE

TASK 1: Know the structure, parts and working of skiving machine, safety methods (Fig 1)

Note: The instructor will demonstrate the skiving machine and explain its parts and the functions of each part.

- 1 Draw the image of the part in Table 1.
- 2 Write the function of each part in Table 1.

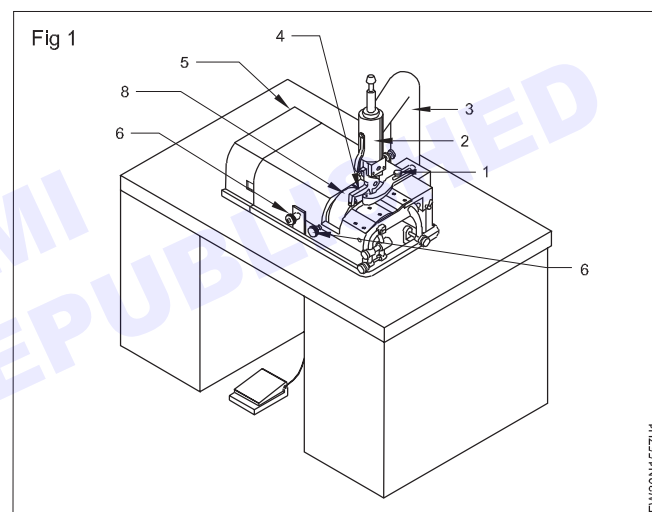


Table 1

S.No.	Name of parts	Image of parts	Functions of parts
1	Gauge adjusting knob		
2	Material releasing lever		
3	Machine arm		
4	Pressure foot		
5	Belt guard		
6	Grinding ON/OFF knob		
7	Knife feed adjuster knob		
8	Bell knife		

Footwear Maker - Leather Measurement, Cutting and Stitching

Carry out maintenance and preventive maintenance

Objectives: At the end of this exercise you shall be able to

- know about tools maintenance and precautions
- know about machine maintenance and precautions.

Requirements			
Tools/Instruments		Materials	
• Screw driver 250 mm	- 1 No.	• Lubricating oil	- 250 ml.
• Allen key 1-10 mm	- 1 No.	• Cotton waste	- 1/2 kg.
• Spanner 6-32 mm	- 1 No.	• Cotton cloth	- 1/4 kg.
Equipments/Machines		• Grease	- 100 gm.
• Flat bed sewing machine	- 1 No.	• Emery sheet	- 2 Nos.
• Grinding machine	- 1 No.		
• Sole pressing machine	- 1 No.		

PROCEDURE

TASK 1: Know about tools maintenance and precautions

Instructors should explain to trainees about handling of tools and machinery with precaution.

- Be careful not to injure your hands with sharp parts while removing rust. Do not use emery sheet over steel rule or tape.
- Apply a thin layer of oil to the surface of the rusty tool and wipe it with a cloth.
- Trainees have to write down the tools maintenance method in Table 1.

Prevent rust formation

- Inspect all tools and remove rust using emery sheet if rust is present.

Table 1

S.No.	Name of the tools	Maintenance method
1	Knife	
2	Spanner	
3	Screw driver	
4	Pincer	
5	Cutting plier	

TASK 2: Know about machine maintenance and precautions

- Before starting the maintenance of the machines we should make sure that the machine has stopped running.

Instructor need to explain about various machine maintenance to trainees.

- Trainees have to write about various machine maintenance in Table 2.

Table 2

S.No.	Name of the machine	Maintenance method
1	Sewing machine	
2	Skiving machine	
3	Clicking machine	
4	Insole lasting machine	
5	Toe part lasting machine	

Footwear Maker - Leather Measurement, Cutting and Stitching

Overhaul, check, fault find, repair various type manual and automatic machines/ instruments used in leather cutting or clicking

Objectives: At the end of this exercise you shall be able to

- inspect the leather cutting machine and find out the defects
- redressal of grievances
- inspect and fault finding of hydraulic clicking machine
- troubleshooting.

Requirements			
Tools/Instruments		Equipments/Machines	
• Screw driver 250 mm	- 1 No.	• Clicking machine (hand operated)	- 1 No.
• Spanner 6-32 mm	- 1 Set.	• Hydraulic clicking machine	- 1 No.
• Cutting plier 150 mm	- 1 No.	Materials	
• Hammer	- 1 No.		
		• Waste cloth (or) cotton waste	- as reqd.

PROCEDURE

TASK 1: Inspect the leather cutting machine and find out the defects

- To test the skinning machine, (manual operation) first press the handle of the machine down.
- Use the necessary tools while testing it. (Example Pliers, Hammer, Spanner)
- If the handle-down smoothly without any hindrance it is correct, if it doesn't come down, check the gear for a fault.

TASK 2: Redressal of grievances

- To fix the defective handle that is not properly lowered by inspection, unscrew its cover part and remove the screw and clean it if there is any stock or piece of leather bit stuck in the gear wheel.
- Then push the handle down again to confirm that the defect has been corrected.
- Apply appropriate lubricating oil or grease to the gear after cleaning. Then refit the removed cover in the same position.

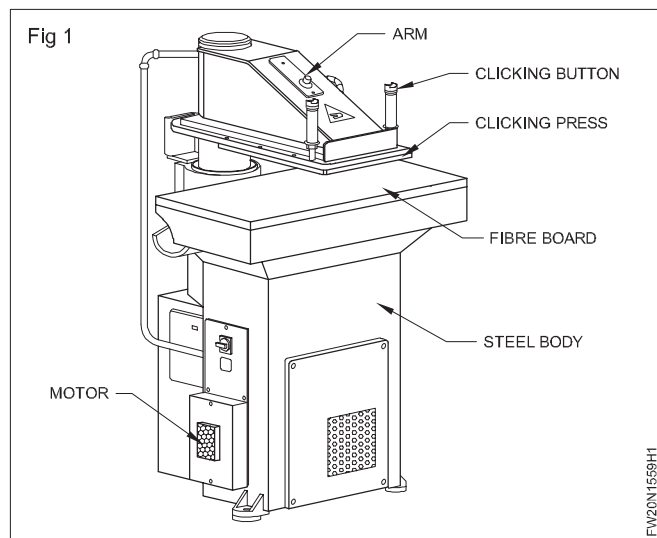
TASK 3: Inspect and fault finding of the hydraulic clicking machine

- To test a hydraulic clicking machine, first connect the machine to the power supply and turn the switch ON and run the machine.
- engine when it is running, if the sound is not smooth then know that there is a problem.
- While running like this, check that all the stages are working properly. For example:
- Thus while testing for flaws, be very careful and focus your full attention on the test without any distractions. By doing this, the defects can be identified correctly.
- Does Beam run lower and higher? Also check if the beam turns left or right. Also check the sound of the

TASK 4: Trouble shooting (Fig 1)

- To correct any noise (sound) detected in the hydraulic clicking machine, remove the cover from the hydraulic section using an allen key or screw driver.

- Remove screw, allen screw or bolt using the appropriate tool. After removing the cover, check whether the oil level in the hydraulic system is correct, and if the oil level is low, refill it with required oil.
- Then run the engine again and check its sound carefully, and if the sound is consistent, confirm that the fault has been rectified.
- Then fix the cover in the same position. While fitting back in position, Fit with careful consideration of self-protection.



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Footwear Maker - Leather Measurement, Cutting and Stitching

Identify different parts of shoe, components viz. uppers, linings, insoles, soles etc.

Objectives: At the end of this exercise you shall be able to

- identify the parts of a derby shoe
- identify the parts of an oxford shoe.

Requirements

Tools/Instruments

- Knife - 1 No.
- Scale - 1 Set.

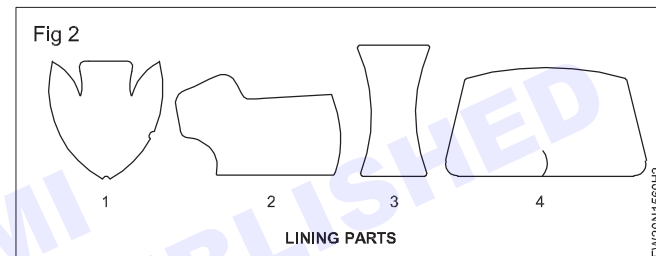
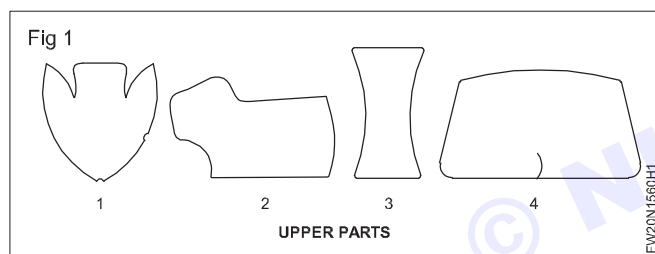
Materials

- Shoe components - as reqd.

PROCEDURE

TASK 1: Identify the different parts of a derby shoe (Fig 1 & 2)

Instructor should show and explain about different parts of a derby shoe.

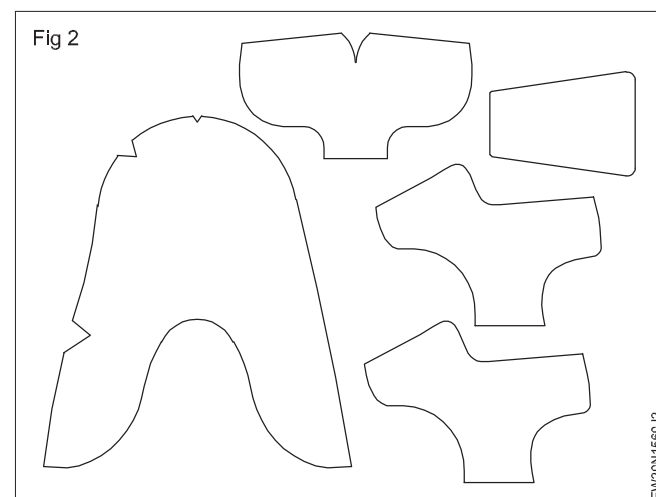
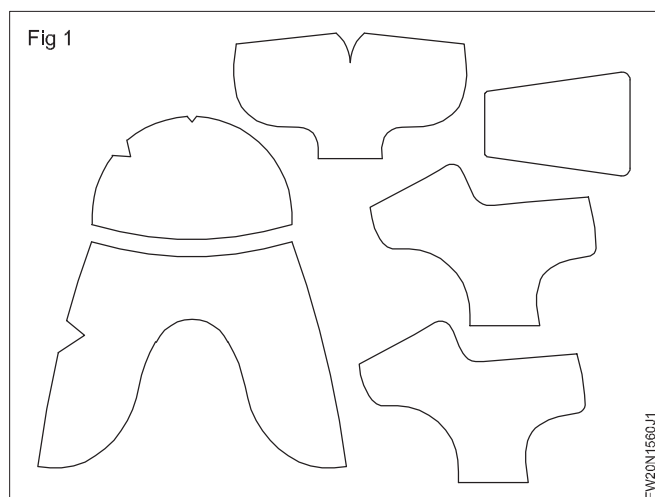


- List the number of parts required for the above derby shoe and their uses in Table 1.

Table 1

S.No.	Name of parts	Required number	Their uses
1	Vamp		
2	Quarter		
3	Back strap		
4	Heel grip		

TASK 2: Identify the parts of an Oxford shoe (Fig 1 & 2)



Instructor should show and explain about different parts of an oxford shoe.

- For the above oxford shoe, list the number of parts required and their uses in Table 2.

Table 2

S.No.	Name of parts	Required number	Their uses
1	Toe cap		
2	Vamp		
3	Counter		
4	Tongue		
5	Quarter		

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Footwear Maker - Leather Measurement, Cutting and Stitching

Practice various clicking core cutting methods viz manual, press cutting, hand clicking, machine clicking, cutting knives and press knives

Objectives: At the end of this exercise you shall be able to

- know about the knives required for hand clicking practice
- practice cutting with a hand knife
- know about the cutting dies required for machine clicking practice
- practice cutting and ripening of leather by placing the dies in the machine.

Requirements

Tools/Instruments

- Knife - 1 No.
- Scale - 1 No.
- Cutting die - 6 Set.

Equipments/Machines

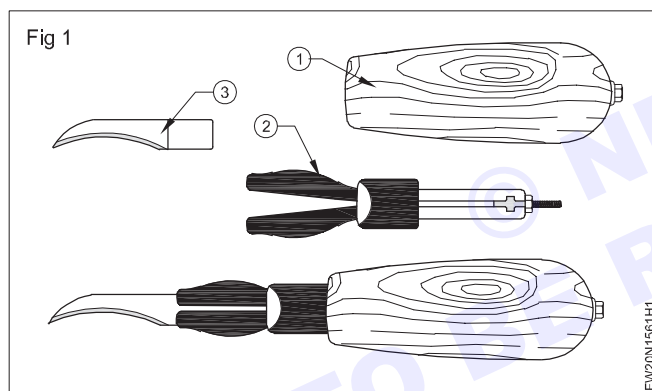
- Hydraulic clicking machine - 1 No.

Materials

- Leather - as reqd.
- Marking pencil - 1 No.

PROCEDURE

TASK 1: Know about the knives required for hand clicking practice (Fig 1)



Instructor to explain about the tools used for hand clicking by, showing the tool.

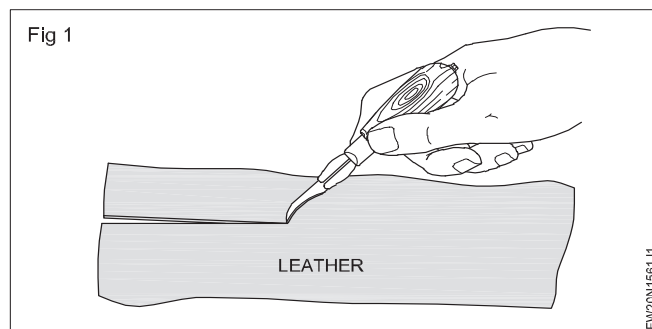
- List the parts and uses of the tools shown in Fig 1 in Table 1.

Table 1

S.No.	Name of the tool	Name of parts	Uses
1			
2			
3			

TASK 2: Practice cutting with a hand knife (Fig 1)

- Take the clicking knife shown in Fig 1.
- Place the leather to be cut on table.



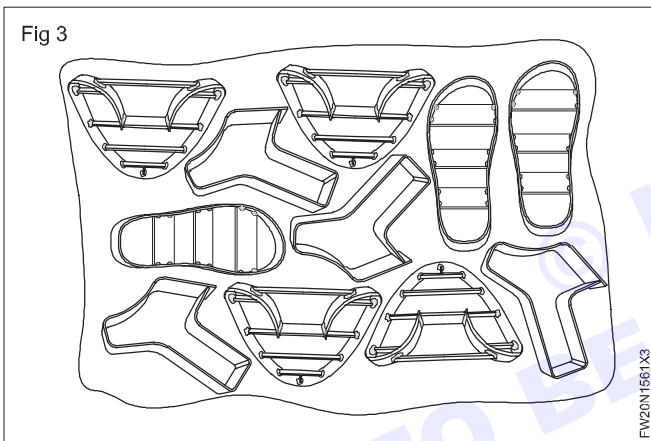
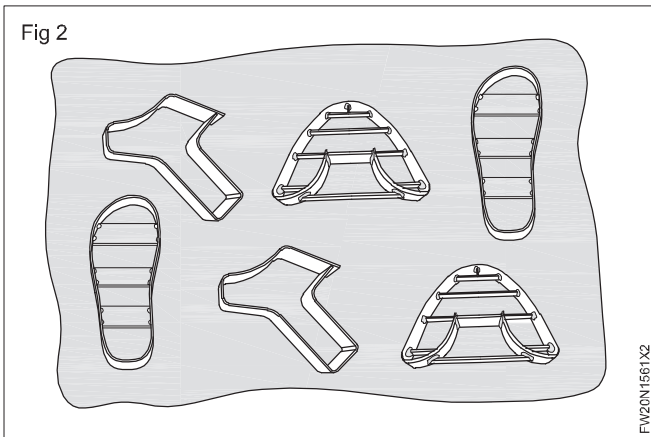
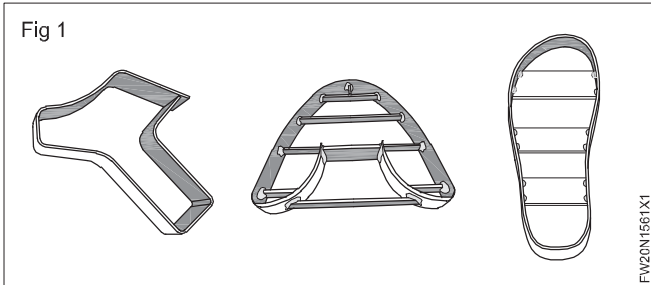
- Take the required pattern.
- Place the pattern on the leather placed on the cutting table.
- While placing the pattern, look for a perfect flawless surface of the leather.
- Place the left hand over the Pattern and hold the knife as shown in Fig 1 and apply moderate pressure and pull from front to back.

Note: While using the knife, use it carefully and safely without cutting your fingers. Do not apply too much pressure to the knife.

TASK 3: Know about the cutting dies required for machine clicking practice (Fig 1-3)

- Name the object shown in Fig 1 and its uses in Table 2.
- Mention the items shown in Fig 2 maintenance procedures in Table 3.

Instructor to show and explain the dies required for cutting practice on the machine.



Name the material shown in Fig 1 & 2 and its uses in Table 2.

Table 2

S.No.	Item name	Uses

Maintenance procedures for items shown in Fig 3 to be mentioned in Table 3.

Table 3

S.No.	Item name	What can be done during maintenance	Don'ts

TASK 4: Practice cutting and ripening of leather by placing the dies in the machine (Fig 1 to 5)

- Switch ON the machine as shown in Fig 1 and wait for 2 minutes.
- Select the leather and place it in the recess for the back leather as shown in Fig 1. Then bring the leather up to the cutting board top.

Fig 1



- Be careful not to scratch the aluminum surface while handling.

Fig 2



- Choose the appropriate weight.

Fig 3a

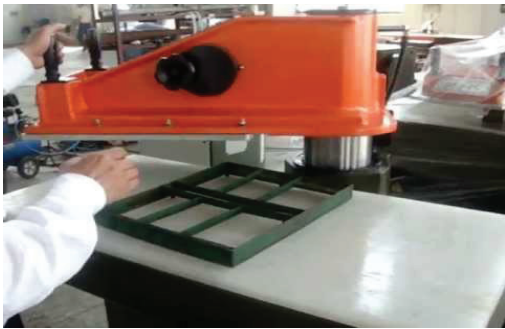


Fig 3b



Fig 3c



Fig 3d



- Press the selected left and right buttons simultaneously.
- Take the cut leather part and die.
- Place the cut leather in the correct position on a nearby tray.

Fig 4



Fig 5



Note

- Do not place the cut leather shoe parts improperly as shown in Fig 4.
- Arrange the cut leather shoe parts part wise on a tray as shown in Fig 5 properly.

Practice on leather cutting by hand and machine

Objectives: At the end of this exercise you shall be able to

- cut leather by hand with a knife
- cut leather by machine and cutting die.

Requirements

Tools/Instruments

- Knife - 1 No.
- Cutting sheet - 1 No.
- Grinding stone 6"x2"x1" - 1 No.
- Scale - 12" - 1 No.

Equipments/Machines

- Hydraulic clicking machine - 1 No.
- Clicking die - as reqd.

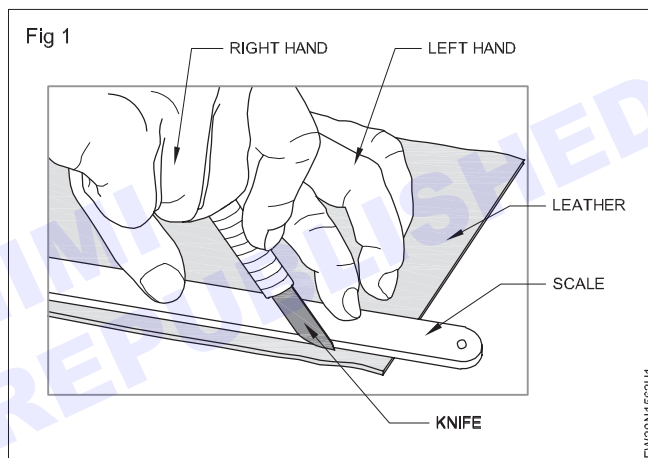
Materials

- Waste leather pieces - as reqd.

PROCEDURE

TASK 1: Cut leather by hand with a knife (Fig 1)

- Take a piece of leather, a ruler, a knife and a cutting sheet to cut the leather by hand with a knife.
- Then place the leather on the cutting sheet and place the measuring scale on it and press it with left thumb and forefinger.
- Then hold the knife with the right hand (while holding the knife so that the front part of the knife is between the tip of the middle finger and the index finger and the back part of the knife is between the thumb and the index finger) and put it on the leather with the required pressure and move the hand from top to bottom and cut the leather.



TASK 2: Cut leather by machine and cutting die (Fig 1)

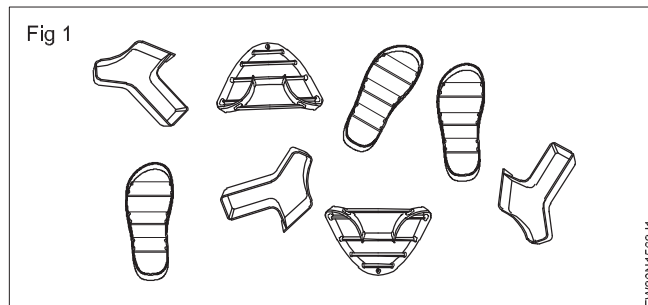
- First keep the leather on machine and to cut with die, keep in mind to consider all preventive maintenance while preparing.
- After that place the required leather and dye on the bed in the machine.
- After that turn on the machine and set the cutting stroke only on the fiber board above the bed.
- To set the cutting stroke, use the provided screw slowly and set.
- Then after setting the cutting stroke, place the leather on the fiber board on the bed and place the die on the leather.
- Then to click the skin press the buttons on both sides of the front part of the head (or) arm of the hydraulic clicking machine simultaneously with the thumbs of both hands.
- When pressed like this, the arm moves down and cuts the leather.
- After skinning the arm will automatically revert to the old state. This arm is arranged to turn left and right in a semi-circular shape. Thus consider the maintenance work after cutting the leather on the machine.

Instructor need to explain to the trainees about the methods of using clicking dies.

- Mention the methods of using clicking dies in Table 1.

Table 1

S.No.	Methods of using the die
1	
2	
3	
4	



Footwear Maker - Leather Measurement, Cutting and Stitching

Measure the leather-hides and skins by applying different methods

Objectives: At the end of this exercise you shall be able to

- measuring large and small skins by using an electronic measuring machine
- measuring large and small skins using card board
- measuring large and small skins using square board
- measuring large and small skins using measuring frame.

Requirements

Tools/Instruments

- Measuring tape - 1 No.
- Scale 12" - 1 No.

Equipments/Machines

- Measuring frame - 1 No.
- Measuring machine - 1 No.

Materials

- Leather - as reqd.
- Square board - as reqd.
- Card board - as reqd.

PROCEDURE

TASK 1: Measuring large and small skins by using an electronic measuring machine

- First turn on this machine. After ON the conveyor wire starts running.
- Spread the given skin on this conveyor wire.
- Then the skin is measured and the size is shown on the display board. Note it down.

The instructor will take the trainees to the nearest tannery and show them the electronic measuring machine and explain how it works.

TASK 2: Measuring large and small skins using card board

- First spread the skin we want to measure on the table.
- Spread the card board with the measurements (1/4, 1/2, 3/4, 1 ft.) over the skin.
- After that find the surface area of the skin by counting how many card boards are over the skin.

TASK 3: Measuring large and small skins using square board

- Spread the skin we need to measure on the table.
- Then spread the square board over the skin (1/4, 1/2, 3/4, 1 ft.).
- Then calculate how many square boards there are over the skin and measure the area of the skin and mark it.

TASK 4: Measuring large and small skins using measuring frame

- Take two wooden frames 4×4 feet long and wide.
- Take wires with less thickness.
- Place the wires within the frame taken with uniform spacing.
- In that paint only 1 square foot of it so that it is clearly visible separately.
- Then spread the skin on the table and find the size of the skin by placing this frame over the skin.

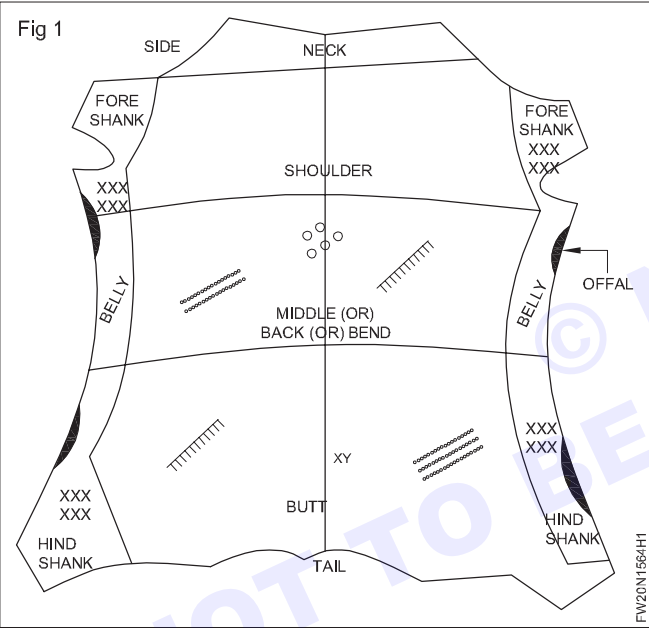
Check the defect in hide and skins and common defects in hides and skins

- Objectives: At the end of this exercise you shall be able to
- know the parts of the skin
 - check the skin for defects.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Whole hide	- as reqd.
Equipments/Machines		• Marking chalk	- as reqd.
• Work bench	- 1 No.		

PROCEDURE

TASK 1: Know the parts of the skin (Fig 1)



Instructor to show the skin and describes its structure, parts and defects.

- Skin texture, parts and defects

TASK 2: Check the skin defects (Fig 1)

- Check the skin for defects.

The instructor to spread the skin on the table and explain the defects in it.

- Look at the skin defects in Fig 1 and identify the cause.
- Names of skin defects Mentioned in Table 1. Directly indicate the cause of defects, area of occurrence and effects of defects on skin in Table 1.

- 1 Yoke marks
- 2 Pox marks
- 3 Warble holes
- 4 Scratches
- 5 Vein marks
- 6 Brand marks

- 7 Goad marks
- 8 Sore marks

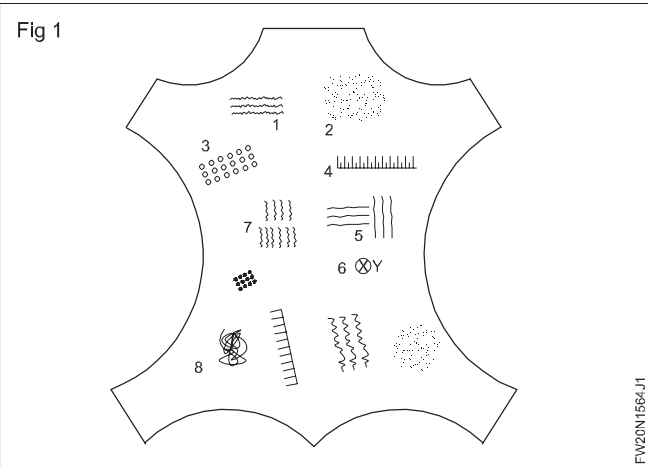


Table 1

S.No.	Name of defects	Cause of defects, part	Effect on skin due to defects
1	Yoke marks		
2	Pox marks		
3	Warble holes		
4	Scratches		
5	Vein marks		
6	Brand marks		
7	Goad marks		
8	Sore marks		

— — — — —

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Select and verify leather sorting

Objective: At the end of this exercise you shall be able to

- practice grading skin based on defects.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Whole leather	- as reqd.
• Scale 12"	- 1 No.		

PROCEDURE

TASK 1: Practice on grading skin based on defects (Fig 1)

Instructor to show the whole skin and explain the grade based on the defect.

- State the skin grading method in Table 1.

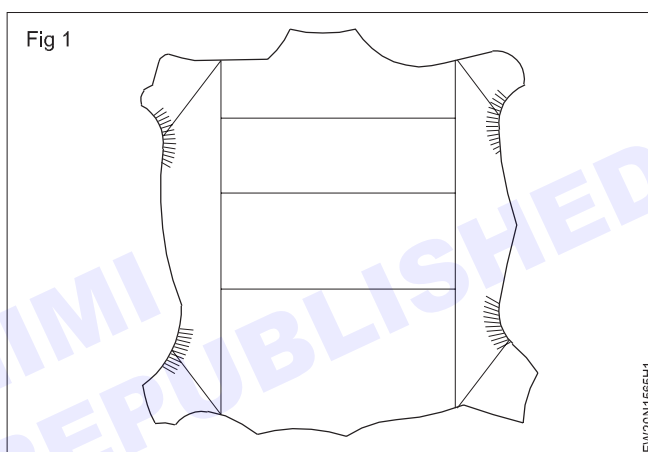


Table 1

S.No.	Part of the skin	Number of grades	Number of defects	Their applications
1	Belly			
2	Butt			
3	Shoulder			
4	Neck			
5	Tail			
6	Shank			
7	Head			

Footwear Maker - Leather Measurement, Cutting and Stitching

Draw a free hand sketch of drawing tools and block diagram of machine

Objectives: At the end of this exercise you shall be able to

- practice free hand drawing of tools used in trade
- practice free hand drawing of machines used in trade.

Requirements

Tools/Instruments

- Scale 12" - 1 No.
- Tools used in leather trade - 1 Set.

Materials

- Pencil - 1 No.
- Eraser - 1 No.
- Chart paper - 1 No.

PROCEDURE

TASK 1: Practice free hand drawing of tools used in trade

The instructor to spread the hand tools in the workshop on the table and explain their arrangement.

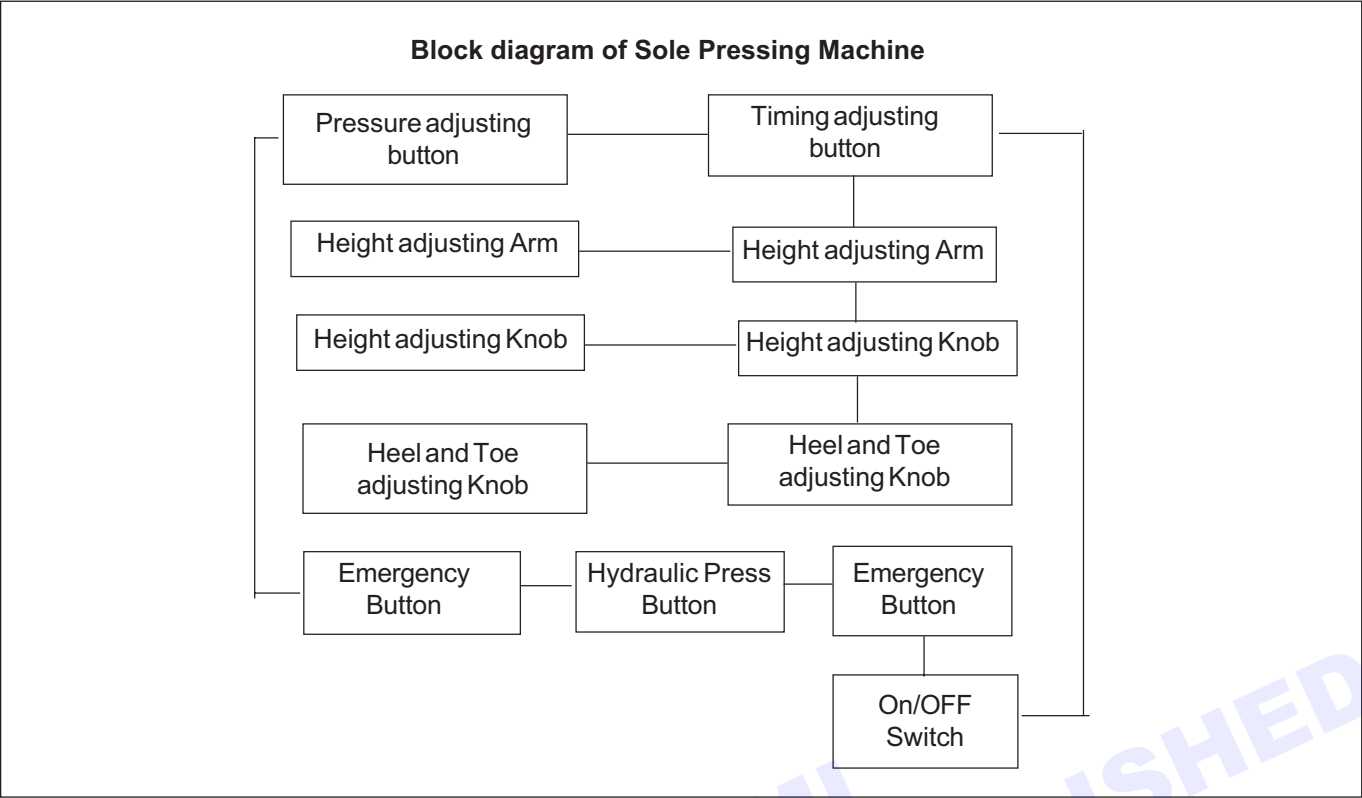
- 1 See the names of the tools and their arrangement.
- 2 Draw the free hand sketch of tools opposite to their names in Table 1

Table 1

S.No.	Name of tools	Free hand sketch of tools
1	Steel rule 300 mm	
2	Scissors 200 mm	
3	Zig zag scissors 150mm	
4	Cutting knife - 200 mm	
5	Pincer 200 mm	
6	3 Leg iron last	
7	Folding hammer 150 gm	
8	Shoe hammer 400 g	
9	Screwdriver 150 mm	
10	Compass 100 mm	
11	Divider 100 mm	

S.No.	Name of tools	Free hand sketch of tools
12	Shoe maker tape 600 mm	
13	Stitching awl 150 mm	
14	Hollow punch (No.1 to 10)	
15	Nail puller 150 mm	
16	Pricking awl 150 mm	
17	Shoe last (wooden)	
18	Eyelet punch 4"	
19	Design punch 4"	
20	Clicking knife	
21	Oil stone	
22	Rampi	

TASK 2: Practice drawing block diagrams of machines



Draw the block diagram of Band Knife Splitting Machine as like block diagram shown above.

Practice of using grinding materials

Objectives: At the end of this exercise you shall be able to

- fitting nails into the insole
- fitting eyelet button on leather
- fitting rivet button on leather
- joining fancy button on leather.

Requirements

Tools/Instruments

- Hammer - 1 No.
- Eyelet punch - 1 No.
- Drilling tool (1-10 mm) - 1 Set.
- Iron last - 8 size - 1 Pair

- Shoe last men's 8 size - 1 Pair
- Kadappa stone - 1 No.

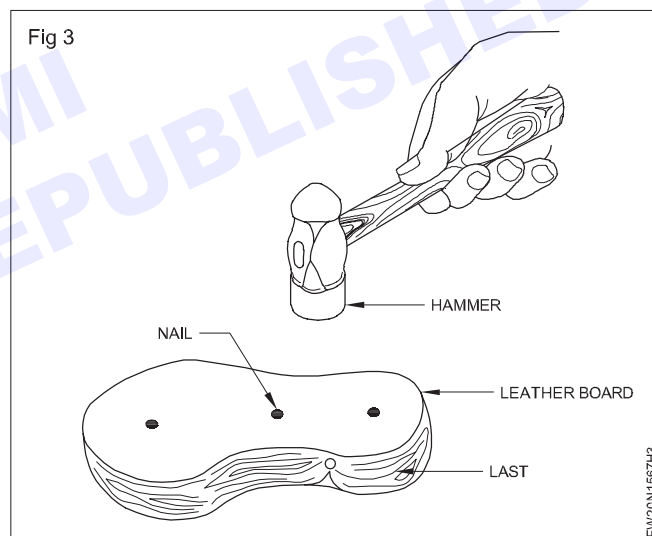
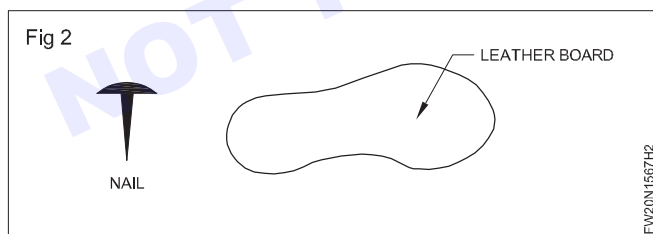
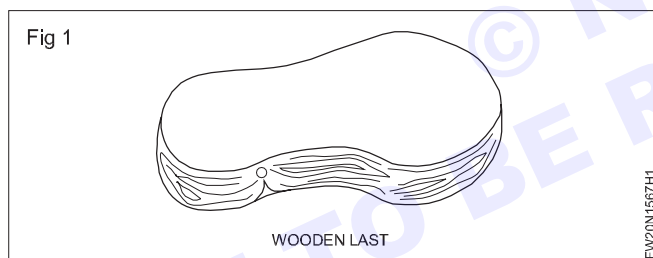
Materials

- All grinding materials - as reqd.

PROCEDURE

TASK 1: Fitting nails into the insole (Figs 1-3)

- Take the wooden shoe last.
- Reverse the bottom of last and place the insole leather board on it and drive a ½" chapatti nail into it with the help of a hammer.



TASK 2: Fitting eyelet button on leather (Figs 1-3)

- Take the piece of leather. With the help of hollow punch and hammer, wood, keep the skin on the wood and hit it with moderate pressure by placing the hollow punch on it.
- Now the leather will have hole in it. Place the eyelet button in the hole made and fix the eyelet button with the help of eyelet punch as shown in Figs 1, 2, 3.

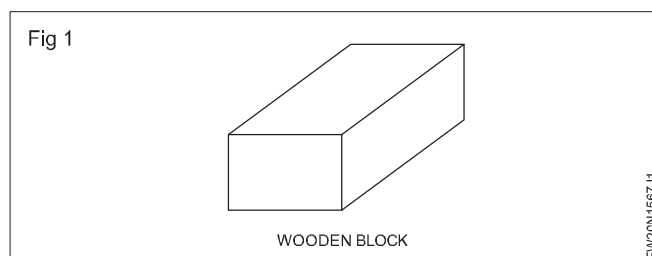
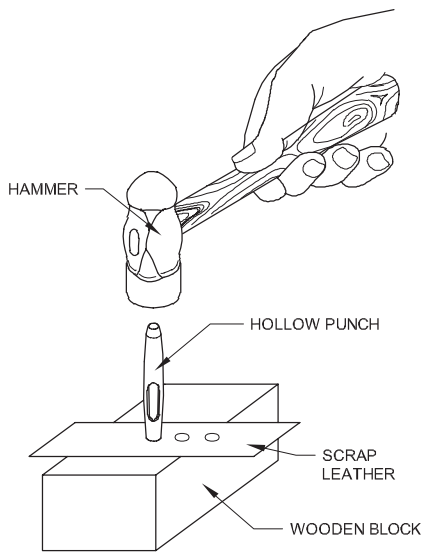
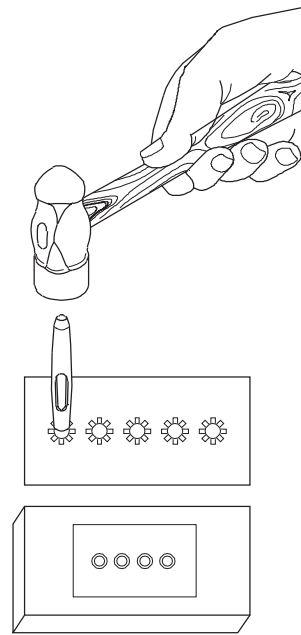


Fig 2



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Fig 3

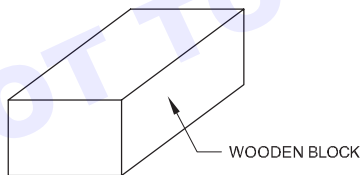


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TASK 3: Fitting rivet button on leather (Figs 1 to 3)

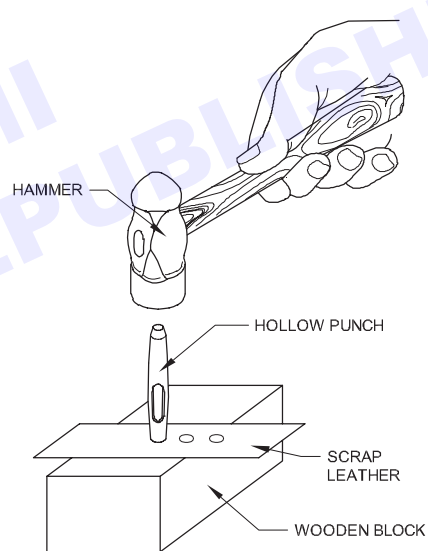
- Take the required amount of piece of leather. Then take the wooden block.
- Then take the hammer and hollow punch. Place the piece of leather on the wood and place the hollow punch on it and hit the hollow punch with moderate pressure with a hammer.
- Now the leather will have hole in it. After that take the perforated leather and place the rivet button in it, place it on the kadappa stone or iron last and hit the rivet button with a hammer. Now the rivet button will be firmly fixed.

Fig 1



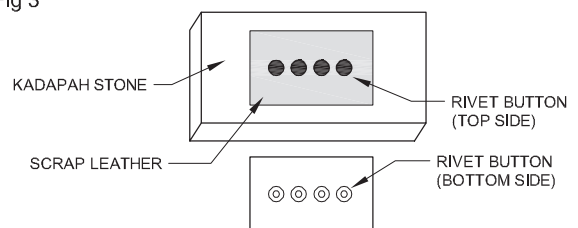
FW20N1567X1

Fig 2



FW20N1567X2

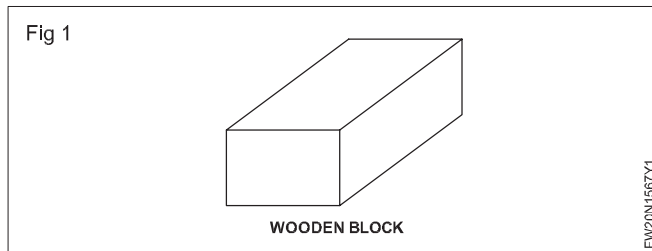
Fig 3



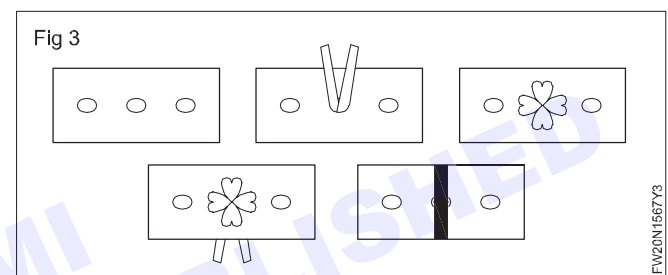
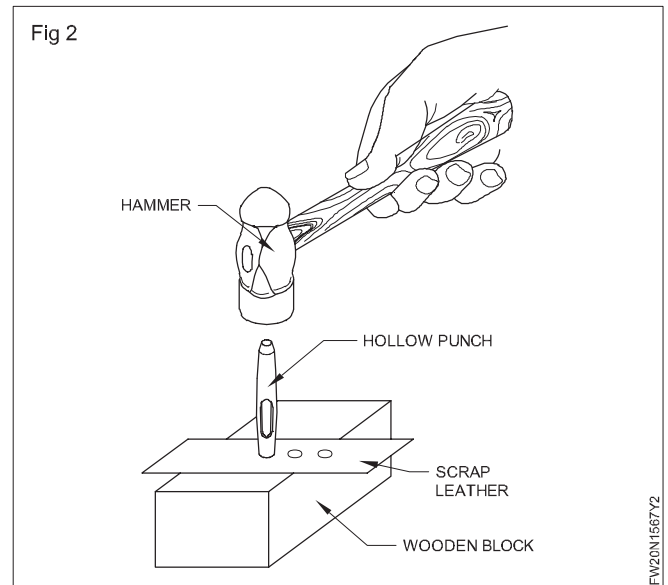
FW20N1567X3

TASK 4: Joining fancy button on leather (Figs 1-3)

- Take required amount of piece of leather.
- Then take the wood, hammer, hollow punch.
- Then place the piece of leather on top of the wood and place the hollow punch on it and hammer on the hollow punch as shown in Fig 2.



- Now the leather will have hole on it.
- Then insert the fancy button in the punching hole as shown in Fig 3 on the upper part of the perforated leather and spread the fancy button to split rivet on the back of the leather.



Practice different types of stitching

Objective: At the end of this exercise you shall be able to

- practice different types of stitching.

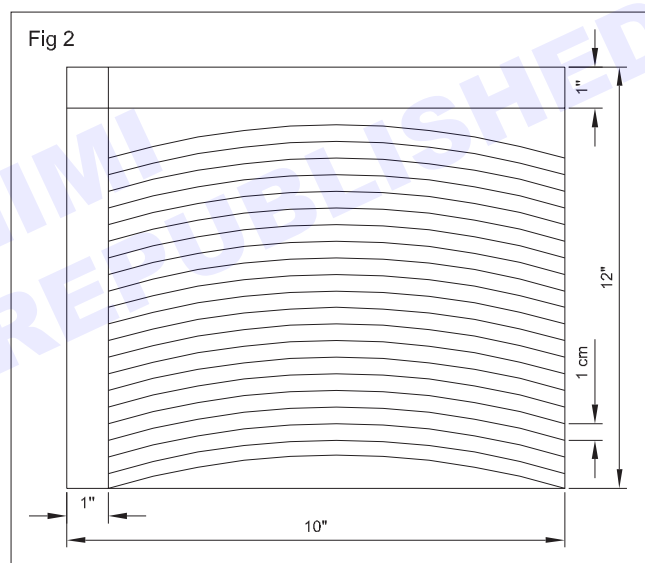
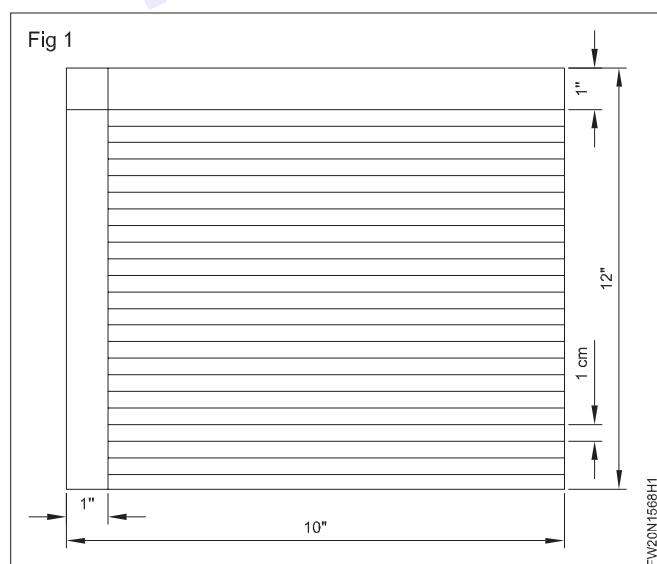
Requirements			
Tools/Instruments		Materials	
• Trimmer	- 1 No.	• Chart paper (12" x 10")	- 1 No.
• Scale 12"	- 1 No.	• Machine sewing thread	- 1 No.
Equipments/Machines		• Eraser	- 1 No.
• Flat bed sewing machine	- 1 No.	• Pencil	- 1 No.

PROCEDURE

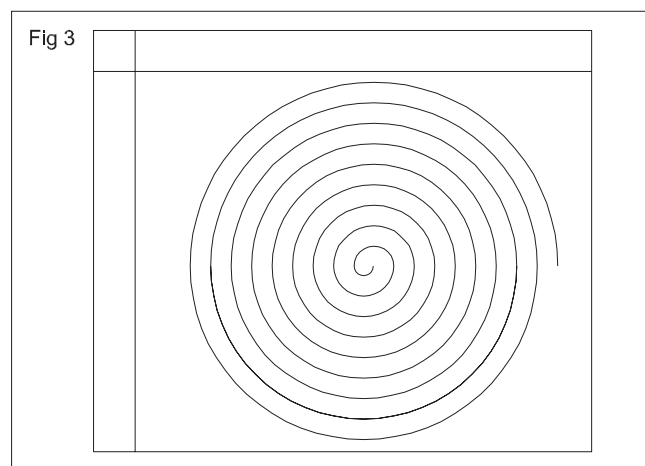
Instructor to describe the types of stitches.

TASK 1: Practice different types of stitching (Figs 1-3)

- Take a 12" x 10" chart paper as shown in Fig 1.
- Draw a margin line leaving 1" from top and 1" from left side corner.
- Then draw lines across the chart leaving a gap of 1 cm.
- Place the striped chart paper on the sewing machine and practice the lock stitch.
- Take a 12" x 10" chart paper as shown in Fig 1.
- Draw a margin line leaving 1" from top and 1" from left side corner.
- Then draw lines across the chart paper leaving a gap of 1 cm.
- Place the striped chart paper on the sewing machine and practice chain stitch.
- Straight stitch practice
- Fig 2 Curve stitch practice



- Fig 3 Circular stitch practice



- Trainees to practice stitching on chart paper as shown in Figs 1, 2, 3. Any other pattern may be practiced in stitching. Get it checked by the instructor.

Footwear Maker - Leather Measurement, Cutting and Stitching

Identify and select different type of grinding material used in leather/rubber

Objectives: At the end of this exercise you shall be able to

- identify the grinding materials that can be used on leather and rubber
- select the grinding materials that can be used on leather and rubber.

Requirements

Tools/Instruments

- Hammer

- 1 No.

Materials

- Nail

- as reqd.

- Rivet button

- as reqd.

- Eyelet button

- as reqd.

- Fancy button

- as reqd.

PROCEDURE

TASK 1: Identify the grinding materials that can be used on leather and rubber (Fig 1)

The instructor should show and explain the grinding materials that can be used on leather and rubber.

- Identify the grinding materials in Fig 1 and mention them in Table 1.

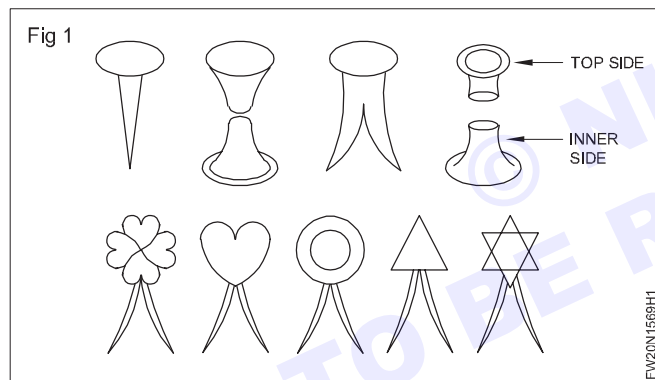


Table 1

S.No.	Grinding material names	Uses
1	Nail	
2	Rivet button	
3	Split rivet	
4	Press button	
5	Fancy button	

TASK 2: Select the grinding materials that can be used on leather and rubber

- Among the grinding materials in Fig 1, separate the materials that can be used in leather and rubber and mention them in Table 2.

Instructor should explain the grinding materials used in leather and rubber

Table 2

S.No.	Name of the grinding materials used on leather	Name of the grinding materials used on rubber
1		
2		
3		
4		
5		

Footwear Maker - Leather Measurement, Cutting and Stitching

Perform grinding using various grinding materials

Refer Ex. No. 1.5.67

Identify different types and sizes of needle

Objectives: At the end of this exercise you shall be able to

- identify the types of needles
- identify the sizes of needles.

Requirements

Tools/Instruments

- Scale - 1 No.

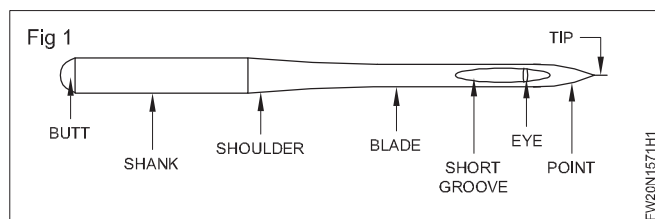
Materials

- Needles of different types and sizes - as reqd.

PROCEDURE

TASK 1: Identify the types of needles (Fig 1)

Instructor to explain the types and sizes of needles by showing the needles.

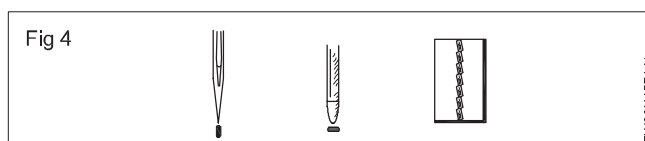
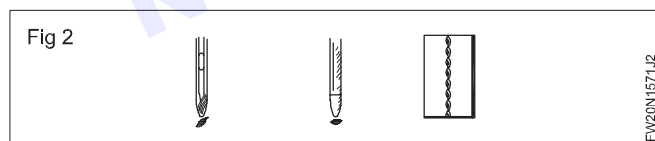
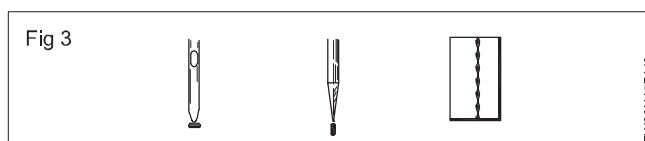
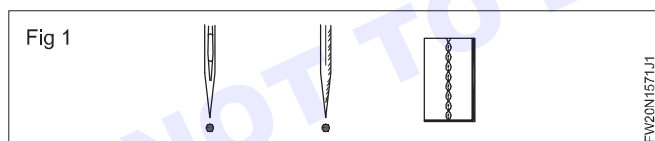


- Trainees need to mention the parts of the needle and their uses in Table 1.

Table 1

S.No.	Parts of a needle	Uses
1	Butt	
2	Shank	
3	Shoulder	
4	Blade	
5	Short groove	
6	Needle eye	
7	Point	
8	Tip	

TASK 2: Identify the sizes of needles (Figs 1-4)



- Trainees to state the structure, size and uses of needles in Figs 1 to 4 in Table 2.

Instructor should explain the structure, size, uses of needles.

Table 2

S.No.	Name of the structure of the needle	Size	Uses
1	Round tip		
2	Wedge tip		
3	Twist tip		
4	Cross-end		

Draw the sketch of free hand drawing of different needle size

Objectives: At the end of this exercise you shall be able to

- draw the sketch of freehand drawing of different needle size.

Requirements			
Tools/Instruments			
• Scale	- 1 No.	• Pencil	- as reqd.
Materials		• Eraser	- as reqd.
• Sewing needles of different sizes	- as reqd.		

PROCEDURE

TASK 1: Free hand drawing of different sizes of sewing needles tip

Instructor need to show different sizes of needles to trainees and explain about their structure and uses.

- Trainees need to free hand draw the tip of needles of different sizes in Table 1.

Table 1

S.No.	Needle size, name	Draw the tip of the needle
1	120 Needle round tip	
2	110 Needle cross tip	
3	100 Needle twist tip	
4	90 Needle wedge tip	

Practice and identify different types of stitching

Objectives: At the end of this exercise you shall be able to

- mark and cut a scrap leather
- sewing different types of seams.

Requirements

Tools/Instruments

- Scale - 1 No.
- Kadappa stone (1½' x 12') - 1 No.
- Folding hammer - 1 No.
- Knife - 1 No.
- Cutting mat A3 size - 1 No.

Equipments/Machines

- Flat bed sewing machine - 1 No.
- Zig zag sewing machine - 1 No.
- Cutting table - 1 No.

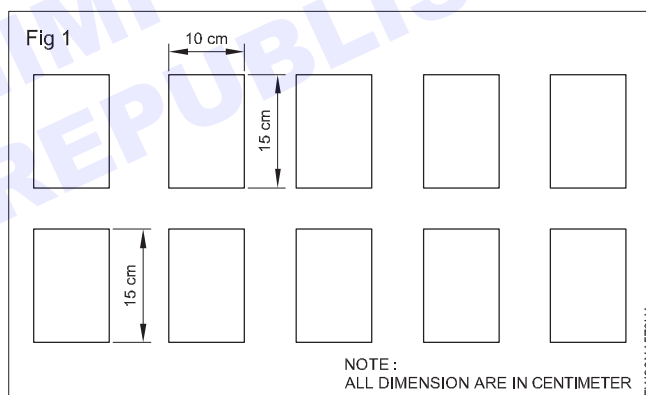
Materials

- Piece of leather (15 x 10 cm) - as reqd.
- Cotton thread (No. 30) - as reqd.
- Pipe beading - as reqd.
- Adhesive - as reqd.
- Marking pencil - as reqd.
- Needle LR 110 - as reqd.

PROCEDURE

TASK 1: Mark and cut a scrap leather (Fig 1)

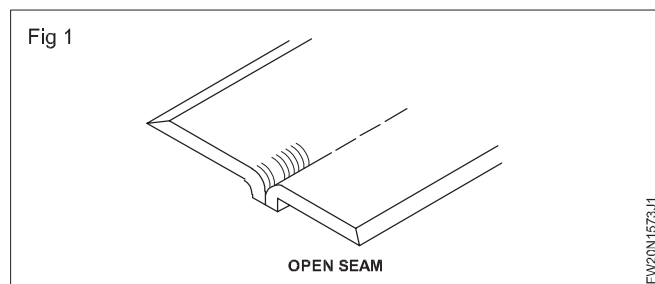
- First, take scrap leather and mark L-15 cm, B-10 cm size on the leather with stainless steel scale as mentioned in Fig 1.
- Click the marked leather.
- Leather should not be sticky while clicking.



TASK 2: Sewing different types of seams (Figs 1-8)

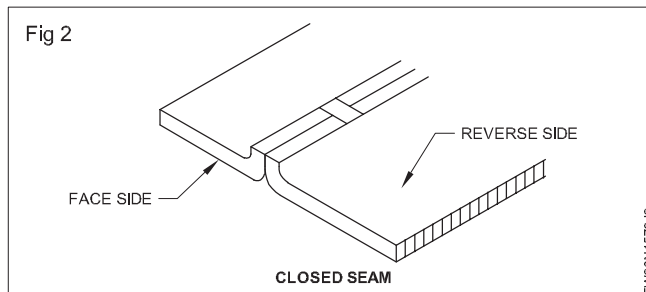
Open seam

- Keep the cut two scrap leather pieces flesh to flesh
- Then leave 5mm allowance (for stitching) on one side.
- Sew by flat bed sewing machine where stitching is to be done.
- Then hammer the stitched place with a folding hammer.



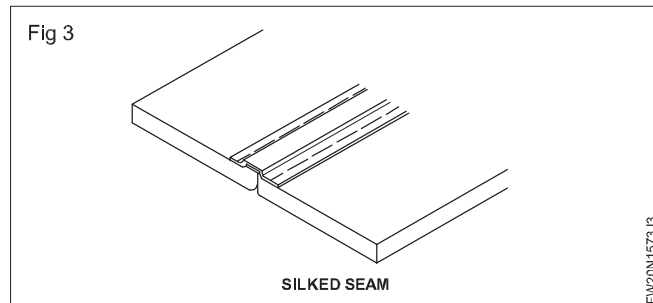
Closed seam

- Keep the cut two scrap leather pieces grain to grain.
- Then leave 5mm allowance (for stitching) on one side.
- Sew by flat bed sewing machine where stitching allowance is given.
- Then hammer the stitched place with a hammer and turn the component.



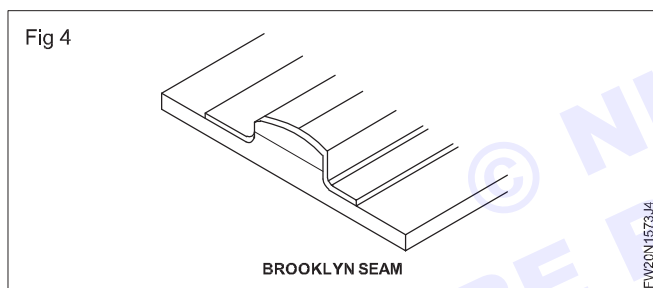
Silked seam

- Keep the cut two scrap leather pieces grain to grain.
- Sew like a closed seam.
- Hammer the stitched area.
- Then attach the woven tape in the place of hammering.
- Then do two rows of stitching on both sides.



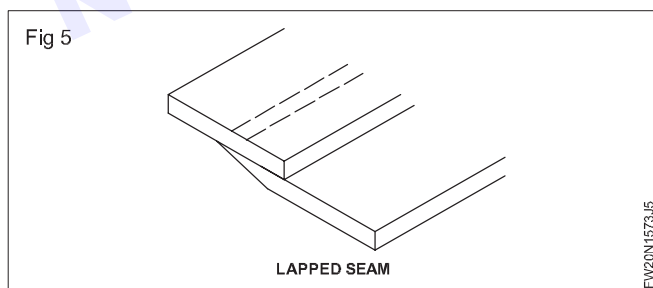
Brooklyn seam

- Sew the cut two scrap leather pieces like- closed seam in flat bed sewing machine.
- After hammering the stitched area, stick it with woven tape.



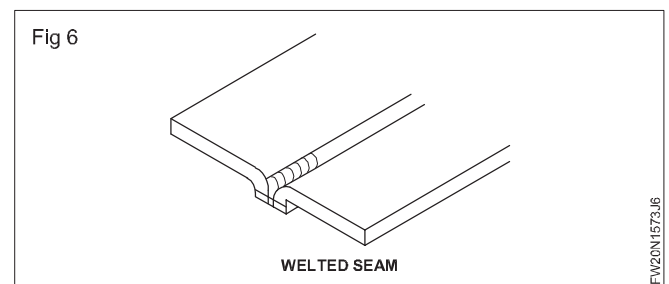
Lapped seam

- Place the two cut scrap leather pieces on top of each other.
- Then leave an allowance of 2 mm from the edge area and sew it.



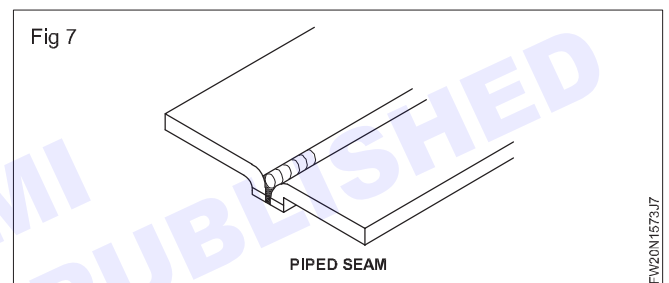
Welted seam

- Place the two cut scrap leathers grain to grain.
- Place a strip leather inside the grain to grain side leather.
- Then leave a stitching allowance 5mm on edge and sew it.



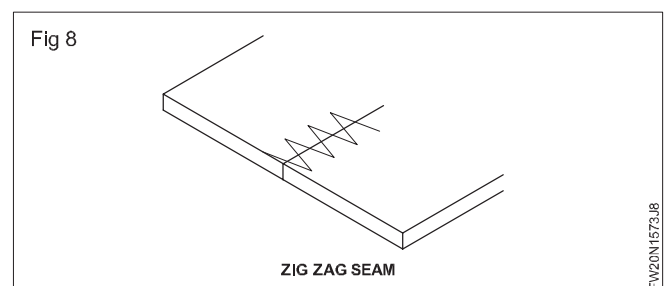
Piped seam

- Place one cut leather piece.
- On the edge of the leather piece, keep a readymade pipe beading and sew it



Zig zag seam

- Keep the two cut leather pieces on the side without any gap and stitch them with zig zag machine.



After sewing each seam, show it to the instructor for approval.

Stitch different part of upper and upper to bottom part using different stitching methods

Objectives: At the end of this exercise you shall be able to

- sewing the upper part
- sewing the bottom part.

Requirements			
Tools/Instruments		Materials	
• Trimmer	- 1 No.	• Machine thread	- as reqd.
Equipments/Machines		• Upper part	- as reqd.
• Sewing machine	- 1 No.	• The bottom part	- as reqd.

PROCEDURE

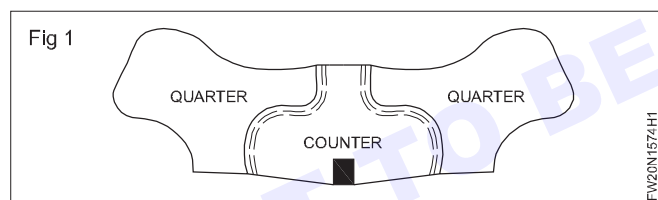
TASK 1: Sewing the upper part (Figs 1-5)

- Sewing the upper part in the sewing machine as shown in Fig 1 to 5.

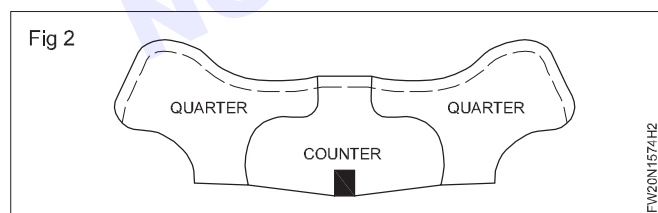
After sewing each part show it to the instructor and get it checked.

- Stitching arrangement of different parts of the shoe.

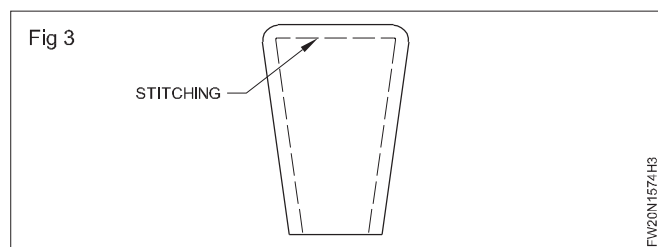
Counter part stitch (Fig 1)



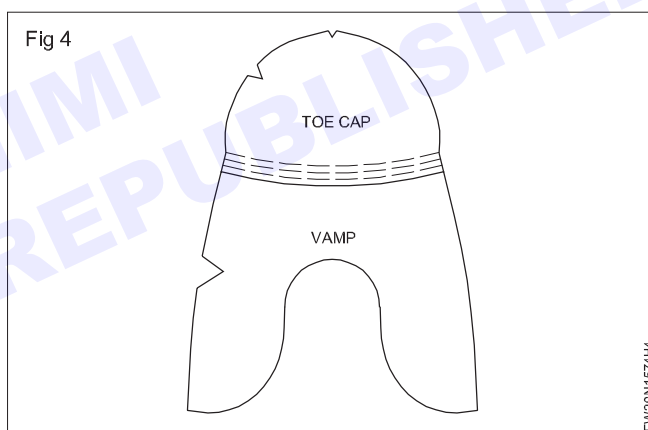
Quarter part stitch (Fig 2)



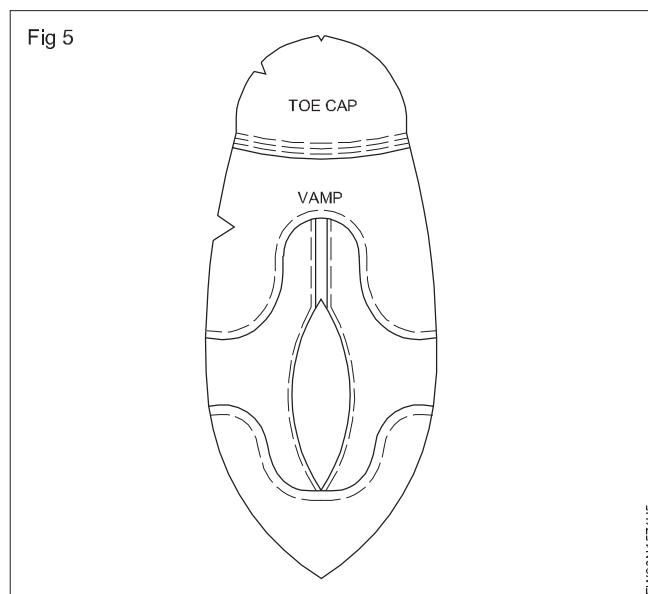
Tongue position (Fig 3)



Toe cap switch (Fig 4)

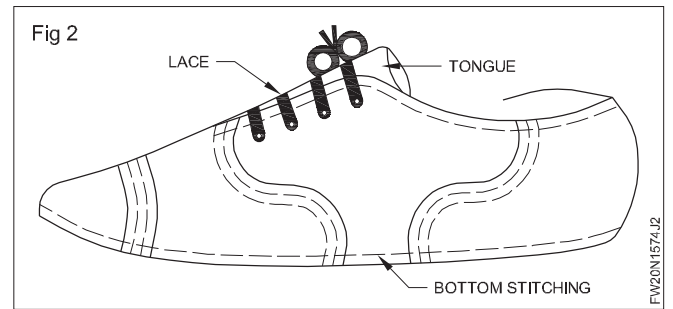
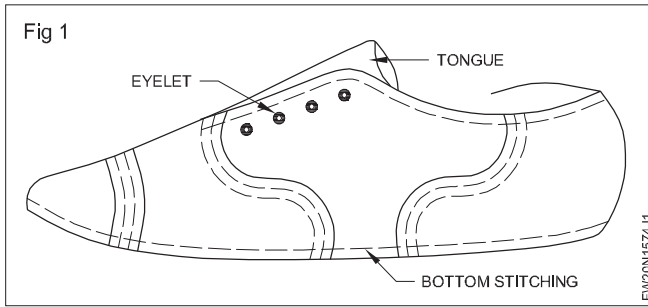


Total part stitched upper (Fig 5)



TASK 2: Sewing the bottom part

- Sew the bottom part as shown in Fig 1 and 2.



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Carryout different stitching of hand and machine stitch

Objectives: At the end of this exercise you shall be able to

- practice lock stitch in kattai leather
- practice chain stitch in kattai leather
- practice stitching in sewing machine.

Requirements

Tools/Instruments

- Scale - 1 No.
- Hand sewing needle - 1 No.
- Trimmer - 1 No.

Equipment/ Machines

- Sewing machine - 1 No.

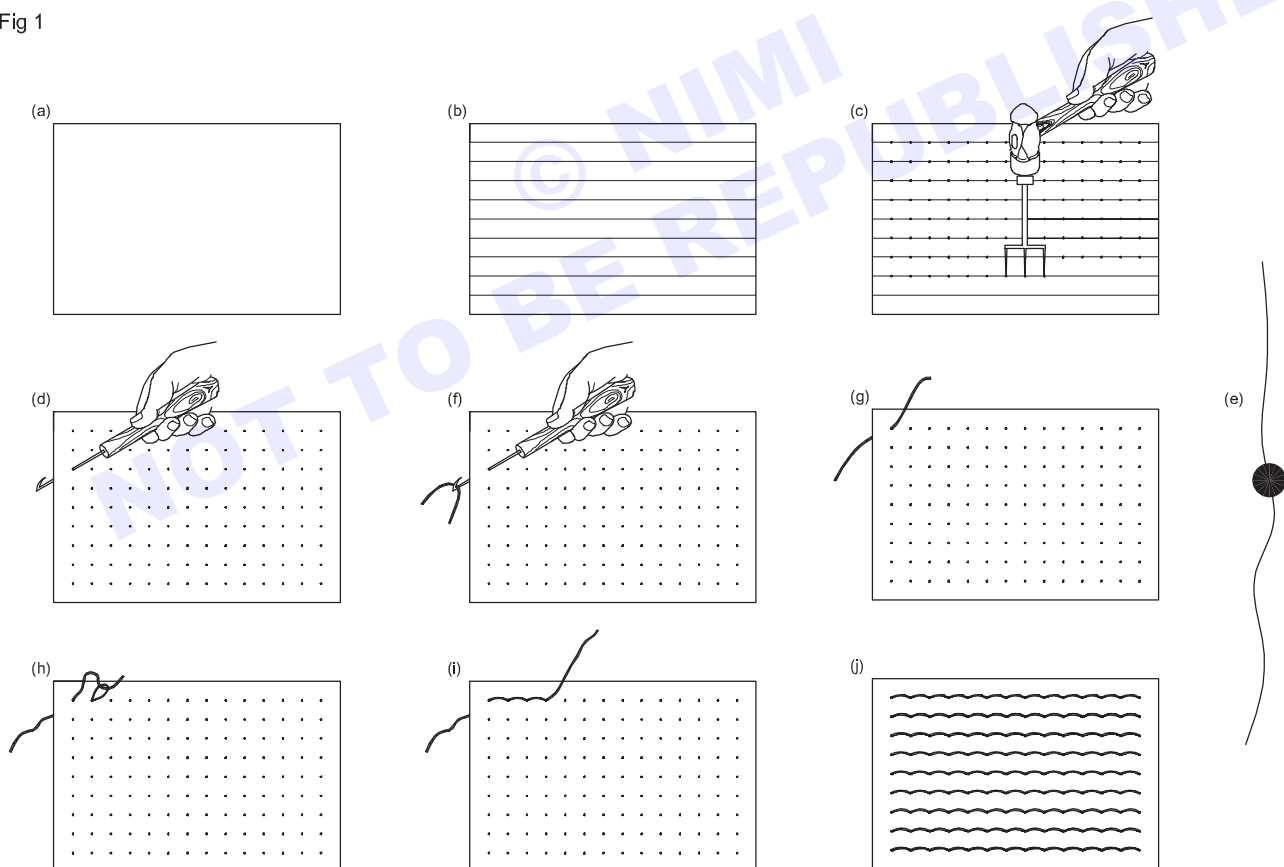
Materials

- Kattai leather - as reqd.
- Hand sewing thread - as reqd.
- Wax - as reqd.
- Marking pencil - as reqd.

PROCEDURE

TASK 1: Practice lock stitch in kattai leather (Fig 1)

Fig 1



- First take a piece of leather measuring 8"x5".
- With the help of a marking pencil, lines should be made crosswise with a 1 cm gap, as shown in part 2 of Fig 1.
- Mark the lined leather with a stitching marker.
- Use a trimmer to cut the required amount of thread for the hand needlework.
- Apply wax to the cut thread.
- Take the marked leather along with the Stitching All and press the spikes of the Stitching All into the

leather and insert the hand sewing needle into the leather.

- Fold the waxed thread in half and place the center of the fold in a small notch on the needle.
- Pull only one half of the knotted thread over the top of the leather.
- Again push the hand sewing needle over the next mark to make a hole and insert the needle.

- Pull the needle upwards slightly by hooking the thread under the leather to the notch at the tip of the inserted needle.
- Insert the upper thread inside the pulled thread and pull the lower thread. When pulled like this, the leather below and above will form a braid-like knot. Keep this knot within the mass of the leather.
- Make the next stitch in the same way.

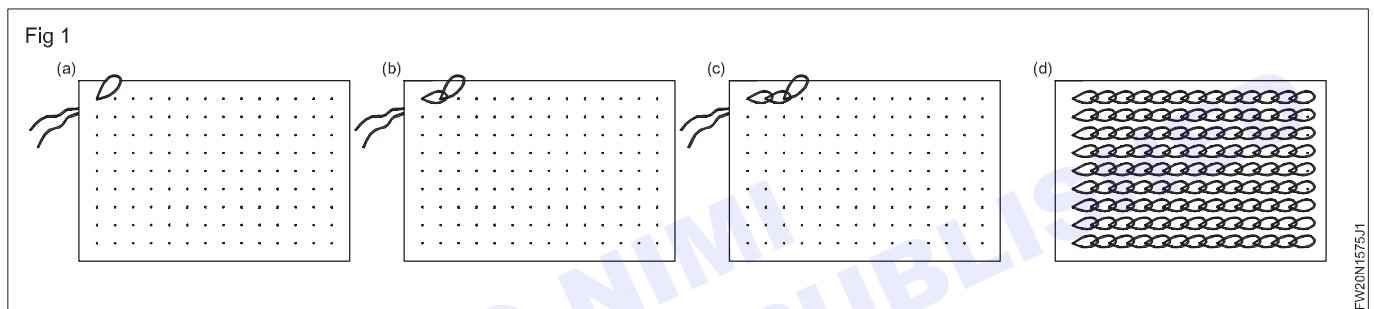
TASK 2: Practice chain stitch in Kattai leather (Fig 1)

Use images a to f in Fig 1 as they are.

Work as described in step 1 up to 7 given in Task - 1.

- Pull the twisted yarn over the top of the leather in double as shown in Fig 1.
- Again push the needle over the next leather mark to make a hole and insert the needle.

- Hold the thread in the notch at the end of the inserted needle and pull it as shown in Fig 1a, insert the thread in the thread in Fig 1j as shown in Fig 1a and pull the bottom thread tight.
- Make a similar stitch continuously



TASK 3: Practice stitching in sewing machine

Refer Ex. No. 1.5.68

General maintenance of machines - brief idea about minor routine maintenance and safety aspect and study of different leather

Objectives: At the end of this exercise you shall be able to

- maintenance of machines
- routine machines maintenance and safety
- identify different types of leather.

Requirements			
Tools/Instruments			
• Screw driver 200 mm	- 1 No.	• Lasting machine	- 1 No.
Equipments/Machines		Materials	
• Sewing machine	- 1 No.	• Lubricating oil	- as reqd.
• Skiving machine	- 1 No.	• Leather	- as reqd.

PROCEDURE

TASK 1: Maintenance of machines

Refer Ex. No. 1.4.45 - TASK 1

TASK 2: Routine machine maintenance and safety

Refer Ex. No. 1.4.45 - TASK 2

TASK 3: Identify different types of leather

Instructor should spread different types of leather on the table and explain the characteristics to the trainees.

Identify the different types of leather spread on the table.

- Aniline leather
- Cow softy
- Buff leather
- Sheep Nappa
- Glaze kid
- Vegetable tanned leather
- Suede leather

- Nubuck leather
- Oil pull-up leather
- Corrected grain leather
- Goat upper leather
- Goat lining leather
- Cow lining
- Split leather

Note: Among the leathers spread on the table, identify the type of leather that the instructor says and check it with him.

Identify various types of instrument/machine contraction

Objectives: At the end of this exercise you shall be able to

- know the types of sewing machines
- know the instruments.

Requirements

Tools/Instruments

- Scale - 1 No.
- Measuring tape - 1 No.
- Leather thickness gauge - 1 No.

Equipments/Machines

- Flat bed sewing machine - 1 No.
- Post bed sewing machine - 1 No.
- Cylinder bed sewing machine - 1 No.

PROCEDURE

TASK 1: Know the types of sewing machines (Figs 1-3)

Instructor to show the types of sewing machines and explain them to the trainees.

- Write the parts of machines given in Figs 1, 2, 3 in Table 1.

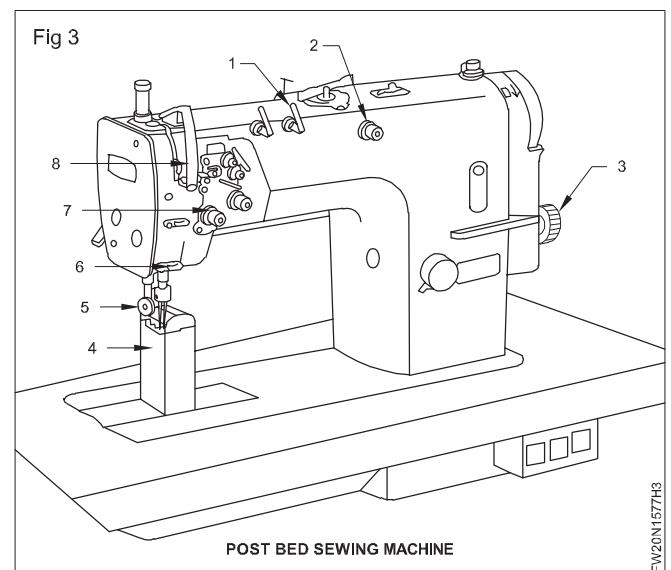
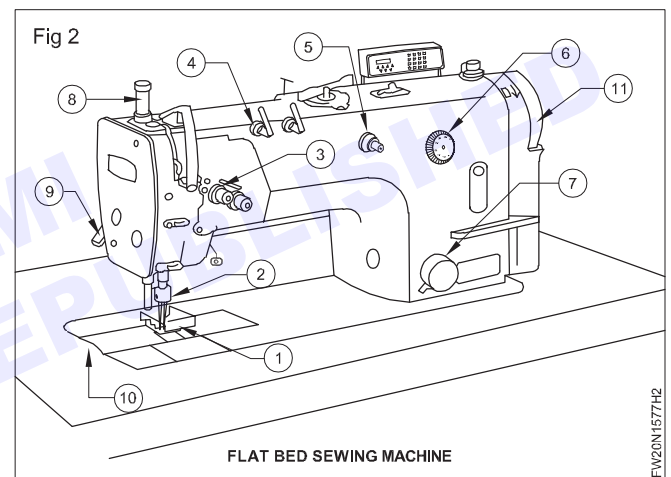
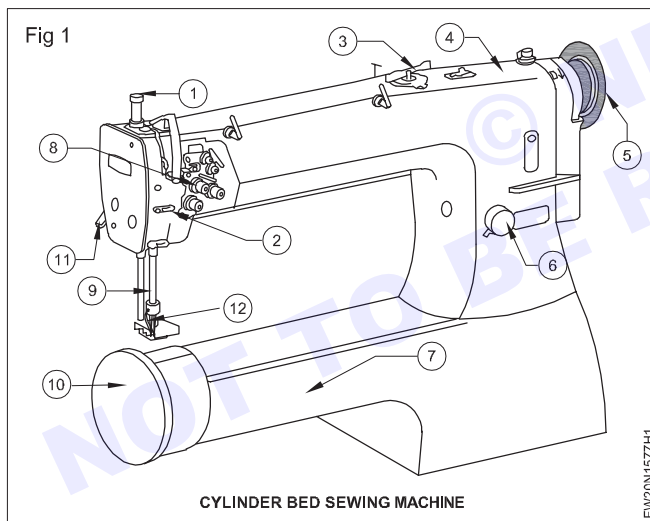


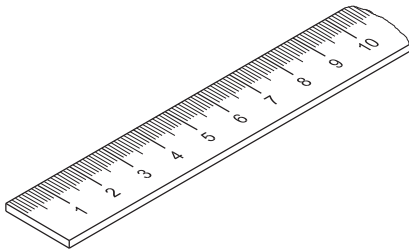
Table 1

S.No.	Name of machines	Parts
1	Cylinder bed sewing machine	
2	Flat bed sewing machine	
3	Post bed sewing machine	

TASK 2: Know the instruments (Figs 1-3)

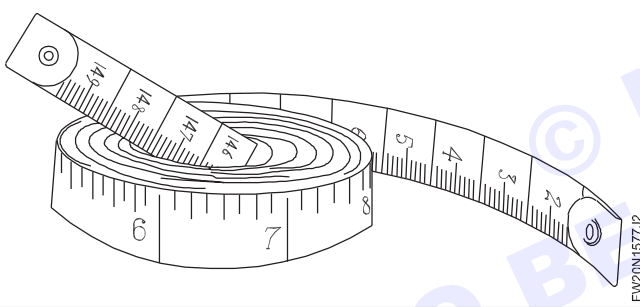
Instructor to show the measuring instruments and teach the trainees to measure

Fig 1



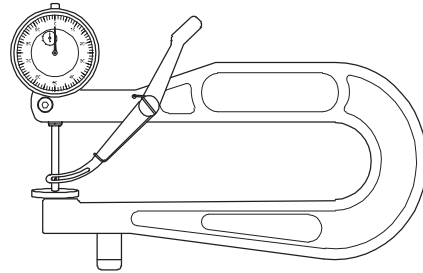
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Fig 2



FW20N1577J2

Fig 3



LEATHER THICKNESS MEASURING GAUGE

FW20N1577J3

- Mention the names of the instruments shown in Figs 1, 2, 3 and their uses in Table 2.

Table 2

S.No.	Name of the instrument	Their uses
1	Scale	
2	Measuring tape	
3	Leather thickness gauge	

Leather Footwear Maker - Leather Measurement, Cutting and Stitching

Exercise 1.5.78

Identify various parts and section

Refer Ex. No. 1.5.77 - TASK 1

Footwear Maker - Leather Measurement, Cutting and Stitching

Check the accuracy, precision, sensitivity of machines

Objectives: At the end of this exercise you shall be able to

- know the accuracy, precision and sensitivity of sewing machine
- know the accuracy, precision and sensitivity of skiving machine.

Requirements

Tools/Instruments

- Scale 12 inch - 1 No.
- Screw driver - 150 mm - 1 No.

Equipments/Machines

- Sewing machine - 1 No.
- Skiving machine - 1 No.

- Splitting machine - 1 No.

Materials

- Banyan waste - as reqd.
- Needle No: 90 - as reqd.

PROCEDURE

TASK 1: Know the accuracy, precision and sensitivity of sewing machine

Instructor should explain all parts of sewing machine and fitting accuracy.

- Check that the parts of the sewing machine are fitted accurately.
- Adjust the stitch length by screwing the stitch length adjuster as required.
- While fitting the needle, make sure that the long groove is on the left side.
- Fit the bobbin and bobbin case in shuttle case.

Note: Show the fitment of needle and bobbin case to the instructor and get his approval.

- Sequence of inserting the thread in machine
Thread stand - Thread guide - Thread tensioner-
Thread controller - Spring - Take up lever - Thread
guide - Needle bar guide - Needle.

Note: Show the thread inserted on the machine to the instructor and get his approval.

TASK 2: Know the accuracy, precision and sensitivity of skiving machine

Instructor should explain the fitting of precision parts to the movement of the skiving machine.

- Adjust the pressure of the pressure foot with the help of the thickness adjuster in the skiving machine.
- Adjust the gauge to the required amount of skiving.
- Adjust the feed roller as required.
- Adjust the gap between feed roller and bell knife.

- To sharpen the bell knife-adjust the grinding wheel adjusting screw.
- Take the skin to be skived and place it near the pressure foot and hold it with both hands.
- Skiving by pressing the pedal with your foot.

Note: Check the skiving done and correct fitment of machine parts by showing it to the instructor and get it checked.

Check the speed of response machines

Objectives: At the end of this exercise you shall be able to

- finding the speed of various machines.

Requirements			
Equipments/Machines			
• Hydraulic clicking machine	- 1 No.	• Splitting machine	- 1 No.
• Skiving machine	- 1 No.		

PROCEDURE

TASK 1: Finding the speed of various machines

Instructor should explain motor speed of hydraulic clicking, skiving, splitting machine and clicking, skiving, splitting speed to trainees.

- Trainees to mark the RPM of the engine in the table given below.

Table 1

S.No.	Name of the machine	Write the RPM of the motor
1	Hydraulic clicking machine	
2	Skiving machine	
3	Splitting machine	
4	Flat bed sewing machine	

Select and verify characteristics of machines

Objectives: At the end of this exercise you shall be able to

- identify the characteristics of a splitting machine
- identify the characteristics of skiving machine
- identify the characteristics of hydraulic clicking machine.

Requirements

Equipments/Machines

- | | | | |
|---------------------|---------|------------------------------|---------|
| • Skiving machine | - 1 No. | • Hydraulic clicking machine | - 1 No. |
| • Splitting machine | - 1 No. | | |

PROCEDURE

TASK 1: Identify the characteristics of a splitting machine

Instructor should show the machines that can be used in footwear maker and explain its characteristics.

- Trainees to mention the characteristics of machines in Figs 1, 2, 3 in Tables 1,2, 3.

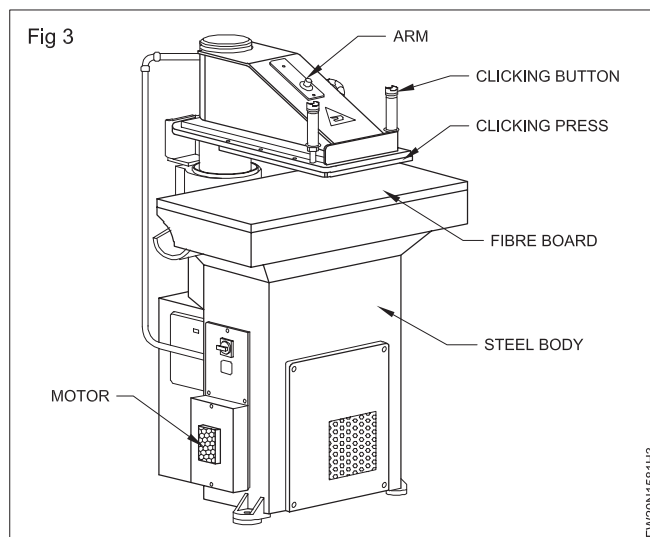
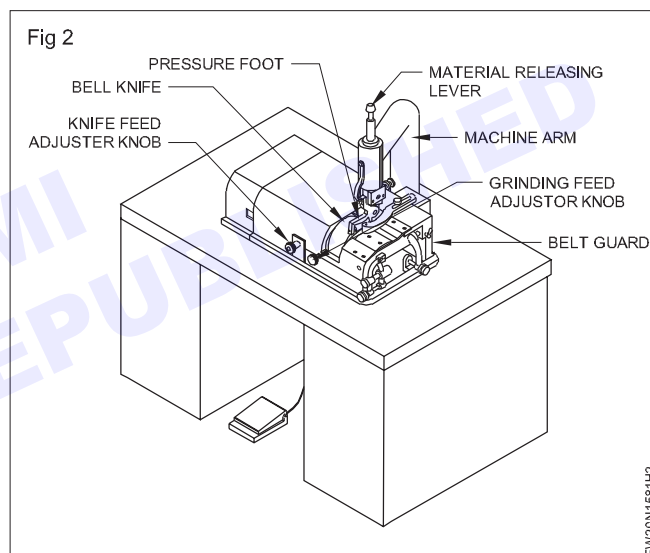
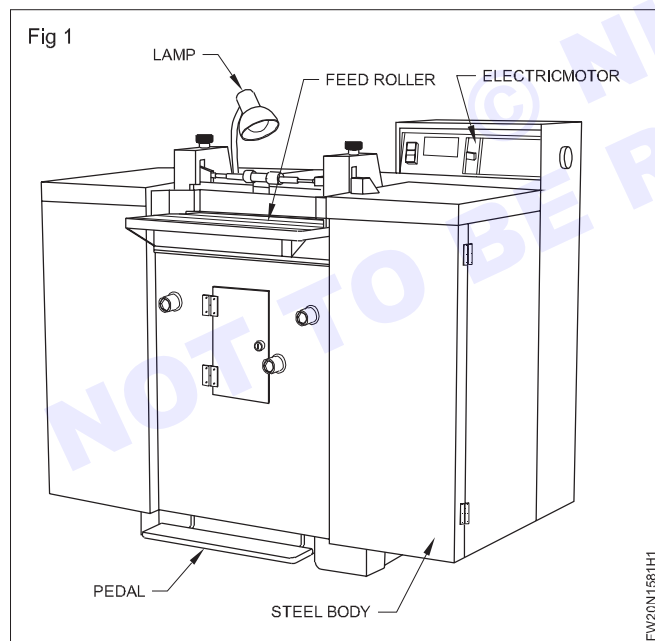


Table 1

S.No.	Name of the machine	Characteristics
1	Splitting machine	

— — — — —

TASK 2: Identify the characteristics of skiving machine

Table 2

S.No.	Name of the machine	Characteristics
2	Skiving machine	

— — — — —

TASK 3: Identify the characteristics of hydraulic clicking machine

Table 3

S.No.	Name of the machine	Characteristics
3	Hydraulic clicking machine	

— — — — —

Footwear Maker - Leather Measurement, Cutting and Stitching

Service and maintenance of machines

Objectives: At the end of this exercise you shall be able to

- maintenance of splitting machine
- service of splitting machine.

Requirements

Equipments/Machines

- Splitting machine - 1 No.

PROCEDURE

TASK 1: Maintenance of splitting machine

- The machine is designed to take up automatic lubrication to all friction parts. So you have to check if the oil level is low or if the life of the oil is expired.
- Check the blade form and grinding setting.
- Always clean and maintain the machine.
- Fix counter-rotating wheels.
- Check the band knife is in its proper position?
- Check that the top gap roller and bottom roller are running parallel to the band knife.
- Clean the counter rotating impeller and blade surfaces with solvent (Dirt cleaning solution).
- Before starting the machine check the grinding wheels in the machine.

TASK 2: Service of splitting machine

- **Failure to split properly** - check and fix the knife. Check and adjust pressure bar movement. Fix the moving press.
 - **Moving the leather irregularly** - Check and adjust the position of the blade, adjust the moving press. Check the gap between the blade and the guide roller.
 - **Blade malfunctioning** - Increase blade stability. Sharpen the tip of blade. Adjust the stop roller.
 - **Inadequate dust absorption** - Clean the dust collection. Clean the material stuck between the rolling blades. Clean the waste collection box.
- While the trainees carrying out the above work, they have to write the safety measures to be taken in Table 1

Table 1

S.No.	Name of the mechanical malfunction	Safety practices to be followed while repairing it
1	Failure to split properly	
2	Moving the leather irregularly	
3	Blade malfunction	
4	Inadequate dust absorption	

Study the construction, operation of the machine

Objectives: At the end of this exercise you shall be able to

- know about the construction of skiving machine
- know about the operation of skiving machine.

Requirements

Equipments/Machines

- Skiving machine

- 1 No.

Materials

- Leather pieces

- as reqd.

PROCEDURE

TASK 1: Know about the construction of skiving machine

Refer Ex. No. 1.5.57

TASK 2: Know about the operation of skiving machine

To skive, adjust the skiving machine and do skiving (Figs 1-4)

- First, take the leather required for skiving and place it under the pressure foot. By using thickness adjuster-adjust the pressure of pressure foot.
- Adjust gauge to the required amount of skiving.
- Adjust the feed roller as required. (Adjust the gap between feed roller and bell knife).
- To sharpen the bell knife-adjust the grinding wheel adjusting screw.
- Take the leather to be skived and place it near the pressure foot and hold it with both hands
- Skiving by pressing the pedal with your foot. Leather will go in between pressure foot and feed roller and come out as skiving.

Note: Hold the leather firmly by hand while skiving.

Fig 1



Fig 2



Fig 3



Fig 4



- Check the skiving leather for skiving allowance and thickness for its correctness.
- If there is any defect, adjust the gauge and pressure foot roller and fix it.
- Skive all the scrap leather in the same manner.

Note: Measure the skived leather with the help of leather thickness gauge. Check for uniform skiving groove.

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Identify and carry out maintenance and preventive maintenance

Objectives: At the end of this exercise you shall be able to

- know about the tools maintenance and precautions
- know about machine maintenance and precautions.

Requirements

Tools/Instruments

- Screw driver 150 mm - 1 No.
- Allen key 1-10 mm - 1 Set.
- Spanner 6-32 mm - 1 Set.

Equipments/Machines

- Flat bed sewing machine - 1 No.
- Grinding machine - 1 No.
- Sole pressing machine - 1 No.

Materials

- Lubricating oil - 250 ml.
- Cotton waste - 1/2 kg.
- Cotton cloth - 1/4 kg.
- Grease - 100 gm.
- Emery sheet - 2 Nos.

PROCEDURE

TASK 1: Know about tools maintenance and precautions

Refer Ex. No. 1.5.58 - TASK 1

TASK 2: Know about machine maintenance and precautions

Refer Ex. No. 1.5.58 - TASK 2

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Practice on designing, pattern cutting and template making for different types of footwear such as sports shoe, walking shoe, running shoe, track shoe, field shoe and safety shoe

Objectives: At the end of this exercise you shall be able to

- practice to take insole designs and patterns
- practice to take ladies' cheppal patterns.

Requirements

Tools/Instruments

- Steel rule 300 mm - 1 No.
- Shoe makers tape - 1 No.
- Knife - 1 No.

Equipments/Machines

- Wood last (Ladies size-4) - 1 Pair
- Working table - 1 No.

Materials

- Chart paper - as reqd.
- Pencil - as reqd.
- Rubber - as reqd.
- Gray board - as reqd.
- Driving adhesive - as reqd.

PROCEDURE

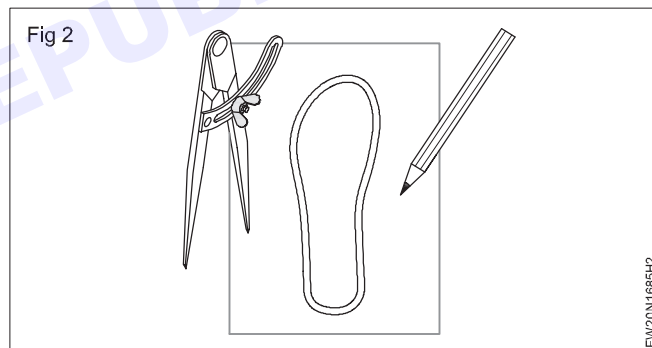
TASK 1: Practice to take insole designs and patterns (Figs 1-3)

Taking the insole pattern

- Take a chart and place it on the table.
- Place a ladies (size 4) last over it.
- With the help of a sharp pencil, trace the shape of the insole so that it is straight across the edge at a 90° angle.
- Take out the last.
- Mark a space 8.3 mm from the edge of the drawn insole with the help of a divider. Draw with pencil. Then cut- it.

While cutting the insole pattern, be careful not to touch the knife.

Fig 2



- Insole pattern has been cut.

Note: After cutting the insole, trainees should get it checked by the instructor for approval

Fig 1

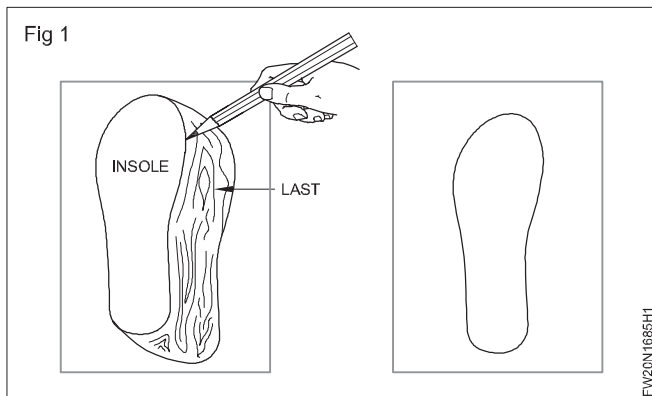
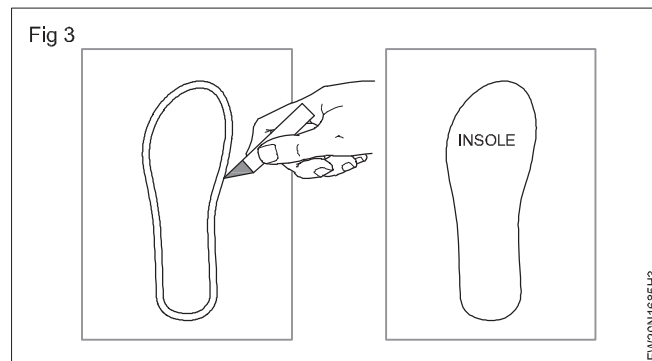
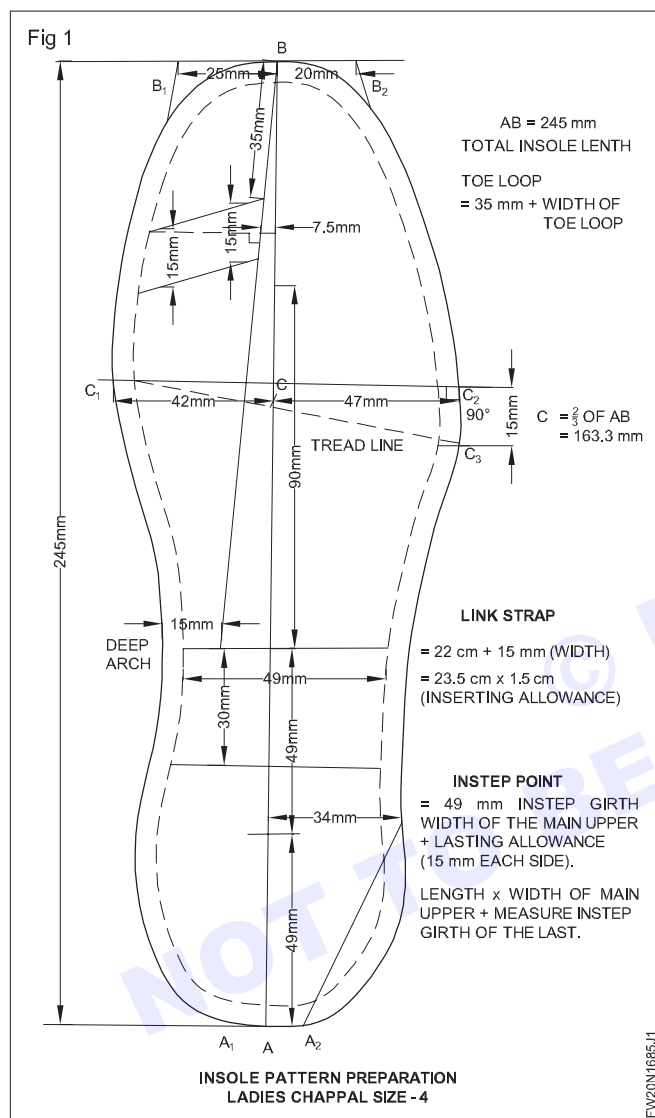


Fig 3



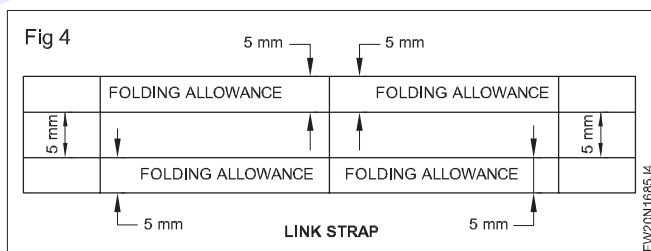
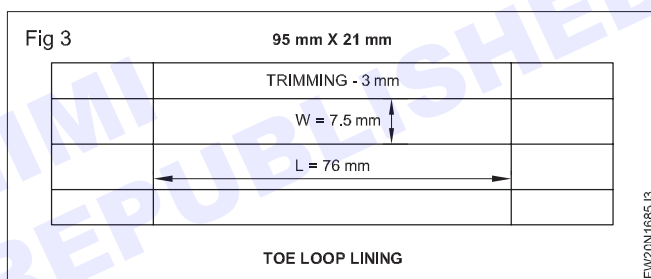
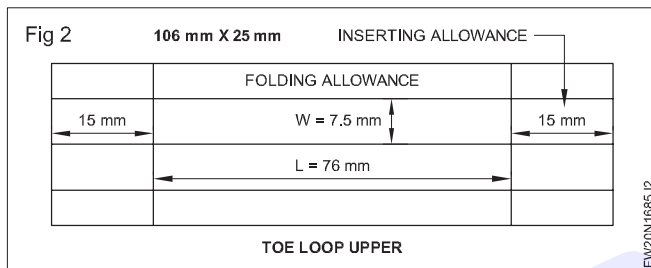
TASK 2: Practice to take ladies chappal pattern (size - 4) (Figs 1-4)

- Take the cut insole.
- Insole AB-Measure the total leg length and mark.
- Measure AC. $AC = \frac{2}{3}$ of $AB = \frac{2}{3} \times 245 \text{ mm} = 2 \times 81.663 \text{ mm}$.
- Extend a line from seat center A to toe center B, Joint it.
- Mark $AC = 163 \text{ mm}$. on the line.



- From point C extend 90° perpendicular line on both sides of AB. Tread line on the left meets at C, mark it. Measure it. Size is .. 42 mm ($CC^1 = 42 \text{ mm}$).
- Do the same from point C. ($CC^2 = 47 \text{ mm}$)
- Women's Toe Extension is 35 mm. Mark as BE.
- From this Toe loop, main upper, ling strap measure and after leaving the allowance space cut on the pattern paper with the help of a sharp knife.

Cut the pattern carefully without touching the knife.



Leather

Exercise 1.6.86A

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Basic design of different types of chappal, sandal, oxford, derby, moccassin, casual, monk, ghille, mule, court shoe, school shoe

Objectives: At the end of this exercise you shall be able to

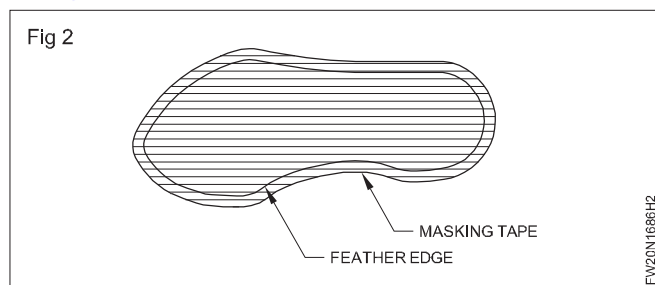
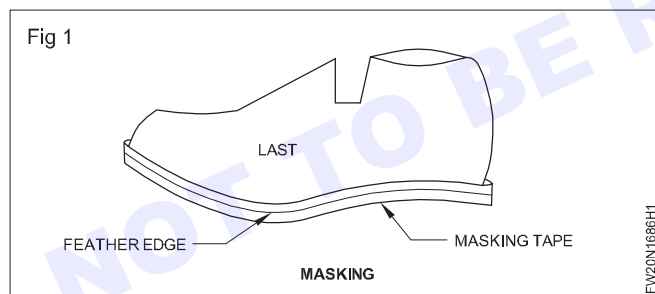
- practice to take insole pattern, practice to take outsole pattern
- practice to make male chappal design, practice to make male sandal design.

Requirements			
Tools/Instruments			
• Steel rule 300 mm	- 1 No.	• Work bench	- 1 No.
• Shoe makers tape	- 1 No.	Materials	
• Compass	- 1 No.	• Chart paper	- as reqd.
• Divider	- 1 No.	• Pencil	- as reqd.
• Measuring tape -2 mtr	- 1 No.	• Rubber	- as reqd.
• Cutting mat (A3 size)	- 1 No.	• Gray board	- as reqd.
• Knife 200 mm	- 1 No.	• Masking tape 1	- as reqd.
Equipments/ Machines			
• Men's last (8)	- as reqd.		

PROCEDURE

TASK 1: Practice to take insole pattern (Figs 1-6)

- Paste the masking tape at the bottom of the last so that the entire feather edge is hidden.

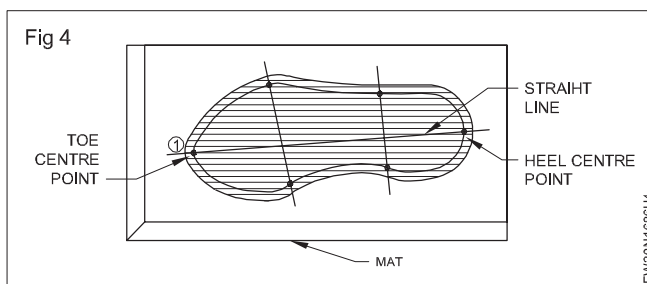
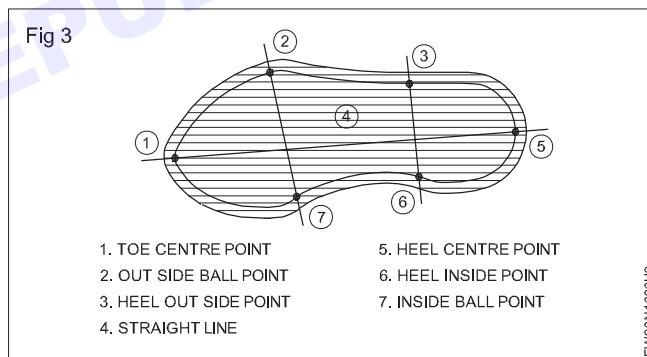


Marking and tracing (Fig 3)

- After masking mark and connect heel center point, toe center point, inside ball point, outside ball point, Heel in/out point, join them

Cutting (Fig 4)

- Draw straight line on cutting mat.



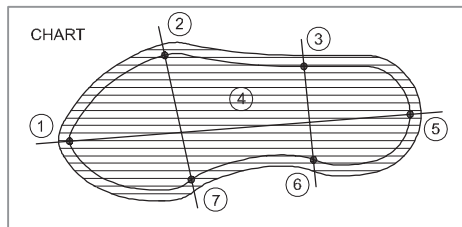
- Separate the masking tape from the last and paste it on the cutting mat by keeping the toe center point and heel center point both fit in a straight line.

Note: Paste without shrinks

Taking insole pattern (Fig 5 & 6)

- Draw straight line on a chart paper

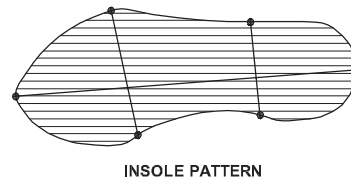
Fig 5



1. TOE CENTRE POINT
2. OUT SIDE BALL POINT
3. HEEL OUT SIDE POINT
4. STRAIGHT LINE
5. HEEL CENTRE POINT
6. HEEL INSIDE POINT
7. INSIDE BALL POINT

FW20N1686H5

Fig 6



FW20N1686H6

Note: Care should be taken while handling the cutting knife.

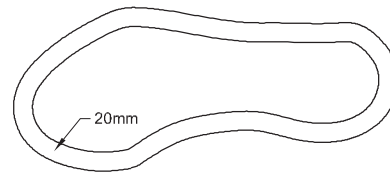
- Separate the measuring tape from the cutting mat and paste it on the chart paper. Mark feather edge.
- Cut the feather edge with knife.

- Prepare the Insole pattern like this.
- Insole pattern taken.

TASK 2: Practice to take out sole pattern (Fig 1)

- Draw the insole pattern out line on the chart.
- Allow 20mm allowance around the outline of the insole pattern and draw the outline together. (Fig 1)
- Cut the drawn line and take the outsole pattern.

Fig 1

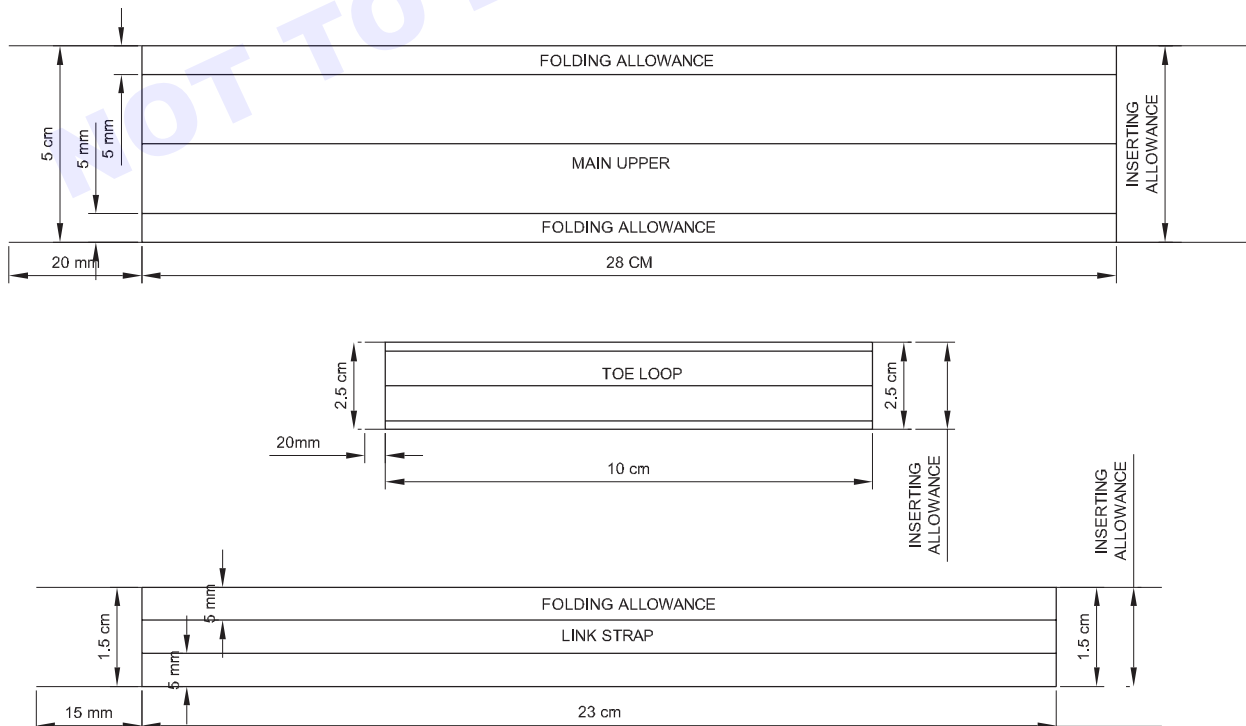


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TASK 3: Practice to make male chappal design (Fig 1-3)

- Three components are required to make a male chappal.
- Main upper strap: 28 cm x 5 cm
- Link strap: 23 cm x 1.8 cm
- Toe loop strap: 10 cm x 2.5 cm
- Take a cutting mat.
- Put it on the table.
- Pick up the pattern sheet.
- Mark the above dimensions on the pattern sheet and cut it. This is the male chappal upper pattern.

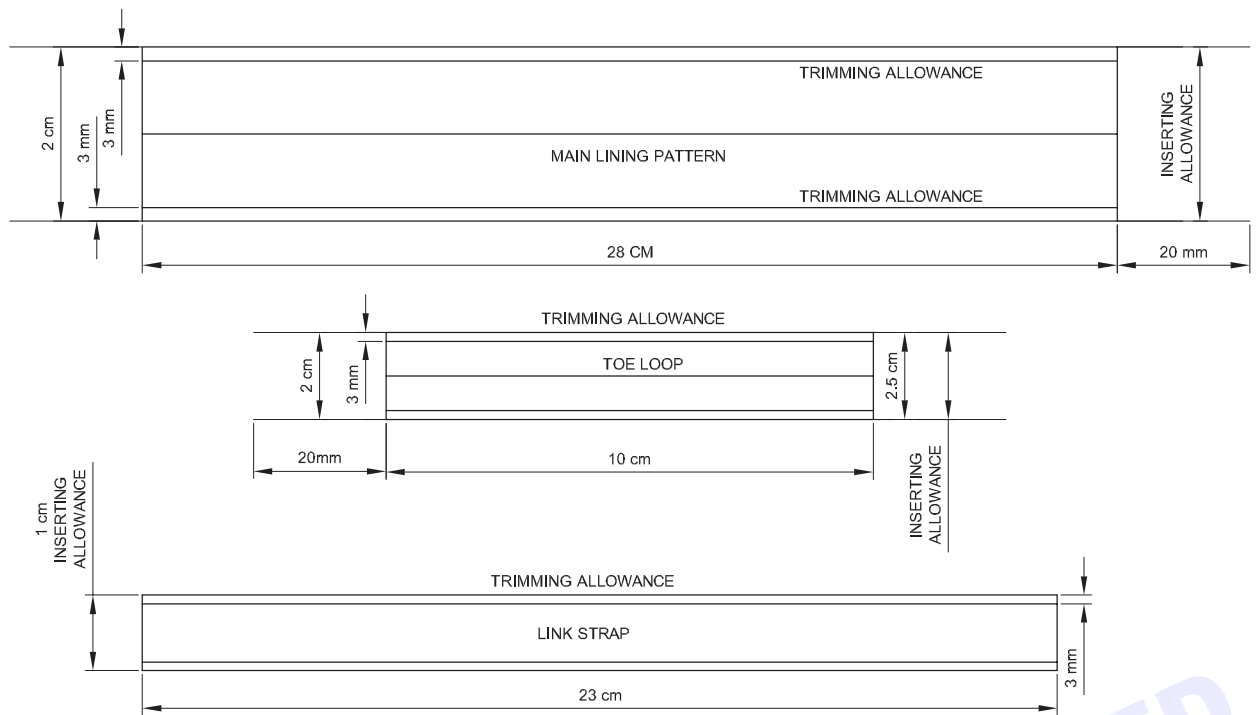
Fig 1



FW20N1686K1

Preparation of lining pattern

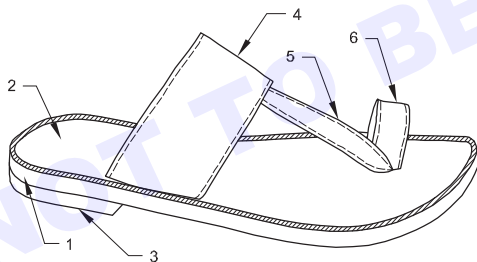
Fig 2



FW20N1686K2

- Mark the above dimensions on the pattern paper and cut out the lining patterns.
 - Paste the same patterns on the gray board and cut them out.
 - This is the template for male (gent's) chappal size 8.
- 1 Out sole
 - 2 Insole (or) Topsole
 - 3 Heel
 - 4 Main upper
 - 5 Link strap
 - 6 Toe loop

Fig 3



FW20N1686K3

Note: Trainees have to prepare insole and outsole pattern for male chappal following Task 1 & 2 show it and get the approval from instructor.

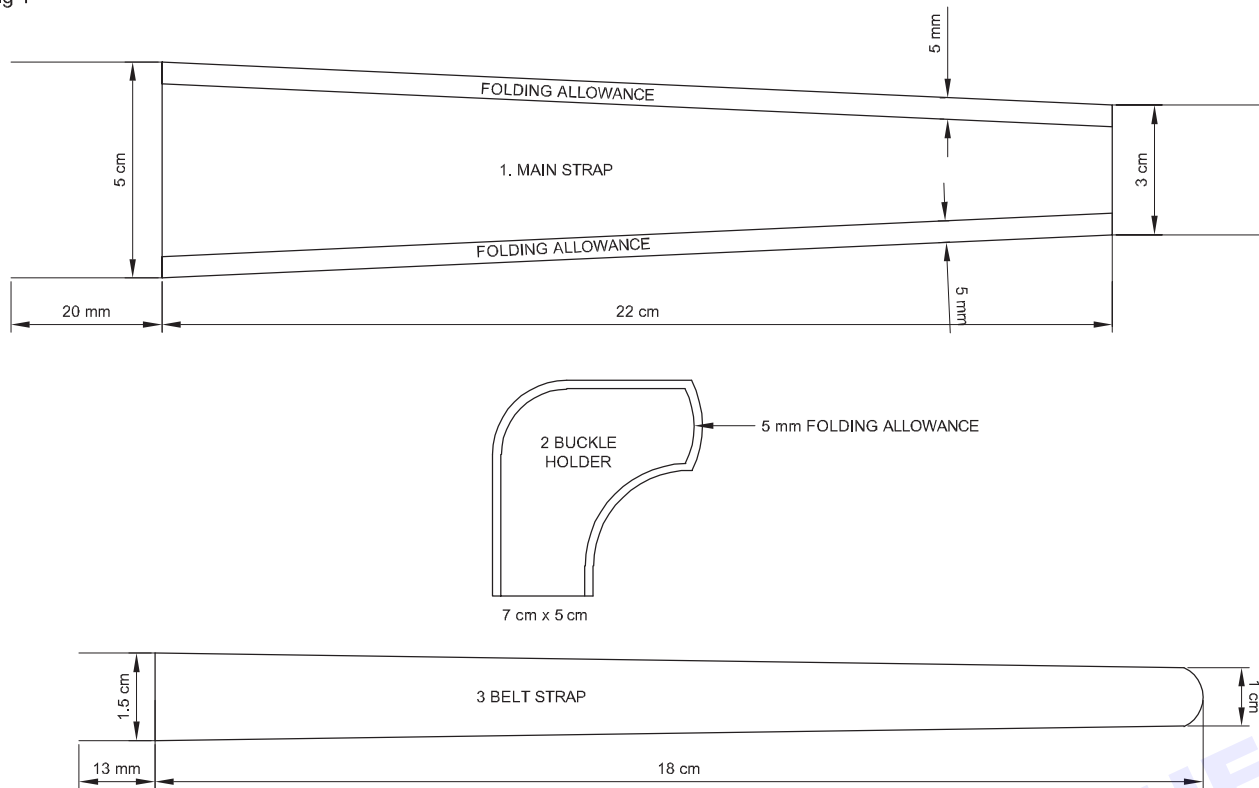
TASK 4: Practice to make male chappal design (Figs 1-3)

- Three components are required to make a male sandal.
- Main strap: 22 cm x 5 cm
- Buckle holder strap: 7 cm x 4.5 cm
- Belt strap: 18cm x 1.5 cm
- Take a cutting mat.
- Put it on the table.
- Place the pattern sheet on top of it.
- Mark the above dimensions on the pattern sheet and cut it. This is the sandal upper pattern.

Preparation of lining pattern

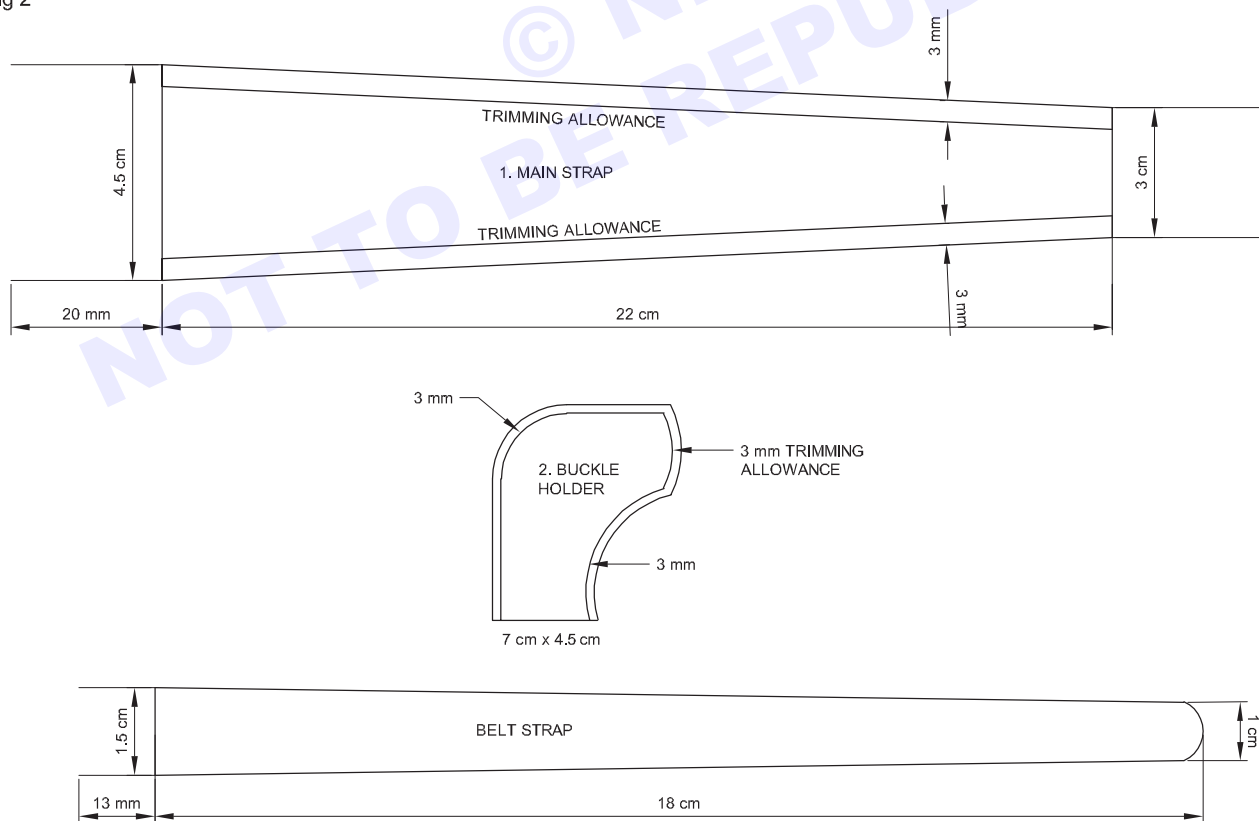
- 22 cm x 4.5 cm main lining strap
- 7 cm x 4.5 cm (Trimming allowance 3mm) – Buckle holder
- 18cm x 1.5 cm to 1cm belt strap
- Mark the above measurements on the pattern paper and cut out the patterns.
- Paste the same patterns on the gray paper and cut them out.
- This is the template for sandal Lining (Size 8) for a male.

Fig 1



FW20N1686/M1

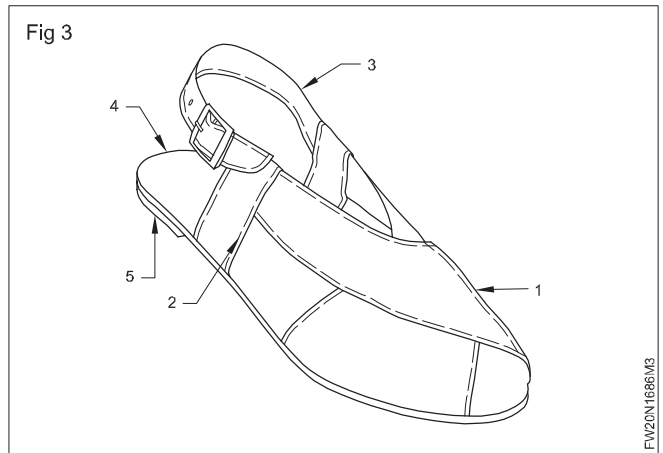
Fig 2



FW20N1686/M2

Gents sandal (size 8)

- 1 Main upper strap
- 2 Buckle holder strap
- 3 Belt strap
- 4 Insole/Topsole
- 5 Heal



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Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Basic design of different types of chappal, sandal, derby, oxford, casual, monk, ghillie, mule, court and school shoe

Objectives: At the end of this exercise you shall be able to

- practice to take mean forme
- practice to take derby shoe design
- practice to make oxford shoe design
- practice to make casual shoe design
- practice to make court shoe design
- Draw monk, ghillie, mule, school shoe design on chart paper.

Requirements			
Tools/Instruments			
• Steel rule 300 mm	- 1 No.	• Women's last(size-4)	- 1 No.
• Protractor	- 1 No.	• Work bench	- 1 No.
• Divider	- 1 No.	Materials	
• Measuring tape	- 1 No.		
• Cutting mat (A3 size)	- 1 No.		
• Knife 200mm	- 1 No.		
Equipments/Machines			
• Male last (size-8)	- as reqd.	• Chart paper	- as reqd.
		• Pencil	- as reqd.
		• Rubber	- as reqd.
		• Gray board	- as reqd.

PROCEDURE

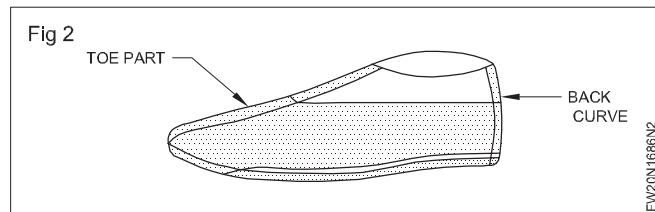
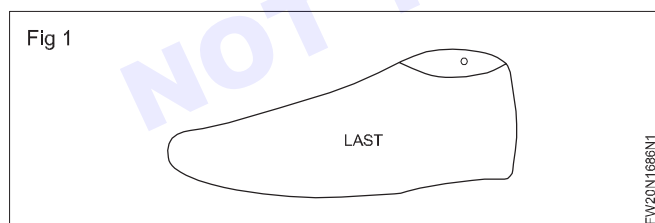
TASK 1: Practice to take mean forme (Figs 1-3)

Practice to take Gents mean forme

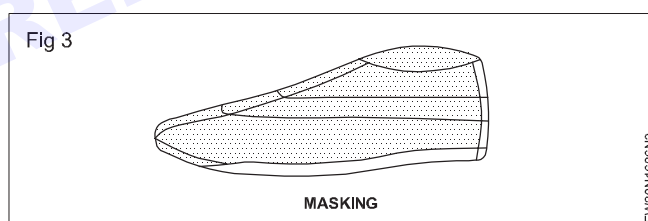
Take a model 8 size gents last.

Masking (Figs 1-3)

- First paste the masking tape on last feather edge.



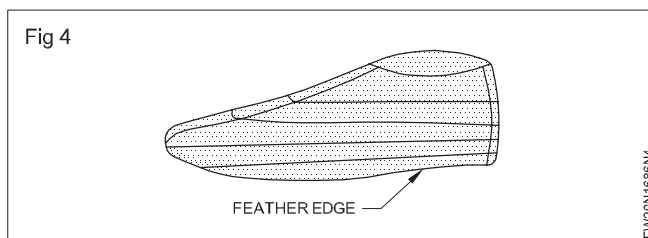
- Then paste the masking tape up to toe part, cone area centre.
- Paste the tape on back curve, centre line.
- Paste the masking tape from toe part to centre line.



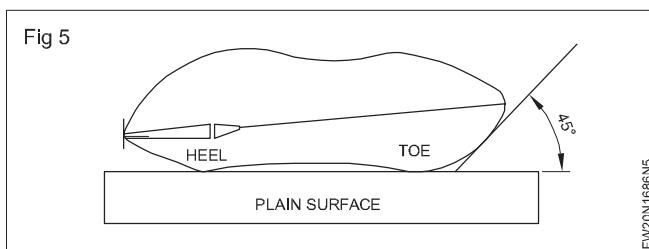
Note: After applying the tape, rub on it to avoid wrinkles.

Marking and tracing (Figs 4-11)

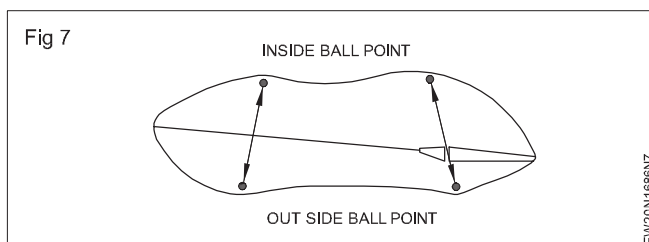
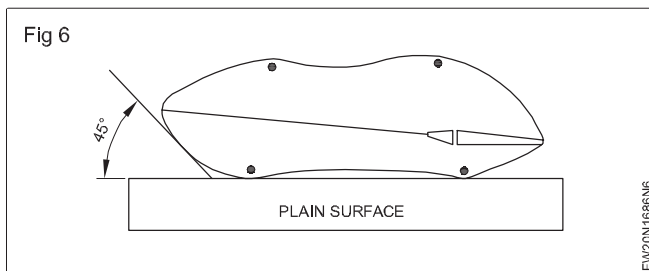
- After masking over the last cut the tape outside the feather edge.



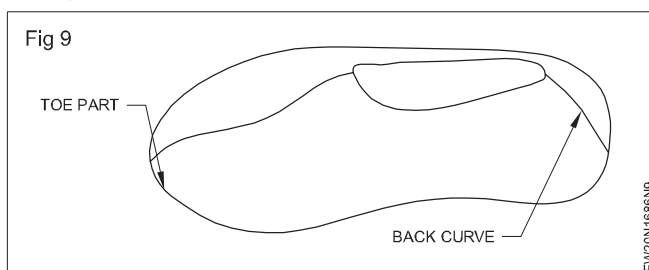
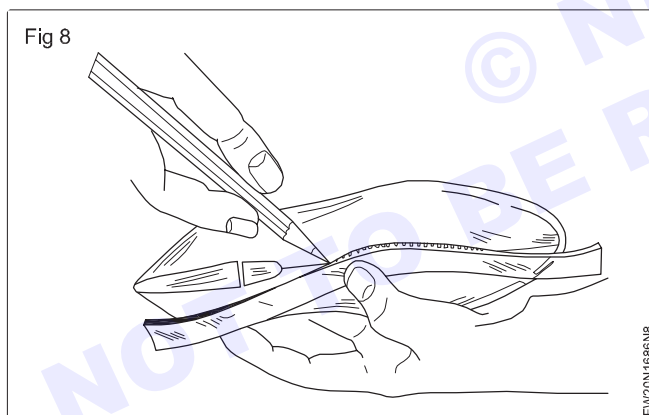
- Mark the toe and heel part by placing the last of the masked on a plain surface table touching the feather edge at a 45° angle.



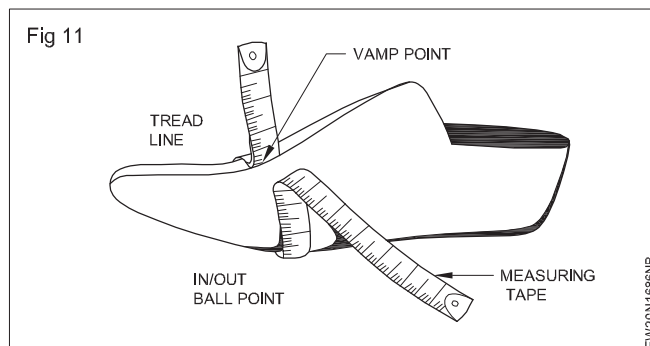
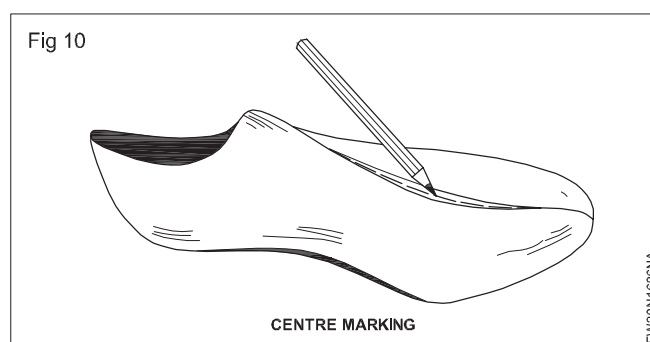
- Similarly, mark toe and heel point inside the last.



- Draw the centre line on toe and cone area.
- Same way draw centre curve line on the back part.



- Draw centre line (dotted) to toe and back curve line
- Join both inside, outside, ball point touching tread line with measuring tape.
- Name the point joining the two lines as vamp point.
- Mark the back height given for 8 size.



Cutting and Attaching (Figs 12-17)

First cut on - tread line centre mark in toe to cone area. Then cut the back curve centre line.

- First take the outside side tape and stick it on the mat.
- Then take the tape from the mat and stick it on the chart and rub it to avoid wrinkles.
- Same way cut the edge of the masking tape pasted on the chart. This is the outer forme.

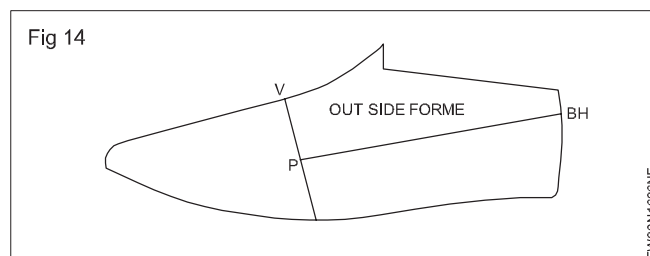
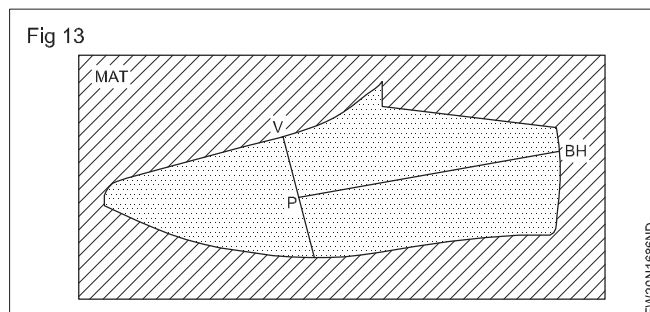
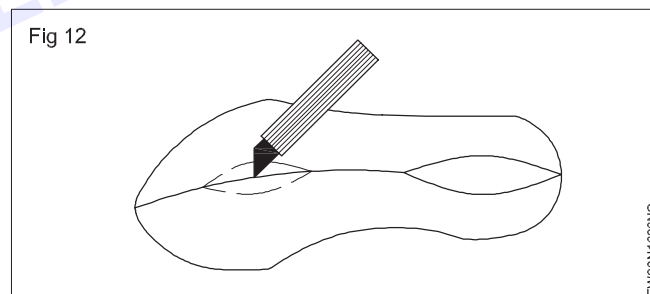
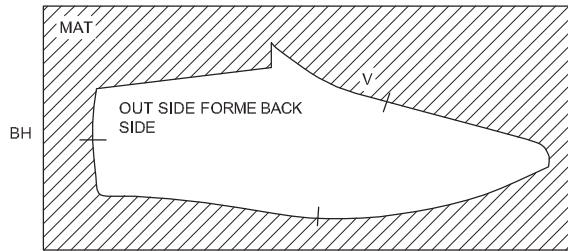


Fig 15

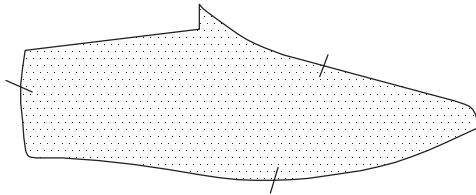


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Note : Care should be taken while handling the knife.

- Turn the outer forme to the back and draw on mat and mark the vamp and back point.

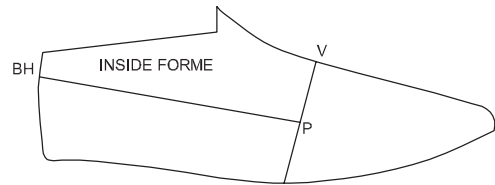
Fig 16



FW20N1686NG

- Take inside tape match vamp point and back height point on tread line to match and paste it and rub it thoroughly to eliminate wrinkles.
- Draw the inner forme on the chart and mark the points as done in Mat.
- Then take the tape from the mat and stick it on the chart and rub it to eliminate wrinkles.
- Same way cut the edge of the masking tape pasted on the chart. This is the inner forme.

Fig 17

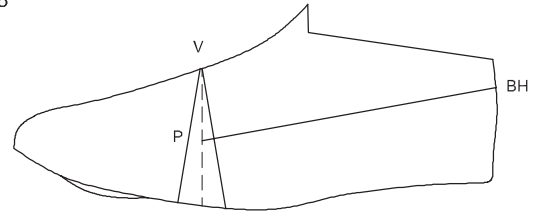


FW20N1686NH

Taking mean forme (Figs 18-19)

- First take the outer forme and draw it on the chart.

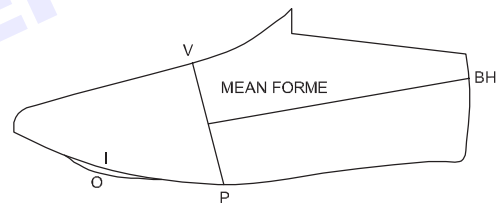
Fig 18



FW20N1686NI

- Then take the Innerforme on outer forme and draw the matching main points (vamp point, back height point) and join the two ball points.
- Take the measurement between Vamp point in/out, and ball point and mark half of the measurement. This point is called pivot point.
- Join both pivot point and back height point.
- This is mean forme standard.
- Mean forme is the cut taken out from mean forme standard.

Fig 19



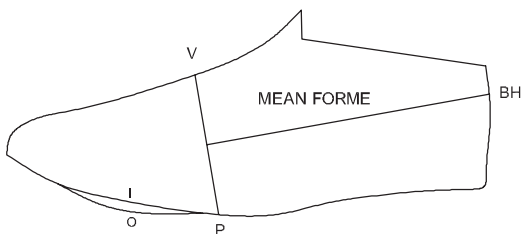
FW20N1686NJ

TASK 2: Practice to take derby shoe design

Upper standard and shell preparation (Figs 1-3)

- First put the mean forme and draw the outline. Mark the key points in the figure.
- From mean forme feather edge.
- Heel part - 19 mm.
- Middle part - 18 mm (seat area)
- Toe part – give 15mm lasting allowance, draw using the spring divider as shown in the figure.

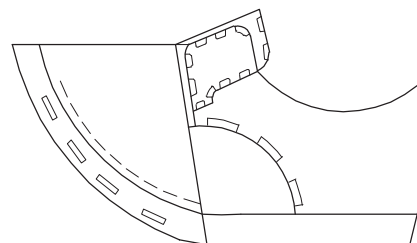
Fig 1



FW20N1686O1

- From Vamp point V and upto point F, draw a tangent
- From Vamp point V and upto point T, draw a tangent.
- Draw the Curve line as per measurement shown in figure and take two Derby upper standard. Fig 3
- As per figure take one derby upper standard and cut as upper shell pattern.

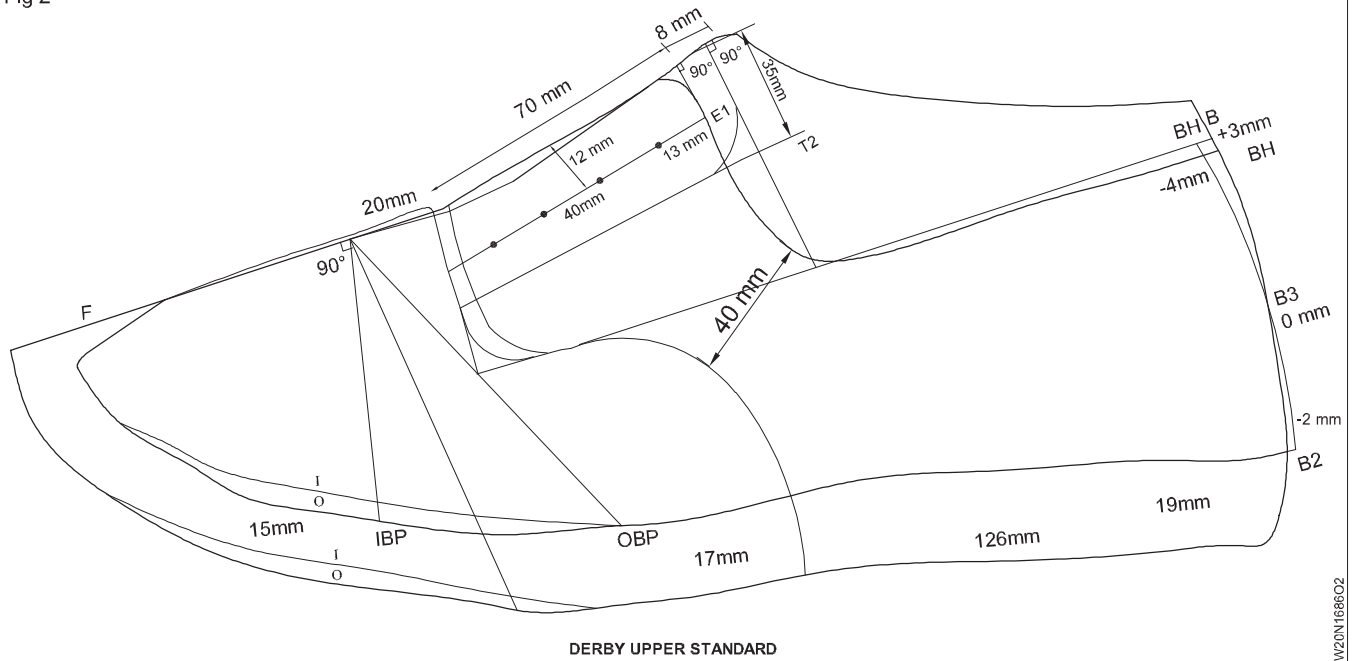
Fig 3



DERBY UPPER SHELL

FW20N1686O3

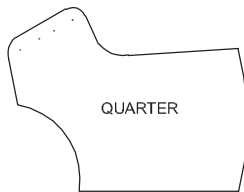
Fig 2



FW20N1686O2

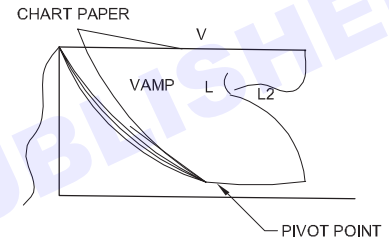
Upper pattern preparation (Figs 4 to 8)

Fig 4



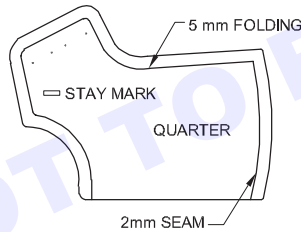
FW20N1686O4

Fig 7



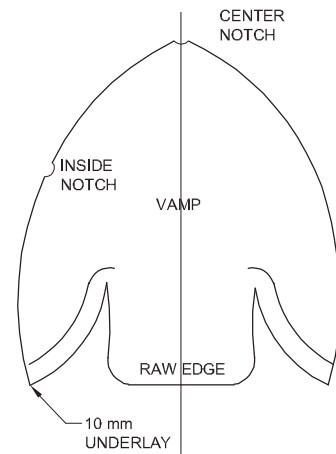
FW20N1686O7

Fig 5



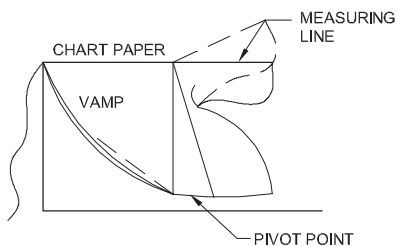
FW20N1686O5

Fig 8



FW20N1686O8

Fig 6

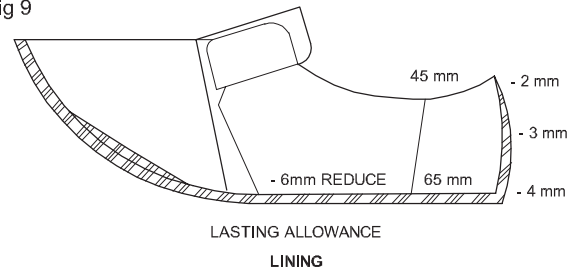


FW20N1686O6

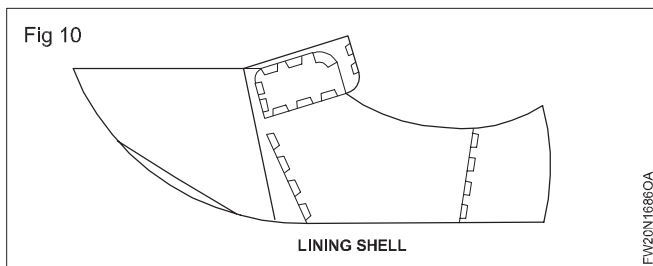
- Draw the derby upper shell on the chart and draw a curved line regarding the dimensions as shown in the figure and take the upper pattern.

Lining standard and shell preparation (Fig 9-10)

Fig 9



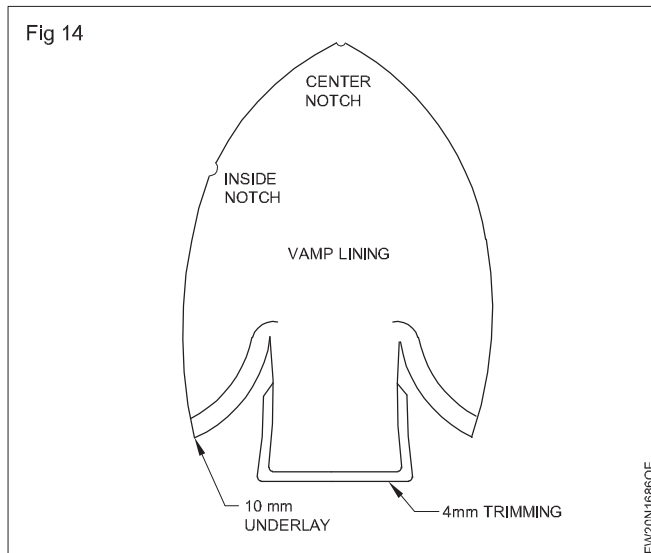
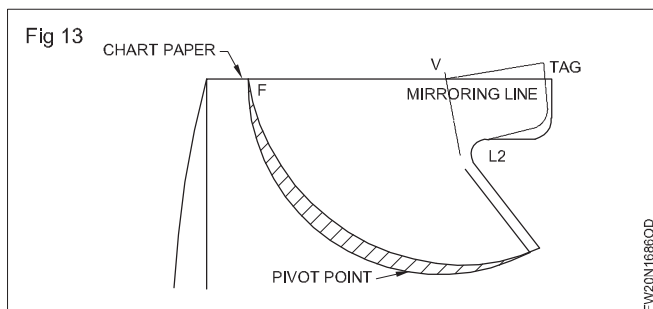
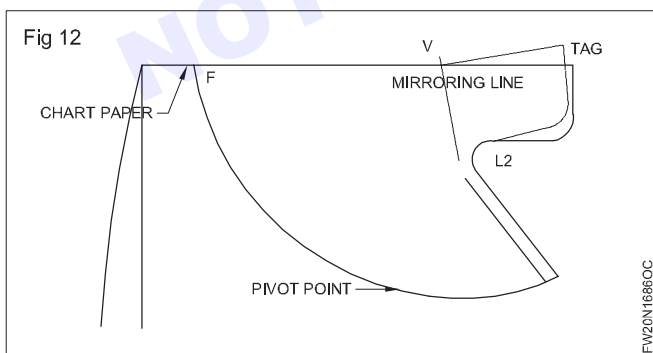
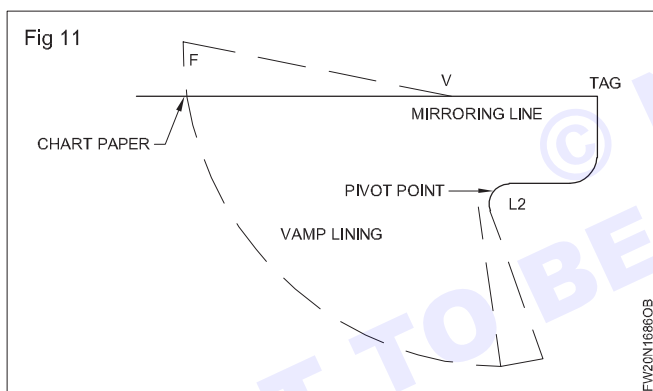
FW20N1686O9



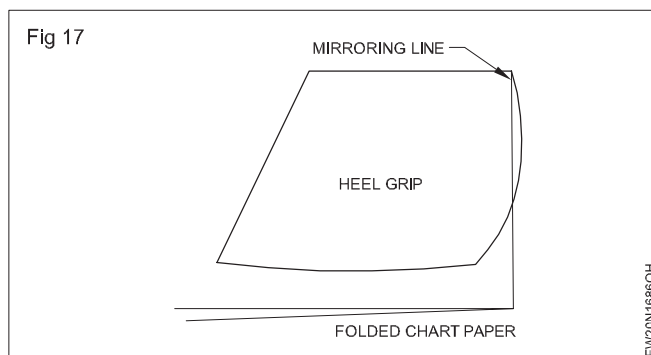
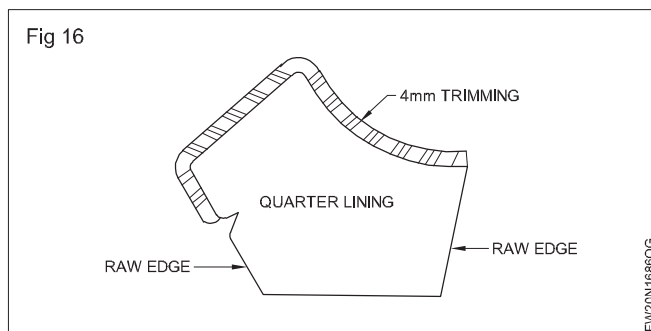
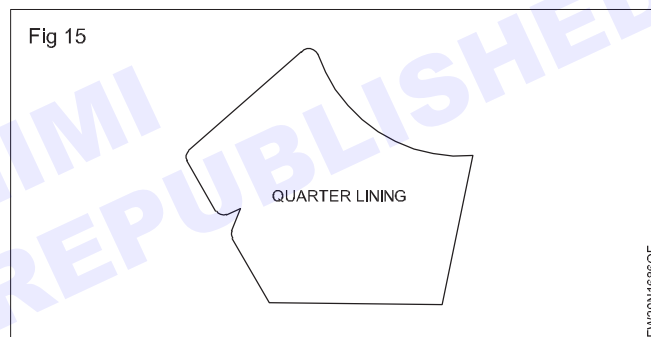
- First put the upper shell and draw the outline and quarter line.
- Reduce the lasting allowance by 6mm and draw it.
- Mark the dimensions as per the figure and draw vamp line, heel grip, back curve line. Thus take the draw lines and cut it to take lining standard.
- Prepare two lining standards and keep one lining standard intact.
- Cut another lining standard into a shell as shown in figure. Thus the cut lining standard is lining shell.

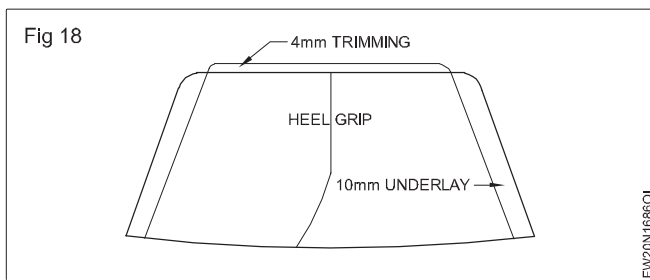
Lining pattern preparation (Figs 11-18)

- First fold the chart paper and take it. Place the lining shell on the chart and rotate it and draw it shown in the figure by keeping 10mm under lay allowance, 4mm trimming allowance take the vamp lining pattern



- Cut centre nicks, inside notch, stencil chamber and take vamp lining pattern.
- Place the lining shell on the chart and draw a quarter outline as shown in the figure and draw 4mm trimming allowance, cut and take out the quarter lining pattern.

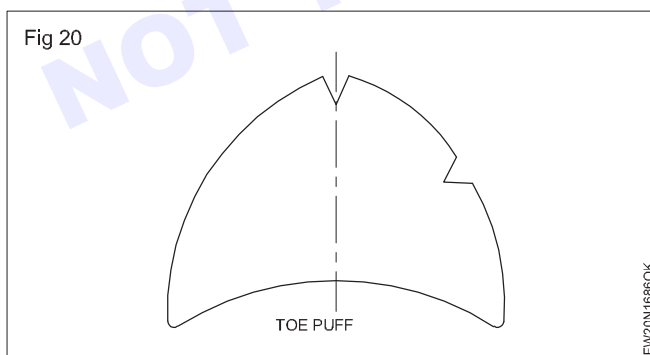
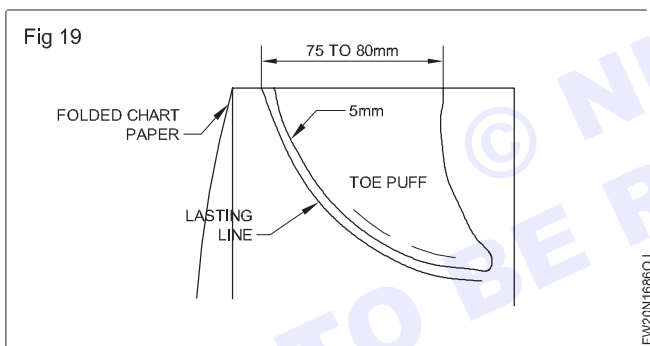




- Keep the lining shell pattern on chart, draw heel grip outline as shown and give 4mm trimming allowance, 10 mm under lay allowance. From lasting allowance to back curve mark 30mm measurement and upto mirror line cut stencil and chamber and take heel grip pattern.

Toe puff preparation (Fig 19 & 20)

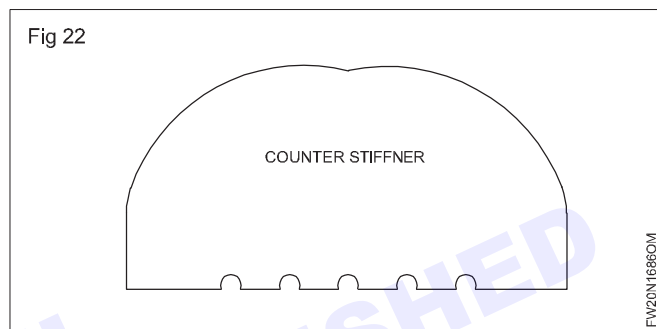
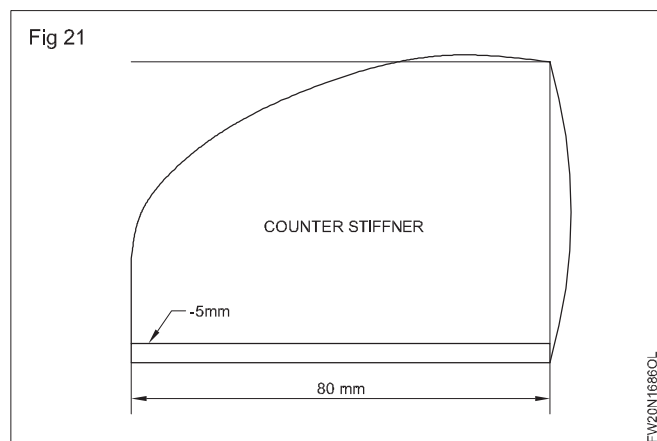
- First fold the chart paper keep the upper shell in straight line and draw the outline.
- Draw 5mm inside the lasting line as shown in the figure.
- The length of the toe puff can be between 75-80 mm depending on the last.
- Open the chart, cut the inside line center nicks and take toe puff pattern.



Stiffener preparation (Fig 21 & 22)

- First fold the chart paper, keep the upper sheet fit in straight line and draw the outline.
- Draw 5mm inside the lasting line as shown in the figure.
- Length of counter stiffener may be 80 mm depending on the last.

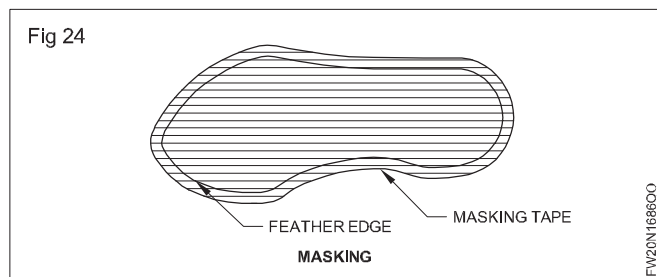
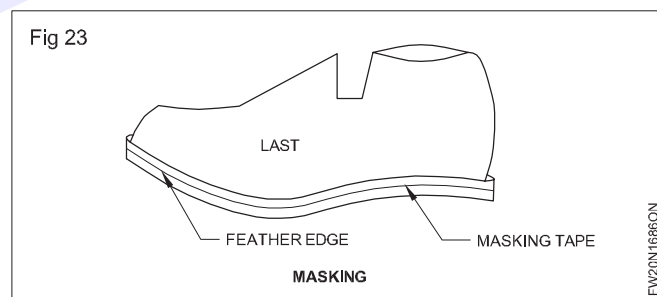
- Open the chart, cut the center nicks 'U' cut and take out counter stiffener pattern.



Insole, insocks, out sole preparation

Insole preparation (Figs 23 - 28)

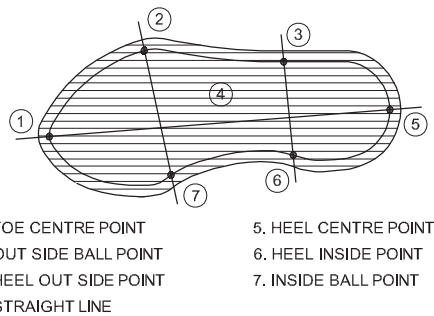
- Paste the masking tape at the base of the last so that the entire feather edge disappears.



Marking and tracing

- After masking mark Heel centre point, toe centre point, inside ball point, outside ball point, Heel in/out point mark and join.

Fig 25



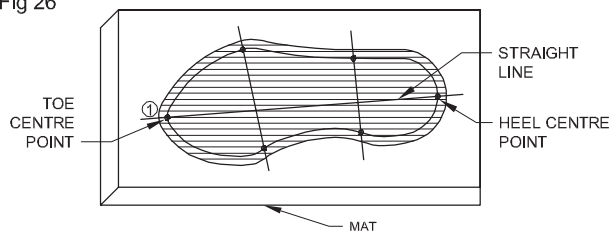
FW20N1686OP

Cutting

- Draw straight line on cutting mat.
- Separate the masking tape from the last keep the toe center point, heel center point to fit in a straight line and paste it on cutting mat.

Note: Paste without shrinks.

Fig 26



FW20N1686OQ

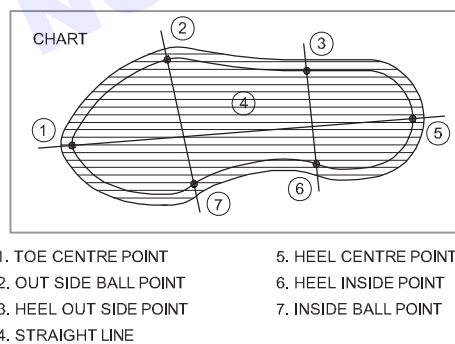
Taking the insole pattern

- Draw a straight line on a chart paper.
- Take the masking tape from the cutting mat and paste it on the chart paper. Mark the feather edge.
- Cut the feather edge with a knife.

Note: Care should be taken while handling the cutting knife.

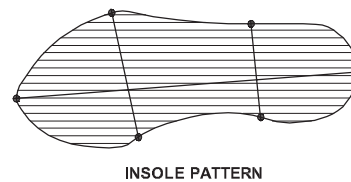
- Thus prepare the insole pattern

Fig 27



FW20N1686OR

Fig 28

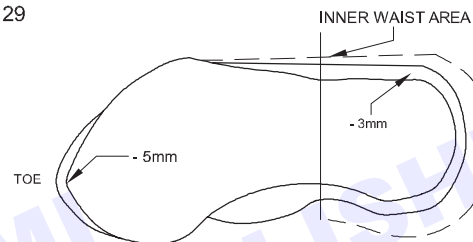


FW20N1686OS

Insocks pattern preparation (Fig 29)

- Draw insole pattern-out line on a chart paper.
- As shown in the figure, add 3mm from inner waist and draw outline tread
- Reduce 5mm from the toe area and draw a curve line.
- From inner tread line- to Inner waist line draw a curve line (as shown in the figure)
- Cut the drawn line and take insocks pattern.

Fig 29

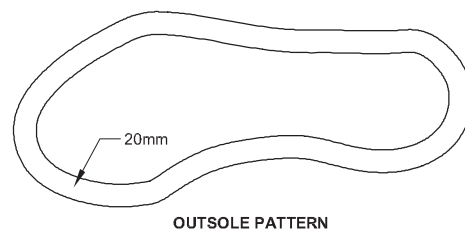


FW20N1686OT

Outsole preparation (Fig 30)

- Draw insole pattern-out line on a chart paper.
- Draw a line around the insole pattern - out line by adding 20mm allowance.
- Cut the drawn line and take out sole pattern.

Fig 30

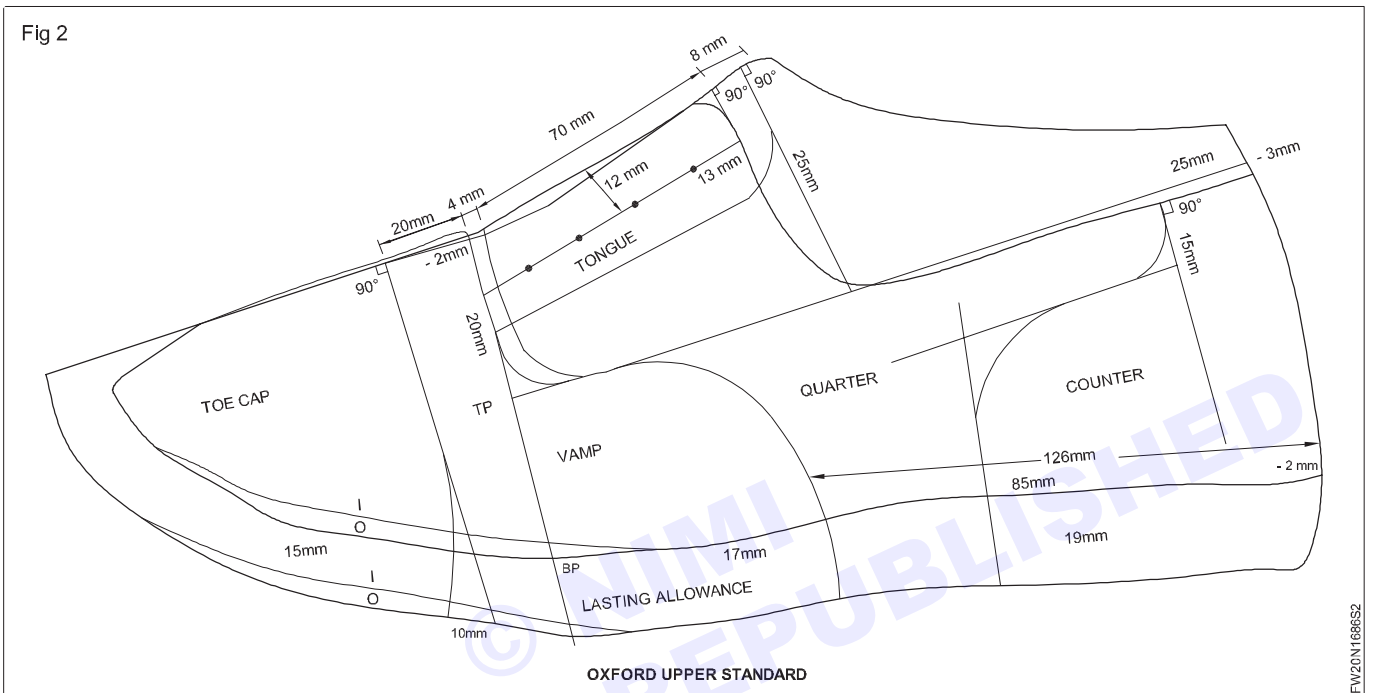
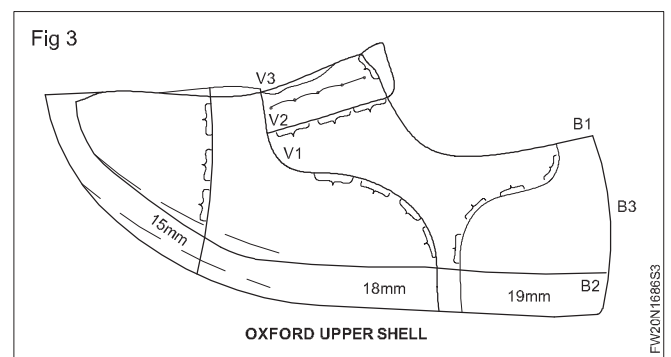
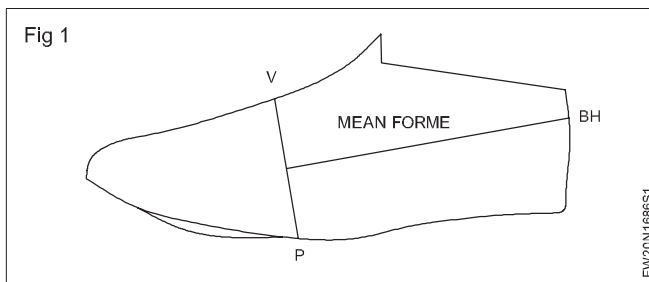


FW20N1686OU

TASK 3: Taking an Oxford Shoe Pattern

Upper standard and shell preparation (Figs 1-3)

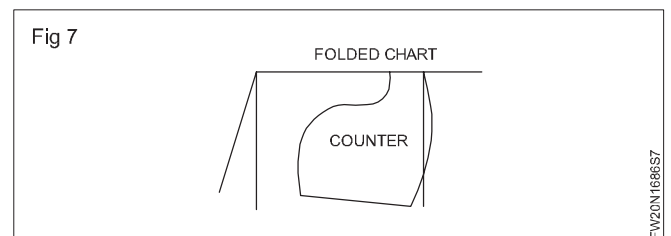
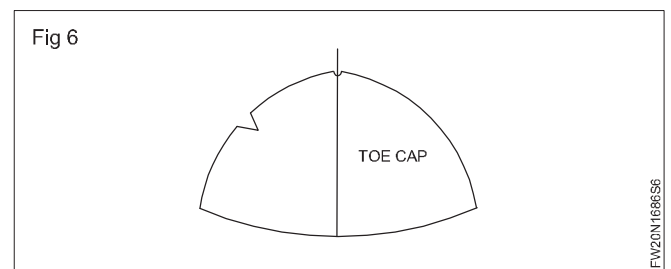
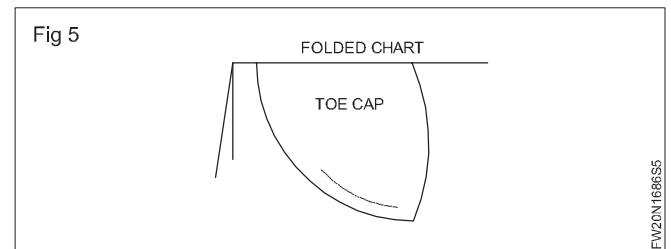
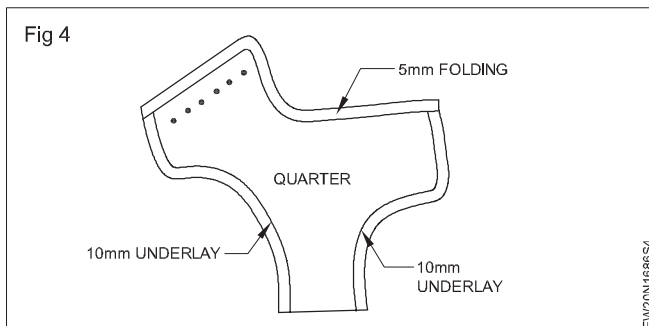
- First keep the mean forme and draw an outline. Mark the key points as shown in figure.
- Heel part from mean forme feather edge is – 19mm
- Middle area - 18 mm (seat area)
- Draw the toe part by keeping 15mm lasting allowance with the spring divider as shown in the figure.
- From vamp point (v) to F point draw a tangent line.

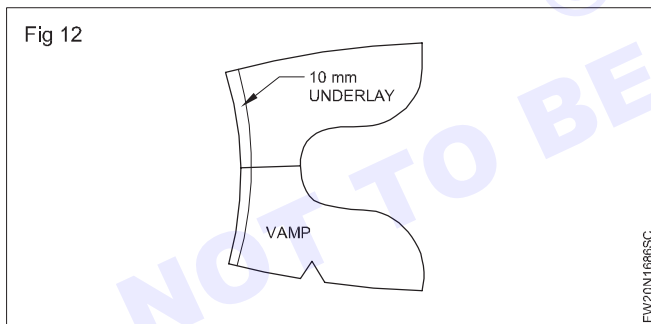
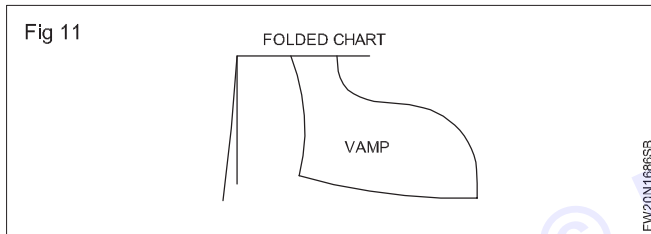
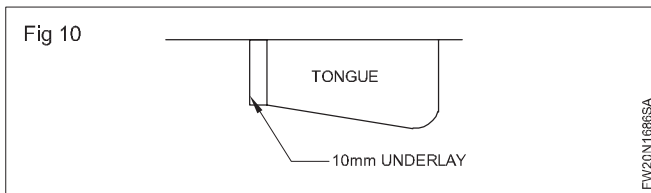
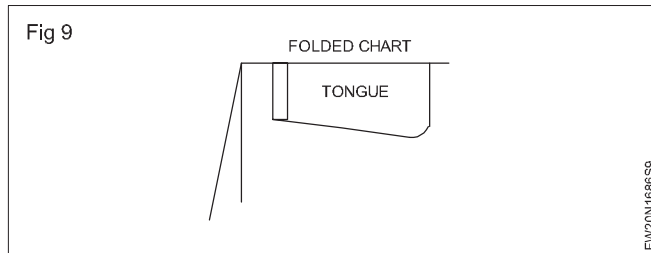
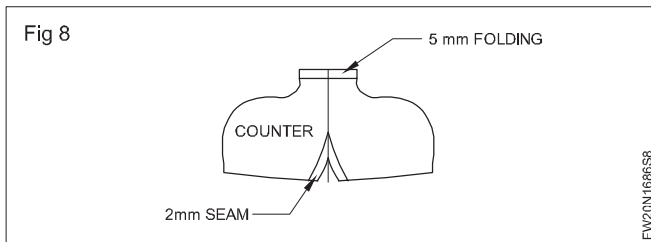


- Draw a tangent line from Vamp point (v) to T point.
- As shown in the figure, mark and draw curve line and take two oxford upper standard. (Fig 2)
- Take an Oxford Upper Standard and cut it as an upper shell pattern as shown in the figure.

Upper pattern preparation (Figs 4-12)

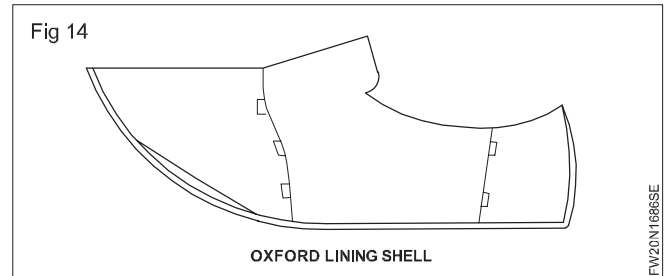
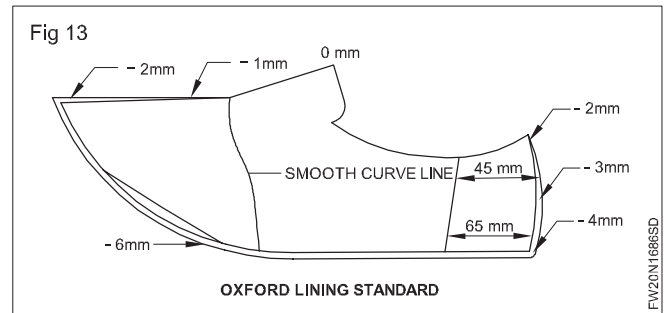
- Draw the oxford upper shell on the chart and take the upper patterns by drawing a curved line of dimensions as shown in the figure.
- Fold the chart and take oxford upper pattern as shown in the figure.





Lining standard and shell preparation (Fig 13 & 14)

- First place the upper shell and draw the outline quarter line.
- Draw by keeping lasting allowance reduced by 6mm.
- Draw the vamp line, quarter line, heel grip, back curve according to the size as shown in the figure. Thus cut the draw line and take lining standard.
- Prepare two lining standards and keep one lining standard intact.
- Cut another lining standard into a shell as shown in the figure.
- Thus the cut lining standard is lining shell.



Lining pattern preparation (Figs 15-19)

- Fold the chart and keep the lining shell pattern on it and take the lining patterns.

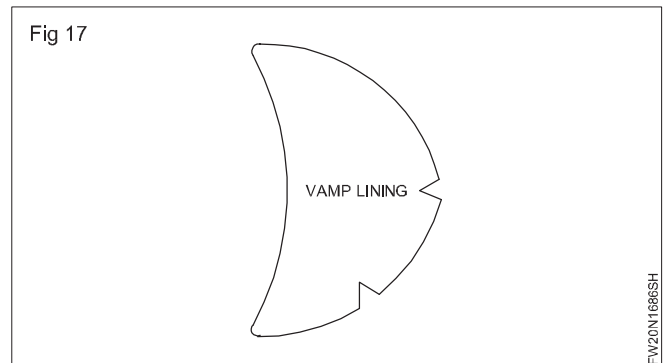
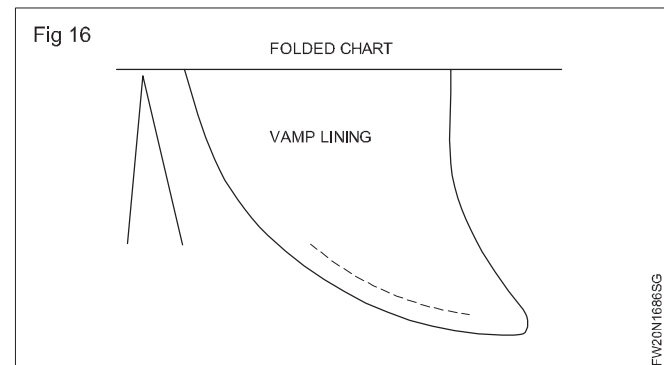
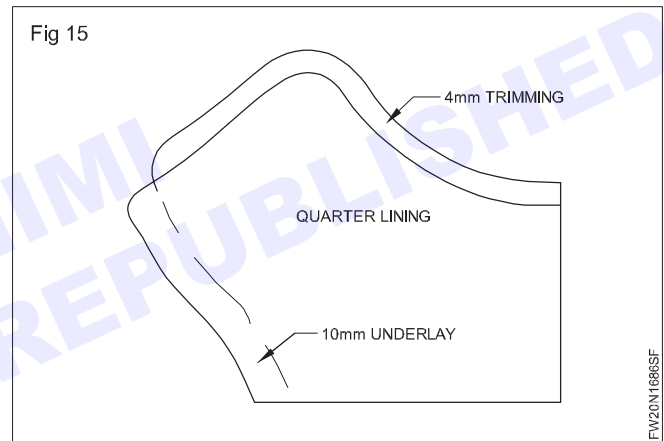


Fig 18

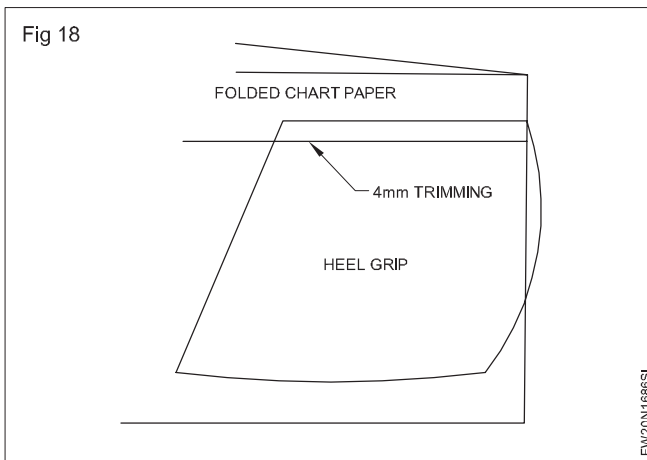
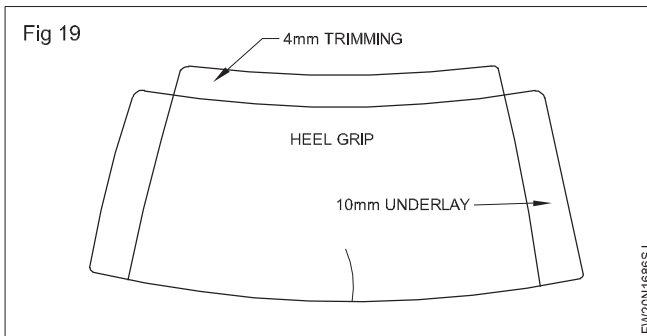


Fig 19



Toe puff preparation (Fig 20 & 21)

- First fold the chart paper and place the upper shell and draw the outline
- Draw a line 5mm inside the lasting line as shown in the figure.
- The length of the toe puff can be up to 75-80mm depending on the last.
- Open the chart and cut inside line, center nicks and take toe puff pattern.

Fig 20

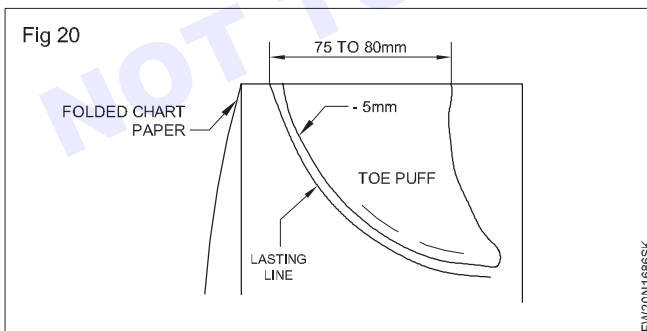
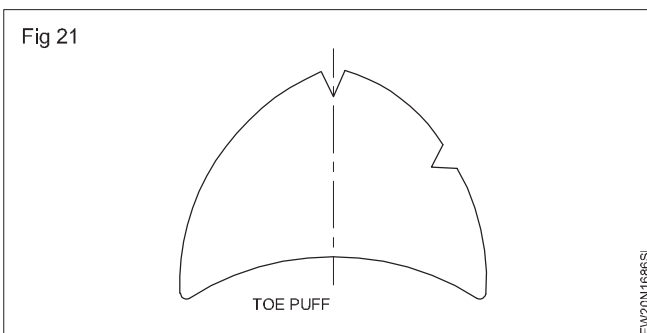


Fig 21



Stiffener preparation (Fig 22 & 23)

- First fold the chart paper, fit the upper shell, and draw the outline
- Draw a line 5mm inside the lasting line as shown in the figure.
- The length of counter stiffener may be up to 80 mm depending on the Last.
- Open the chart, cut the center nicks 'U' and take the counter stiffener pattern.

Fig 22

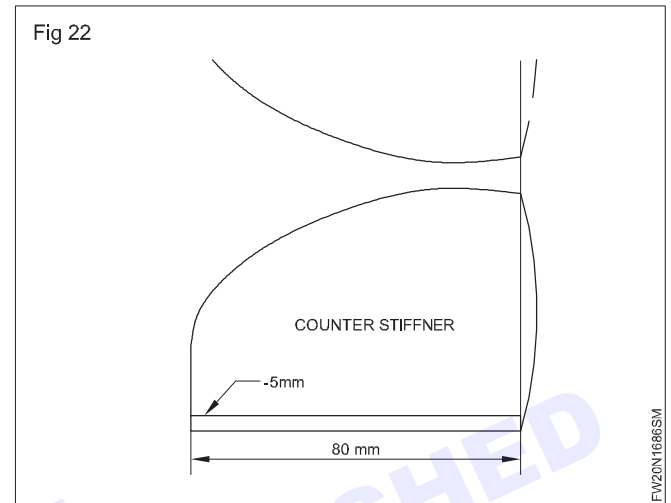
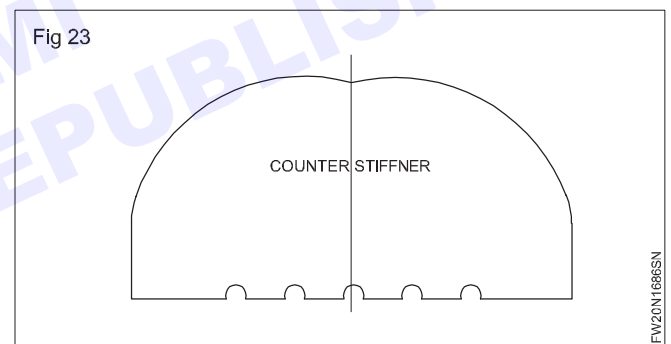


Fig 23



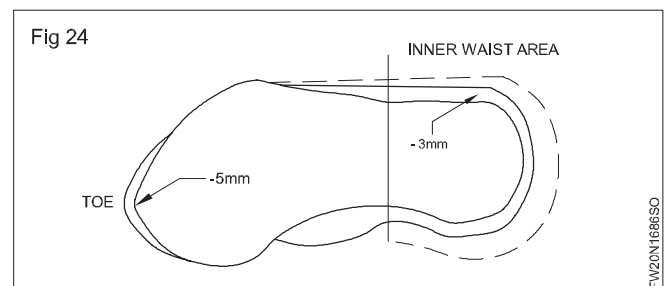
Insole, insocks, out sole preparation

Follow the procedure of Derby Shoe Insole Pattern.

Insocks pattern preparation (Fig 24)

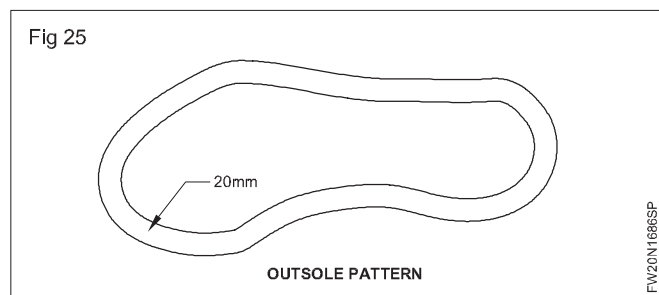
- Draw the insole pattern-out line on a chart paper
- Draw an outline tread by adding 3mm from inner waist as shown in figure.
- Reduce 5mm in toe area and draw a curve line.
- Draw a curve line from the inner tread line- up to inner waist line. (as shown in figure)
- Cut the drawn line and take insocks pattern.

Fig 24



Out sole preparation (Fig 25)

- Draw insole pattern- out line on a chart
- Draw a line adding 20 mm allowance around the outline of the insole pattern.
- Cut the drawn line and take out sole pattern.



TASK 4: Designing casual shoes

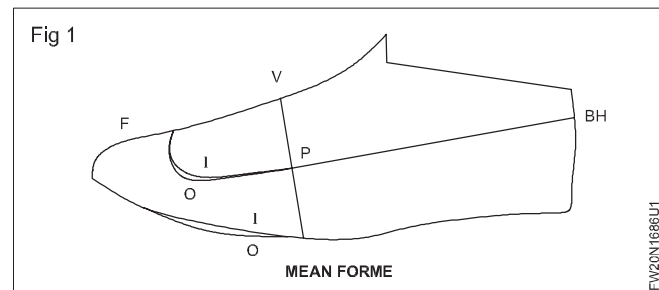
Taking mean forme (Fig 1)

- Trace a 2mm edge line using a pencil on toe part of the model size last taken. Draw a curve line on the toe part according to the last taken.

Refer Ex.No. 1.6.86 Task 1 to take mean forme.

Upper standard and shell preparation (Fig 2 & 3)

- First keep the Mean Forme and draw the outline. Mark the important points as shown in the figure.



From mean forme feather edge

- i Heel part- 19 mm
- ii Middle part (seat area) - 18 mm
- iii Toe part – Draw by leaving 15 mm lasting allowance as shown in figure with spring divider.
- From vamp Point V to point F, draw a tangent.
- From vamp Point (V) to 'T' point, draw a tangent

- Draw a smooth curve line from I to L.
- Saddle line width can be from 25 mm to 30 mm.
- Draw a curve line with respect to the measurements shown in the figure and take two upper standards.
- Take an upper standard as shown in the figure and cut it as an upper shell pattern.

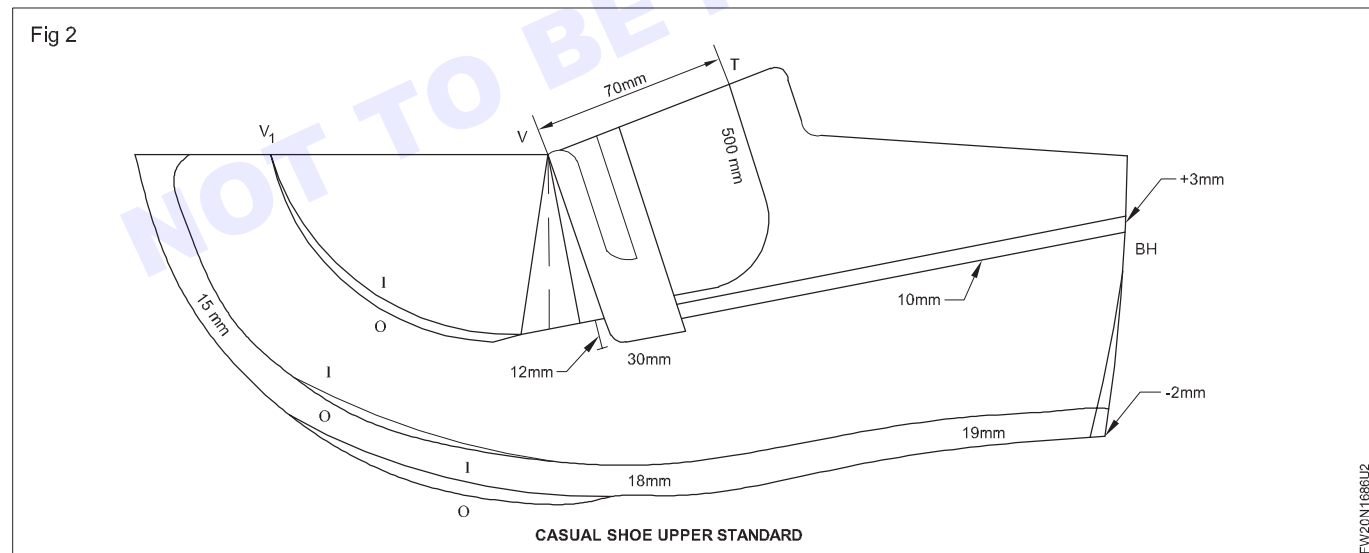
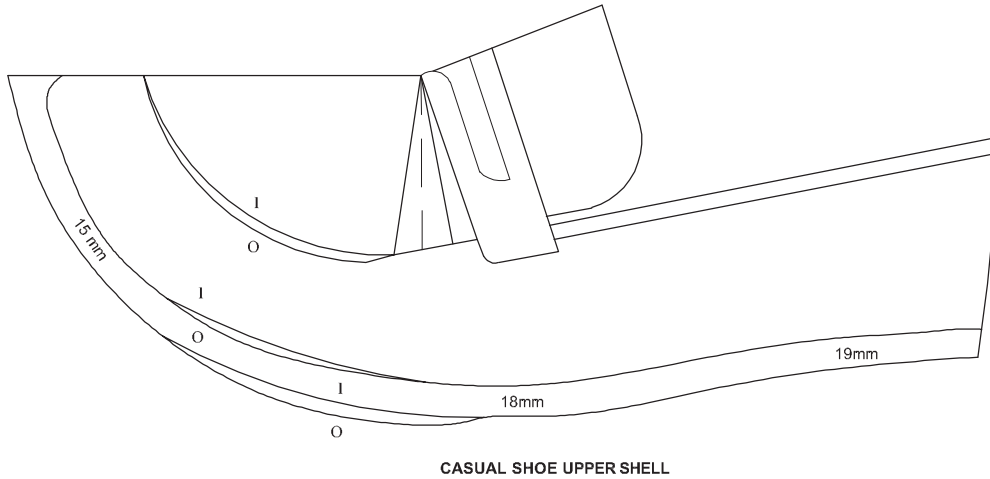


Fig 3



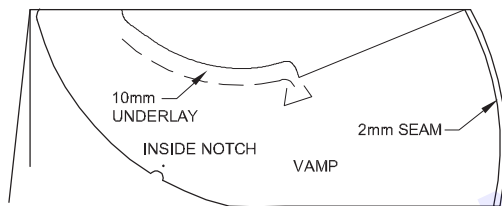
FW20N1686U3

Upper pattern preparation (Figs 4-11)

- Draw upper shell on Chart and draw a curved line with respect to the measurements and take the upper patterns.

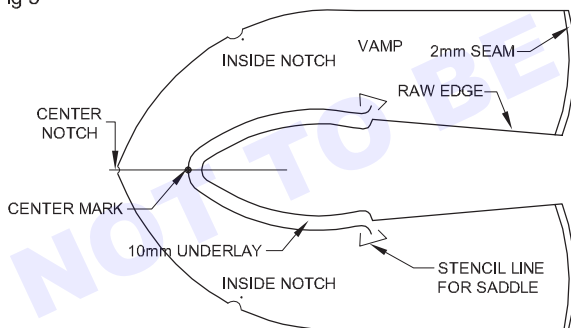
Fig 4

FOLDED CHART



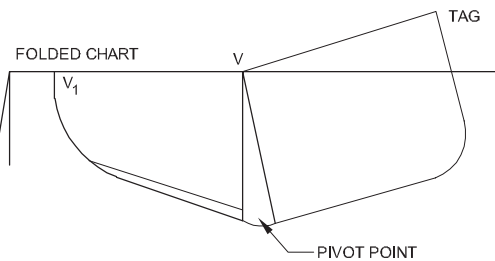
FW20N1686U4

Fig 5



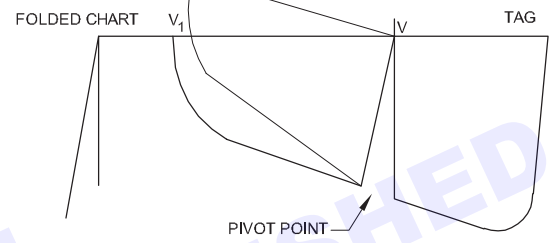
FW20N1686U5

Fig 6



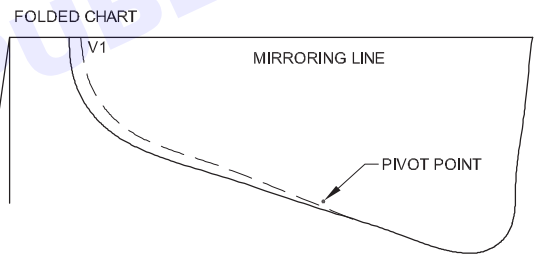
FW20N1686U6

Fig 7



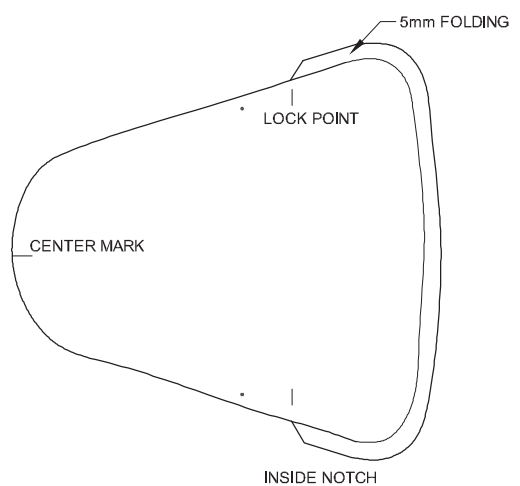
FW20N1686U7

Fig 8

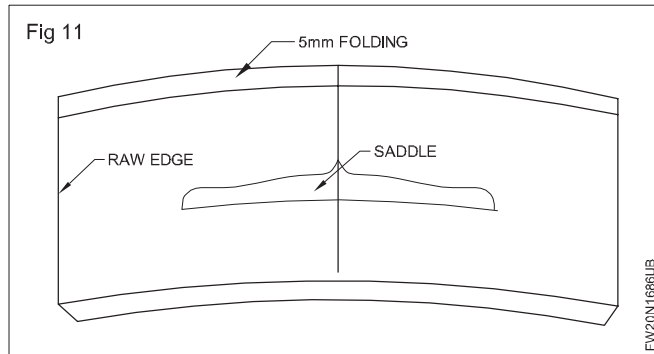
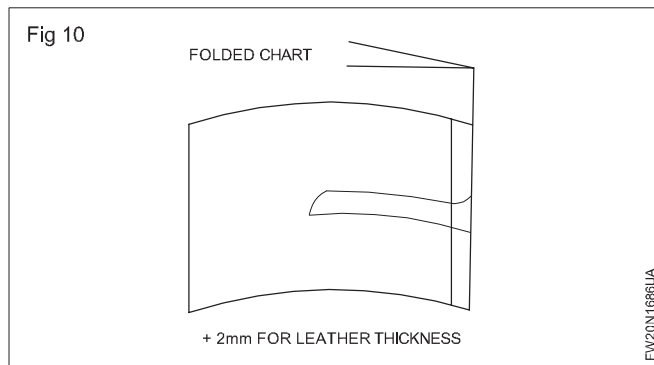


FW20N1686U8

Fig 9

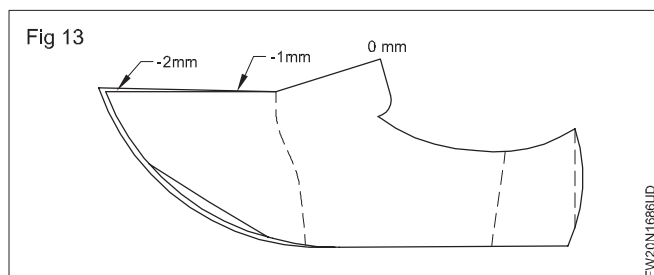
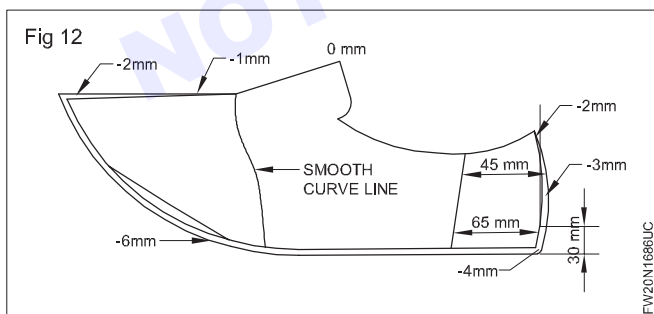


FW20N1686U9



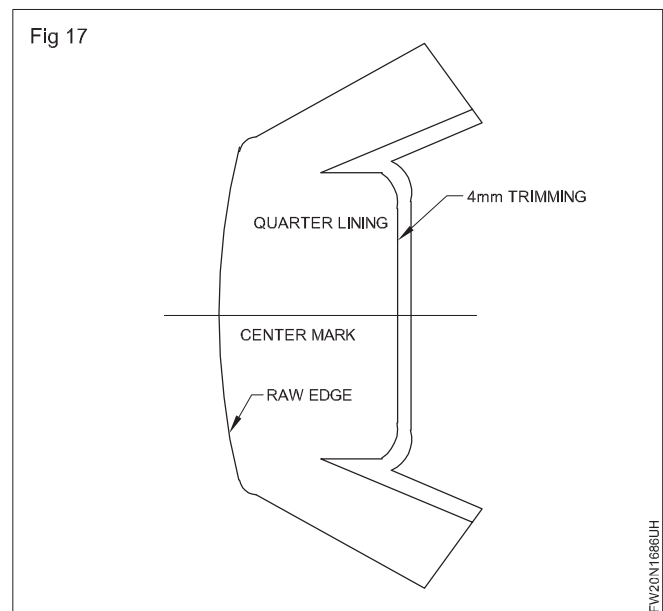
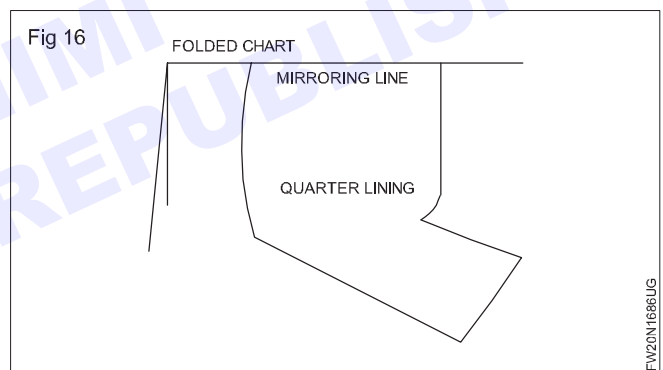
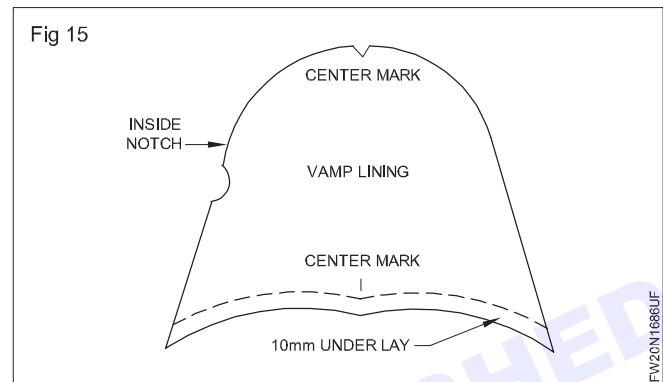
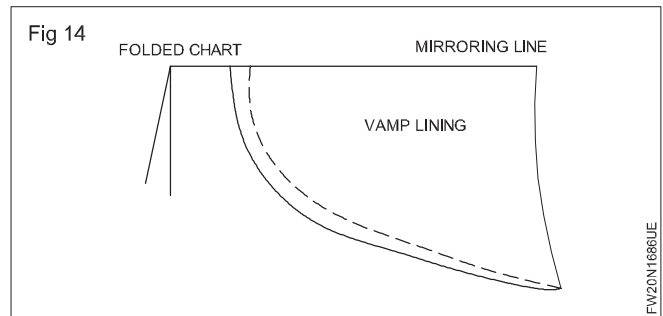
Lining Standard and lining shell preparation (Fig 12 & 13)

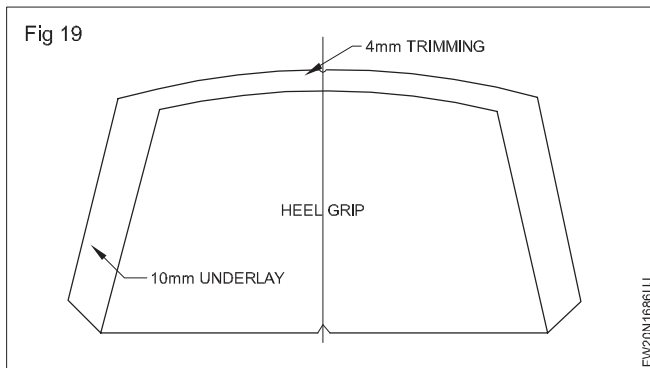
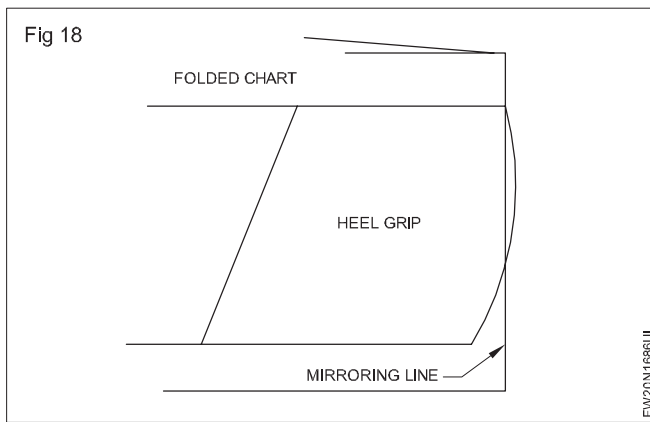
- First by keeping the upper shell draw outline and quarter line.
- Draw the lasting allowance reduced by 6mm.
- According to the dimensions shown in figure draw Vamp line, heel grip, back curve line. Thus cut the drawn lines and take the lining standard-
- Prepare two lining standards and keep one lining standard intact.
- Cut another lining standard into a shell as shown in the figure.
- Thus the cut lining standard, is lining shell.



- Take a lining standard and cut it as a lining shell pattern as shown in the picture.

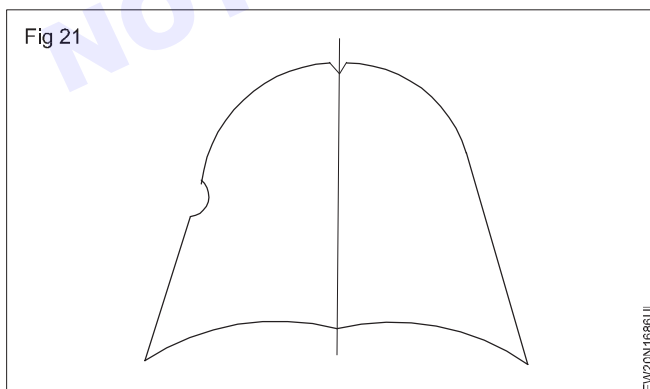
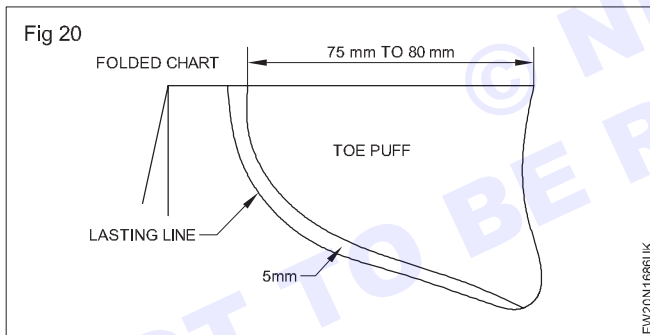
Lining pattern preparation (Figs 14-19)





- Fold the chart and by keeping lining shell pattern take lining patterns.

Toe puff preparation (Fig 20 & 21)

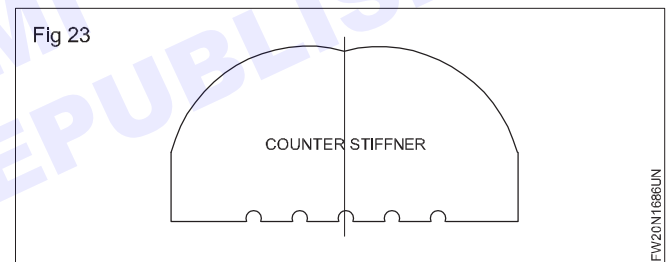
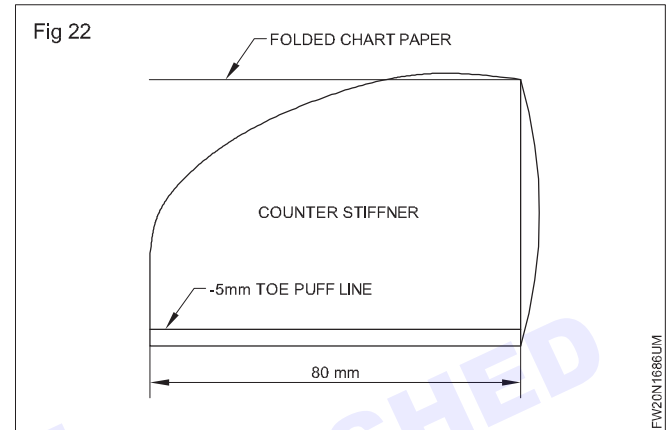


- First fold the chart paper and keep and fit the upper shell- in straight line and draw the outline.
- As shown in figure 5mm inside the lasting line draw a line.
- Length of counter stiffener may be 75-80 mm depending on the Last.

- Open the chart cut the inside line center nicks cut and take toe puff pattern.

Counter stiffener preparation (Fig 22 & 23)

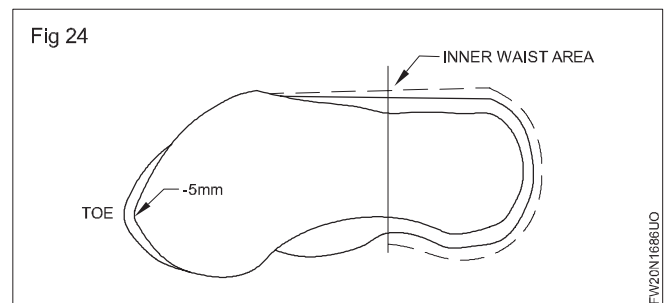
- First fold the chart paper and fix the upper shell and draw the outline.
- As shown in figure 5mm inside the lasting line, draw a line.
- The length of the toe puff can be up to 80mm depending on the Last.
- Open the chart cut the center nicks 'U' cut and take counter stiffener pattern.



Insole, insocks, outer sole pattern preparation

Insole pattern preparation (Fig 24 & 25)

Follow the procedure given in Derby Shoe Insole Pattern

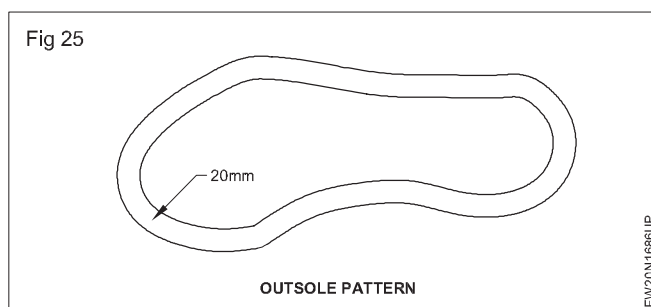


Insocks pattern preparation (Fig 24)

- 1 Draw the insole pattern- out line in a chart paper.
- 2 Add 3 mm from inner waist to draw out line tread as shown in figure.
- 3 Reduce 5mm in Toe area and draw curve line.
- 4 Draw a curve line from Inner tread line to Inner waist line (as shown in figure).
- 5 Cut the drawn line and take the Insocks Pattern.

Outsole preparation

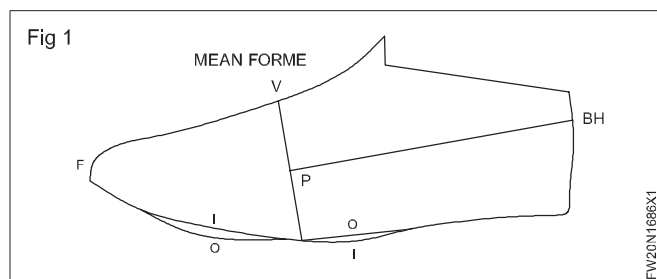
- 1 Draw insole pattern out line on a chart paper.
- 2 Draw a line by Adding 20mm allowance around the outline circumference of the insole pattern.
- 3 Cut the drawn line and take the out sole pattern.



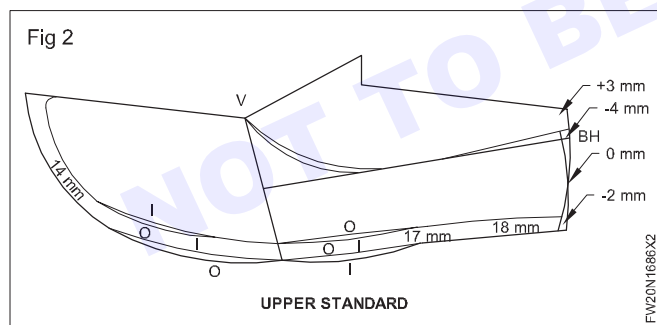
TASK 5: Practice Court Shoe Designing (Figs 1-3)

Upper standard and shell preparation (Fig 1)

- First, by keeping the Ladies Mean Forme and draw an outline. Mark the important points as shown in Figure.



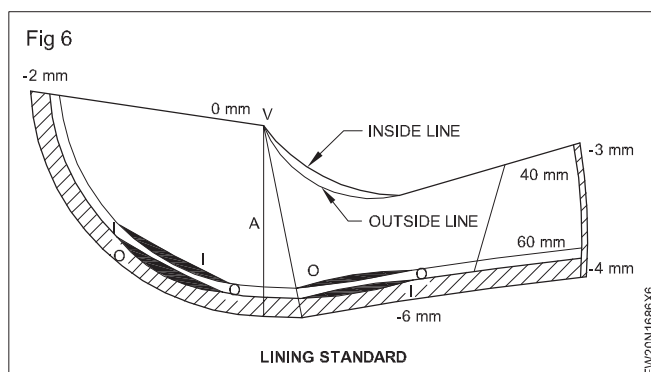
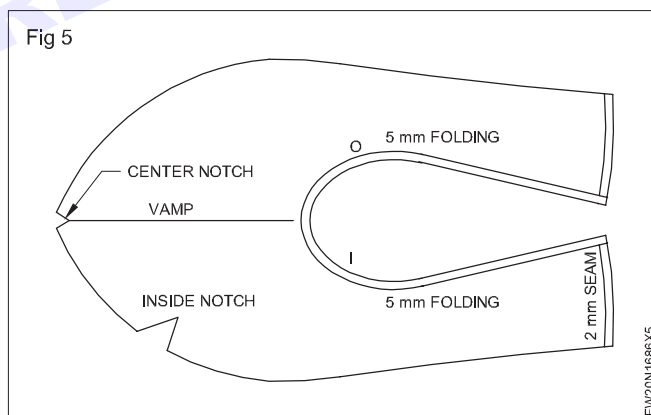
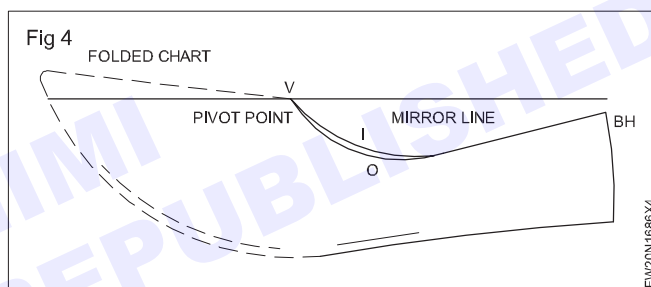
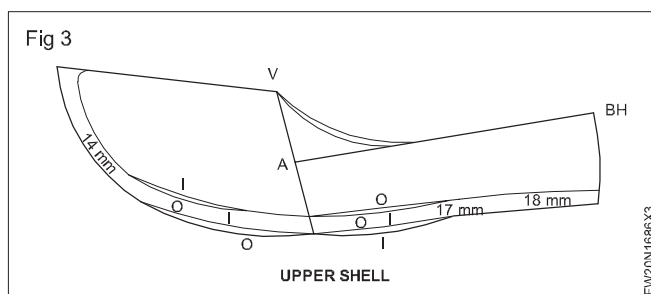
- From Mean Form - Feather Edge
- Heel Part- 19 mm
- Middle part - 18 mm (Seat area)
- Draw toe part by leaving 15 mm Lasting Allowance and draw with spring divider as shown in Figure. (Fig 2)

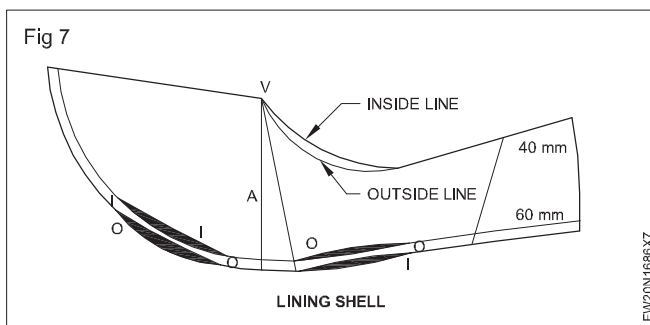


- Draw a tangent line from Vamp point (V) to F point.
- Draw a tangent line from Vamp point (V) to T point.
- Mark as per the dimensions and draw the curved outline and take two ladies court shoe upper standards. (Fig 2)
- Take a court shoe upper standard and cut it as an upper shell pattern as shown in figure. (Fig 3)

Upper pattern preparation (Figs 4 - 7)

- Fold the chart as shown in figure and place Ladies court shoe upper shell, rotate it and take the vamp pattern.



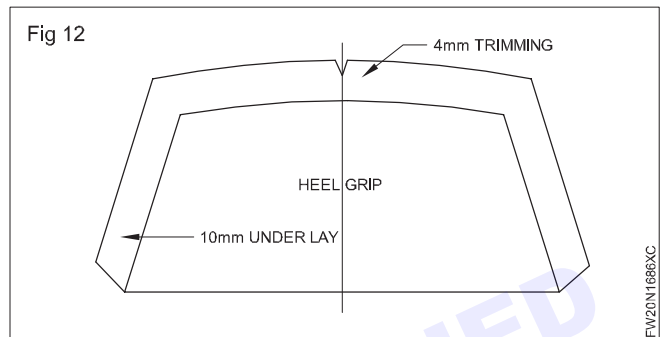
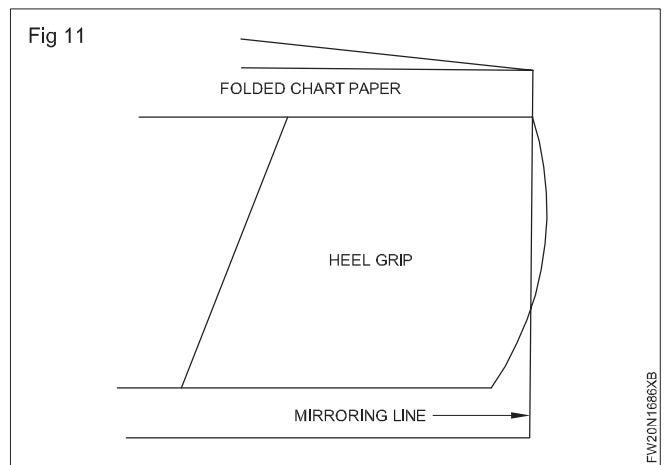
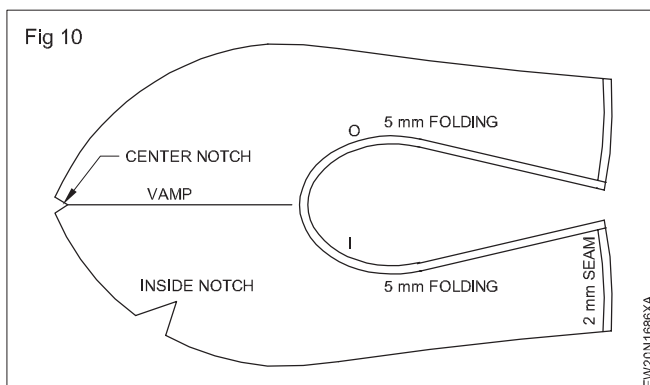
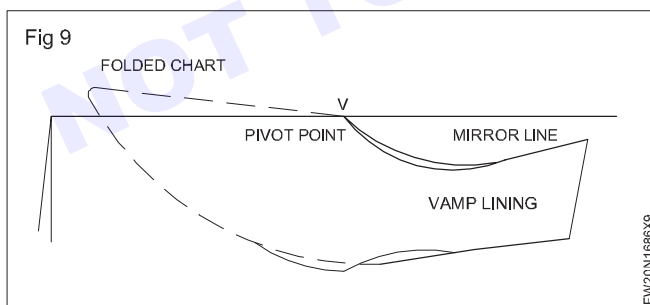
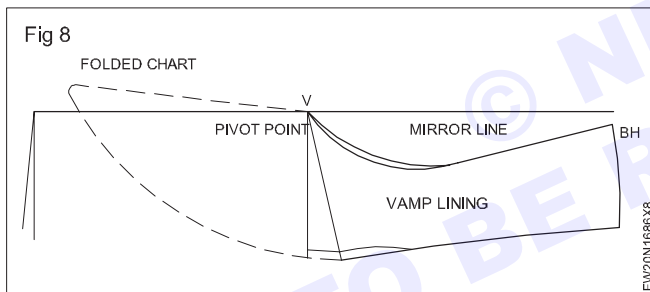


Lining standard and Lining shell preparation

- First using upper shall mark outline and key points and draw a curved line.
- Draw the lasting allowance reduced by 6 mm
- Mark vamp line, quarter line, heel grip back curve according to the dimension shown in figure.
- Thus Cut the lines drawn and make lining standard.
- Prepare two lining standards and keep one lining standard intact.
- Cut another lining standard into a shell as shown in figure.

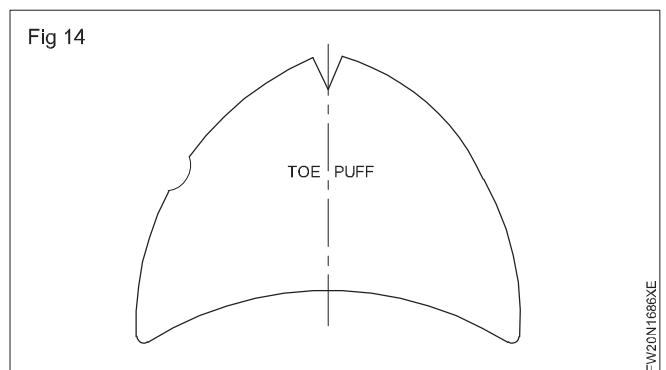
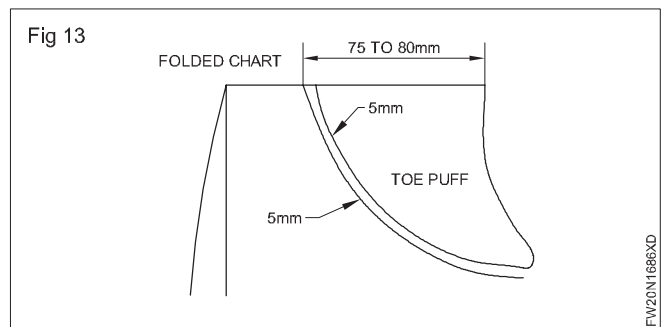
Lining pattern preparation (Figs 8-12)

- Fold the chart and keep the lining shell pattern and take the lining pattern.



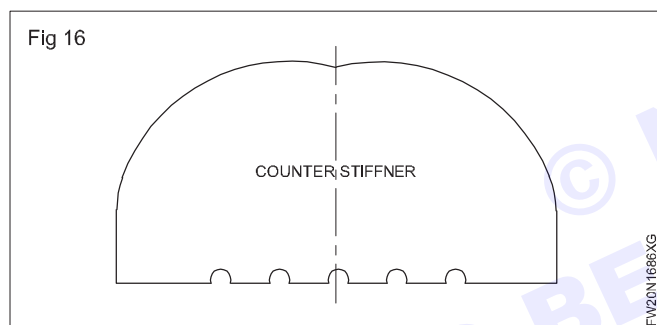
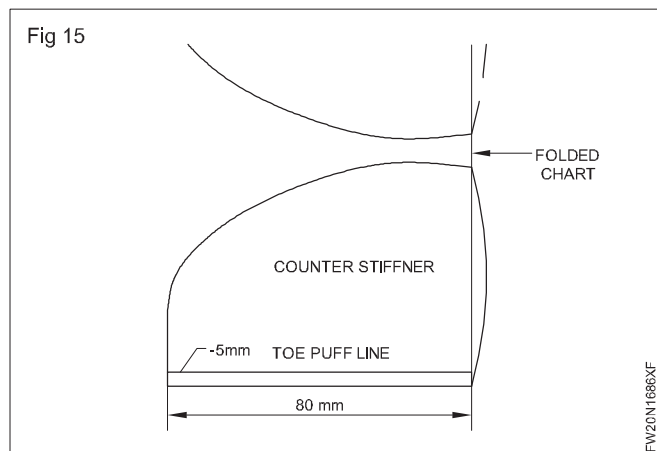
Toe puff preparation (Fig 13 & 14)

- Fill the chart paper-and fit the upper shell in a straight line and draw the outline.
- Draw a line 5mm inside the lasting line as shown in figure.
- Toe puff length can be up to 75-80 mm depending on the Last.
- Open the chart inside line, cut centre nicks and take toe puff pattern.



Counter stiffener preparation (Fig 15 & 16)

- First, fold the chart paper and fit the upper shell in a straight line and draw the outline.
- Draw a line 5mm inside the lasting line as shown in the figure.
- Length of counter stiffener may be 80 mm depending on the Last.
- Open the chart, cut the canter nicks 'U' cut and take counter stiffener pattern.

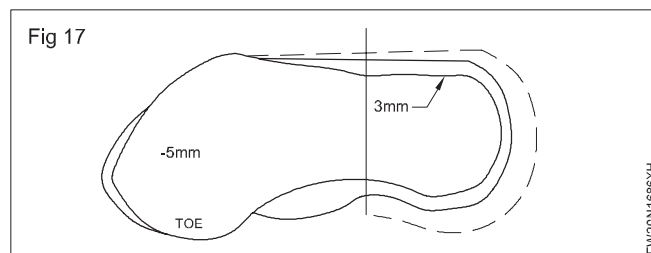


Insole pattern preparation

Follow the procedure of Derby Shoe Insole pattern preparation

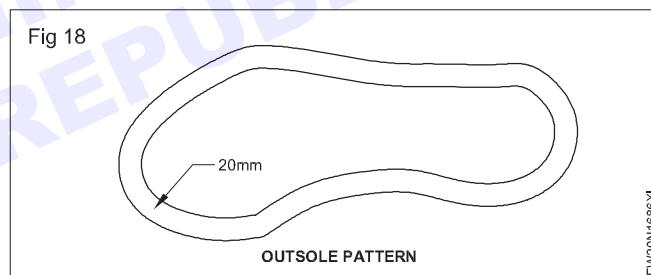
Insocks pattern preparation (Fig 17)

- Draw insole pattern out line on a chart paper.
- Add 3 mm from inner waist to draw out line tread as shown in the figure.
- Reduce, 5 mm in toe area and draw a curve line.
- Draw a curve line from Inner tread line to Inner waist line (as shown in Figure).
- Cut the drawn line and take Insocks Pattern



Out Sole pattern preparation (Fig 18)

- Draw insole pattern out line on a chart paper.
- Add 20 mm allowance and draw a line around the outline circumference of the insole pattern.
- Cut the drawn line and take the out sole pattern.



TASK 6: Draw designs of Monk, Ghillie, Mule, School shoes on a chart

Draw different designs of monk, ghillie, mule, school shoes on the given chart and show it to the instructor for approval.

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Construct and design of track shoe, winter boot and safety shoe

Objectives: At the end of this exercise you shall be able to

- draw patterns (design) of various track shoes
- draw patterns of various winter boots
- draw patterns of various safety shoes.

Requirements

Tools/Instruments

- Steel rule 300 mm

- 1 No.

Equipments/Machines

- Work bench

- 1 No.

Materials

- Chart paper
- Pencil
- Eraser
- Color pencil
- Sketch pen

- as reqd.
- as reqd.
- as reqd.
- as reqd.
- as reqd.

PROCEDURE

TASK 1: Drawing the patterns of various track shoes (Fig 1)

Note: Instructor will explain various track shoe designs and components.

- The trainees to draw various track shoe designs as shown in Fig 1 mark the parts and get the approval from the instructor.

Fig 1



FW20N1687H1

TASK 2: Drawing patterns of various winter shoe boots (Fig 1)

Note : Instructor to explain various parts of winter shoes / boots.

- The trainee to draw and mark the parts of various winter shoes/boots as shown in Fig 1.

Fig 1



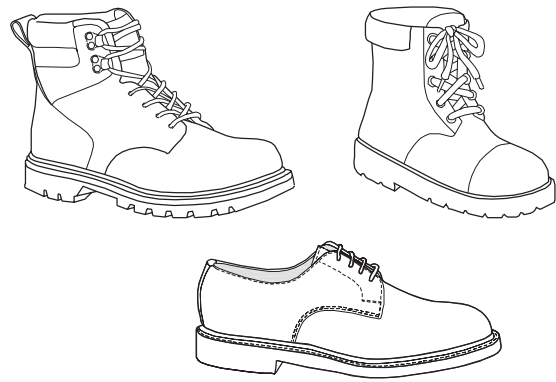
FW20N1687H2

TASK 3: Draw the patterns of various safety shoes (Fig 1)

Note: Instructor will show and explain the structure of various safety shoes.

- Trainees to draw the structure of various safety shoes as shown in Fig 1 and mark the parts.

Fig 1



FW20N1667H3

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Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Draw a free hand sketch of all types of styles / fashion shoes, ladies, gents and baby shoe

Objectives: At the end of this exercise you shall be able to

- practice drawing sketches of different types of men's style and current suit footwear
- practice drawing sketches of different styles and current suit footwear of different types for women and children.

Requirements

Tools/Instruments

- Scale 12 inch

- 1 No.

Materials

- Chart paper
- Pencil
- Eraser

- as reqd.
- as reqd.
- as reqd.

PROCEDURE

TASK 1: Practice drawing sketches of different types of men's style and current suit shoes

The instructor will show and explain different types of men's style and current suit footwear.

- Draw the Men's footwear name and images in Table 1.

Table 1

S.No.	Men's footwear name	Image of footwear
1		
2		
3		
4		
5		

TASK 2: Practice drawing sketches of different styles and current suit footwear of different types for women and children.

The instructor will show and explain different types of women's style and current suit footwear.

- Draw the women's footwear name and images in Table 2.

Table 2

S.No.	Women's footwear name	Image of footwear
1		
2		
3		
4		
5		

The instructor will show and explain different types of children's style and current suit footwear.

- Draw the children's footwear name and images of children's shoes in Table 3 below.

Table 3

S.No.	Name of children's footwear	Image of footwear
1		
2		
3		
4		
5		

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Construct and design of different types styles/ fashion shoes

Objectives: At the end of this exercise you shall be able to

- know the designs of different styles of shoes
- drawing various designs as fashion.

Requirements			
Tools/Instruments		Materials	
• Shoe size tape	- 1 No.	• Chart paper	- 1 No.
		• Color pencil	- 1 No.
		• Pencil	- 1 No.
		• Rubber	- 1 No.

PROCEDURE

TASK 1: Know the designs of different styles of shoes (Figs 1-7)

Note : Instructor should show and explain to the trainees the different styles of shoes.

- Trainees to draw various designs on chart paper.

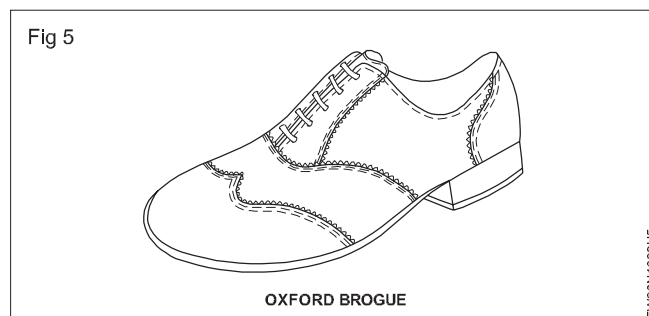
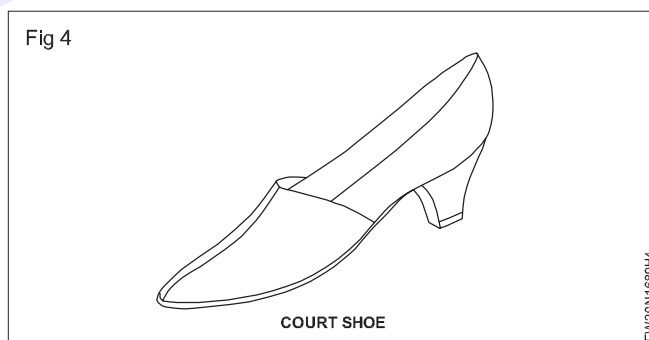
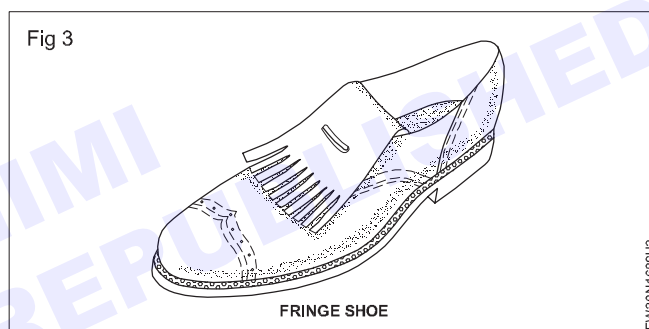
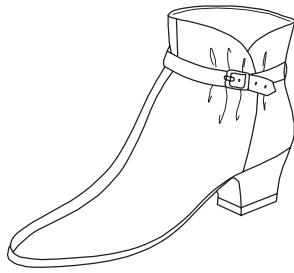


Fig 6

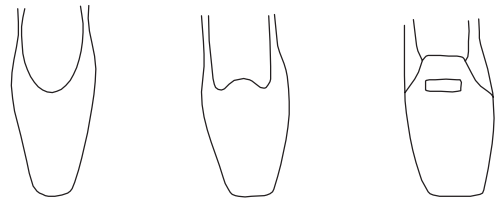


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FWN1689H6

Toe patterns of women's shoes

Fig 7



FW20N1689H7

Trainees who have drawn the various shoe styles to the instructor and get it checked by him.

TASK 2: Drawing various designs as fashion

- Instructor will show and explain fashion shoes of various designs to the trainees.

Trainees change the designs of shoes drawn in Task 1 into fashion and show it to the instructor for his approval.

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Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Clicking - Economical cutting of upper components and linings

Objectives: At the end of this exercise you shall be able to

- marking of tension and stretch marks in leather
- practice to nesting upper parts in leather
- calculating the percentage of economical cutting.

Requirements

Tools/Instruments

- Steel scale - 12 inch - 1 No.
- Knife - 1 No.

Equipments/Machines

- Leather thickness measuring gauge - 1 No.
- Work bench - 1 No.

Materials

- Leather - as reqd.
- Marking pencil - as reqd.
- Shoes pattern - as reqd.

PROCEDURE

TASK 1: Marking tension and stretch marks in leather (Fig 1)

The instructor to lay out the leather on the work bench and demonstrate the tension and stretch marks.

- Check the direction of the tension and stretch marks on the leather in Fig 1.

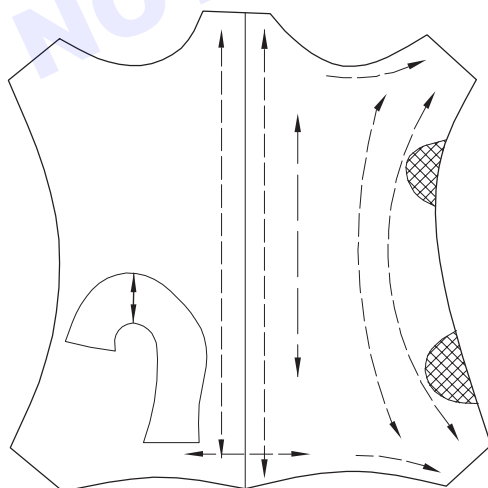
Note: Instructor to instruct the trainees to mark the tension and stretch marks of leather in Figure 1 in Table 1

- Instructor to check the marks done by the trainees in Table 1.

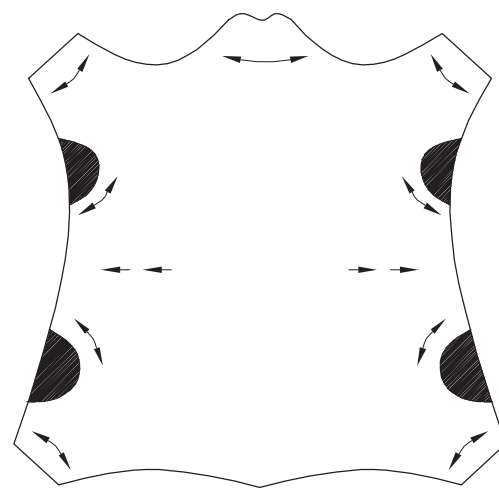
Table 1

S.No.	Direction	Marks
1	Neck to tail	
2	Belly to belly	

Fig 1



LINES OF TIGHTNESS



LINES OF STRETCH

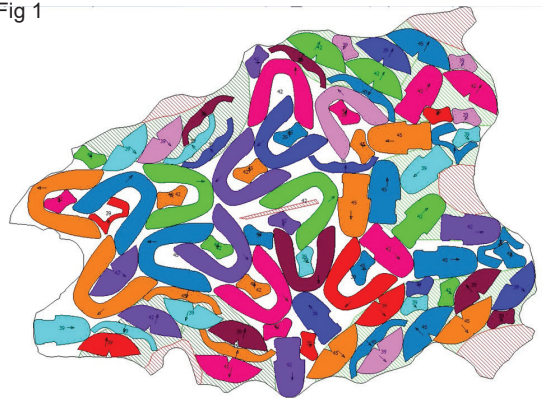
FW20N1650H1

TASK 2: Practice to nesting upper parts in leather (Fig 1)

Instructor to explain the nesting of upper parts in leather.

- Trainees to do nesting in another leather like the leather nesting given in Fig 1.

Fig 1



TASK 3: Calculating the percentage of economical cutting

Instructor by demonstrating nesting in different upper parts of leather will explain percentage of economical cutting to trainees.

- Calculate the percentage of economy cuts by nesting upper parts and lining parts in different leathers.

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Leather Exercise 1.6.91

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Stitching leather by hand and machine

Objectives: At the end of this exercise you shall be able to

- practice hand stitching
- practice machine stitching.

Requirements			
Tools/Instruments		Equipments/Machines	
• Trimmer		• Flat bed sewing machine	
- 1 No.		• Post bed sewing machine	
		• Cylinder bed sewing machine	
		- 1 No.	
		- 1 No.	
		- 1 No.	

PROCEDURE

TASK 1: Practice hand stitching

Refer Ex. No. 1.5.75 - TASK 1 & TASK 2

TASK 2: Practice machine stitching

Refer Ex. No.1.5.68 - TASK 1

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Identify different types of clicking or cutting

Objectives: At the end of this exercise you shall be able to

- identify the leather cut in clicking machine
- identify the hand cut leather
- identify the differences between hand cut leather and machine cut leather.

Requirements

Tools/Instruments

- Knife - 1 No.
- Oil stone - 1 No.
- Kaddapa stone - 1 No.

Equipments/Machines

- Clicking machine - 1 No.

Materials

- Leather cut by clicking machine - as reqd.
- Leather cut by hand - as reqd.

PROCEDURE

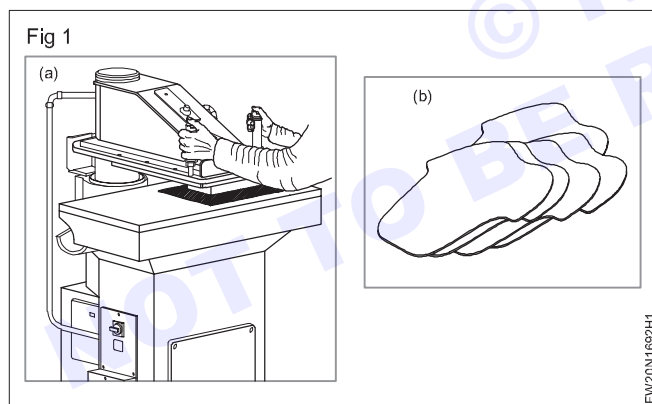
TASK 1: Specify the characteristics of leather cut on a clicking machine (Fig 1)

The instructor will show the leather cut on the machine and explain their characteristics.

Instructor to explain the differences between machine-cut leather and hand-cut leather.

- Trainees need to State the characteristics of machine cut leather shown in Fig 1 in Table 1.

Table 1



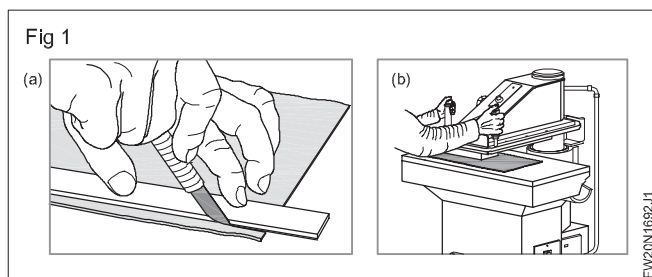
S.No.	Leather characteristics

TASK 2: Specify the characteristics of hand cut leather (Fig 1)

Instructor will show hand-cut leather and explain their characteristics.

- Trainees need to state the characteristics of the hand cut leather shown in Fig 1 in Table 2.

Table 2



S.No.	Leather characteristics

TASK 3: Specify the differences between machine-cut leather and hand-cut leather

Trainees need to mention the differences between machine-cut leather and hand-cut leather in Table 3.

Table 3

S.No.	Machine cut leather	Hand cut leather
1		
2		
3		
4		
5		
6		
7		

— — — — —

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Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Prepare and practice of economic cutting of upper components and linings

Objectives: At the end of this exercise you shall be able to

- know the upper and lining parts of shoes
- practice marking of leather using interlocking method.

Requirements

Tools/Instruments

- Steel scale - 12 inch - 1 No.
- Knife - 1 No.

Equipments/Machines

- Leather thickness measuring gauge - 1 No.

- Work bench - 1 No.

Materials

- Leather - as reqd.
- Marking pencil - as reqd.

PROCEDURE

TASK 1: Know the upper and lining components of shoes

Refer Ex. No. 1.6.90 - TASK 2

Instructor to keep a shoe and explain the upper and lining components to the trainees.

- Write the names of upper and lining components in Table 1.

Table 1

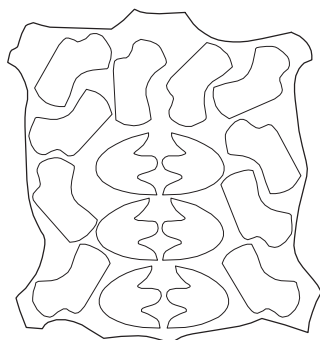
S.No.	Upper and lining components
1	
2	
3	

TASK 2: Practice marking of leather using interlocking method (Fig 1 - 2)

Instructor to explain the best interlocking method for economical cutting.

- Lay out the upper components in leather as shown in Fig 1.

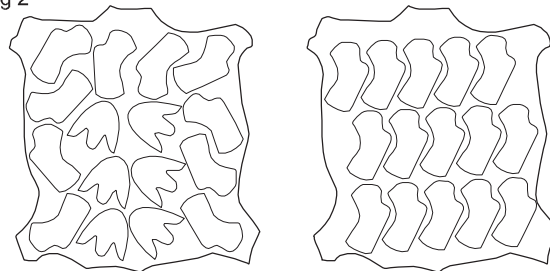
Fig 1



FW20N1693H1

- Layout the parts of the leather as shown in Fig 2.

Fig 2



FW20N1693H2

Note : Trainees have to Lay out the shoe parts in different leather in the best interlocking method as shown in the given figure and show it and get it checked by the instructor. Also calculate in economic rate percentage.

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Draw the free hand sketch with measurement clicking or cutting manual or machine cutting

Objectives: At the end of this exercise you shall be able to

- practice cutting to measurement
- practice machine cutting
- drawing parts with measurements.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Variety of shoes pattern	- as reqd.
• Cutting sheet	- 1 No.	• Chat paper	- as reqd.
• Steel rule 12 inch	- 1 No.	• Leather	- as reqd.
• Grinding stone	- 1 No.	• Marking pencil	- as reqd.
Equipments/Machines			
• Hydraulic clicking machine	- 1 No.		

PROCEDURE

TASK 1: Practice cutting to measurement (Fig 1 & 2)

Note: The knife should be handled with care.

- Spread the leather on the table.
- Using chart paper, take the pattern following the procedure in Exercise No.1.6.85 with measurements.
- Mark the defects in leather.
- First mark the patterns of the upper parts in an interlocking method in the area of defect-free and stretch ability. (Fig 1)
- Place the marked leather on the cutting mat and cut all the upper parts. (Fig 2)
- Hold the knife at a 45° angle to the curved area and cut.
- Cut without making a mess while cutting.

Note: Trainees need to show the upper parts cut by them to the instructor for his approval .

Fig 1

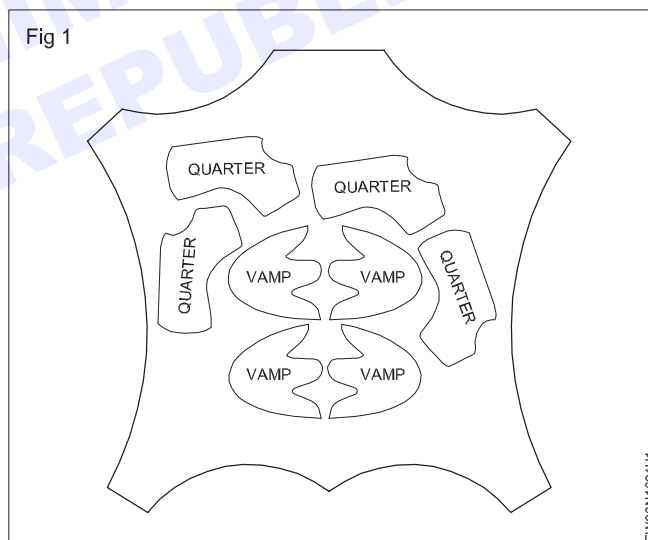
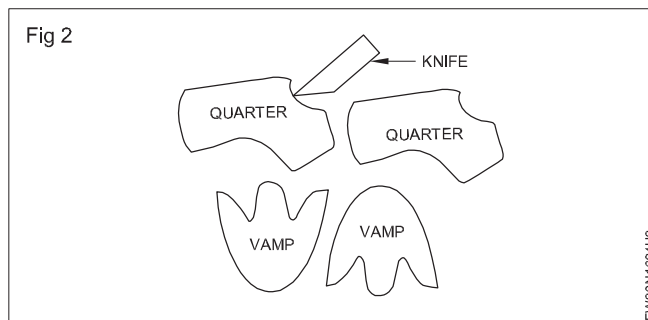


Fig 2



TASK 2: Practice machine cutting

Refer Ex.No. 1.5.61 - Task 4

TASK 3: Drawing parts with measurements

The instructor will show the pattern of the various parts and explain and have the trainees draw the same.

- Identify the pattern of each part.
- Then draw the images in Table 1 against the name of the parts.

Table 1

S.No.	Name of parts	Image of parts
1	Vamp	
2	Quarter	
3	Heel grip	
4	Back strap	
5	Counter	

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Identify different parts of components of shoe upper linings

Objectives: At the end of this exercise you shall be able to

- identify the lining parts of shoe upper.

Requirements

Materials

- | | | | |
|---------------------------|------------|----------|------------|
| • Shoe upper lining parts | - as reqd. | • Pencil | - as reqd. |
| | | • Eraser | - as reqd. |

PROCEDURE

TASK 1: Identify the lining parts of shoe upper (Fig 1)

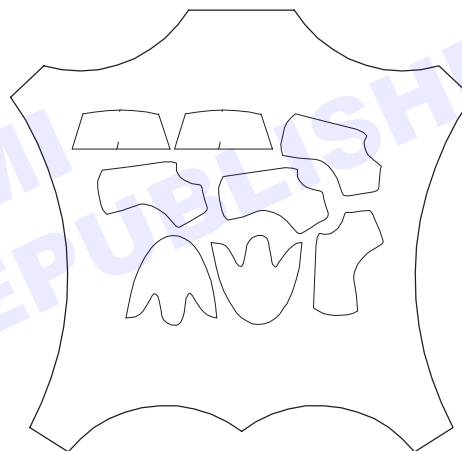
Instructor to Show and explain the shoe upper lining parts to the trainees.

- List the lining parts shown in Fig 1 in Table 1.

Table 1

S.No.	Name of parts
1	
2	
3	
4	

Fig 1



FW20N1695H1

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Identify different parts of components of insole, sole heel, top pieces, shoe heel, stiffeners and sock lining

Objectives: At the end of this exercise you shall be able to

- identify the top pieces of various shoes
- identify different stiffeners
- identify different insoles
- identify various socks linings
- identify various shoe heels.

Requirements

Tools/Instruments

- Knife - 1 No.
- Leather thickness gauge - 1 No.
- Scissors - 1 No.

Equipments/Machines

- Designing table - 1 No.

Materials

- Top pieces - as reqd.
- Stiffener - as reqd.
- Insole - as reqd.
- Sock lining - as reqd.
- Shoe heels - as reqd.

PROCEDURE

TASK 1: Identify the top - pieces of various shoes (Fig 1)

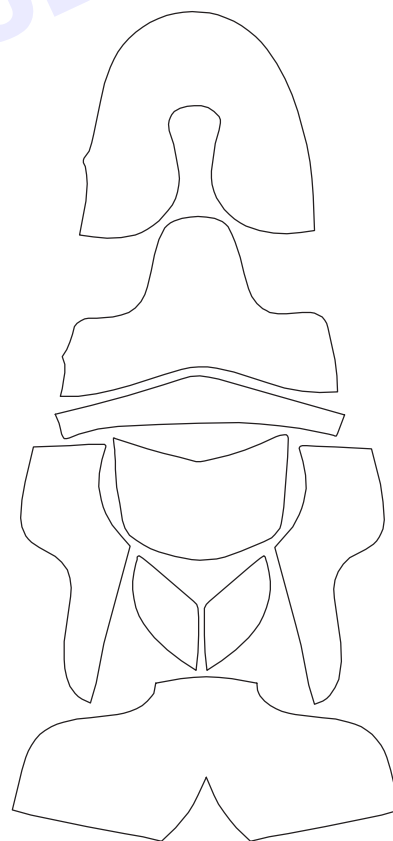
Instructor to show and explain the various top pieces used to make shoes to the trainees.

- Trainees to identify the top pieces required to make the shoes and draw their patterns in Table 1.

Table 1

S.No.	Name of the top pieces of various shoes	Pattern of parts
1	Cap	
2	Vamp	
3	Saddle	
4	Quarter	
5	Tung	
6	Elastic gusset	
7	Counter	

Fig 1



TASK 2: Identify different stiffeners

Instructor will show and explain various stiffeners to the trainees.

- Trainees to identify various stiffeners and mark them in Table 2.

Table 2

S.No.	Stiffener names
1	
2	

TASK 3: Identify different insoles

The instructor will show and explain insoles individually prepared from different raw materials.

- Trainees to identify insoles made of different raw materials and mark them in Table 3.

Table 3

S.No.	Raw material of insole
1	
2	

TASK 4: Identify various socks linings

The instructor will show and explain to the trainees individually the raw materials and types used for different sock lining.

- Trainees to identify various sock lining and mark them in Table 4.

Table 4

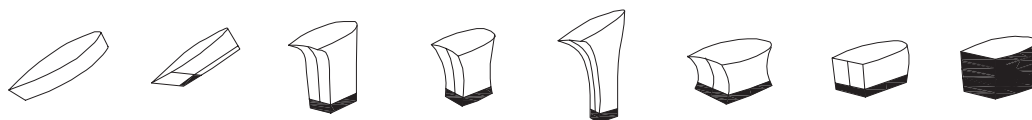
S.No.	Sock lining name	Sock lining patterns
1		
2		

TASK 5: Identify various shoe heels (Fig 1)

The instructor will show and explain separately the raw materials and patterns used to make the various heels. (Fig 1)

- Trainees to identify shoe heels made out of various raw materials and mark them in Table 5

Fig 1



FWZ0N1696J1

Table 5

S.No.	Names of heel	Heel patterns
1		
2		

Footwear Maker - Designing, Pattern Cutting & Template Making of Different Types of Footwear

Prepare and practice of different types stitching by hand/machines

Objectives: At the end of this exercise you shall be able to

- preparing for hand sewing and practice sewing
- preparing for machine sewing and practice machine sewing.

Requirements			
Tools/Instruments		Materials	
• Trimmer	- 1 No.	• 8"x5" Kattai leather	- as reqd.
Equipments/Machines		• Marking pencil	- as reqd.
• Flat bed sewing machine	- 1 No.	• Sewing thread	- as reqd.
		• Wax	- as reqd.
		• Chart paper	- as reqd.
		• Hand sewing needle	- as reqd.

PROCEDURE

TASK 1: Preparing for hand sewing and practice sewing

Refer Ex. No. 1.5.75 - TASK 1 & TASK 2

TASK 2: Preparing for machine sewing and practice machine sewing (Fig 1)

Preparation

- 1 Take a 12" x 10" sheet of chart paper required for machine sewing practice.
- 2 Take a ruler and pencil, eraser
- 3 Clean the sewing machine thoroughly, oil it, thread it and keep it ready.

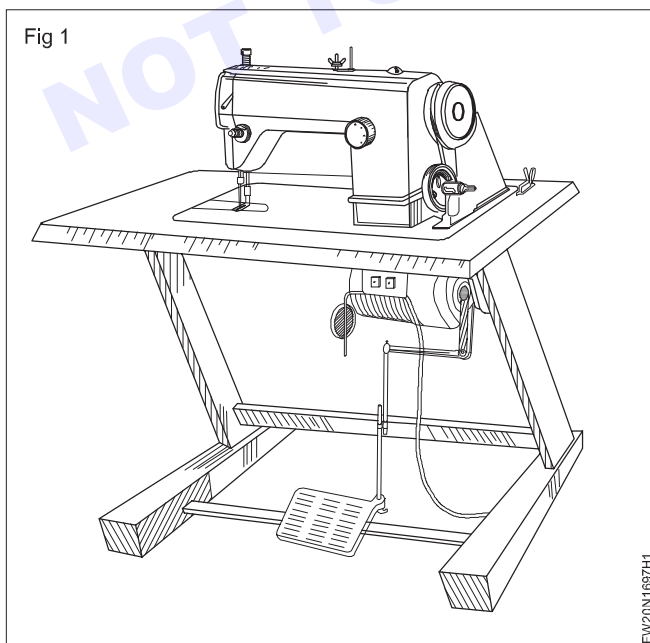
Sewing practice

- 1 On the chart paper taken, leave a 1" gap and draw line in two areas with a scale and pencil.
- 2 Draw lines diagonally across the chart paper leaving a 1 cm gap in the other areas.
- 3 Place a wooden stool of suitable height in front of the machine and sit ready to sew.
- 4 Then turn on the switch of the machine and put the chart paper with the lines drawn on the bed part of the machine under the presser foot, lower the foot and release the pedal slightly and press it.
- 5 Sew across the chart in a similar manner.

Safety Method

- 1 When sitting on a stool, sit at the correct height and position.
- 2 Operate the pedal slowly while starting the machine. (Extreme care is required as the engine speed is high)
- 3 Be careful not to poke your hands with the needle while sewing.
- 4 Do not pull out the sewing material while the needle is inside the needle plate. (Pulling like that will tear the sewing material)
- 5 Disconnect the power supply immediately after sewing.

Fig 1



Footwear Maker - Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Closing, skiving and application of different adhesives, folding of upper and assembling of upper and lining components

Objectives: At the end of this exercise you shall be able to

- skiving upper and lining parts
- practice using different adhesives
- practice folding
- attaching the upper and lining parts.

Requirements

Tools/Instruments

- Hammer - 1 No.
- Knife - 1 No.
- Mate - 1 No.
- Kadapa stone - 1 No.
- Glue can - 1 No.
- Brush - 1 No.
- Eyelet fixer - 1 No.
- Departmental punch - 1 No.
- Eyelet setter - 1 No.

Equipments/Machines

- Skiving machine - 1 No.
- Postbed sewing machine - 1 No.

- Folding machine - 1 No.
- Leather thickness Measuring gauge - 1 No.

Materials

- Latex - as reqd.
- Dendrite glue - as reqd.
- Upper Leather (Derby) - as reqd.
- Lining Leather (Derby) - as reqd.
- Eyelet - as reqd.

PROCEDURE

TASK 1: Skiving the Derby Upper and Lining Parts (Figs 1-8)

- 1 First take the required derby model upper and lining parts for skiving and make necessary adjustments in the skiving machine and first place the upper part under the pressure foot. Then adjust the pressure of the pressure foot with the help of thickness adjuster (Fig 1)

Fig 1



- 2 Adjust the gauge to the required amount of skiving.
- 3 Adjust the feed roller as required (Adjust the gap between feed roller and bell knife)
- 4 To sharpen the bell knife adjust the grinding wheel adjusting screw.

- 5 Take the leather to be skived and place it near the pressure foot and hold it with both hands (Fig 2)

Fig 2



Note : First skive on a scrap piece of leather and get it checked with the instructor.

- 6 Check the thickness of the derby upper component which has been cut and given.
- 7 Switch on the skiving m/c and adjust the pressure foot as required. (Fig 3)
- 8 Take vamp leather and make 10mm underlay and folding skive.

Fig 3



Fig 4



Note : Check with leather thickness gauge and pair it

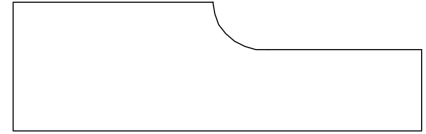
- 9 Fold 10 mm in top line of quarter leather. (Fig 4)
- 10 Do 5mm raw edge skive on quarter back seam.
- 11 Do 3mm raw skive on quarter attachment area. (Fig 5)

Fig 5



Note : Check the skived upper components by showing them to the instructors

Fig 6

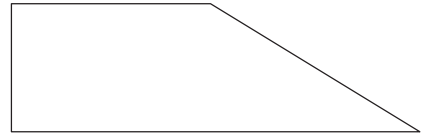


12 Check the cut derby lining components thickness.

13 Switch on the skiving machine and adjust the pressure foot as required.

14 Take the vamp lining and do under lay skive for 10mm.

Fig 7

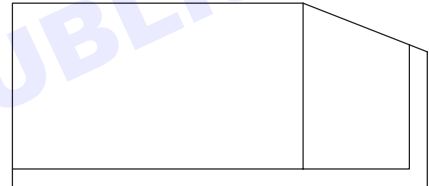


15 Do top line skive on quarter line.

16 Do under lay skive 10mm on heel grip lining.

16 Check skiving done and pair it.

Fig 8



Note: Check the skiving-made upper and lining components by showing them to the instructor.

TASK 2: Practice using different adhesives (Fig 1)

Note: Instructor to explain the trainees how to use temporary adhesives (Latex) and permanent adhesives to apply by hand on scrap leather with a brush.

- In Table 1, where the name of the adhesives is written, state their uses directly next to it.

Fig 1



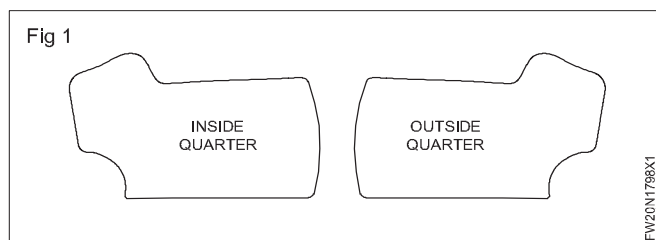
Table 1

S.No.	Name of the adhesive	Applications
1	Rubber Solution	
2	Dendrite glue	
3	Latex	
4	PU Solution	
5	Neoprene	

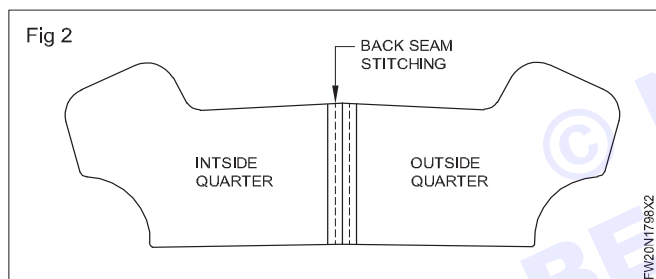
TASK 3: Folding (Figs 1 to 7)

Note: Check if the pair is correct by showing the skived derby components to the instructor

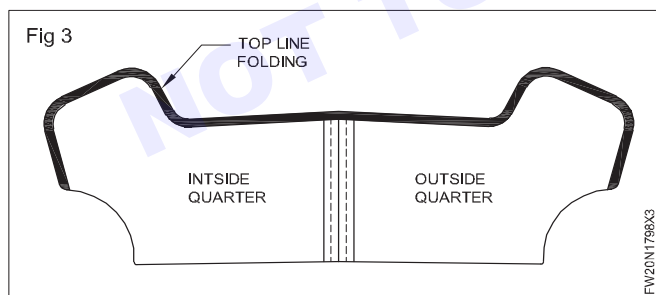
- 1 Take the skiving done inside, outside quarter. (Fig 1)



- 2 Join inside quarter with outside quarter and sew back seam in backside using postbed sewing machine.



- 3 Hammer the place where the seam is stitched and attach the seam tape.



- 4 Apply dendrite on quarter topline.

Note : Allow drying time of 10 minutes for dendrite to flow and dry well.

- 5 Do topline folding with pointed hammer at the place of application.
- 6 Take the vamp component and apply dendrite on tongue and fold the tongue.
- 7 Apply dendrite on In/Out Quarter Lining+Heel grip and do the attaching as shown in the figure.

Fig 4

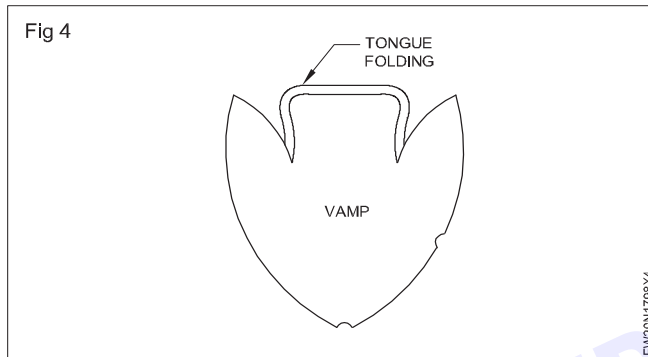


Fig 5

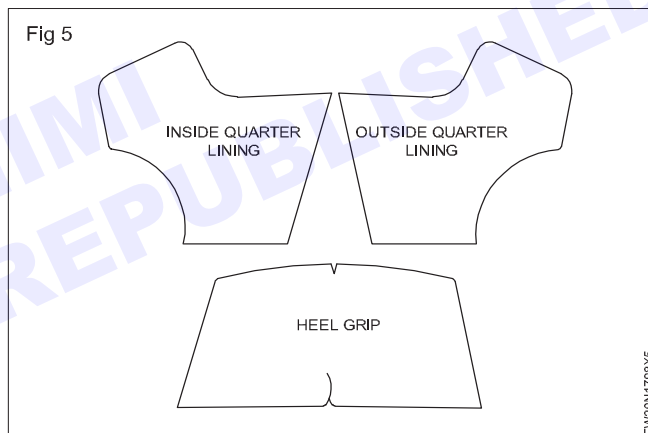


Fig 6

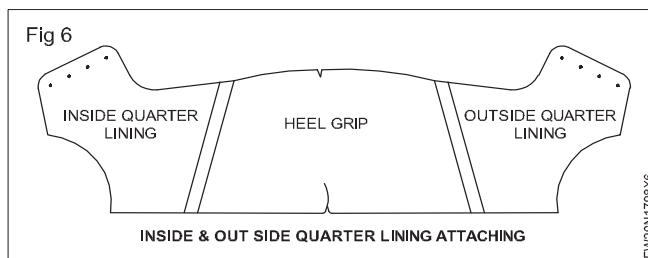
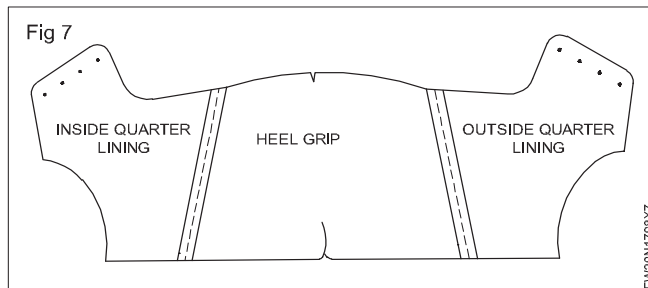


Fig 7



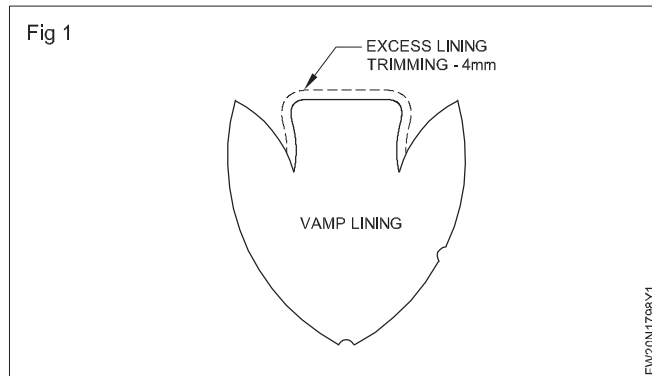
- 8 Do hammering on attached place and stitch it.

TASK 4: Attaching the upper and lining parts

Note: After making the necessary adjustment on the post bed sewing machine, stitch on scrap leather, show and check it with the instructor.

Attaching the lining and inserts to the Derby Shoe upper: (Figs 1-9)

- Apply dendrite on In/Out quarter lining topline with In/Out quarter.

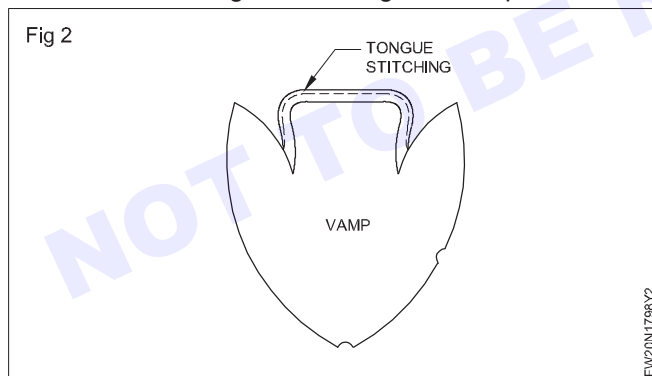


Note: Allow 10 minutes as drying time.

- Top keep 4mm trimming fit with the lining top line paste the lining with upper.
- Hammer on topline.

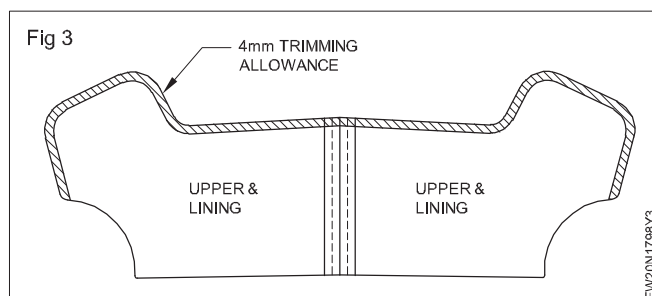
Note: After hammering has been done show and get it checked by your instructor.

- After hammering, do stitching on the top line.

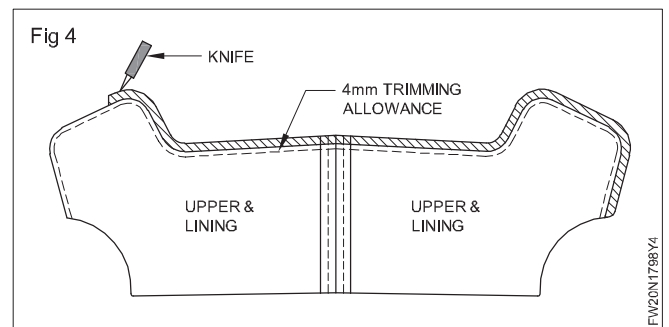


Note: Check the stitching by showing it to the instructor.

- Trim the excess lining from the top line.

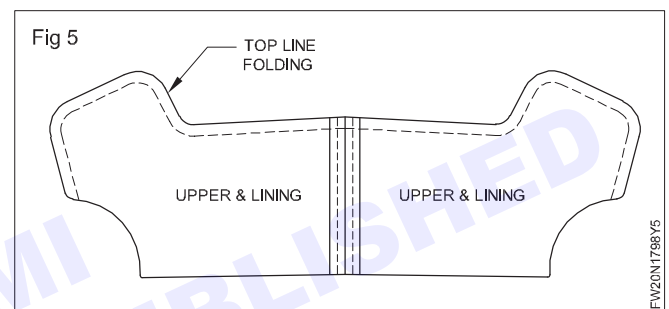


- Apply dendrite on Vamp Upper+Vamp Lining Tongue. Hammer the attachment.
- Do the stitching on hammering done.



Note: Check the stitching by showing it to the instructor.

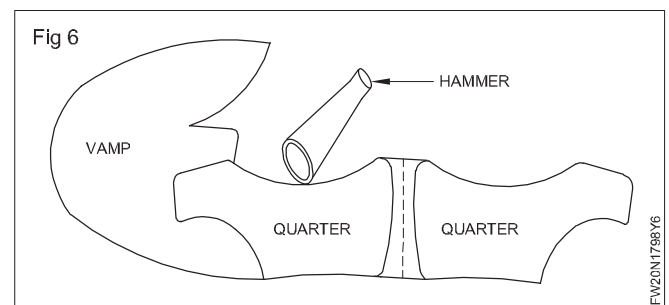
- Trim the excess lining where the stitching is done.



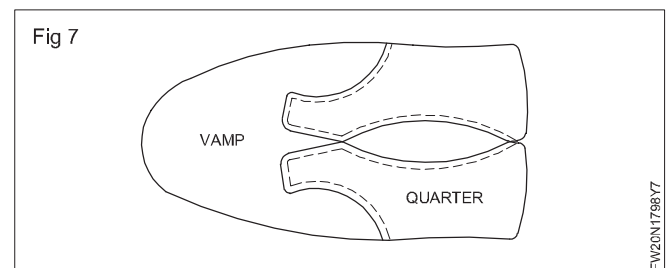
- Apply dendrite on Vamp + Quarter.

Note: Allow 10 minutes as drying time.

- Attach the applied place and do hammering.



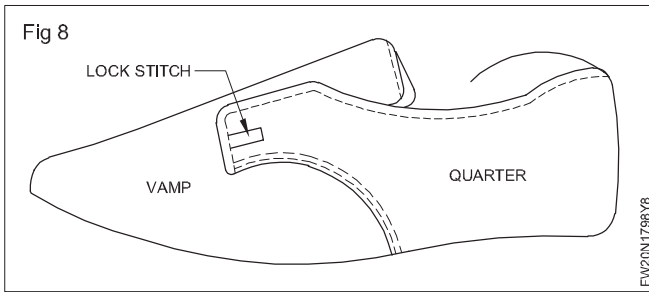
- Do double row stitching where hammering done.



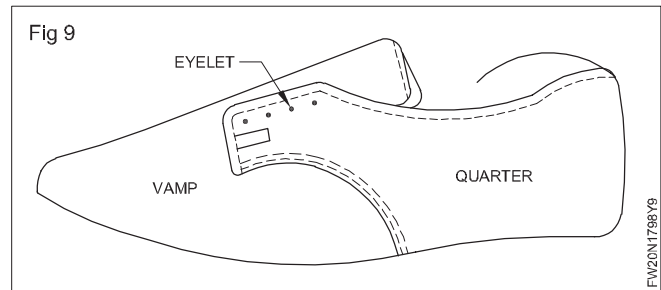
- Apply dendrite on Vamp Lining + Quarter Lining, give 10 minutes and attach it. Then do hammering and stitching.

Note: Check the stitching by showing it to the instructor.

- Do lock Stitching on in/out quarter.



- Pull the thread on the lock Stitched places to the inner side and apply dendrite and paste it.
- Place the punch on quarter and eyelet point and punch holes.



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Footwear Maker - Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Prepare application such as natural rubber solution, rubber latex, polyurethane adhesives, neoprene adhesives, hot melt adhesives, etc. Hardener for adhesives, preparation and application, backing up their leather

Objectives: At the end of this exercise you shall be able to

- know the method of application of various adhesives on leather.

Requirements			
Tools/Instruments		Equipments/Machines	
• Knife-200 mm	- 1 No.	• Work bench	-1 No.
• Scissors -200 mm	- 1 No.	Materials	
• Brush 1"	- 1 No.		
• Hammer	- 1 No.		
• Kadapa stone	- 1 No.		
		• Adhesive	- as reqd.
		• Leather	- as reqd.
		• Cotton waste	- as reqd.

PROCEDURE

TASK 1: Know the method of application of various adhesives on leather

Note: The instructor should explain to the trainees the properties of various adhesives and demonstrate how to use them.

- Place the leather to be pasted on the Kadapa stone.
- Pour the adhesive into the solution can.
- Then apply the adhesive on the leather.
- After it dries well, tap it with a hammer.

List the different types of adhesives in Table 1 and indicate their respective uses

Table 1

S.No.	Name of the adhesive	Applications
1		
2		
3		
4		
5		

- Mix hardener as needed in some adhesives.

Note: This hardener increases bond strength and acts as a curing agent to aid drying.

Footwear Maker - Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Identify the marking essential of color marking the edge of the component, nicks on the edges of the clicking knife and stamping using metal foil in machine

Objectives: At the end of this exercise you shall be able to

- practice coloring the edges of parts
- practice nicking the edge with a clicking knife
- practice fixing stamping metal foil in a stamping machine.

Requirements			
Tools/Instruments			
• Clicking knife	- 1 No.	• Hydraulic clicking machine	- 1 No.
• Brush -1"	- 1 No.	Materials	
Equipments/Machines		• Color	- as reqd.
• Stamping machine	- 1 No.		

PROCEDURE

TASK 1: Practice coloring the edges of parts

- After cutting the upper parts, to color the edges, brush the color on the upper edge.
- Choose the appropriate color for each shoe color and apply it.
- When applying colour take care not to spill color on other areas of upper.

Note: After finishing coloring the edges of the parts show them to the instructor and get approval

TASK 2: Practice nicking the edge with a clicking knife (Fig 1)

- Cut nicks in the edge with a clicking knife on the lasting edge of the cut upper parts.
- Cut this nicks cut to find different shoe sizes.
- Place these in a hydraulic clicking machine, to get cut notches in a clicking die on the last edge of the upper parts.
- Cut different size codes with clicking die.

Note : After finishing coloring the edges of the parts show them to the instructor and get approval

Fig 1

ENGLISH SIZE	CODE
1.....4.....9	
2.....5.....10	
3.....6.....11	
7.....12	
8.....13	
ALL 1/2 SIZES	
EXAMPLE: - SIZE 6 1/2	

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TASK 3: Practice fixing stamping Metal Foil in a Stamping machine (Fig 1 & 2)

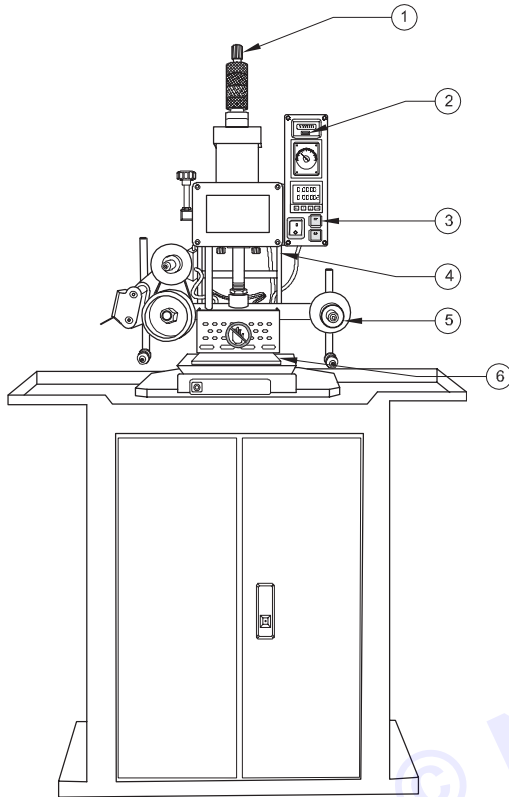
Instructor should show the stamping machine to the trainees and explain its parts and the functions of each part.

Parts of the machine

- 1 Air pressure adjusting knob
- 2 Timer Button

- 3 Temperature Control Knob
- 4 L Shape Arm
- 5 Foil Adjusting Knob
- 6 Alpha Numeric Die

Fig 1



- Look at each part and write its name in Table 1 given below.
- Draw the images of the component in Table 1 with name specified.
- Write the functions of each part in Table 1.

Table 1

S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			
6			

Practice to operate the stamping machine

- Turn on the stamping machine.
- Adjust stamp (Alpha numeric die), heat, air pressure timing suitable for stamping.

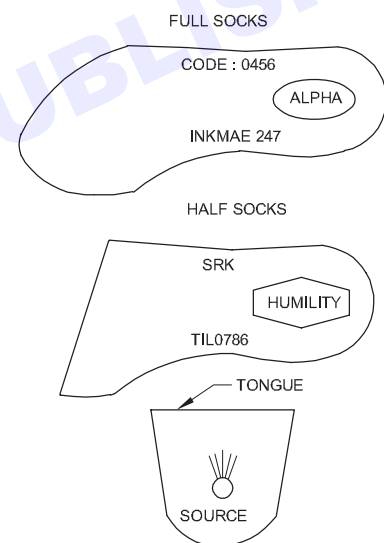
Note: The trainee should show the various adjustments made in the stamping machine with a sample piece to the instructor and get his approval.

- Place the part of the shoe to be stamped under the Alpha numeric die and Foil.
- Now press the pedal
- The Alpha numeric die press and stamp the leather.
- The die is released when the specified temperature, time and pressure are reached.
- Now press the pedal.

Note: While working on the stamping machine, the stamping die should be operated carefully so as not to touch the hands.

- Now the leather would have been stamped.

Fig 2



Footwear Maker - Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Prepare different types of edge treatment

Objectives: At the end of this exercise you shall be able to

- prepare different types of edge treatment.

Requirements

Tools/Instruments

- Folding hammer - 1 No.
- Steel rule 300 mm - 1 No.
- Adhesive can 100ml - 1 No.
- Kaddapa stone 40x30x3 cm - 1 No.
- Cutting mat (A3) - 1 No.

Equipments/Machines

- Flat bed sewing machine - 1 No.
- Zig zag sewing machine - 1 No.

- Cutting table - 1 No.
- Post bed sewing machine - 1 No.

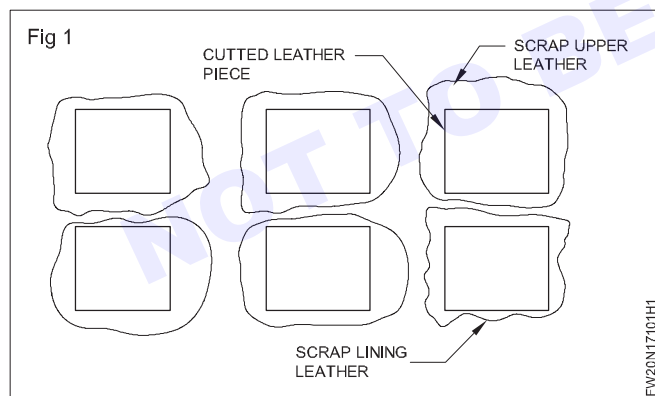
Materials

- Scrap upper leather - as reqd.
- Scrap lining leather - as reqd.
- Ready-made pipe beading - as reqd.
- Thread (No:30) - 1 No.
- Needle LR130 - 1 No.

PROCEDURE

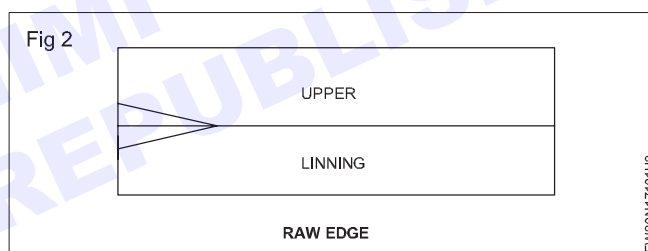
TASK 1: Prepare different types of edge treatment (Figs 1-7)

- First take the upper and lining scrap leathers and mark them to length-20 cm, width-20 cm with steel scale as shown in Fig 1.
- Click on the marked leather.
- Make cutting without squeaks while clicking.



1 Raw Edge

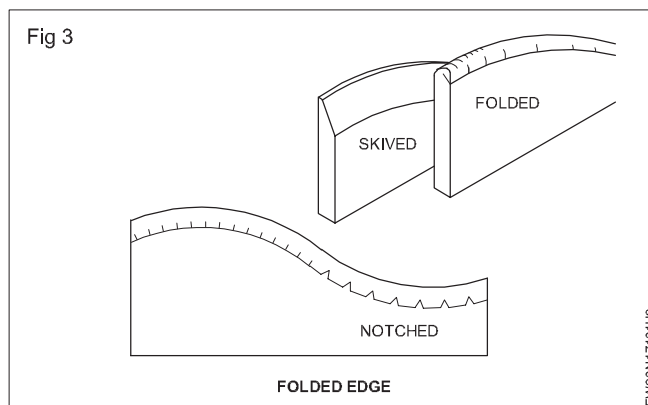
- Take the required quantity of clicked upper and lining leather.
- Skive the upper leather as needed.
- Using a post bed machine, sew leaving a 2mm allowance.
- Sew other pieces in the same way
- Trim the edges of the sewn pieces with a knife (Fig 2).



Note: Show the trimmed pieces to the instructor for approval.

2 Folded Edge

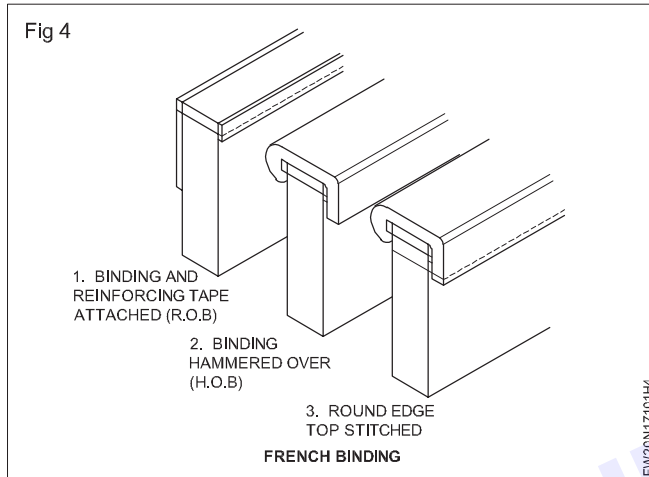
- Skive the upper part side to the required size.
- Then apply adhesive to the skiving area and let it dry
- If the folding is done in a circular curve, cut the knots in the circular area
- Then fold and hammer it. (Fig 3)



3 French binding

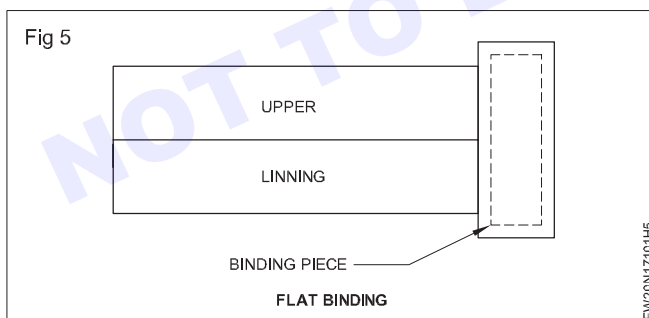
- Take the clicked upper and lining leathers as required.
- Attach the upper and lining and run a binding tape around the fabric.
- Then sew the outer edge of the fabric.
- After sewing, fold the binding tape over the edge and turn.
- Sew along the folded binding tape. (Fig 4)

Trainees to show the sewn part of the French binding to the instructor and get his approval.



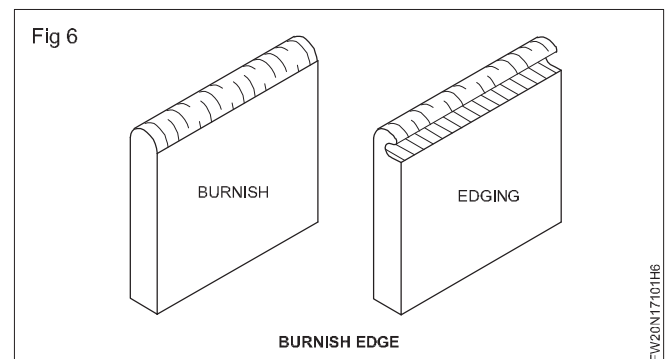
4 Flat Binding

- First paste the upper leather and lining leather.
- Then paste the binding tape on the edge.
- Sew on the binding tape with a 3mm allowance using a post bed sewing machine. (Fig 5)



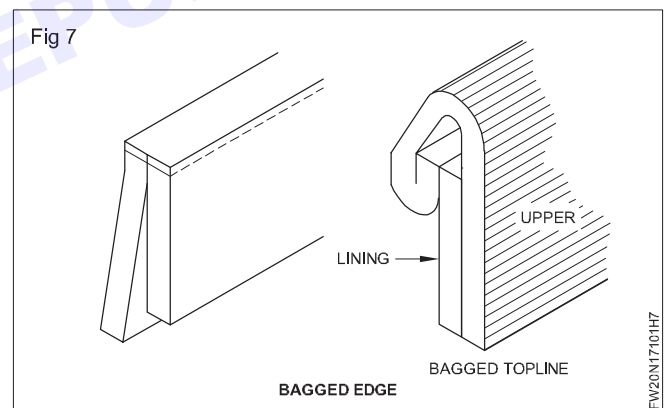
5 Burnish Edge

- In this the raw edge part is like the folded edge.
- Skive the edge at a 40° angle.
- Then heat the edge of the skiving with a hot iron rod and tighten the main part to make a folding like structure. (Fig 6)



6 Bagged Edge

- Take the clicked upper and lining leathers as required
- Then sew along the edge of the lining to the upper and lining.
- Turn the upper and paste to keep the seam inside.
- It does not need to be stitched again on the edge. (Fig 7)



Footwear Maker - Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Prepare different types of adhesives and backing up their leather

Objectives: At the end of this exercise you shall be able to

- know the method of application of various adhesives on leather.

Requirements			
Tools/Instruments		Equipments/Machines	
• Knife-200 mm	- 1 No.	• Work bench	- 1 No.
• Scissors -200 mm	- 1 No.	Materials	
• Brush 1"	- 1 No.		
• Hammer	- 1 No.		
• Kadapa Stone	- 1 No.		
		• Adhesive	- as reqd.
		• Leather	- as reqd.
		• Cotton waste	- as reqd.

PROCEDURE

TASK 1: Know the method of application of various adhesives on leather

Refer Ex. No. 1.7.99

Footwear Maker - Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Surface preparation consists of scouring the surfaces using emery paper / cloth

Objectives: At the end of this exercise you shall be able to

- practice scouring with emery on top.

Requirements

Tools/Instruments

- Knife - 1 No.
- Hammer - 1 No.
- Last size (8) - 1 No.

Materials

- Emery paper - 1 Sheet
- Shoe upper size (8) - 1 No.

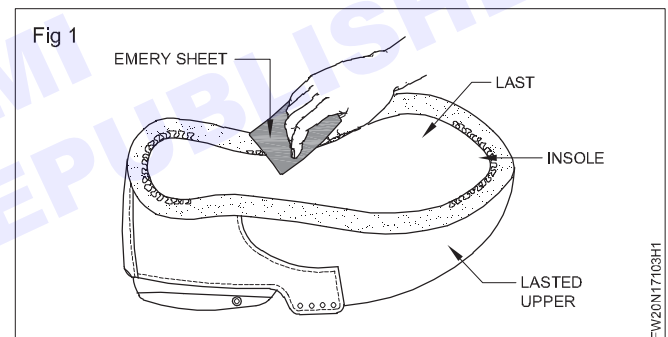
PROCEDURE

TASK 1: Practice scouring with emery on top (Fig 1)

Instructor should demonstrate scouring the bottom of the lasted upper with emery paper

Trainees to show the scouring done upper mounted last to the instructor and get his approval

- Take the closing upper, insole, bottom sole, heel and last.
- Fit the insole to the bottom of the last.
- Then fit the upper and pull it well with the help of pincers and nail it.
- Apply adhesive and stick well around without wrinkles.
- Then do scouring with emery paper. (Fig 1)



Prepare and practice roughening of the surfaces using size of the wire brush

- Objectives: At the end of this exercise you shall be able to
- practice scrubbing the rubber bottom oasis with a wire brush.

Requirements			
Tools/Instruments		Materials	
• Wire brush		-1 No.	
		• Rubber bottom sole	- 1 No.
		• Rubber heel	- 1 No.

PROCEDURE

TASK 1: Practice scrubbing the rubber bottom oasis with a wire brush (Fig 1)

Instructor to rub the rubber bottom oasis with a wire brush and explain the same to the trainees.

Trainees to get approval by showing the instructor the rubber sole and heel scrubbed with a wire brush.

- Keep ready the upper after lasting.
- Then cut the rubber sole to the appropriate shoe size.
- Similarly cut the rubber heel to the required shoe size.
- Scrub the surfaces to be pasted on the rubber sole and heel with a wire brush. (Fig 1)

Fig 1

FW20N1710/H1

Footwear Maker - Perform Different Types of Application Like Closing, Skiving, Folding & Identify Types of Adhesives & Their Application

Prepare by upper stitching machines like post bed, cylinder bed and zig zag sewing machine

Objectives: At the end of this exercise you shall be able to

- operation of post bed sewing machine
- operation of cylinder bed sewing machine
- operation of zigzag sewing machine.

Requirements

Tools/Instruments

- Scissors - 1 No.
- Trimmer - 1 No.
- Oil can - 1 No.
- Knife - 1 No.

Equipments/Machines

- Post bed sewing machine - 1 No.
- Cylinder bed sewing machine - 1 No.
- Zig zag sewing machine - 1 No.

Materials

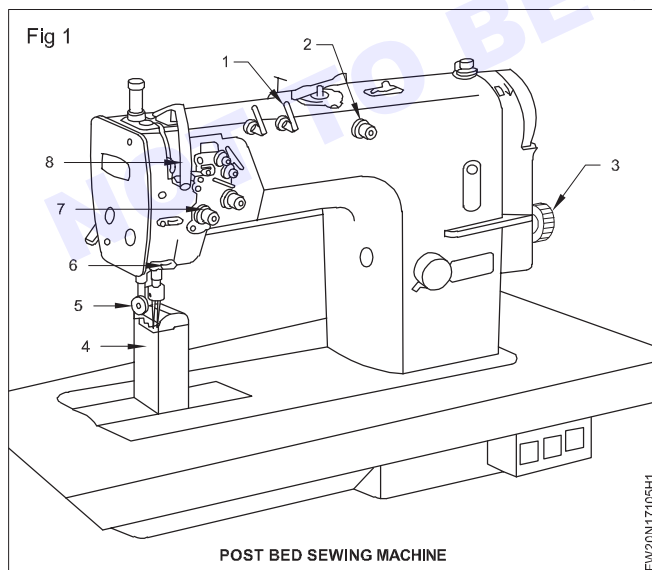
- Thread - 1 No.
- Lubricating oil - 1 No.

PROCEDURE

TASK 1: Operation of post bed sewing machine

- Identify the parts of the machine. (Fig 1)

Note: Instructor will show the Post Bed Sewing Machine and explain its parts and the functions of each part.



- 1 Pre tensioner
- 2 Stitch length adjuster
- 3 Balance wheel
- 4 Bed

- 5 Pressure roller

- 6 Hooks

- 7 Tension spring

- 8 Pressure bar

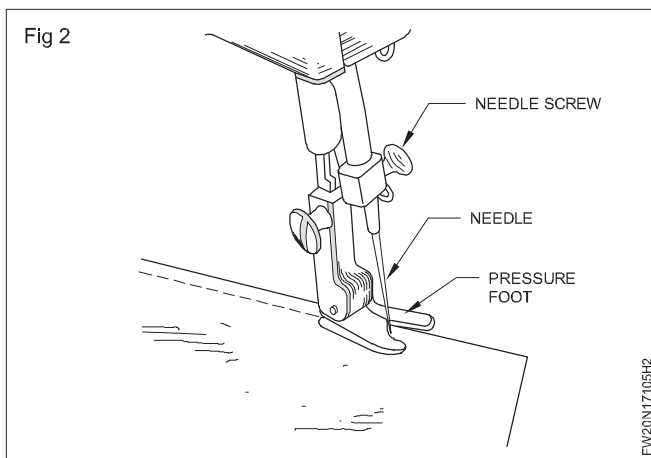
- Look at each component and write its name in Table 1.
- In name specified Table 1 draw the image of the component.
- Write the functions of each part in Table 1.

Table 1

S.No.	Name of parts	Image of parts	Functions of parts

Fitting the needle (Fig 2)

- Turn OFF the engine.
- Lift up the needle bar.
- Loosen the screw of needle bar.



- Select needle No. LR110
- Insert the needle into the needle bar.

Note: While inserting the needle, take necessary care not to hurt your hand

- Fix the needle so that the long groove part of the needle is on the left side of the machine and then tighten the screw.

Top threading (Inserting thread in machine)

- Place the thread on the thread stand.
- First insert the end of the yarn into the guide from back to front.
- Thread the guide through the side of the machine arm.
- Then take the thread through the next remaining hole.
- Pull the thread out through the first hole.
- Go around the bar, then take it through the next hole.
- Feed the thread through the next guide and take it out.
- Pull the thread between the tension discs.
- Then pull the thread between the next disc guide
- Pull the thread from the take up spring lever to the hook
- Pull the thread through the next guide on the right

- Take up the thread from right to left through the take up lever.
- Insert the thread through the next guide on the right hand side.
- Cut the thread to a clean end.
- Feed the thread through the needle bar guide
- Thread the needle from left to right.
- Cut the thread at about 20cm extended outside

Bottom threading (Bobbin fitting on shuttle case)

- Move the bobbin cover plate with a small screwdriver.
- This exposes the bobbin case.
- Lift the bobbin case lever with a screw driver
- Take out the empty bobbin
- Fit the empty bobbin on the bobbin winder and wind the thread.
- Fit the bobbin into the bobbin case.
- Thread the thread through the slot below the tension spring.
- The thread should come through the delivery slot.
- Delivery slots must match. bobbin's thread should go through this slot.
- Cut the bobbin thread by keeping the thread extended 10cm away. Cut the length out
- Hold the thread at the top.
- Touch the pedal enough to release the brake
- Rotate the balance wheel towards you while holding the thread.
- Pull the Top Thread lightly as the needle comes out of the needle plate. This will bring the bottom thread up.
- Close the bobbin cover plate again.
- By keeping the thread extended to 20cm and cut.

Ensure that the post bed sewing machine is set to ready for sewing.

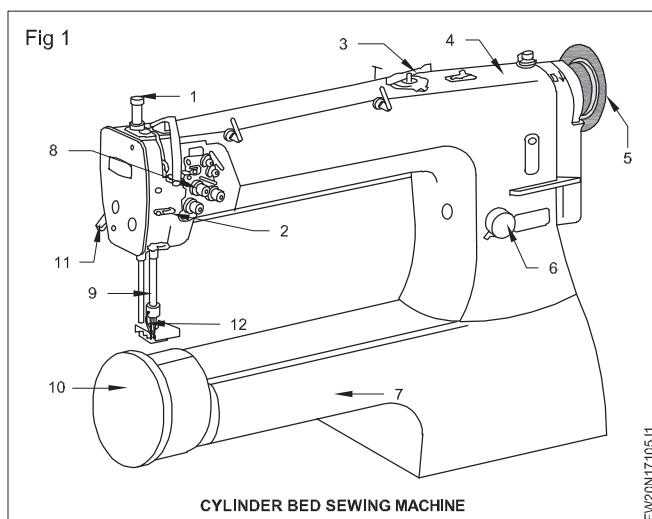
TASK 2: Operation of cylinder bed sewing machine

- Identify the parts of the machine. (Fig 1)

Instructor to show the cylinder bed sewing machine to trainees and explain the parts and its functions

- 1 Pressure bar regulating screw
- 2 Thread guide
- 3 Pre tensioner
- 4 Head

- 5 Balance wheel
- 6 Stitch length adjuster
- 7 Cylinder arm
- 8 Thread tensioner
- 9 Needle bar
- 10 Slide plate
- 11 Pressure foot lifter
- 12 Hooks



- Look at each part and write its name in Table 1.
- In name specified Table 1 draw the image of the component.
- Write the functions of each component in Table 1.

Table 1

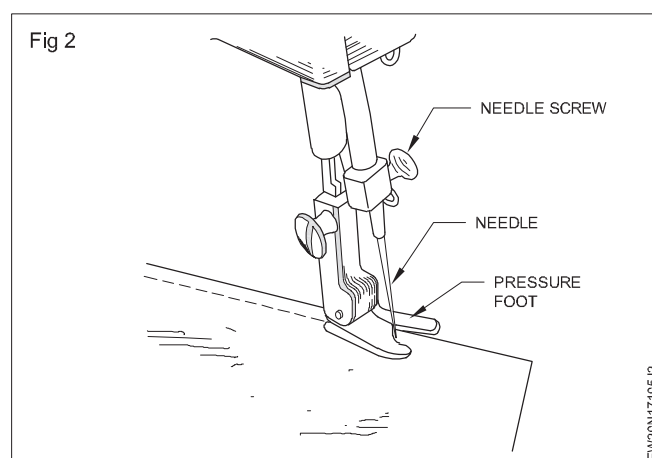
S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			

Fitting the needle (Fig 2)

- Turn OFF the engine.
- Lift up the needle bar.
- Loosen the screw of needle bar.
- Select needle No. LR110
- Insert the needle into the needle bar.
- Fix the needle so that the long groove part of the needle is on the left side of the machine. Then tighten the screw.

Top threading (Machine threading)

- Place the thread on the thread stand.
- First insert the end of the yarn into the guide from back to front.
- Thread the guide through the side of the machine arm.
- Then take the thread through the next remaining hole.



- Pull the thread out through the first hole.
- Go around the bar, then take it through the next hole.
- Feed the thread through the next guide and take it out.
- Pull the thread between the tension discs.
- Then pull the thread between the next disc guide
- Pull the thread from the take up spring lever to the hook
- Pull the thread through the next guide on the right
- Take up the thread from right to left through the take up lever.
- Insert the thread through the next guide on the right hand side.
- Cut the thread to a clean end.
- Feed the thread through the needle bar guide
- Thread the needle from left to right.
- Cut the thread at about 20cm extended outside

Bottom threading (Bobbin fitting on shuttle case)

- Move the bobbin in cover plate with a small screw driver.
- This exposes the bobbin case.
- Lift the bobbin case lever with a screw driver.
- Take out the empty bobbin.
- Switch off the machine.
- Keep the cone thread on thread stand and take out through the thread holes. Then pull the thread out through the tension.
- Fit the empty bobbin on the bobbin winder and wind the thread.
- Attach the bobbin to the spindle.
- Now turn on the machine and press the pedal. Now the bobbin winding will become automatic. Switch off the machine.
- Then loosen the bobbin winder and take out the bobbin.

- Make sure that the bobbin thread is clockwise.
- Open the slide on machine left side and fit the bobbin in the shuttle case. Then a clicking sound will be heard. Check if it fits properly.
- Close the side.
- By keeping the thread extended to 10cm and cut.

Note: Needle fixing, thread inserted in machine and bobbin case fixing done by the trainee to be shown to the instructor and get it checked.

Make sure the machine is set ready to sew

TASK 3: Operation of zig zag sewing machine (Fig 1)

Parts

- 1 Presser foot.
- 2 Feed dog.
- 3 Tension disc.
- 4 Thread guide.
- 5 Bobbin winder.
- 6 Stitch width adjuster.
- 7 Stitch length adjustable regulator.

The instructor to demonstrate the zig zag sewing machine and explain its parts and the functions of each part to the trainees

- Mention the name of each component and its functions in Table 1.

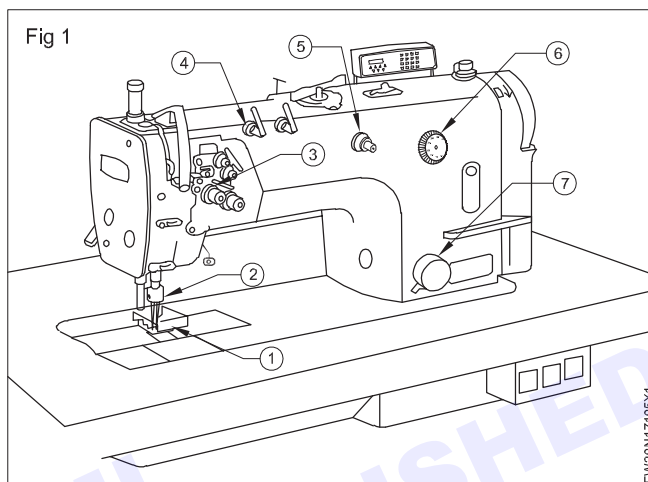


Table 1

S.No.	Name of parts	Functions of parts
1		
2		
3		
4		
5		
6		
7		

Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Cutting bottom components economically, insole attachment and feathering

Objectives: At the end of this exercise you shall be able to

- practice cutting bottom parts economically
- practice insole attachment and feathering.

Requirements

Tools/Instruments

- Knife - 1 No.
- Scissors - 1 No.
- Cutting mat (A3) - 1 No.
- Grinding stone - 1 No.

Materials

- Chart paper - 1 No.
- Adhesive - 100 ml.
- Upper leather - 4 sq.ft.

PROCEDURE

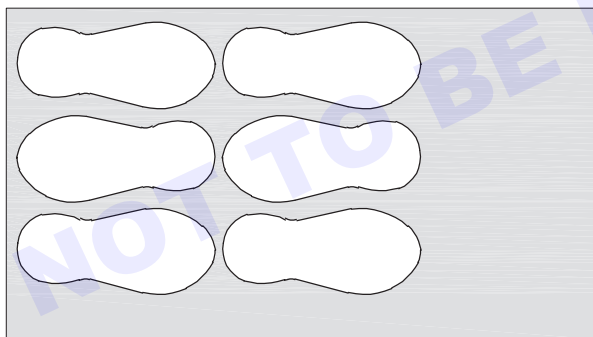
TASK 1: Practice cutting bottom parts economically

- First prepare the tools and materials needed to cut the bottom parts.
- Take the battens needed to cut the bottom parts.
- Then draw as shown in Fig 2

Practice to cut insole

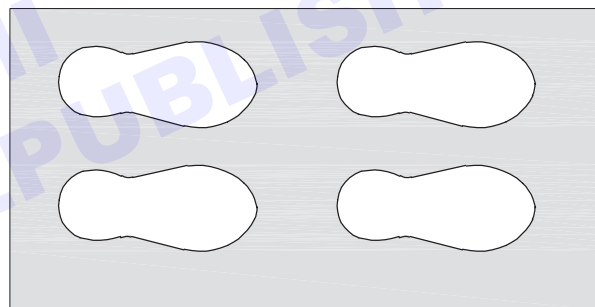
- First take the insole batten and place it on the leather board as shown in Fig 1 and draw it.

Fig 1



FW20N18106H1

Fig 2



FW20N18106H2

- Calculate the quantity drawn in both these methods.

Record in Table 1 which method the trainees drew was the most economical method and why.

Table 1

S.No.	The method drawn in Fig 1	The method drawn in Fig 2
1		
2		
3		

Cut the insole economically using a knife after the trainees get approval from the instructor.

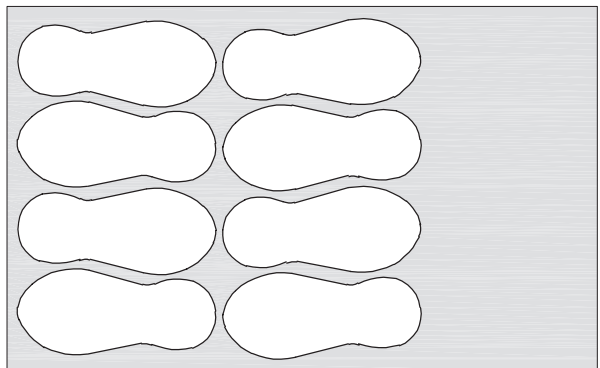
Practice to cut the bottom sole

- Take the rubber sheet and bottom batten.

- Place the batten on the rubber sheet and draw as shown in Fig 3.
- Then draw as in Fig 4.
- Calculate the quantity drawn in these two methods.

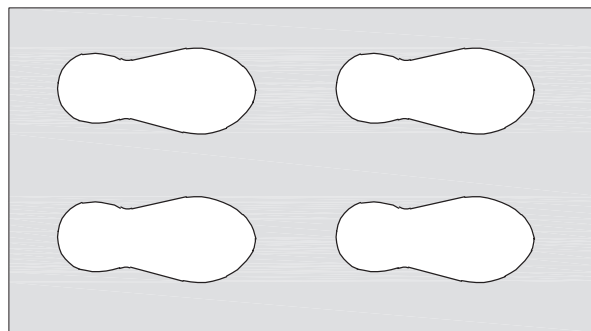
Keep in mind the calculated quantity and write down in Table 2 which method the quantity drawn is the most economical method and the reason for the same.

Fig 3



FW20N18106H3

Fig 4



FW20N18106H4

Table 2

S.No.	The method drawn in Fig 3	The method drawn in Fig 4
1		
2		
3		

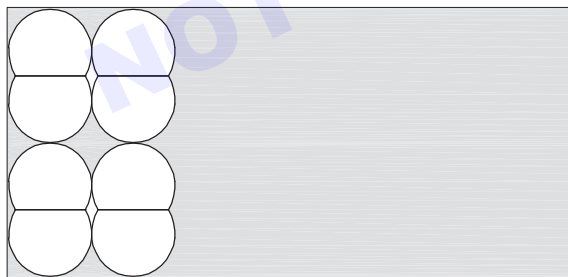
Cut the bottom sole economically after trainees get approval from the instructor.

- Then draw as in Fig 6.
- Calculate the quantity drawn in both these methods.

Practice to cut heel

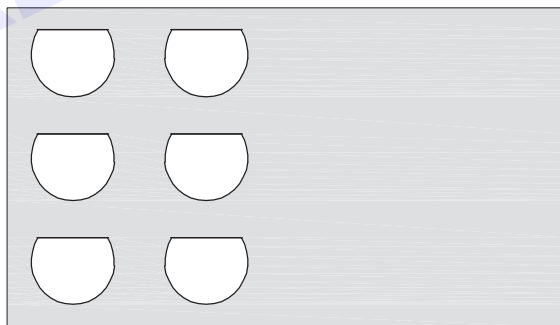
- Take the rubber sheet and bottom batten.
- Place the batten on the rubber sheet and draw as shown in Fig 5.

Fig 5



FW20N18106H5

Fig 6



FW20N18106H6

Trainees to record in table 3 which of these two methods is the most economical method and why.

Table 3

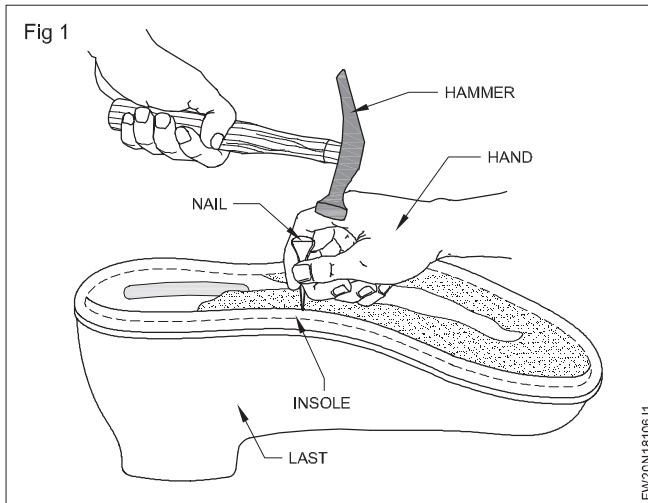
S.No.	The method drawn in Fig 5	The method drawn in Fig 6
1		
2		
3		
4		
5		

Trainees to show the drawn bottom sections to the instructor and get approval on whichever method is most economical.

- After the trainees get approval from the instructor, carefully cut it with the help of a knife.

TASK 2: Practice insole attachment and feathering

- First take the last, insole, nail and hammer.
- Attach the insole to the last with the help of a hammer as shown in Fig 1. (This is a temporary attachment)



- Attach properly using 3 small nails.
- Make sure the insole is properly attached to the last.
- Incase if the insole is not attached properly to the last then attach it properly and fit the edge of it properly.
- Check the feather edge of the insole.

Show the insole fitting to the instructor and get approval.

Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Preparation of toe & counter stiffener

Objectives: At the end of this exercise you shall be able to

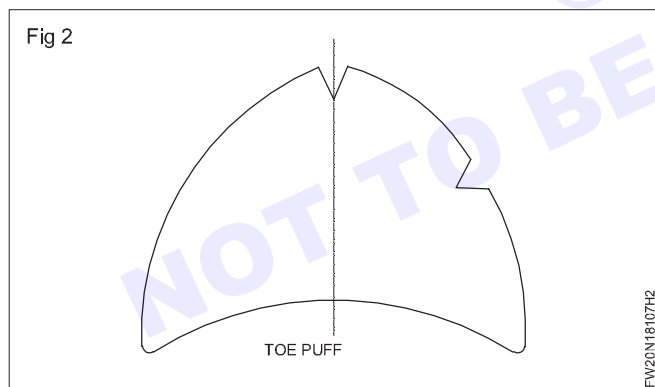
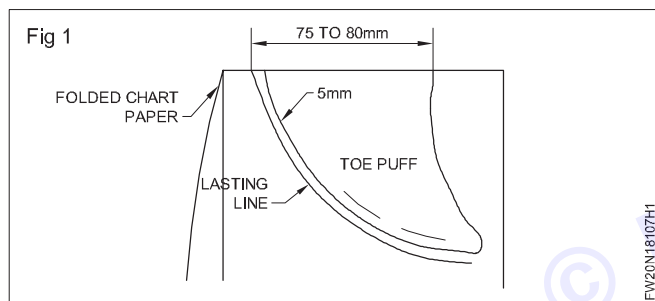
- practice preparation of toe and counter stiffener.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Toe puff stiffener sheet	- 1/4 Sheet
• Scissors	- 1 No.	• Counter stiffener sheet	- 1/4 Sheet
• Cutting mat (A3)	- 1 No.	• Adhesive	- 50 ml.
• Grinding stone	- 1 No.		

PROCEDURE

TASK 1: Practice making toe and counter stiffeners

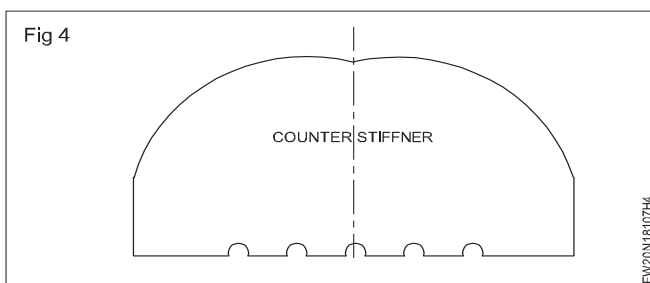
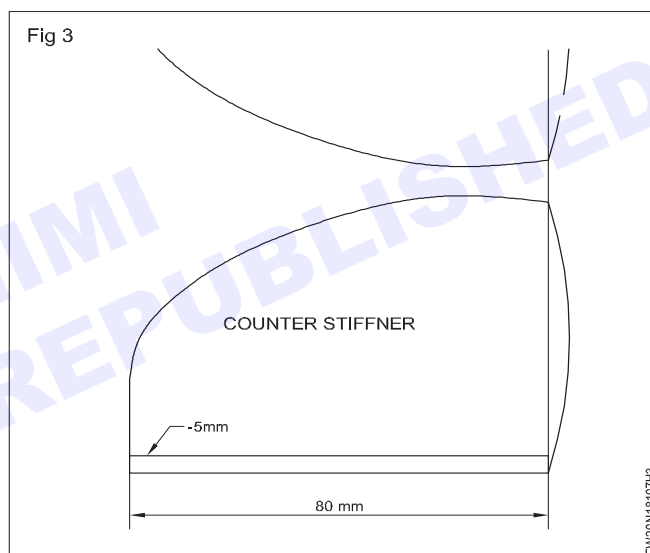
Toe puff preparation (Fig 1 & 2)



- First fold the chart paper and fix the upper shell on it and draw the outline.
- Draw a line 5 mm inside the lasting line as shown in the Figure.
- The length of the toe puff can be 75-80 mm depending on the last.
- Open the chart inside line, cut center nicks and take toe puff pattern.
- Put the batten on the stiffener sheet and draw it.
- Cut out the drawn stiffener sheet.

Stiffener preparation (Fig 3 & 4)

- First fold the chart paper and fix the upper shell fit in straight line and draw an out line.



- Draw a line 5mm inside the lasting line as shown in the Figure.
- Length of counter stiffener may be 80mm depending on the last.
- Open the Chart, cut center nicks 'U' cut and take counter stiffener pattern.
- Place the batten on the stiffener board and draw it.
- Cut out the drawn stiffener sheet.

Trainees who cut the Toe Puff Stiffener and counter stiffener has to show it to the instructor to get the approval.

Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Practice drafting and lasting

Objectives: At the end of this exercise you shall be able to

- practice drafting
- practice lasting.

Requirements

Tools/Instruments

- Knife - 1 No.
- Hammer - 1 No.
- Lasting pincer - 1 No.

Materials

- Upper (Derby-S-8) - 1 Pair
- Adhesive - 100ml.
- Nail - 50 gm.

PROCEDURE

TASK 1: Practice drafting

- Have the last, upper, insole, nail and lasting pincer ready for drafting.
- Take the last and place the insole on the base and drive 3 nails and fix it as shown in Fig 1.

Fig 1



- Place the taken upper over the insole fitted last exactly as shown in Fig 2.

Fig 2



- Take the nail and pin. Place the tweezers on the edge of the last and gently pull the upper part on the last and hit the nails lightly.
- Similarly pull each part and nail it to form the shoe structure

Show the done drafting work to the instructor and get approval.

TASK 2: Practice lasting

- First take the last and the insole.
- Then attach the insole to the last with three nails as shown in Fig 1.
- Apply an appropriate amount of adhesive to the outer edges of the insole as shown in Fig 2.
- Apply appropriate amount of adhesive on inner edges of upper as shown in Fig 3.
- Fit the upper part on the last as shown in Fig 4 and adjust the back part at the height marked on the last.
- Pull all the sides of the upper with the help of pincers and nail them as shown in Fig 5.
- Cut off the excess skin as shown in Fig 6 to avoid wrinkles on the upper.
- Allow the lasted upper to dry for 30 minutes as shown in Fig 7.

Fig 1

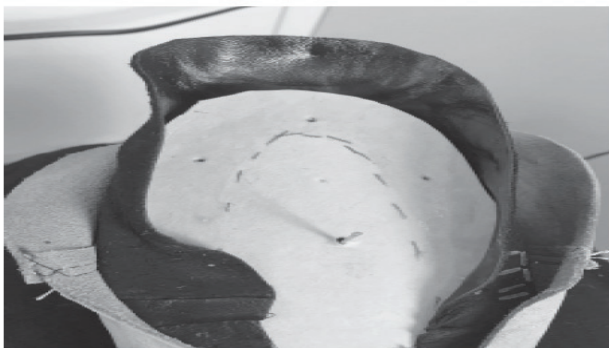


Fig 4



Fig 2



Fig 3

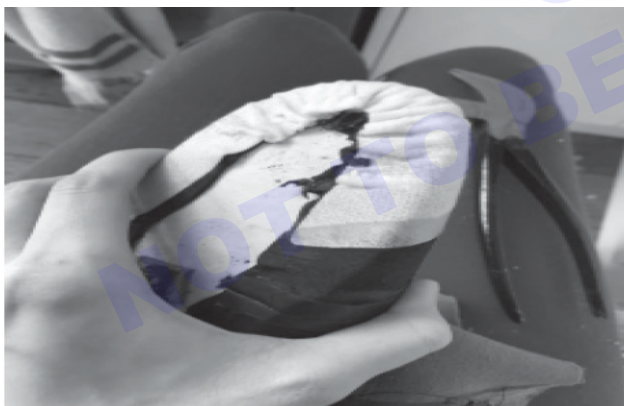


Fig 5



- After 30 minutes remove the nails as shown in Fig 8.
- Skiving as shown in Fig 9 if there is more shrinkage and more height in the lasted area.
- If there are shrinks in the lasted upper, hammer it in all parts as shown in Fig 10 to avoid injury.
- Clean the lasted upper with a clean cloth.
- Check that the lasted upper is correct and ready for the next step.

After complete the lasting work, the trainees to show it to the instructor and get approval.

Fig 6



Fig 7

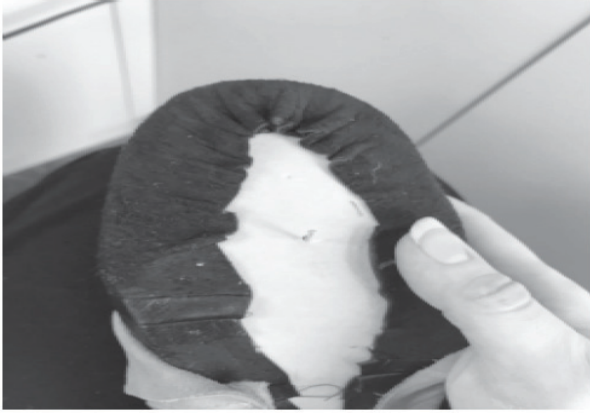


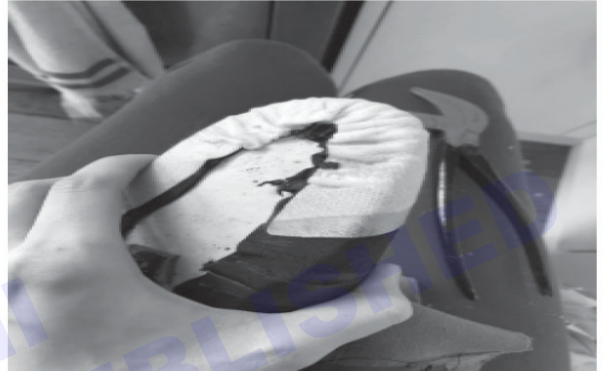
Fig 9



Fig 8



Fig 10



Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Practice sorting & matching the cut components according to quality

Objectives: At the end of this exercise you shall be able to

- practice sorting & matching the cut components according to quality.

Requirements

Tools/Instruments

- Cut components - as reqd.

PROCEDURE

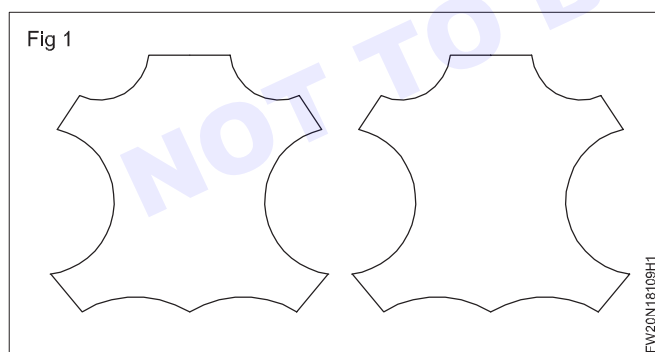
TASK 1: Practice sorting & matching the cut components according to quality (Figs 1-6)

Instructor has to classify the cut components of materials. Explain about viewing color matching.

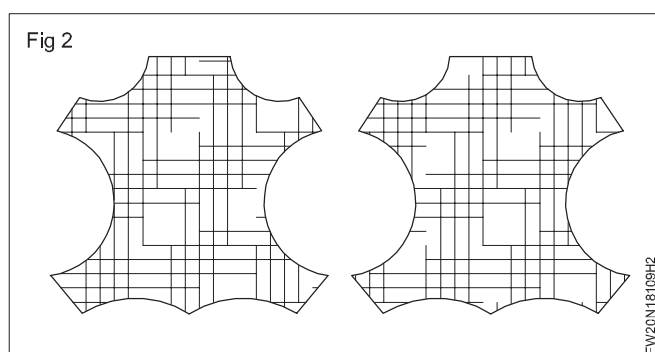
Classification of skin

- Spread your provided skin on the table.
- Separate the spread skin by size.
- Separate the skin by grain.
- Separate skin by shade.
- Separate based on skin defect.
- Also separate the skin based on quality.

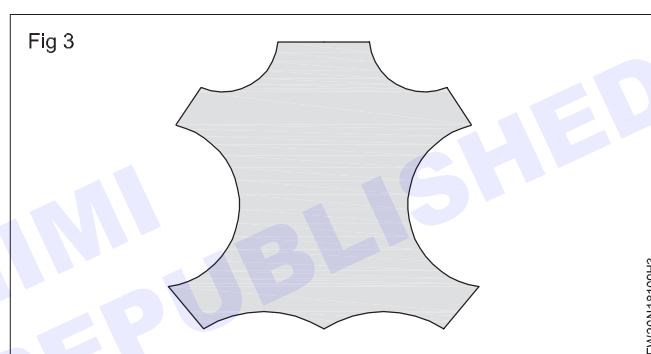
Segmentation based on size (Fig 1)



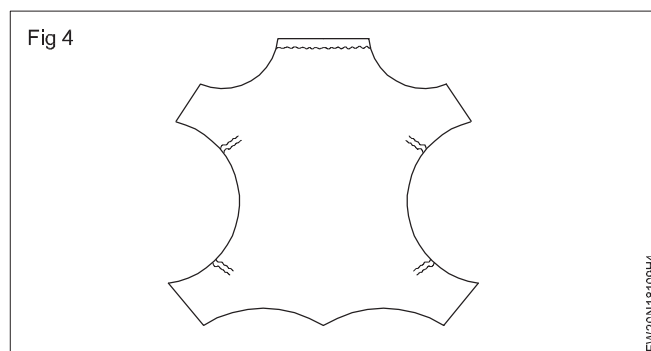
Segmentation based on grain (Fig 2)



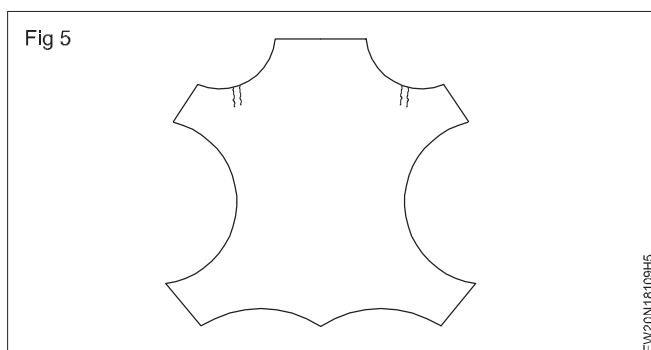
Segmentation based on shade (Fig 3)



Segmentation by defect (Fig 4)



Segmentation by quality (Fig 5)

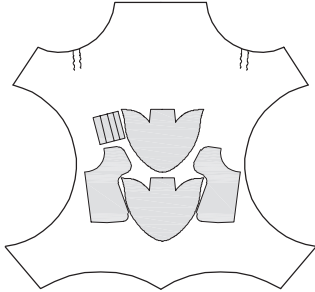


Instructor to examine the skin assortment done by the trainees.

Practice color matching

- Ensure that all parts of the shoe are cut from the same skin as shown in Fig 6.

Fig 6



FW20N18109H6

- Make sure that the volume of the parts is the same.
- See if the grain arrangement of parts is same.
- Take a pair (right and left) and check that both are of the same color.
- Even though the color matching is the same, he keeps it in sun light and check it.
- See if any shade of blue, yellow or green is visible in its mane color when viewed in sunlight.
- If so, select its opposite piece (right if left) in the same color shade.

Instructor to check the matching done by the trainees and correct if there is any mistakes.

Lists the points that trainees should consider while classifying leather and color matching of components in Table 1.

S.No.	Things to keep in mind while classifying the skin and color matching the components.
1	
2	
3	
4	
5	
6	

Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Practice of roughening the lasted upper & bottom attaching soles to upper

Objectives: At the end of this exercise you shall be able to

- practice rubbing the lasted upper and bottom sole.

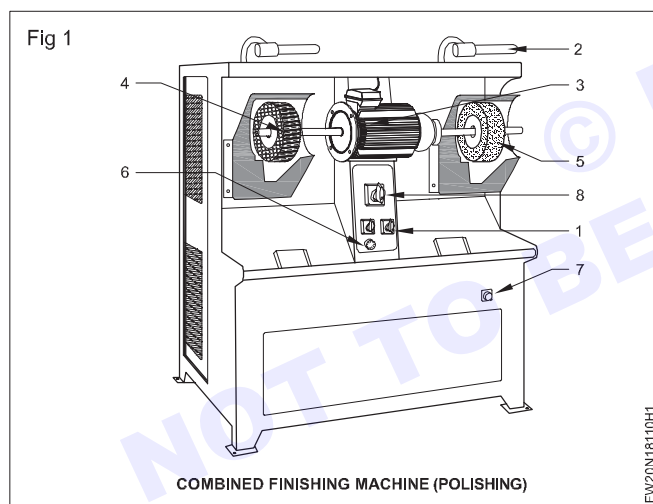
Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Adhesive	- 100 ml.
Equipments/Machines		• Cotton fabric	- 100 gm.
• Combined finishing machine	- 1 No.		

PROCEDURE

TASK 1: Practice rubbing the lasted upper and bottom sole

- Roughing Lasted Oxford Shoe Upper and bottom sole in Combined Finishing Machine

Identification of various parts of Combined Finishing Machine (Fig 1)



Parts

- 1 ON/OFF switch
- 2 LED light
- 3 Motor
- 4 Polishing wheel
- 5 Scouring wheel
- 6 Speed regulator
- 7 Emergency switch
- 8 Exhaust switch

Note: The instructor will demonstrate the Combined finishing machine and explain its parts and the functions of each part.

- Look at each part and write its name in Table 1 given below.
- Draw the figure of the component in Table 1 with name specified.
- Write the functions of each part in Table 1.

Table 1

S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			

Practice to operate the Combined Finishing Machine

- Turn ON the Combined Finishing Machine.
- Adjust the Speed (RPM) to suit Combined Finishing.

Note: The trainees need to show the various adjustment done on the Combined Finishing Machine to the trainer and get approval.

- Press the Lasted Oxford shoe upper bottom part to the scouring wheel
- Scour the bottom area to the required level.

Be careful not to touch the emery sheet while scouring the bottom part in scouring wheel

Note: Check if the scouring is correct by showing the scouring area to the instructor.

- Turn off the engine and clean the machine.

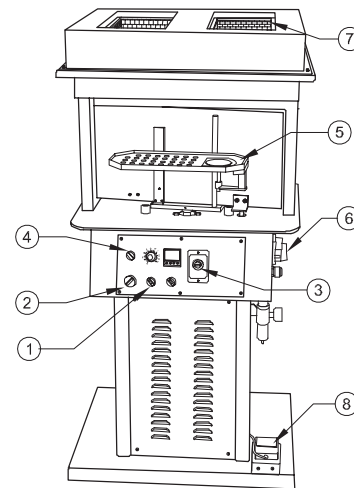
Practice to heat activate the upper and bottom part of roughed shoes

Identification of parts of Heat Reactivating Machine (Fig 2)

Note: Instructor will demonstrate the Heat Reactivating Machine and explain its parts and its functions.

- 1 Air pressure adjusting button
- 2 Heat adjusting button
- 3 On/Off switch
- 4 Timing adjusting button
- 5 Movable rotating tray

Fig 2



6 Emergency button

7 Heat chamber

8 Pedal

- Look at each part and write its name in Table 2 given below.
- Draw the figure of the part name shown in Table 2
- Write the functions of each part in Table 2.

Table 2

S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			

Practice to operate the Heat Re-activating Machine

- Turn on the heat reactivating machine.
- Adjust the timing, pressure, heat to suit the reactivating.
- Use the emery sheet to roughen the readymade Pu sole and lasted upper.

Note: When doing shoe upper-roughing, it should be done without damaging the upper.

- Apply the first coat of Pu solution with brush on the roughened readymade Pu sole and lasted upper.
- Allow it to dry for 20 minutes
- After 20 minutes apply the second coat of Pu solution on the Pu sole and lasted shoe upper.
- Allow it to dry for 20 minutes.

Note: Don't use your hands to check whether the Pu solution has dried

- Press the pedal of heat reactivating machine.
- Keep the Pu sole (left and right) on moveable tray.
- Keep the lasted upper shoe in heat chamber on the top side of machine.
- Again press the pedal
- Light heat will fall on the Pu sole which is kept on the moveable tray.
- After the specific time, pressure and heating the movable tray will move.
- Now the Pu sole would have been reactivated.

Note: Do not place your hand on the moveable tray and heat chamber

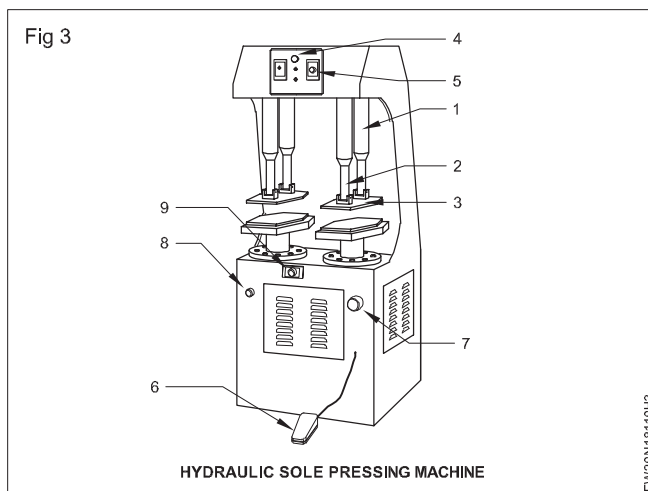
Note: Show the heat re-activated Pu sole and lasted upper shoe and get it checked up by your instructor.

- Switch off the machine.
- Pu sole and lasted shoe upper after re-activating will be ready for sole attach.

Parts in Hydraulic Sole Pressing Machine (Fig 3)

Note: The instructor will demonstrate the Hydraulic Sole Pressing Machine and explain its parts and functions.

- 1 Height adjusting arm (Left and Right side)
- 2 Height adjusting knob
- 3 Heel and Toe adjusting knob
- 4 Pressure adjusting button
- 5 Timing adjusting button
- 6 Pedal
- 7 On/Off switch
- 8 Emergency button
- 9 Hydraulic press button



- Look at each part and write its name in Table 3 given below.
- Draw the image of the part specified with name in Table 3.
- Write the functions of each part in Table 3.

Table 3

S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			

Practice to operate the Hydraulic Sole Pressing machine.

- Take the Heat re-activated lasted Shoe upper and Pu sole.
- Attach left side Pu sole, Right side Pu sole with lasted shoe upper left and Right side by checking and align with the marking.

Note: Show the Combined Pu sole and lasted shoe upper to the instructor and get it checked by him.

- Switch ON the machine.
- Place the Lasted shoe upper Left and Right side attached to Pu sole on hydraulic press correctly

Note: Shoe lasted upper Left and Right side attached to PU sole should be shown and checked with the instructor.

- Adjust the timing and pressure for pasting the sole properly.
- Press the Hydraulic Press Button and Pedal at a time.

Note: Care should be taken while working on Sole Pressing arm machine.

- The height adjusting arm will apply the pressure on lasted shoe upper and press and paste the hydraulic press sole.
- Take out the lasted shoe after a specific time.

Note: Whether the sole is properly attached with lasted shoe upper by showing and get it checked by your instructor.

- Turn OFF the engine.

Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Free hand sketch of lasting down & force lasting

Objectives: At the end of this exercise you shall be able to

- practice to draw free hand sketch of force lasting and lasting down (Cemented lasting).

Requirements

Tools/Instruments

- Scale 300 mm
- Compass 150 mm

- 1 No.
- 1 No.

Materials

- Chart paper
- Pencil
- Rubber

- 1/2 Sheet
- 1 No.
- 1 No.

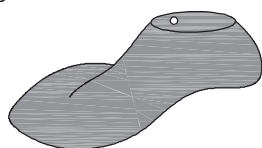
PROCEDURE

TASK 1: Practice to draw free hand sketch of force lasting and lasting down (Cemented lasting) (Figs 1-3)

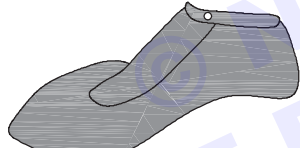
Instructor to show and explain the various types of lasts to the trainees

Trainees to draw different last structure

Fig 1



SOLID BLOCK LAST

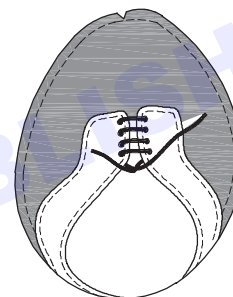


SCOOP BLOCK LAST

FW20N1811H1

Draw shoe upper structure

Fig 2



FW20N1811H2

Trainees to list shoe lasting jobs in Table 1

Table 1

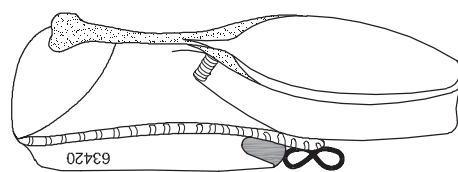
S.No.	Shoe Lasting Jobs
1	
2	
3	
4	
5	

Trainees to draw free hand sketches of listed jobs in Table 1

Instructor to check the listed jobs and free hand sketches done by trainees.

To draw the free hand sketch of force lasting

Fig 3



FW20N1811H3

Trainees to free hand sketch the power lasting figure and show it to the instructor for approval.

Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Practice flat lasting, string lasting & force lasting the upper

Objective: At the end of this exercise you shall be able to

- practice flat lasting
- practice string lasting
- practice force lasting.

Requirements

Tools/Instruments

- Lasting pincer - 1 No.
- Knife - 1 No.
- Grinding stone - 1 No.

Equipments/Machines

- String lasting machine - 1 No.

- Force lasting machine - 1 No.

Materials

- Shoe upper - 1 Pair
- Heavy thread/rope - 2 mtr.
- Adhesive - 100 ml.
- Brush - 1 No.

PROCEDURE

TASK 1: Practice flat lasting (Fig 1 & 2)

Refer Ex. No. 1.8.108 for trainees to practice flat lasting.

TASK 2: Practice String Lasting

Instructor to explain String Lasting to trainees
Trainees to practice string lasting as shown in Fig 1

Fig 1 Method of String Lasting

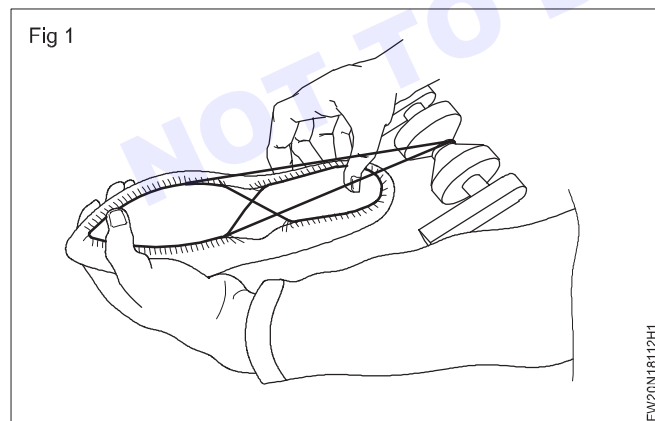
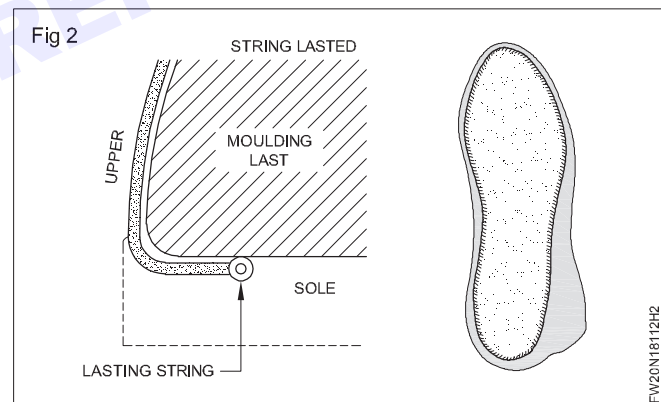


Fig 2 Lasting structure



Trainees to show string lasting to the instructor and get approval.

Trainees to indicate in Table 1 which method of string lasting is used to what type of shoes

Table 1

S.No.	Name of shoes made by string lasting method
1	
2	
3	
4	

TASK 3: Practice to force lasting (Fig 1 & 2)

Instructor to explain the Power Lasting procedure to the trainees.

Trainees need to practice the force lasting as shown in Fig 1 and 2.

Trainees to list the force lasting procedure in Table 2

Table 2

S.No.	Force lasting process
1	
2	
3	
4	
5	

Force Lasting Procedure (Fig 1)

Fig 1



Force Lasting Procedure (Fig 2)

Fig 2



Footwear Maker - Identify Different Sorting and Matching Cut Components, Bottom Components, Prepare Toe, Counter Stiffener, Drafting and Lasting

Practice operations for lasting upper in welted construction

Objective: At the end of this exercise you shall be able to

- practice operations for lasting upper in welted construction method.

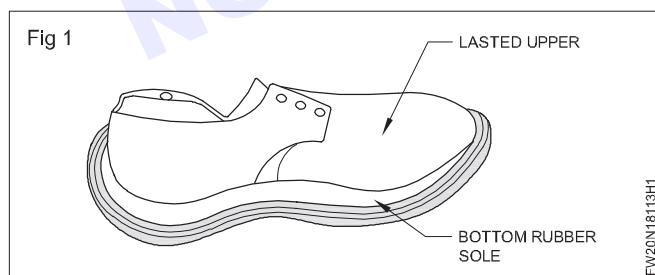
Requirements			
Tools/Instruments			
• Knife	- 1 No.	• Heavy thread / rope	- 2 mtr.
• Hammer	- 1 No.	• Adhesive	- 100 ml.
• Lasting pincer	- 1 No.	• Brush	- 1 No.
Materials		• Bottom sole	- 1 No.
• Shoe upper	- 1 No.	• Welt piece	- 1 No.
		• Heel	- 1 No.

PROCEDURE

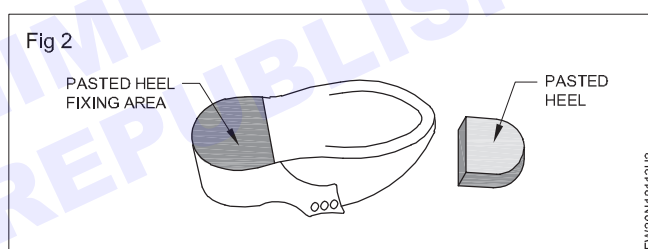
TASK 1: Practice operations for lasting upper in welted construction method

Refer Ex. No. 1.8.108 - TASK 1 & TASK 2.

- Take the lasted upper and bottom sole (rubber sole).
- Rub the bottom of the lasted upper and the inside of the rubber bottom sole with a rubbing machine.
- Clean it free of dust after rubbing.
- Then apply adhesive evenly to the rubbed upper and rubber bottom sole.
- Allow the adhesive to dry for some time (so that it does not stick to the hand when touched).
- After the adhesive is dry, paste the lasted upper over the rubber bottom sole properly as shown in Fig 1.



- Adhere to the bottom rubber sole and beat it well in all areas with a hammer.
- Then on the bottom sole, mark the area where the heel needs to be glued and rub it and the inside of the heel with a rubbing machine.
- Clean the rubbed heel and bottom sole with a cotton cloth to remove any dust



- Apply the paste evenly on the cleaned sole and heel as shown in Fig 2 and let it dry for some time.
- Adhere the glued heel to the bottom rubber sole at the correct size and tap it well with a hammer. Then after a gap of 4 hours, de last the shoe from last.
- Then take the welt rubber piece and make the bottom of it coarse and dust free.
- Apply adhesive to the welt piece and let it dry
- Apply the adhesive evenly.
- Take the glued welt piece, lasting and rubber bottom sole, glued heel start gluing at the top outer edge of the bottom sole from the waist area and finish gluing the shoe around where you started.
- Then hammer the glued welt piece completely.
- Be careful not to damage the upper while hammering.
- Then carefully cut off the excess rubber bottom sole outside the welt piece with the help of a knife.
- When cutting, be careful not to tear the upper part by knife.

- If there is any defect in the cut, correct it by rubbing it on the puffing machine.

Trainees to show the shoe with the welted construction to the instructor and get approval.

Trainees to list the welted construction and the hand tools used for it in Table 1

Table 1

S.No.	Sequence of work of welted construction	Hand tools used
1		
2		
3		
4		
5		

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Footwear Maker - Identify Various Types of Molding Machine their Parts and Section

General maintenance of molding machine and safety

Objectives: At the end of this exercise you shall be able to

- know about maintenance and safety of toe part molding machine
- know about maintenance and safety of back part molding machine.

Requirements			
Tools/Instruments			
• Screw driver set	- 1 Set.	• Back part molding machine	- 1 No.
• Allen key (1 mm-10 mm)	- 1 Set.	Materials	
• Cutting plier (150 mm)	- 1 No.		
• Wooden hammer	- 1 No.		
• Spanner set (6 to 32 mm)	- 1 Set.		
Equipments/Machines			
• Toe part molding machine	- 1 No.	• Scrap upper	- as reqd.
		• Lubricating oil	- as reqd.
		• Cotton waste	- as reqd.

PROCEDURE

TASK 1: Know about maintenance and safety of toe part molding machine

The instructor will operate the machine and explain the maintenance methods of the toe part molding machine and explain the safety procedures.

- Trainees to list the maintenance methods of Toe part molding machine in Table 1

Table 1

S.No.	Different stages of Toe part molding machine	Maintenance method
1	Pneumatic pressure control	
2	Operation of hot and cold molds	
3	Compressor operation	
4	Plunger movement	

TASK 2: Know about maintenance and safety of back part molding machine

Instructor will operate the machine and explain how to maintain the back part molding machine and explain the safety procedures

- Trainees to list the maintenance methods of Back part molding machine in Table 2.

Table 2

S.No.	Different stages of Back part molding machine	Maintenance method
1	Pneumatic pressure control	
2	Plunger movement	
3	Compressor operation	
4	Operation of hot and cold molds	

Footwear Maker - Identify Various Types of Molding Machine their Parts and Section

Identify various types of molding machine and their uses

Objectives: At the end of this exercise you shall be able to

- identify different molding machines
- uses of various molding machines.

Requirements			
Tools/Instruments		Materials	
• Folding hammer	- 1 No.	• Upper	- as reqd.
• Knife 200 mm	- 1 No.	• Toe puff	- as reqd.
Equipments/Machines		• Counter stiffener	- as reqd.
• Toe part molding machine	- 1 No.		
• Back part molding machine	- 1 No.		
• Insole molding machine	- 1 No.		

PROCEDURE

TASK 1: Identify various molding machines

Instructor to explain the trainees about toe part and back part molding machines used in the manufacture of footwear.

- Trainees to write the uses of toe part molding machine in Table 1.

S.No.	Uses of Toe Part Molding Machine
1	
2	

- Trainees to write the uses of back part molding machine in Table 2.

S.No.	Uses of Back Part Molding Machine
1	
2	

Footwear Maker - Identify Various Types of Molding Machine their Parts and Section

Identify various parts and section of molding machine

Objectives: At the end of this exercise you shall be able to

- identification of parts and components of toe part molding machine
- identification of parts and components of back part molding machine.

Requirements			
Tools/Instruments			
• Folding hammer	- 1 Set.	• Counter molding machine	- 1 No.
• Lasting pincer	- 1 No.	Materials	
• Knife (200 mm)	- 1 No.	• Upper	- as reqd.
Equipments/Machines		• Toe puff	- as reqd.
• Toe part molding machine	- 1 No.	• Counter stiffener	- as reqd.

PROCEDURE

TASK 1: Identification of parts and components of Toe part molding machine (Fig 1)

Note: Instructor to explain the trainees about the parts and components of Toe part molding machine (Fig 1).

- Trainees to indicate the uses of parts of Toe part molding machine.

Components

- 1 Toe mold.
- 2 Emergency switch.
- 3 Timing control switch.
- 4 Heat control switch.
- 5 ON/OFF switch.
- 6 Pedal.

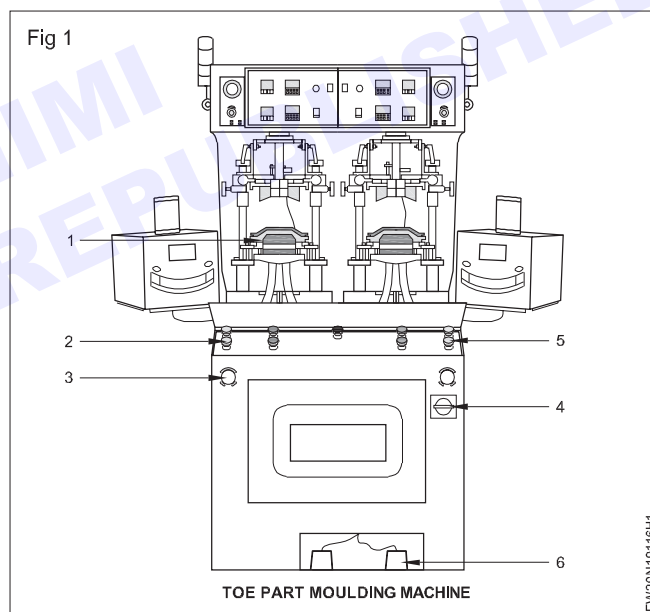


Table 1

S.No.	Parts	Uses
1	ON/OFF	
2	Emergency switch	
3	Timing control switch	
4	Heat control switch	
5	Toe mold	
6	Pedal	

TASK 2: Identification of parts and components of Back part molding machine (Fig 1)

Note: Instructor to explain the parts and components of back part molding machine to the trainees.

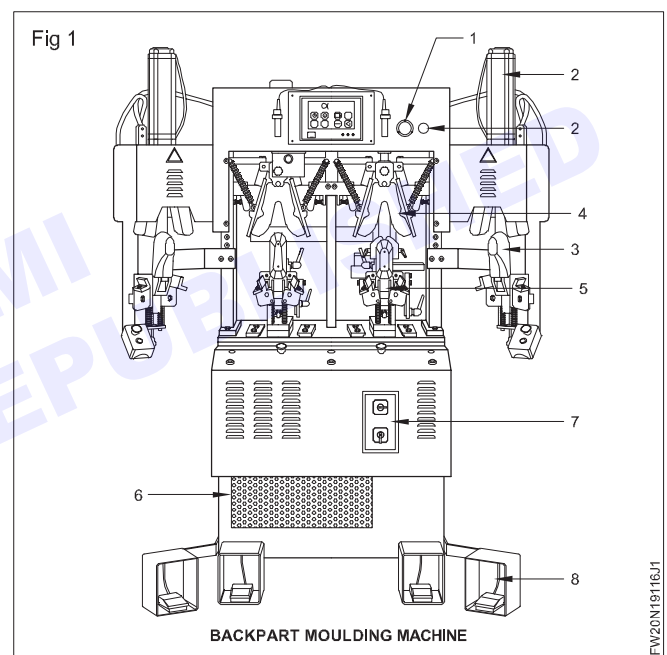
- Trainees to indicate the uses of parts of the back part molding machine (Fig 1) in Table 2

Table 2

S.No.	Parts	Benefits
1	Blanchers	
2	Counter mold	
3	Heat control switch	
4	Cooling control switch	
5	Pneumatic presser adjuster	
6	Laser lamp	
7	Timing control switch	
8	Pedal	

Components

- 1 Heat control switch.
- 2 Cooling control switch.
- 3 Cold mold.
- 4 Blanchers.
- 5 Hot mold.
- 6 Pneumatic pressure adjuster.
- 7 Emergency switch.
- 8 Pedal.



Footwear Maker - Identify Various Types of Molding Machine their Parts and Section

Check the accuracy, precision and sensitivity of molding machines

Objectives: At the end of this exercise you shall be able to

- know how a toe part molding machine works
- check the accuracy, precision and sensitivity of toe part molding machine
- check the accuracy, precision and sensitivity of back part molding machine.

Requirements			
Tools/Instruments		Equipments/Machines	
• Pincer - 200 mm	- 1 Set.	• Toe Part Molding Machine	- 1 No.
• Knife (200 mm)	- 1 No.	Materials	
• Bolting hammer	- 1 No.		
• 3 Leg Iron Last	- 1 No.		
		• Upper	- as reqd.
		• Toe puff stiffener	- as reqd.

PROCEDURE

TASK 1: Know how a Toe part molding machine works

- Replace the required toe mold in the machine.
- Take a Sample Upper (Left, Right).
- Turn on the toe mold machine.
- Adjust the temperature required for toe molding with a switch.
- Adjust the pneumatic pressure as required.
- Place the model upper in the toe part (left, right) mold.
- Push the pedal.
- Now the blanchers press the top on the toe mold to help shape the toe.

Note: Show the toe shape of the toe molding upper to the instructor and get approval. If the toe shape is not correct again change the required heat and pneumatic pressure in the machine to get the correct toe shape.

Do toe molding of other uppers similarly.

TASK 2: Know the working of Back part molding machine

- Replace the required back part mold in the machine.
- Take a sample upper (1 pair)
- Turn on the back part machine.
- Adjust cooling, heating, timing and pneumatic pressure as required.
- Place the upper part on cool back part mold.
- Push the pedal.
- Now the blanchers press the upper part on the back part cooling mold to get the back part shape.
- Take out the upper on the cooling mold.
- Place the taken out upper in the heat molder
- Press the pedal.
- Now the blanchers press the upper part on the hot mold to complete the shape of the back part already obtained on the cold mold.

Note: Instructor to demonstrate the trainees how to change the back part mold.

Note: Show the shape of the back part of the back part molding to the instructor and get approval. If the base part shape is not correct again change the required heat and cool to get the correct base part shape.

- Similarly mold the back part of other uppers.

TASK 3: Check the accuracy, precision and sensitivity of toe part molding machine

Note: Instructor to operate the machine and explain to the trainees about the accuracy, precision, pre-suspension and sensitivity of the toe molding machine.

- Test the molding with an upper by varying the heat, pneumatic and timing settings on the toe part molding machine.

— — — — —

TASK 4: Check the accuracy, precision and sensitivity of back part molding machine

Note: Instructor to operate the machine and explain to the trainees about the accuracy, precision and sensitivity of back part molding machine.

- Check the heat, cooling, pneumatic plungers, timing movement in the back part machine and molding with an upper.

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Footwear Maker - Identify Various Types of Molding Machine their Parts and Section

Check the speed of response molding machines

Objectives: At the end of this exercise you shall be able to

- know the speed of toe part and back part machine.

Requirements			
Tools/Instruments		Equipments/Machines	
• Spanner set (6 to 32 mm)	- 1 Set.	• Toe part molding machine	- 1 No.
• Allen key (1 mm to 10 mm)	- 1 Set.	• Back part molding machine	- 1 No.
• Wooden hammer	- 1 No.	Materials	
		• Scrap upper	- as reqd.

PROCEDURE

TASK 1: Know the speed of Toe part and Back part machine

Instructor to operate the toe part and back part machine and explain it to the trainees.

- Trainees to mold upper part on part and back part molding machine with different upper and state the working speed of the machine in Table 1 and 2.

Table 1

S.No.	Toe part molding machine	One hour/Pair of shoes
1	Derby upper	
2	Oxford upper	
3	Boot upper	

Table 2

S.No.	Back part molding machine	One hour/Pair of shoes
1	Ladies shoe upper	
2	Derby upper	
3	Oxford upper	

Footwear Maker - Identify Various Types of Molding Machine their Parts and Section

Identify and carry out maintenance and preventive maintenance

Objectives: At the end of this exercise you shall be able to

- know the maintenance method toe part molding machine
- know the maintenance method of back part molding machine.

Requirements			
Tools/Instruments		Equipments/Machines	
• Spanner set (6 to 32 mm)	- 1 Set.	• Toe part molding machine	- 1 No.
• Allen key (1 mm to 10 mm)	- 1 Set.	• Back part molding machine	- 1 No.
• Screw driver set(100,150, 200, 250 mm)	- 1 Set.	Materials	
• Adjustable spanner	- 1 No.		
		• Cotton waste	- as reqd.
		• Lubricating oil	- as reqd.

PROCEDURE

TASK 1: Know the method of maintenance of Toe part molding machine

- Trainees to clean the machine with cotton waste.
- Clean the running parts and moving parts with cotton waste and apply lubricating oil wherever necessary.
- Identify and replace worn and damaged parts due to prolonged operation.
- Check and adjust engine oil level and air filters.
- Inspect the electrical and pneumatic lines on the machine once a month.
- Prepare a machine protection schedule and keep it near the machine and update it frequently.
- Trainees should prepare model table and mark various features in it.

Table 1						
Machine maintenance card						
Machine Name: TOE PART MOLDING Machine				MANUFACTURER Mobile No:		
Date of Purchase:				Engine Operator Name:		
Manufacturer Details:				Date of Installation:		
Machine No:						
S.No.	Day	Maintenance details	Care taker	Details of parts replacement	Signature	Note

TASK 2: Know the maintenance method of Back part molding machine

- Instructor to explain the procedure for maintaining the machine and ask the trainees to complete Table 2.

Follow Task 1 and prepare a machine maintenance card for various machines and show it to instructor and get approval.

Table 2**Machine maintenance card**

Machine Name: BACK PART MOLDING Machine

Date of Purchase:

Manufacturer Details:

Machine No:

MANUFACTURER Mobile No:

Engine Operator Name:

Date of installation:

S.No.	Day	Maintenance details	Care taker	Details of parts replacement	Signature	Note

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Welt stitching, bottom filling, sole attaching & heel fixing

Objectives: At the end of this exercise you shall be able to

- welt stitching
- bottom filling
- sole attaching
- heel fixing.

Requirements

Tools/Instruments

- Hand sewing needle - 1 No.
- Knife - 1 No.
- Hammer - 1 No.
- Trimmer - 1 No.
- Iron last - 1 No.

Materials

- Nylon thread - 1 No.
- Lining leather - 2 sq.ft.
- Leather board - as reqd.
- Adhesive - 100 ml.

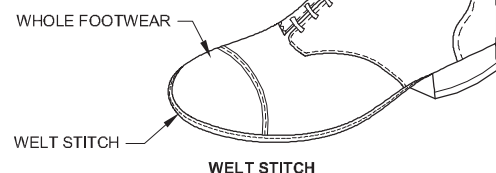
PROCEDURE

TASK 1: Welt stitching (Fig 1)

- 1 First take the whole shoe with the bottom attached one. Then take the hand sewing needle and thread. Measure the circumference of the shoe and slightly take more than double the thread length. From the shoe side middle (i.e. The right leg shoes) to the bottom side area insert the sharp part of the needle in to the groove.
- 2 From the end of the inserted needle, hook cord divide the nylon thread into equal portion, hold the hook and pull out only one part of the thread. then make the next hole with the needle 10 mm apart and pull the inner thread through the hook of the needle and pull it out slightly.
- 3 Insert the thread that is already out of the thread into the thread and pull the two threads separately to form a braid or knot.
- 4 The same way stitch all around the circumference of the foot like when sewing the last stitch, cut off the remaining thread after a regular knot.
- 5 Sew the left leg shoe in the same way.

After sewing, show it to the instructor and get approval.

Fig 1

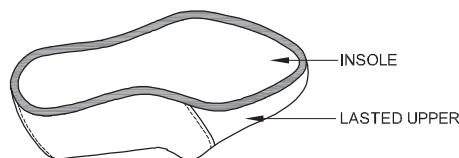


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TASK 2: Bottom filling (Fig 1 & 2)

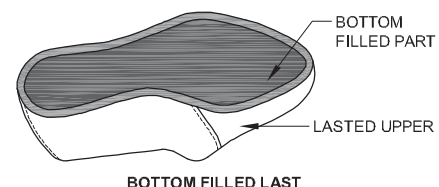
- 1 First take the lasted upper with last. At the bottom of the last, as shown in Fig 1, the edge of the upper is slightly higher and the middle is slightly hollow.
- 2 Before bottom filling
- 4 Cut out the lining leather or board for the insole structure.
- 5 Apply the adhesive and glue it to the bottom of the last as shown in Fig 2.

Fig 1



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Fig 2



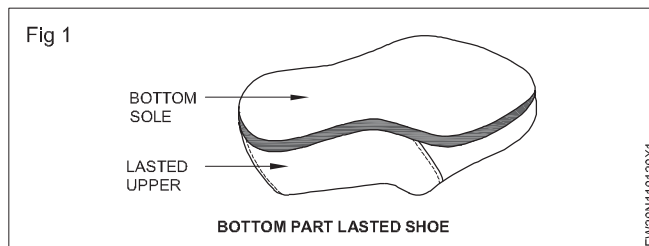
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- 3 Filling is to make the insole (grooved) area equal to the lasting area shown in Fig 2.

After bottom filling show it to instructor and get approval

TASK 3: Sole attaching (Fig 1)

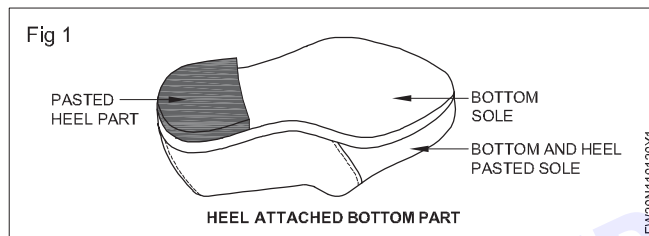
- 1 First take the lasting and bottom filled upper with last and bottom rubber sole. Rub the entire skin area on the bottom of the last with salt paper and make a rough surface. Do the same with the bottom rubber sole. Then apply permanent adhesive evenly all over the base. Apply adhesive to the rubber bottom sole as well. Allow the glued upper and bottom sole to dry until the glue dries.
- 2 Then glue the bottom sole properly as shown in Fig 1 to fit the last.



After attaching the bottom sole, show it to the instructor for approval.

TASK 4: Heel fixing (Fig 1)

- 1 First take the lasting and bottom sole glued shoe with last.
- 2 Then take the rubber heel. Rub the bottom of the heel and the bottom of the bottom sole well with salt paper to make a rough surface. Then apply permanent adhesive to both the rubbed areas and let it dry. After the glue dries, stick the heel to the bottom sole area with the help of a hammer as shown in Fig 1.
- 3 After doing the heel fixing show it to the instructor and get approval.



- 4 After all the work is done cut off the excess bottom rubber sole and heel properly with the help of knife. If it is not cut properly then finally correct it by rubbing it on the buffing machine.

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Finishing, single sole stitching & cemented method of construction

Objectives: At the end of this exercise you shall be able to

- know to construct a shoe using adhesive
- practice sole stitching
- practice finishing the shoe.

Requirements

Tools/Instruments

- | | | | |
|----------------------|-----------|-----------------------|------------|
| • Lasting pincer | - 1 No. | • Emery sheet | - 1 No. |
| • Hammer | - 1 No. | • Dye | - 10 ml. |
| • Knife | - 1 No. | • Bottom sole | - 1 Pair |
| • Hand sewing needle | - 1 No. | • Leather board | - 2 Nos. |
| • Shoe last | - 2 (R&L) | • Lasting nail | - 10 gm. |
| | | • Various shoe uppers | - as reqd. |

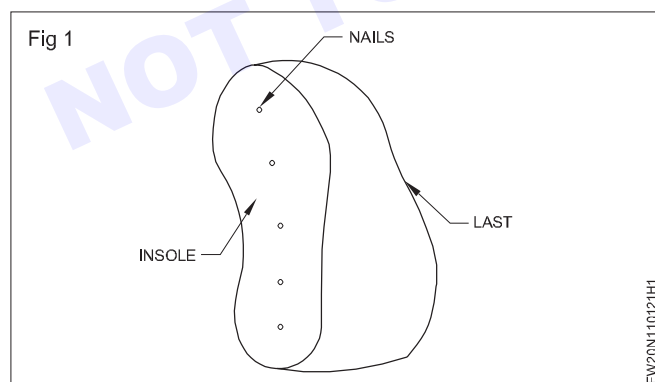
Materials

- | | |
|----------------|-----------|
| • Adhesive | - 100 ml. |
| • Nylon thread | - 1 Cone |

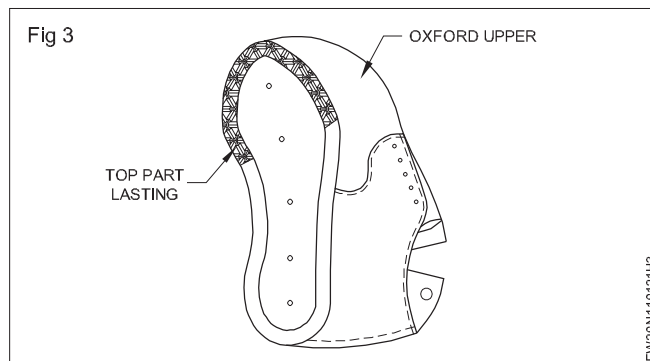
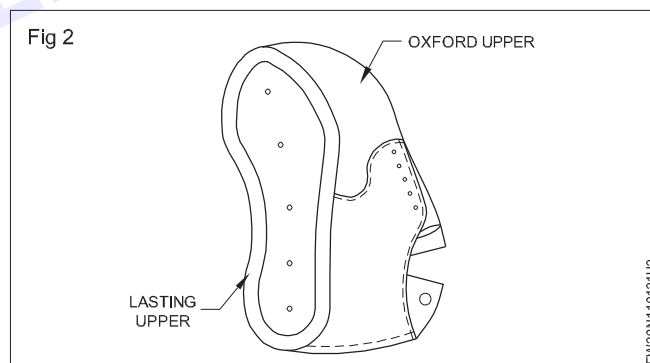
PROCEDURE

TASK 1: Know to construct a shoe using adhesive (Figs 1-5)

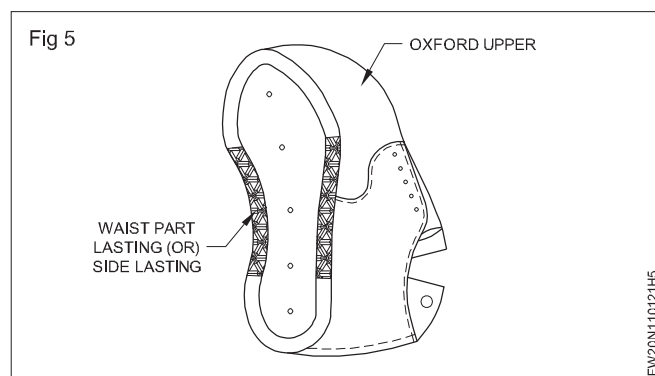
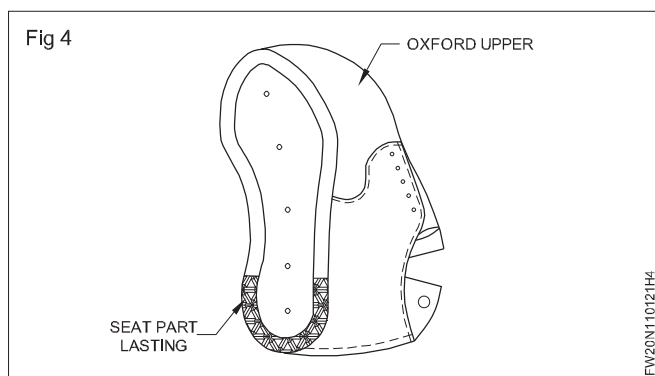
- 1 First take the finished upper. Then take the required insole, bottom sole, heel etc.
- 2 Then take the last of the appropriate size for the upper. Attach the insole to the bottom of the last with the help of a lasting nail and hammer.
- 3 Then select the right size upper.
- 4 Fit the shoe upper from the top of the last. (Fig 1)
- 8 Then with the help of lasting pincers pull the glued leather well on the toe part and paste it without wrinkles. (Fig 2)



- 5 Then apply a 3/4" or 1" width of adhesive around the edge of the insole
- 6 Similarly apply adhesive to the edge and inner part of the upper leather and let it dry.
- 7 Drop the upper of the shoe 13 mm below the top of the rear arch of the last heel area and nail at the seam.



- 9 Same way use pincer and up to 15 mm in seat part and waist part pull well and glue it. (Fig 4 & 5)



- 9 After that, the mane of the leather lasted on the insole is to be rubbed well in the scoring machine to make an area rough.
- 10 Then apply adhesive to the inside of the bottom sole and the bottom of the lasted upper and let it dry.
- 11 After the adhesive dries well, stick the lasted upper on the bottom sole and hit it with the help of a hammer.
- 12 After sticking the bottom, keep it as it is for a whole day.

A gap of one day is kept for the upper and bottom to glue well.

- 13 Then take the last out of the shoe (de-lasting).
- 14 Paste the welt piece to the edge of the bottom sole and then cut away the excess bottom sole outside the welt piece with the help of a knife.
- 15 Then rub in the scoring machine for a fine finish.

The instructor to check each exercise and instruct the trainees to correct any deficiencies.

TASK 2: Practice Sole stitching

Instructor to instruct the trainees to do sole stitching with a bottom-fitted shoe with a hand sewing needle.

- 1 Pick up a shoe with a bottom sole.
- 2 Place a channel applicator on the edge of the bottom sole and create a groove around the bottom.
- 3 Take it properly so that the groove is uniform.
- 4 Take the hand sewing needle, thread, wax.

- 5 Measure the bottom circumference and take the yarn slightly more than double the length of it.
- 6 Now insert the needle into the groove and make it come inside the shoe and hold the waxed thread in the hook of the needle and take out only half of the thread.
- 7 Then make another hole at 10mm interval and pull the inner thread of the shoe slightly out, insert the outer thread into it and pull the inner thread tight to make a braid. similarly, stitch around the circumference of the shoe following the same procedure.

TASK 3: Practice Finishing the shoe

Practice to correct color differences

- 1 Take the completed removed delasted shoe from the lasting.
- 2 Give it a bottom finish.
- 3 Apply the cream on the bottom and edge with a regular brush.
- 4 Paint the bottom of the sole to make it shiny, then apply a water-based wax to polish the shine
- 5 Use acrylic emulsion paint.
- 6 Paint and wax the edges as well.
- 7 Use spray gun on the bottom soles with two different colors to make it look very attractive.
- 8 Paint it thickest on the edge of the bottom sole and lighter on the inner sole.

Note: Check the color differences by showing them to the Instructor.

- 9 Synthetic soles can also display the above color differences for beauty.

Upper finishing

- 1 Different types of uppers are used in shoes.
- 2 Fully dyed tanned hides.
- 3 Semi-tanned and dyed hides.
- 4 A shoe with an upper printed on a Plated Heated Plate
- 5 As these have color differences, mix the colors in the Spray Gun and spray them to fix them.

Roughing upper dressing

- 1 Suede Leathers (Suede Leathers) Rubbed with (80, 120, 240, 360, 480) emery sheets and dyed with dyeing dyes to remove defects in the shoe bow (important for suede). If any oil has spilled on the painted area, rub it back with emery paper. Apply a crayon of the same color on top of it and cover up the blemish.

Decompression practice

- 1 Wrinkles in the upper part of the shoe are rare in other shoes. Take this type of shoe and put it back on the last.
- 2 Take the Iron Gun (heated by electricity).
- 3 Rub the wrinkles on the upper with this iron. Feel the wrinkles disappear.

Show the wrinkle fully removed in shoe to the instructor and get it checked.

Hot air blower

- 1 This activity is used to remove the laxity of the skin. It is better to blow hot air for less time.

Note: Know the amount of hot air, time of application with the help of instructor.

Practice finishing

- 1 Before making the whole shoe, repair the minor cut, scratch, abrasion, and line on the upper by using glue hot melt.

- 2 If it is suede leather, rub it on salt paper and fix it with crayon.
- 3 Learn finishing by applying pigment in the color of the upper with a brush or by spraying pigment of the same color with a spray gun.

Note: Check that defects (cuts, scratches, abrasions) on the upper are completely repaired by showing them to the instructor.

Practice to fix blemishes

- 1 Unnecessary thread knots in the finished shoes should be cut and removed in the upper position. If there are loop stitches or skip stitches, they must be re-stitched correctly or replaced with a different upper.

Note: Check for quality upper stitching by showing the instructor that you have made a flawless upper.

- 2 Sew 4 stitches per 1cm of stitch length or stitch 2.5mm apart.

(Or)

- 3 3mm stitch spacing or 3 stitches per 1cm, make the upper of the shoes according to the buyer's choice.
- 4 Stitch 2mm away from the edge of the stitched upper or Sew 3mm away from the stitching edge, learn to sew according to the measurements given by the instructor.
- 5 While finishing, if there are excess sewing bits on the upper parts of the finished shoes, cut them off.

Leather

Exercise 1.10.122

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Prepare basic block diagram of a molding machine

Objectives: At the end of this exercise you shall be able to

- practice drawing basic block diagram of a molding machine.

Requirements			
Tools/Instruments		Materials	
• Measuring scale		- 1 No.	
		• Pencil	- as reqd.
		• Rubber	- as reqd.
		• Chart paper	- as reqd.

PROCEDURE

TASK 1: Practice drawing basic block diagram of a molding machine

Refer Ex. No. 1.9.116

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Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Prepare & manufacture of molded shoes

Objectives: At the end of this exercise you shall be able to

- prepare and manufacture of molded shoes.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Chart paper	- 1/4 Sheet
• Scissors	- 1 No.	• Pencil	- 1 No.
Equipments/Machines		• Rubber	- 1 No.
• Shoe Injection Molding Machine	- 1 No.	• Molded bottom Sole	- 1 Pair
• Shoe Vulcanizing Machine	- 1 No.	• Cotton waste	- 100 gm.

PROCEDURE

TASK 1: Prepare and manufacture of molded shoes (Fig 1 & 2)

Manufacture of vulcanized shoes

- 1 Take the closed upper.
- 2 Fit it over the metal last in the molding machine
- 3 Now turn on the molding machine and run it.
- 4 The machine will run and automatically attach the bottom sole to the shoe, allow the required time and then take out the shoe.

Instructor to take the trainees to the factory and explain about the function of vulcanizing machine shown in Fig 1

Manufacture of injection mold shoes

- 1 Upper lasting procedure is same as Vulcanizing procedure. In injection molding machine vinyl plastic has been used instead of rubber for bottom sole.
- 2 Fix the upper on the machine's appropriate level.
- 3 Then close the part to be molded
- 4 Now turn on the machine and run it.
- 5 Now the hot molten mixed sole material flow and fill towards shoe bottom. Afterwards allow it to cool.
- 6 Take due care while take out the shoe from machine without damaging the sole area.

Instructor to take the trainees to the factory and explain about the function Vulcanizing of machine shown in Fig 2

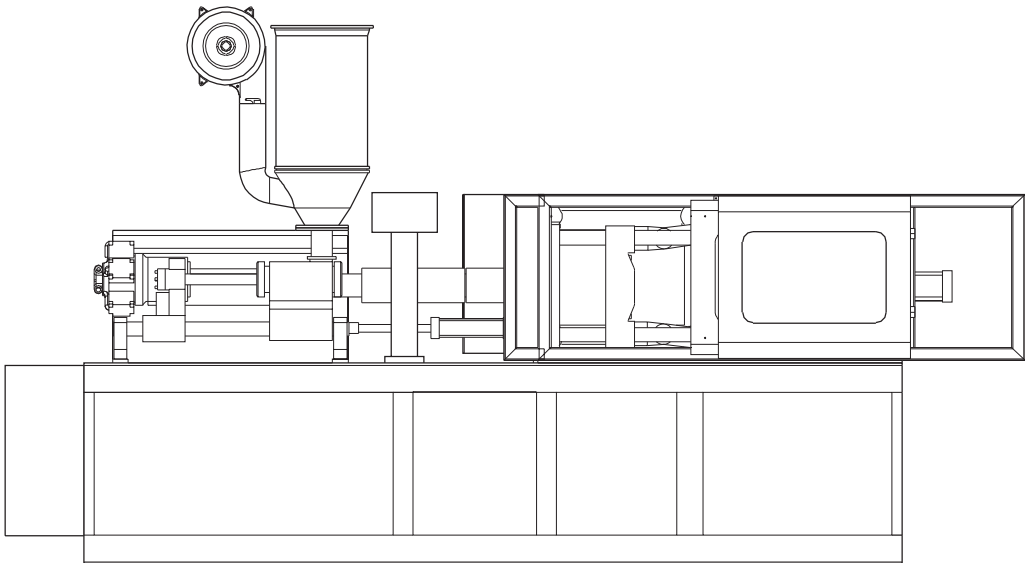
Fig 1



Instructor to explain the advantages of Vulcanized and injection molded sole shoes.

Trainees to indicate the advantages of vulcanized and injection molded sole shoes in Table 1

Fig 2



INJECTION WARP MACHINE

FW20N110123H2

Table 1

S.No.	Advantages of vulcanized and injection molded sole shoes
1	
2	
3	
4	
5	

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Practice on insole preparation, drafting, lasting, sole attaching, sole stitching, welt stitching, bottom filling, heel fixing & finishing

Objectives: At the end of this exercise you shall be able to

- practice making insoles
- practice drafting
- practice lasting
- practice sole attaching
- practice bottom filling
- practice welt stitching
- practice heel fixing
- practice finishing.

Requirements

Tools/Instruments

- Cutting Mat (A3)
- Knife
- Hammer
- Hand Sewing Needle
- Polishing Brush

- 1 No.
- 1 No.
- 1 No.
- 1 No.
- 1 No.

Materials

- Adhesive - 100 ml.
- Pencil - 1 No.
- Rubber - 1 No.
- Nylon Thread - 1 No.
- Polish canister - 1 No.
- Color Dye (Required Color) - 10 ml.
- Leather Board - 2 Nos.
- Nail Puller - 1 No.

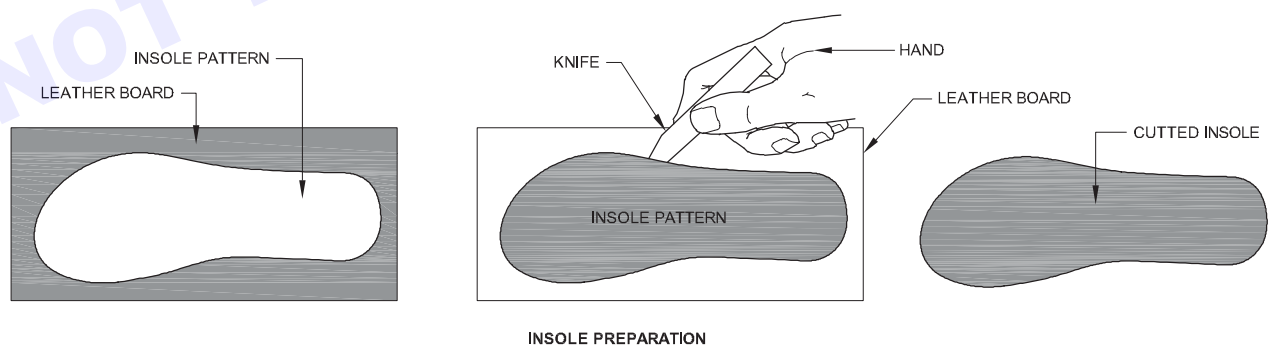
PROCEDURE

TASK 1: Practice making insoles

- First take the insole pattern and the leather board. Place the insole pattern on the leather board and mark it with a pencil as shown in Fig 1 and cut it out with the help of a knife.

Show the cut insole to the instructor and get approval.

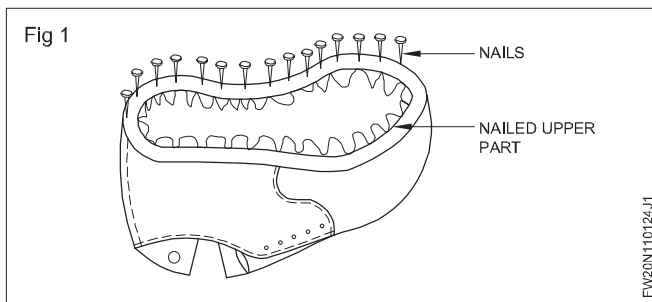
Fig 1



TASK 2: Practice drafting

- 1 First get the Shoe upper, the right size last and the insole.
- 2 Position the insole on the bottom of the last and fasten it with the help of lasting nail and hammer.
- 3 Fit the upper on the top part of the last.
- 4 Using the Lasting Pincer pull the upper end of the Last well around and lightly fix the nail as shown in Fig 1.

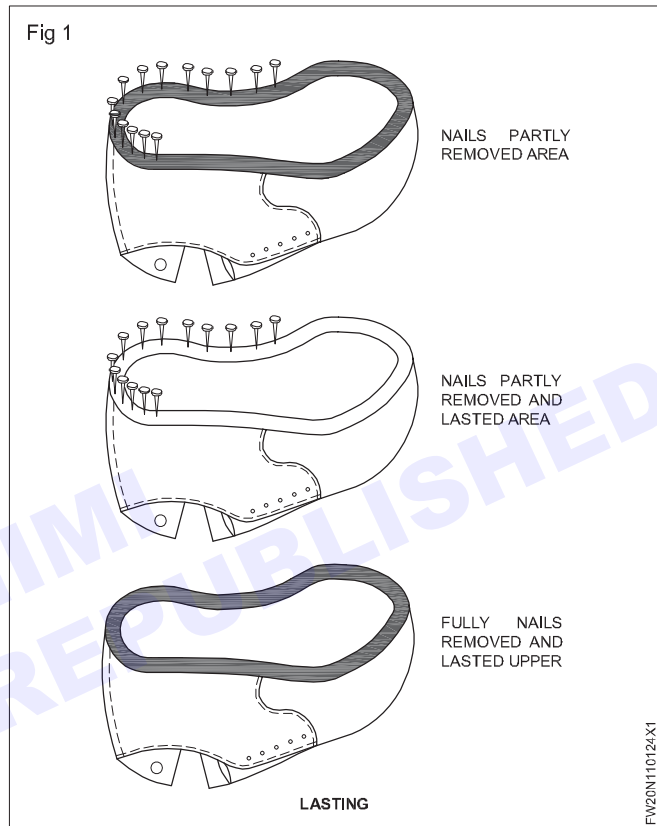
After completion of drafting show it to the instructor and get approval.



TASK 3: Practice lasting

- 1 Pick up a drafted shoe upper and a nail puller.
- 2 Remove the drafted nails piece by piece with a nail puller.
- 3 Apply adhesive to the upper and insole where the nail has been removed and allow it to dry.
- 4 After drying, carefully pull the upper part with lasting pincers as shown in Fig 1 and paste it.

Complete the drafting and show it to the instructor for approval.



TASK 4: Practice sole attaching

Refer Ex. No. 1.10.120 - TASK 3

TASK 5: Practice bottom filling

Refer Ex. No. 1.10.120 - TASK 2

TASK 6: Practice welt stitching

Refer Ex. No. 1.10.120 - TASK 1

TASK 7: Practice heel fixing

Refer Ex. No. 1.10.120 - TASK 4

TASK 8: Practice finishing

- 1 Take the 'T' lasted shoe and fix any scratches on the upper parts and if the color has been removed from the scoring, apply dye to those areas and fix it.
- 2 If there is color variation on the sides of the bottom sole, correct it by applying dye on it.

- 3 Apply lacquer to the upper part of the shoe to give it a shine.

After finishing work show it to the instructor and get approval.

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Prepare back part moulding

Objectives: At the end of this exercise you shall be able to

- prepare upper for heel (or) back part lasting
- identify various parts of seat and side lasting machine
- know the functioning of seat and side lasting machine.

Requirements

Tools/Instruments

- Lasting pincer (200mm) - 1 No.
- Folding hammer - 1 No.
- Clicking knife - 1 No.

Equipments/Machines

- Seat and Side Lasting Machine - 1 No.

- Hot and Cold back part Molding machine - 1 No.

Materials

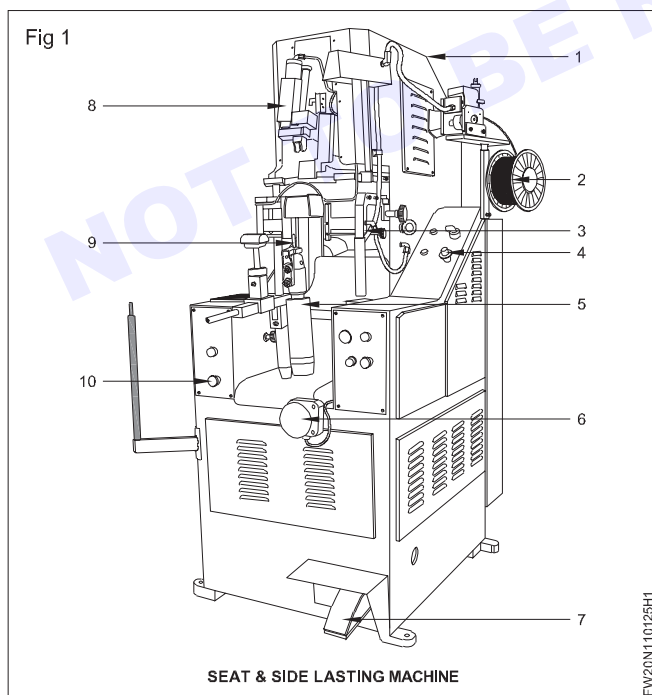
- Model upper - as reqd.
- Counter stiffener - as reqd.

PROCEDURE

TASK 1: Prepare upper for back part lasting

Refer Ex. No. 1.9.116 & 117 - TASK 2

TASK 2: Know the parts and uses of seat and side lasting machine (Fig 1)



Areas

- 1 Head
- 2 Pew glue roll
- 3 Viper
- 4 Adhesive heat control switch
- 5 Toe rest
- 6 Emergency switch
- 7 Pedal
- 8 Illusion light
- 9 Back band
- 10 Pincer movement control.

Instructor operate the machine and explain the parts and functions of the seat and side lasting machine

Trainees to mention the functions of the parts of seat and side last machine in Table 1.

Table 1

S.No.	Name of parts of seat and side lasting machine	Functions
1	Pew glue roll	
2	Viper	
3	Adhesive heat control switch	
4	Toe rest	
5	Emergency switch	
6	Pedal	
7	Illusion light	
8	Head	
9	Back band	
10	Pincer movement control	

Show the completed table to the instructor and get approval

TASK 3: Know the functioning of seat and side lasting machine (Figs 1 - 5)

Instructor to explain seat and side lasting by showing the trainees the shoe in which the instructor has done toe lasting.

- 1 Take toe lasted shoes (1 pair).
- 2 Adjust the back height of the toe lasted shoe as required.
- 3 Pull the upper back of the shoe with pincers after adjusting the back height.
- 4 Select the appropriate heel band suitable to the last and fix it on machine.
- 5 Turn the switch that controls the temperature of the cementing glue to the required level and turn it on.
- 6 Turn on the glue chamber pressure control switch as required
- 7 Turn on the rotary motor. (Fig 1, Fig 2, Fig 3)

Fig 1



Fig 2

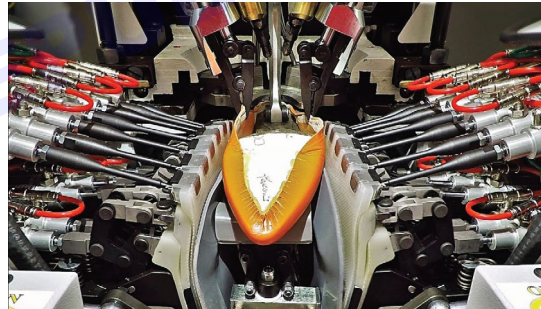
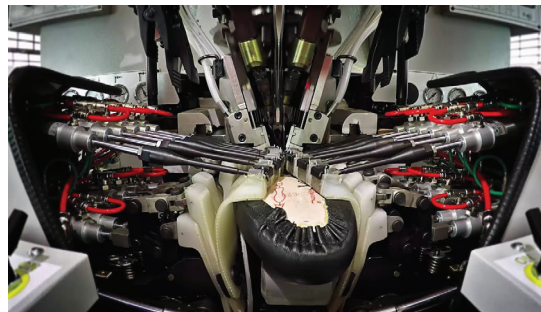


Fig 3



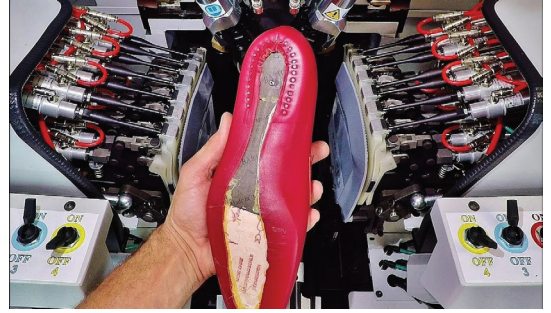
- 8 Operate the last carrier with locking spindle drives
- 9 Locking spindle engages the last carrier
- 10 Now press the pedal
- 11 The last carrier moves to its position (Fig 4)
- 12 Now the adhesive is applied to the upper side

Fig 4



- 13 When the pedal is pressed again, the pincers pull the upper to help seat and side last.
- 14 Press the pedal again and release the last carrier.
- 15 Now the shoe will be seat and side lasted. (Fig 5)

Fig 5



- 16 Take out the lasted shoe.
- 17 Show the seat and side lasting shoes to the instructor and get approval.

Similarly practice the seat and side lasting of other shoes

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- know the parts and functions of toe puff attaching machine
- practice toe puff attaching
- know the parts and functions of toe puff conditioning machine
- practice toe puff conditioning.

Tools/Instruments

- Leather thickness gauge - 1 No.
- Screw driver 150 mm, 200 mm - 1 Set.
- Clicking knife 150 mm - 1 No.
- Hammer - 1 No.
- Allen key (1-10 mm) - 1 Set.

Equipments/Machines

- Toe puff conditioning machine - 1 No.

- Toe puff attaching machine - 1 No.

Materials

- Upper - as reqd.
- Toe puff stiffener - as reqd.
- Dendrite (sticky glue) - as reqd.

PROCEDURE

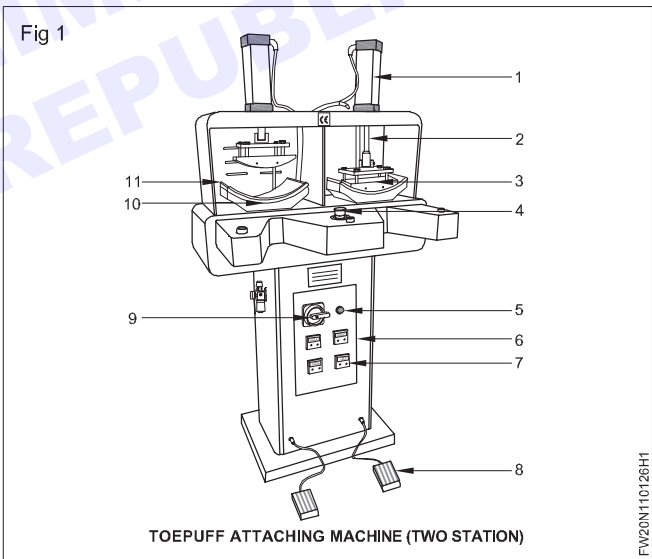
TASK 1: Know the parts and functions of Toe puff attaching machine

The instructor to operate the machine and explain to the trainees the parts and functions of the Toe puff attaching machine (Fig1).

- Trainees to mention the parts and their functions of Toe puff attaching machine in Table 1.

Parts

- 1 Cylinder
- 2 Pneumatic piston
- 3 Upper aluminum mold
- 4 Emergency switch
- 5 Indicator lamp
- 6 Time relay
- 7 Heat control switch
- 8 Pedal
- 9 ON/OFF switch



- 10 Lower aluminum mold
11 Polyurethane board

Table 1

S.No.	Parts of Toe puff attaching machine	Functions
1	Cylinder	
2	Pneumatic piston	
3	Polyurethane board	
4	Pedal	

5	Upper aluminum mold	
6	Emergency switch	
7	Time relay	
8	ON/OFF switch	
9	Lower aluminum mold	
10	Heat control switch	
11	Indicator lamp	

TASK 2: Practice Toe puff attaching

Instructor to explain the trainees the benefits of attaching a toe puff.

- 1 Trainees to take an upper for Toe puff attaching.
- 2 Switch on the m/c.
- 3 Take the Toe puff stiffener and stick it properly on the toe area of the upper with adhesive glue.
- 4 Set the required temperature for the upper mold.
- 5 Set the time relay switch as required.
- 6 Set the required heat for the mold.

Take a sample upper with the Toe puff stiffener attached and run the Toe puff attaching machine to check with the instructor.

- 7 Press the start switch.
- 8 Place the Toe Puff stiffener pasted upper between the upper and lower molds and do attaching.
- 9 Now the Toe Puff stiffener attached upper will come out.
- 10 Similarly do other uppers for toe attaching.

Note: The machine has a hot part and should be handled with extreme caution.

TASK 3: Know the parts and functions of Toe puff conditioning machine (Fig 1)

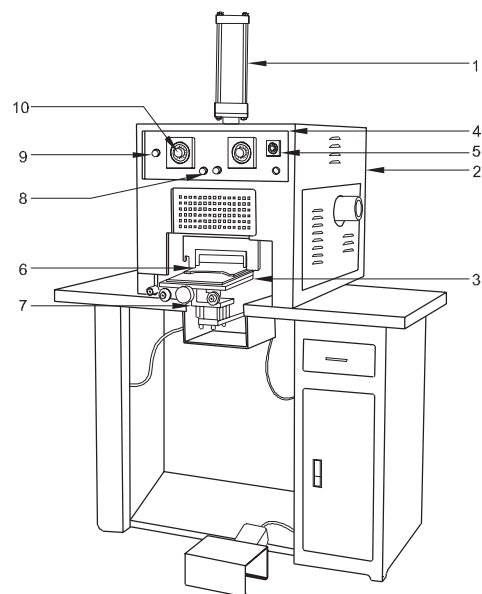
Instructor to operate the machine and explain to the trainees the components and its functions of the Toe Puff conditioning machine.

- Trainees to mention the parts of Toe Puff conditioning machine and its functions in Table 2.

Parts

- 1 Cylinder
- 2 Shield
- 3 Upper aluminum mold
- 4 Start switch
- 5 Emergency switch
- 6 Polyurethane board
- 7 Lower aluminum mold
- 8 Power switch
- 9 Time relay
- 10 Heat control switch

Fig 1



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Table 2

S.No.	Name of the parts of Toe puff conditioning machine	Functions
1	Pneumatic cylinder	
2	Shield	
3	Upper aluminum mold	
4	Start switch	
5	Emergency switch	
6	Polyurethane Board	
7	Lower aluminum mold	
8	Power switch	
9	Time relay	
10	Heat control switch	

TASK 4: Practice Toe puff conditioning (Fig 1)

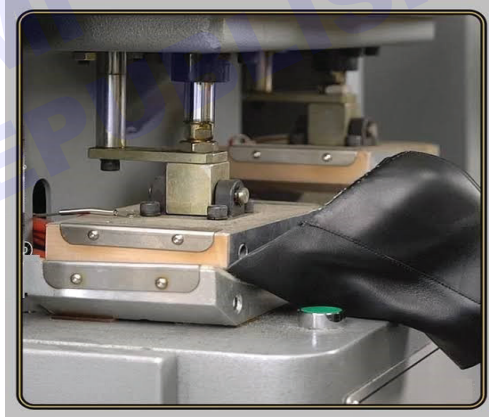
Instructor to explain the Trainees the benefits of conditioning the upper with Toe Puff attaching.

- 1 Trainees should pick up an upper with a Toe - puff attachment.
- 2 Set the required temperature for the upper mold.
- 3 Set the time relay switch as required.
- 4 Take a sample upper with Toe puff attaching and have the instructor to check the Toe Puff conditioning.
- 5 Place the Toe - puff attached upper between the upper and lower aluminum molds.
- 6 Press the start switch.
- 7 Now the upper and lower aluminum molds press the upper to get the perfect conditioning for Toe last.

- 8 Once the timing is over the mold will release and the upper will come out.

- 9 Similarly condition the other uppers. (Fig 1)

Fig 1



Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Prepare and practice attaching insole to the last bottom and pulling over toe laster

Objectives: At the end of this exercise you shall be able to

- practice to attach the insole at the bottom of the last
- practice to lasting the toe area.

Requirements

Tools/Instruments

- Lasting pincer (200 mm) - 1 No.
- Clicking knife - 1 No.
- Three leg iron last - 1 No.
- Folding hammer - 1 No.

Equipments/Machines

- Lasting peg - 1 No.

- Men shoe last - as reqd.

Materials

- Insole sheet - as reqd.
- Lasting nail - as reqd.
- Dendrite (sticky glue) - as reqd.

PROCEDURE

TASK 1: Practice to attach the insole to the bottom of the last

- Instructor to explain the insole pattern to trainees and ask them to mark and cut out the insole sheet (Fig 1 & 2).

Fig 1



Fig 2



Fig 3



Fig 4



- 1 Choose the upper to fit the insole.
- 2 Choose the right last for the upper.
- 3 Mark toe center and back height on the selected last.
- 4 Take a pair of insoles (Fig 3 & 4).

- 5 Mark the toe center and back center on the insole and fix it with a lasting nail so that the last toe center and back center come together. Place the nail in the toe, middle and back area.
- 6 Check that the feather edge of the insole fitted last is correct.
- 7 Similarly fit the insole on the other last

Instructor to check the insole fitted by the trainees.

TASK 2: Practice to lasting the Toe area (Figs 1-10)

- 1 Fit the upper to last with the insole fitted.
- 2 Adjust the toe center and back height as needed while fitting the upper to last. (Fig 1).

Fig 1



- 3 Pull the Toe part with pincers. (Fig 2)

Fig 2



- 4 Fasten with lasting nail by pulling without crimps with pincers.
- 5 Pull the top with pincers to get a toe shape. (Fig 3 & 4)

Fig 3



Fig 4



- 6 If wrinkles occur while lasting the upper, pull out the already driven nail and re-nail without wrinkles. (Figs 5-10)

Fig 5

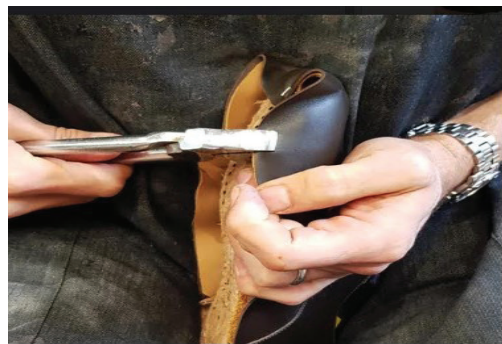
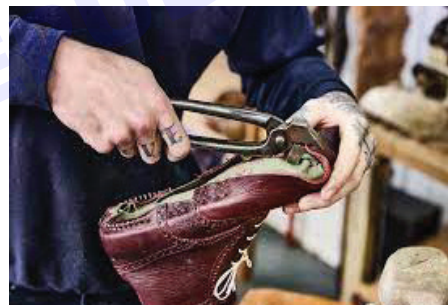


Fig 6



Fig 7



Instructor to check the area where the lasting is done and check if the lasting is correct.

Fig 8



Lasting should be done so that the nail does not touch the hand while doing lasting

Fig 9



Trainees to show the lasted shoe to the trainer to check if the lasting is correct.

Fig 10



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Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Identify various parts & section of pulling over toe lasting machine

Objectives: At the end of this exercise you shall be able to

- know the various parts and functions of pulling over toe lasting machine
- know the working of pulling over toe lasting machine.

Requirements

Tools/Instruments

- Lasting pincer (200 mm) - 1 No.
- Clicking knife - 1 No.
- Folding hammer - 1 No.
- Spanner (6-32 mm) - 1 Set.
- Allen key (1-10 mm) - 1 Set.

Equipments/Machines

- Pulling over toe lasting machine - 1 No.

Materials

- Scrap upper - as reqd.
- Piper last - as reqd.
- Pew sticky glue roll - as reqd.

PROCEDURE

TASK 1: Know the various parts and functions of pulling over toe lasting machine (Fig 1)

Instructor to explain the trainees the various parts and functions of a pulling over toe lasting machine. Instructor to call the trainees to complete Table 1.

Parts

- 1 Micro setting light
- 2 Dobed
- 3 Pincers
- 4 Pincer adjusting knob
- 5 Bottom part button
- 6 Pedal
- 7 Pew sticky glue roll
- 8 Hydraulic presser adjusting knob
- 9 Head

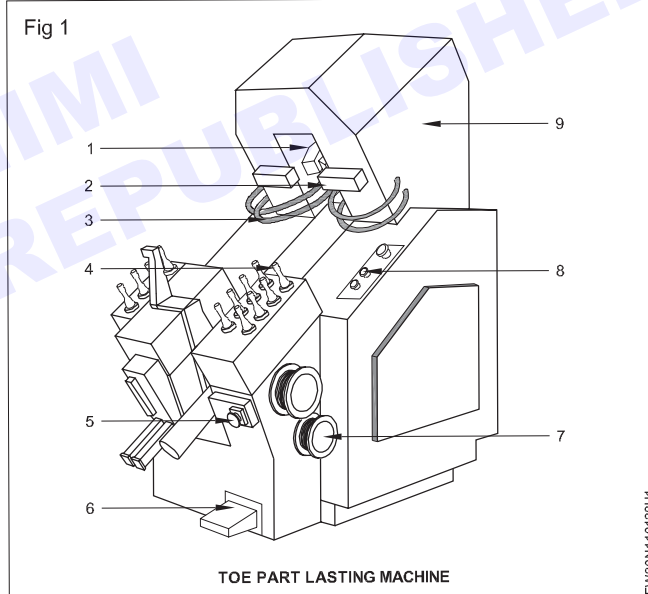


Table 1

S.No.	Toe lasting machine parts name	Functions
1	Micro setting light	
2	Dobed	
3	Pincers	
4	Pincer adjusting knob	
5	Bottom part button	
6	Pedal	

S.No	Toe lasting machine parts name	Functions
7	Pew sticky glue roll	
8	Hydraulic presser adjusting knob	
9	Head	

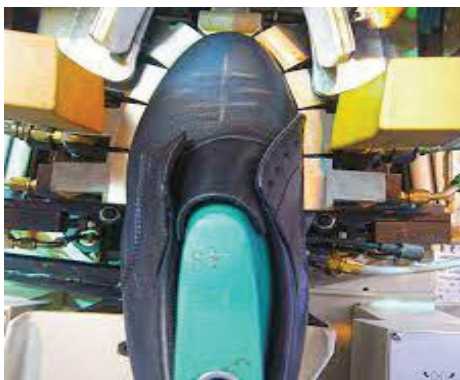
Trainees to show the completed Table 1 to the instructor and get approval.

TASK 2: Know the working of pulling over toe lasting machine (Figs 1-5)

The instructor should select the correct last for the training shoe and check the corresponding toe band against the machine.

- 1 Take the conditioned upper. (1 pair)
- 2 Choose the appropriate last for the upper and fix the upper on the last.
- 3 Keep the upper fixed last in the machine
- 4 Align the upper center and last center properly with the micro setting light on the machine (Fig 1)
- 5 Turn on the switch that controls the temperature of cementing glue as required.

Fig 1



- 6 Adjust the glue chamber pressure adjusting switch.
- 7 Hydraulically adjust the toe pressure hammer.
- 8 Replace and adjust the toe band pressure adjusting regulator.
- 9 Turn on the hydraulic motor.
- 10 Adjust the heel support adjustment.
- 11 Adjust the insole restor as needed.

Fig 2



Instructor should take a sample upper and make all the above adjustments test and demonstrate the trainees that the lasting is correct.

12 Press the pedal.

13 Now the toe part of the upper will last is the lasting.

14 Depress the pedal again and release the last.

Be very careful while lasting. Viper blade, pincer etc. should be handled carefully without direct touch with hand.

Fig 3

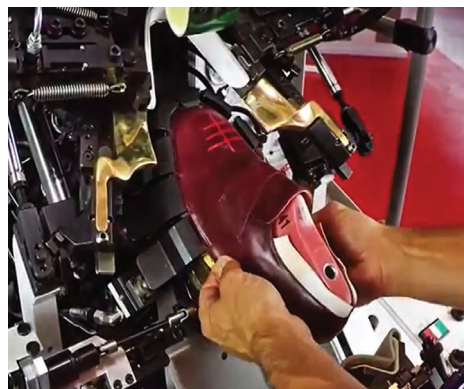
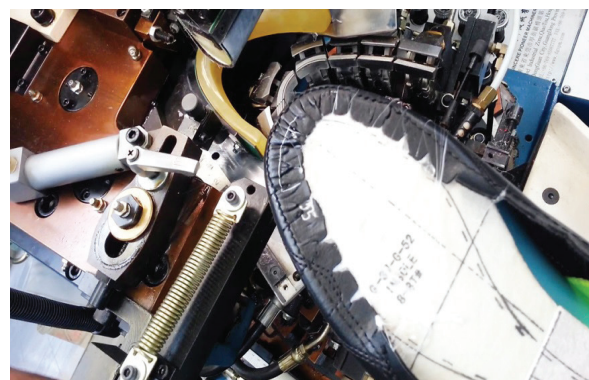


Fig 4



15 Similarly practice lasting all other uppers.

Fig 5



Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Check the accuracy, precision of pulling over toe lasting machine

Objectives: At the end of this exercise you shall be able to

- check accuracy, precision checking of pulling over toe lasting machine.

Requirements			
Tools/Instruments		Equipments/Machines	
• Lasting pincer (200 mm)	- 1 No.	• Pulling over toe lasting machine	- 1 No.
• Clicking knife	- 1 No.	Materials	
• Folding hammer	- 1 No.		
• Spanner (6-32 mm)	- 1 Set.		
• Allen key (1-10 mm)	- 1 Set.		
		• Scrap upper	- as reqd.
		• Piper last	- as reqd.
		• Pew sticky glue roll	- as reqd.

PROCEDURE

TASK 1: Check accuracy, precision of pulling over Toe lasting machine

Instructor to run the machine and explain the trainees about the accuracy, precision of pulling over toe lasting machine.

- 1 Change the movement of toe pad, pincer, wiper of pulling over toe lasting machine and test with the lasted shoe upper.
- 2 Test whether the movement of all the pincers work together.

- 3 Check that the flow of molten glue is evenly spread across the toe part.
- 4 Adjust the last in such away that the micro setting light fall in the center of the last.
- 5 Select the correct toe band to fit the last and check for fit.
- 6 Check and find that the cyclic operations of the toe band, pincer, glue flow and wiper are performed accurately at the correct intervals.
- 7 Check that the glue is melting at the correct temperature.

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Identify & carryout maintenance and preventive maintenance

Objectives: At the end of this exercise you shall be able to

- know the method of maintenance of toe lasting machine.

Requirements			
Tools/Instruments		Equipments/Machines	
• Spanner set (6-32 mm)	- 1 Set.	• Toe lasting machine	- 1 No.
• Allen sea set (1-10 mm)	- 1 Set.	Materials	
• Screw driver set (100,150,200, 250 mm)	- 1 No.		
		• Cotton waste	- 100 g.
		• Lubricant oil	- 2 ltr.

PROCEDURE

TASK 1: Know the method of maintenance of toe lasting machine

Refer Ex. No. 1.9.119 - TASK 1

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Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Identify various parts & section of sole stitching machine

Objectives: At the end of this exercise you shall be able to

- identify various parts and section of sole stitching machine.

Requirements

Tools/Instruments

- Cutting pliers - 1 No.
- A screw driver (100,150,200, 250 mm) - 1 Set.
- Spanner (6-32 mm) - 1 Set.
- Allen key (1-10 mm) - 1 Set.

Equipments/Machines

- Sole stitching machine - 1 No.

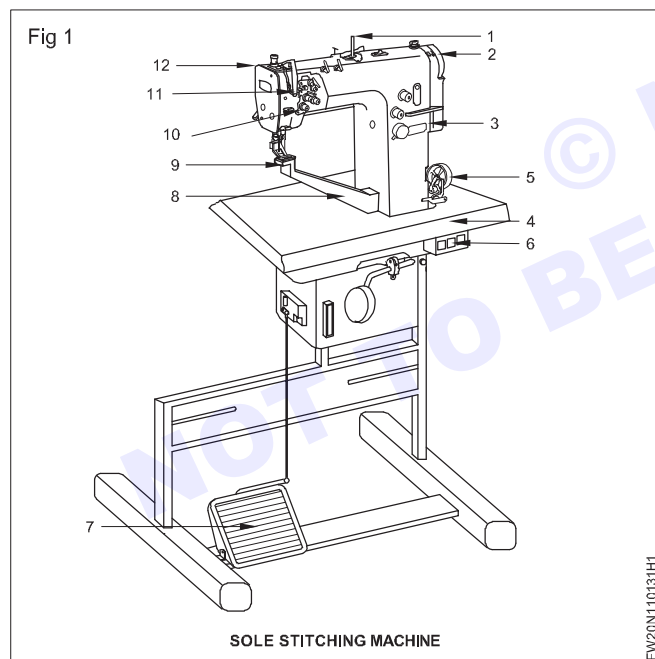
Materials

- Model shoe - as reqd.
- Glove - as reqd.
- Cotton waste - 1/2 kg.

PROCEDURE

TASK 1: Identify various parts and section of sole stitching machine (Fig 1)

Instructor to explain the trainees the functions of the sole stitching machine parts functions to trainees



- Tension guide
 - Presser foot
 - Machine arm
- 1 Trainees to practice operating the sole sewing machine.
 - 2 Operate the machine under the supervision of an instructor.
 - 3 Must wear shoes while operating the machine.
 - 4 First practice sewing on scrap upper leather.
 - 5 Then feel the operation of the machine and sew the sole on the upper.
 - 6 Switch off the machine when the job is done.

Press the foot pedal very slowly as the machine can sew very fast.

- Trainees to mention the uses/functions of various parts of sole stitching machine against the space given in Table 1

Table 1

S.No.	Name of parts	Uses/functions
1	Pedal	
2	ON/OFF switch	
3	Bobbin winder	
4	Table	
5	Sing iron	
6	Machine point	
7	Spool pin	
8	Base plate	
9	Thread take up lever	
10	Tension guide	
11	Presser foot	
12	Machine arm	

Match the parts for the above figure (Fig 1)

- Pedal
- ON/OFF switch
- Bobbin winder
- Table
- Sing iron
- Machine point
- Spool pin
- Base plate
- Thread take up lever

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing**Finishing of shoes & other articles**

Objectives: At the end of this exercise you shall be able to

- practice shoe finishing.

Requirements**Tools/Instruments**

- Brush 1 inch
- Knife
- Scissors 100 mm

- 1 No.
- 1 No.
- 1 No.

Materials

- Shoe size
- Cotton waste
- Shoe polish

- 8-10 Pairs
- 1/4 kg.
- 1 No.

PROCEDURE**TASK 1: Practice shoe finishing**

Refer Ex. No. 1.10.121 - TASK 3

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Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Practice on marks and blemishes, their character and process of removal

Objectives: At the end of this exercise you shall be able to

- identifying defects during shoe make-up
- correcting defects.

Requirements			
Tools/Instruments		Materials	
• Trimmer	- 1 No.	• Sponge	- as reqd.
• Brush 1"	- 1 No.	• Various colors dye solution	- as reqd.
• Burning tool	- 1 No.		

PROCEDURE

TASK 1: Identifying defects during shoe make-up

Instructor to arrange the shoes made by the trainees in their section and explain various defects in them and ask the trainees to mention in Table 1.

Table 1

S.No.	Nature of defects
1	
2	
3	
4	
5	

TASK 2: Correcting defects

- Explain to the trainees the method of correcting the following defects and mark them in Table 2.

Table 2

S.No.	Nature of defects	Fix methods
1	Skip stitches	
2	Loose stitches	
3	Color differences	
4	Glue stains	
5	Excess sewing threads	

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Prepare bottom finishing (Leather soles & heels)

Objectives: At the end of this exercise you shall be able to

- practice to prepare for bottom finishing.

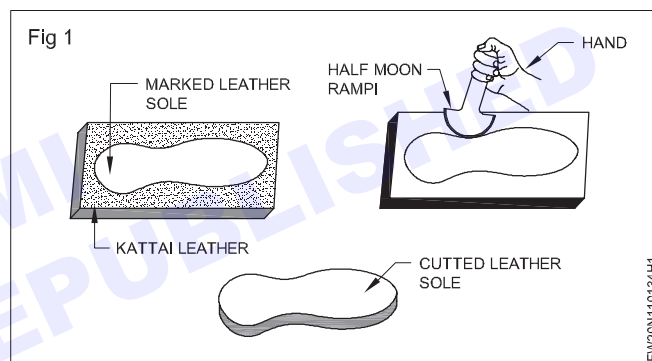
Requirements			
Tools/Instruments		Materials	
• Timber	- 1 No.	• Marking pencil	- 1 No.
• Cutting mat - A3	- 1 No.	• Emery sheet	- 1 No.
• Half round knife	- 1 No.	• Mand leather	- 1 kg.
		• Dye	- 10 ml.

PROCEDURE

TASK 1: Practice to prepare for bottom finishing (Fig 1)

- 1 First take the kattai leather and bottom sole pattern needed to make the bottom.
- 2 Place the pattern on the leather with the help of a marking pencil draw it.
- 3 Cut out the marked kattai leather with the help of wood and half round knife.
- 4 Rub the cut bottom sole edge with emery sheet and make a coarse surface on one side.
- 5 Similarly prepare the heels side too.
- 6 Do the above procedure as shown in Fig 1

Follow the above procedure and simultaneously cut the heels.



- 7 After cutting out the leather sole and heels, paint the sides to match the mane.

After the trainees complete these tasks, show them to the instructor for approval.

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Prepare positional edge set & formations edge inking

Objectives: At the end of this exercise you shall be able to

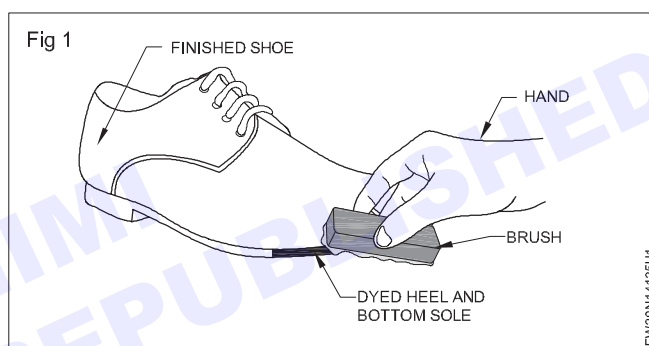
- practice painting on the edge of a specific area.

Requirements			
Tools/Instruments		Materials	
• Polish brush	- 1 No.	• Various color dyes	- 100 ml.
• Dye applying brush	- 1 No.		

PROCEDURE

TASK 1: Practicing dyeing on the edge of a particular area (Leather bottom sole and side of heels, edge of lasted upper)

- 1 Pick up a pair of shoes that is not finished yet.
- 2 Then prepare the dye solution (dye) needed for the finishing work, and the brush needed to apply it.
- 3 Apply the prepared dye solution with a brush to the edges of the shoe upper where the color has changed.
- 4 Similarly apply on leather bottom sole and heels as shown in Fig 1.
- 5 Then dry it for some time and brush it.



Once the trainees have completed this work show it to the instructor and get approval

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Prepare upper finishing, repair & shoe dressing

Objectives: At the end of this exercise you shall be able to

- practice shoe repair
- practice shoe dressing
- practice upper finishing.

Requirements

Tools/Instruments

- Steel rule 12" - 1 No.
- Burning tool - 1 No.

Materials

- Derby shoes - 2 Pairs
- Dye solution (desired color) - 100 ml.

PROCEDURE

TASK 1: Practice shoe repair

- 1 Choose a shoe with the lasting and bottom, heel attached and unfinished work.
- 2 Check it thoroughly and find out if there are any defects.
- 3 If you find any defects then note them. (minor cuts, scratches etc. during manufacturing)

- Trainees to write down the method of remedying defects that may occur during shoe making in Table 1.

Table 1

S.No.	Defects during shoe making	Method of remedying defects
1	Nail scratch	
2	Scoring mark	
3	Glue stickiness	

Instructor to explain the defects that happens during shoe making to the trainees

TASK 2: Practice shoe dressing

- 1 Take the defective shoe for shoe dressing
- 2 Apply the liquid cream on it with a cotton and spread it all over the upper.

- 3 Then let it dry for some time

Instructor to explain about shoe dressing and its purpose.

TASK 3: Practice upper finishing

- 1 Take the shoe that is not finished yet.
- 2 If the thread is not cut in its upper parts, remove the thread with a burning tool.
- 3 If the glue on the upper and bottom parts is not cleaned, clean it with a rubber eraser.
- 4 If there are any other defects, polish using polish and brush.

After the trainees complete the work, show it to the instructor and get approval.

- Trainees to Sort and write the upper finishing jobs in Table 2.

Table 2

S.No.	Shoe upper finishing works
1	
2	
3	
4	
5	
6	

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Check the accuracy of product shoes

Objectives: At the end of this exercise you shall be able to

- testing the accuracy of the manufactured shoe.

PROCEDURE

TASK 1: Testing the accuracy of the manufactured shoe

- 1 Pick up a pair of shoes with all the work done.
- 2 When testing a pair of shoes, see if the grain setting is correct for both.
- 3 Check if the color matches.
- 4 Check if the shoe set (right, left) is correct.
- 5 Look and check if the shoe size is correct.
- 6 Looks to see if the glue sticks clearly.
- 7 Check that the stitching on the upper is correct.
- 8 Check if the top and bottom match exactly.
- 9 Check for dirt stains.
- 10 Check for good finishing by removing thread debris.

Explain the methods of manufacturing accuracy of the trainer shoe will examine.

Mention in Table 1 the points to be observed by the trainees during the inspection of all the completed works.

Table 1

S.No.	Points to note when testing a finished shoe
1	
2	
3	
4	
5	
6	
7	
8	

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Practice test methods using the universal testing machine

Objectives: At the end of this exercise you shall be able to

- practice on universal testing machine.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Leather upper	- 2 pcs.
• Cutting mat - A3	- 1 No.	• Leather lining	- 2 pcs.
• Oil stone	- 1 No.	• Suede leather	- 2 pcs.
Equipments/Machines		• Nubuck leather	- 2 pcs.
• Universal testing machine	- 1 No.		

PROCEDURE

TASK 1: Practice on universal testing machine

Test the tensile strength of leather

- 1 For this take a drum-bell shaped skin.
- 2 Attach one end of the skin to the grip portion of the universal testing machine and the other end to the jaw.
- 3 Set the machine to stretch it up to 20mm per minute.
- 4 Now turn on the machine and run it.

- 5 Note the measurement at which the skin is torn.

Instructor to explain about tensile strength test on universal testing machine.

- Trainees to test the tensile strength of different leathers on a universal testing machine and the extent to which it tears to be noted in Table 1.

Table 1

S.No.	The name of the skin	Measure of tensile strength
1	Aniline leather	
2	Nubuck leather	
3	Cow vining leather	
4	Suede leather	
5	Nappa leather	
6	Glaze kit leather	
7	Oil pull up leather	

Extension of break testing

- 1 Take a piece of skin and attach one end of the skin to the grip portion the machine and the other end to the jaw.
- 2 Measure the length of the skin.
- 3 Turn the machine ON and run it.
- 4 Mark the stretch to which the skin is torn in elasticity

Trainees to test the stretch on a testing universal machine and get the trainer's approval on the size.

Testing tear strength

- 1 Take a rectangular shaped leather of size 50 mm x 25 mm.
- 2 Bend an iron piece 10 mm wide and 2 mm thick at right angle and attach one end of the skin to the fixed hooks.

- 3 Fit the other end of the leather into the machine-mounted jaw.
- 4 Turn the machine ON and run it.
- 5 Mark the stretch to which the skin is torn.

Instructor to explain about the skin tearability testing

- Trainees to test the tearability of different skins and note it in Table 2.

Table 2

S.No.	The Name of the skin	Measure of tear strength
1	Cow upper leather	
2	Suede leather	
3	Nubuck leather	
4	Semi aniline leather	
5	Coat lining leather	
6	Glaze Kit Leather	
7	Pigmented finished leather	

Instructor to explain the method of testing the strength of thread.

- Trainees to test the strength of the thread and mark its size in Table 3.

Table 3

S.No.	Types and size of thread	The strength of the yarn
1	Cotton thread - 30	
2	Polyester thread - 40	
3	Nylon thread - 60	
4	Nylon thread - 40	
5	Nylon thread - 20	
6	Cotton thread - 20	

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Select and verify characteristics of universal testing machine

Objectives: At the end of this exercise you shall be able to

- practice to test the characteristics of universal testing machine.

Requirements			
Tools/Instruments		Materials	
• Knife	- 1 No.	• Chart paper	- as reqd.
Equipments/Machines		• Pencil	- as reqd.
• Universal testing machine	- 1 No.	• Rubber	- as reqd.

PROCEDURE

TASK 1: Practice to test the characteristics of universal testing machine

- Universal testing machine has different testing functional set ups. Choose the test functional set up to test leather.

Instructor to explain the trainees the functional characteristics of the parts of the universal testing machine.

- Trainees to mark the functional characteristics of the parts of Universal Testing Machine in Table 1

Table 1

S.No.	Name of parts	Functional characteristics
1	Lead screw wall	
2	Moving cross head	
3	Grip adjuster	
4	Fixed grip	
5	Movable grip	
6	Bottom cover	

Footwear Maker - Prepare & Perform Insole Making, Drafting, Lasting, Sole Attaching, Sole Stitching, Bottom Filling, Heel Fixing & Finishing

Identify various parts & section of universal testing machine

Objectives: At the end of this exercise you shall be able to

- identify parts and sections of universal testing machine.

Requirements			
Tools/Instruments		Materials	
• Screw driver	- 1 No.	• Chart paper	- as reqd.
• Cutting player	- 1 No.	• Pencil	- as reqd.
		• Rubber	- as reqd.
Equipments/Machines			
• Universal testing machine	- 1 No.		

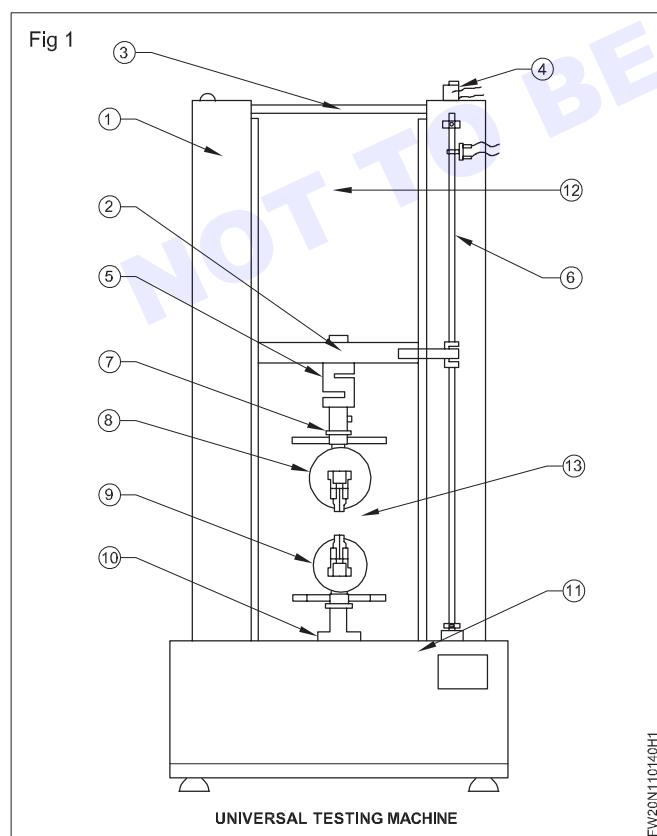
PROCEDURE

TASK 1: Identify parts and sections of Universal Testing Machine (Fig 1)

Instructor to explain the parts and sections of Universal testing machine as shown in Fig 1.

- Trainees to mark the uses of parts of Universal testing machine in Table 1.

Trainees to list the uses parts of Universal testing machine in the Table and show it to the instructor for approval.



Parts

- 1 Lead screw cover
- 2 Moving cross head
- 3 Fixed cross head
- 4 Extension measurement optical coder
- 5 Flexible coupling
- 6 Adjustable upper limit sat
- 7 Grip adjuster
- 8 Movable grip
- 9 Fixed grip
- 10 Base test adapter
- 11 Bottom cover
- 12 Spacebar tensile specimen
- 13 Testing space

Table 1

S.No.	Name of parts of UTM	Uses
1	Lead screw cover	
2	Moving cross head	
3	Fixed cross head	
4	Extension measurement optical coder	
5	Flexible coupling	
6	Adjustable upper limit sat	
7	Grip adjuster	
8	Movable grip	
9	Fixed grip	
10	Base test adapter	
11	Bottom cover	
12	Spacebar tensile specimen	
13	Testing space	

Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Construct and making of shoes of latest fashion

Objectives: At the end of this exercise you shall be able to

- drawing, cutting and skiving of derby shoe spare parts
- preparation of bottom parts
- folding and assembling parts
- drafting hand lasting
- bottom and heel fixing
- sole attaching.

Requirements

Tools/Instruments

- | | |
|---------------------------|---------|
| • Cutting knife | - 1 No. |
| • Scissors | - 1 No. |
| • Measuring scale | - 1 No. |
| • Cutting mat | - 1 No. |
| • Leather thickness gauge | - 1 No. |
| • Glue can | - 1 No. |
| • Hammer | - 1 No. |
| • Kuddapa stone | - 1 No. |
| • Eyelet fixer | - 1 No. |
| • Oil stone | - 1 No. |
| • Iron last | - 1 No. |
| • Hole punch | - 1 No. |
| • Pincer | - 1 No. |

Equipments/Machines

- | | |
|-------------------|---------|
| • Cutting table | - 1 No. |
| • Skiving machine | - 1 No. |

- | | |
|-----------------------------|---------|
| • Post bed sewing machine | - 1 No. |
| • Sole pressing machine | - 1 No. |
| • Heat reactivating machine | - 1 No. |

Materials

- | | |
|---------------------|------------|
| • Chart paper | - 1 No. |
| • Upper leather | - 2 sq.ft. |
| • Lining leather | - 2 sq.ft. |
| • Rubber sheet | - 1 Sheet |
| • Emery sheet | - 1 No. |
| • Shoe upper scrap | - 200 gm. |
| • Adhesive | - 100ml. |
| • Nylon thread (60) | - 1 No. |
| • Nail | - 50 gm. |
| • Masking tape -1" | - 1 Roll |
| • Cotton yarn | - 1 No. |

PROCEDURE

TASK 1: Drawing, cutting and skiving of derby shoe spare parts (Figs 1-15)

Note: Check with the instructor whether the tools and equipment required for practice are correct.

Marking of upper and lining components (Figs 1 to 5)

- Spread the leather on the table.
- Take the derby upper patterns.
- Mark the defects in leather.
- First, mark the vamp component in an interlocking manner in the region of defect-free resilience and stretch ability.
- Similarly mark the quarter patterns as shown in figure.
- Spread the lining Leather on the table and mark the defect areas.
- Keep derby lining patterns ready.

Fig 1

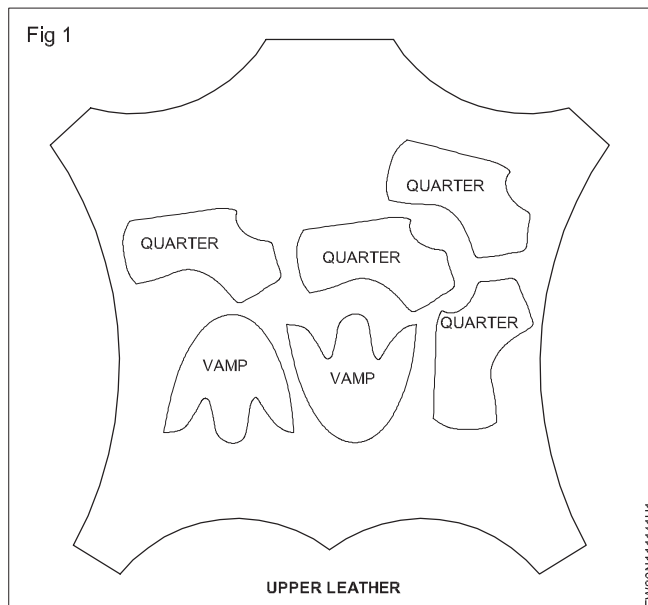
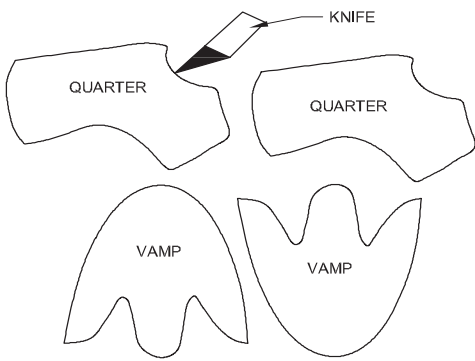


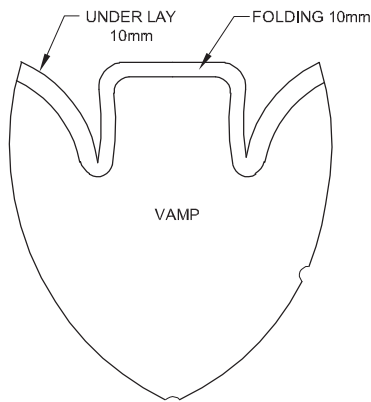
Fig 2



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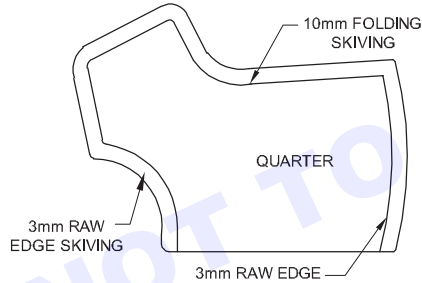
- Place the vamp lining pattern on top of the lining leather and mark the outline completely by looking at the direction of tightness and stretchiness.

Fig 3



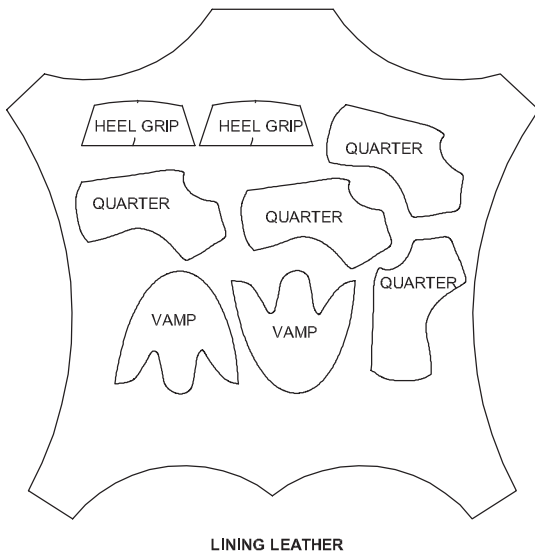
FW20N11141H3

Fig 4



FW20N11141H4

Fig 5



FW20N11141H5

- Keep quarter lining pattern in inter locking mode and make outline mark.
- Mark the heel grip lining pattern as shown in the figure.

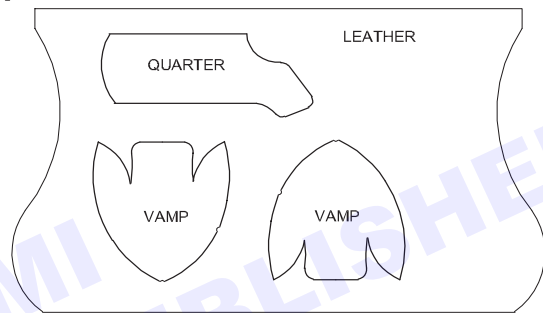
Note: Check the marked pair by showing it to the instructor

Cutting of upper and lining components (Figs 6 to 10)

Note: Knife should be handled with care

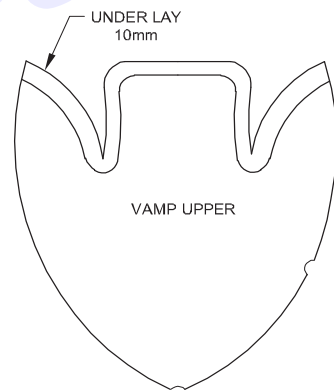
- Place the marked leather on the cutting mat and cut the vamp upper leather.
- Hold the knife at an angle of 45° in the curved area and cut.
- Cut the quarter upper leather as shown in the figure without fringes in it.

Fig 6



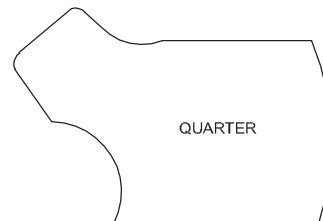
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Fig 7



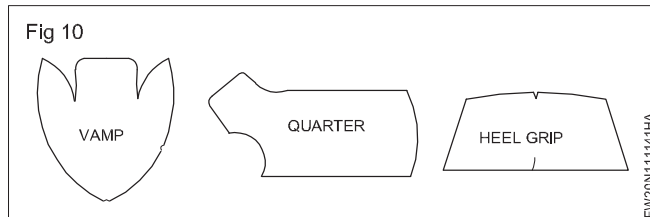
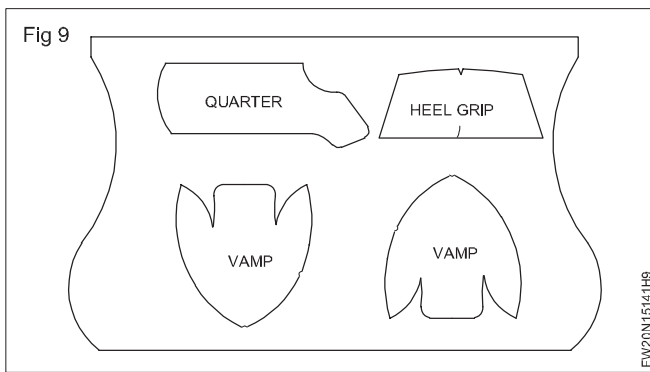
FW20N11141H7

Fig 8



FW20N11141H8

- Pair the cut components and check the notches and punch holes.
- Place the marked lining on the cutting mat and cut the vamp lining leather. Hold the knife at a 45° angle to the curved area and cut.
- Cut out the 2 quarter lining and heel grip lining without fringes.

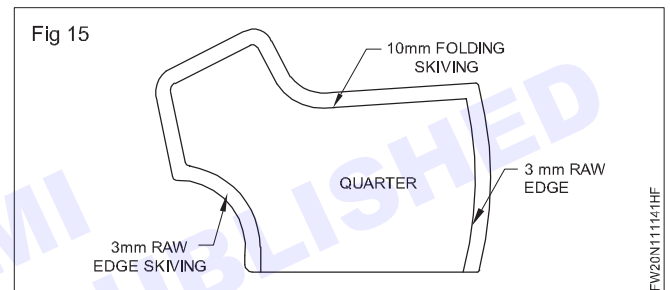
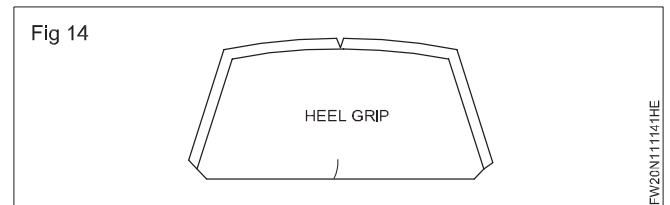
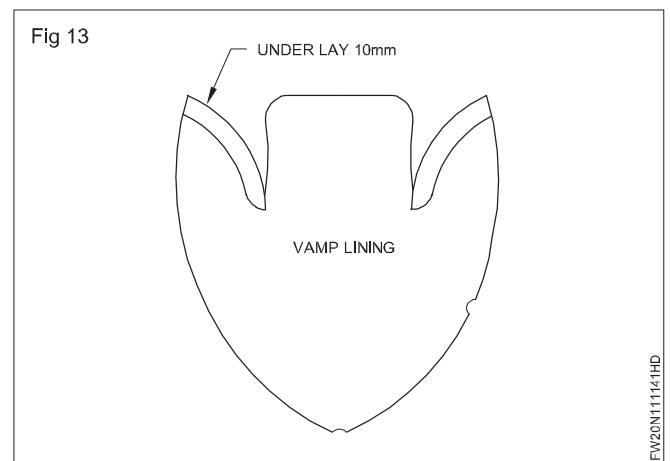
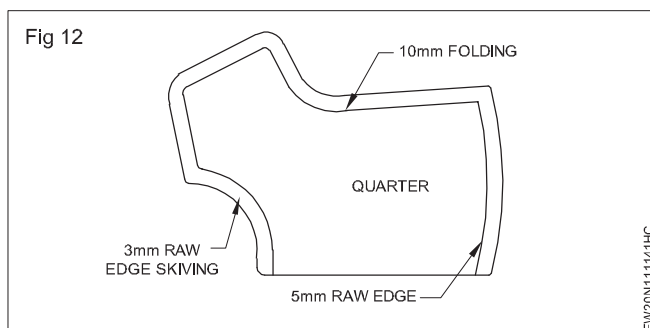
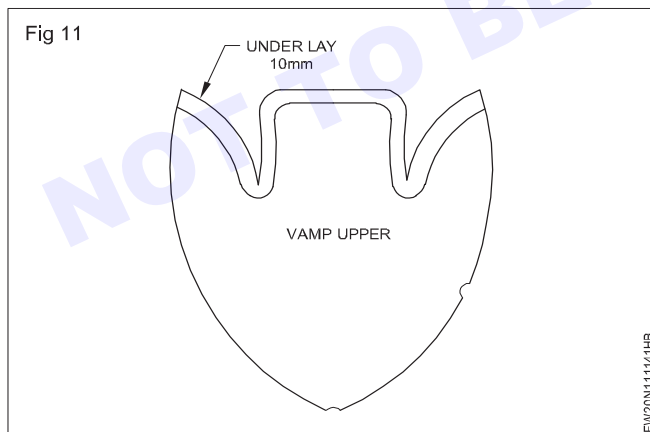


- Check the cut lining component for its notches, nicks and pair them as left and right.
- Check pairing.

Skiving of upper and lining components

Note: Make the necessary adjustment in the Skiving Machine and skive with the Sample and show it to the instructor and get it checked.

- Check the thickness of derby upper components made by cutting.
- Switch on the skiving machine and adjust the pressure pad as required.
- Take the Vamp leather and make a 10mm underlay and folding skive.



Note: Use the leather thickness gauge to check the skiving thickness and pair it.

- Make a 10mm folding skive on the top line of the quarter leather.
- Make a 5mm raw edge skive at the quarter back seam.
- Make a 3mm raw edge skive in the attachment area of the quarter.

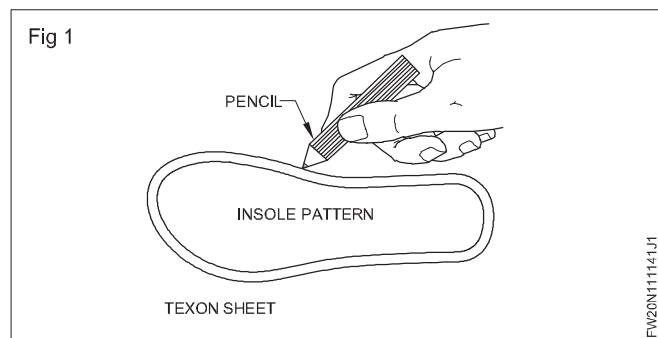
Note: Check skiving upper components by showing them to the instructor.

- Check the thickness of derby upper components made by cutting.
- Switch on the skiving machine and adjust the pressure foot as required.
- Take the vamp lining and skive the underlay to 10mm.
- Top line skive in Quarter lining.
- Underlay skive 10mm in Heel grip lining.
- Check the skiving done and pair it.

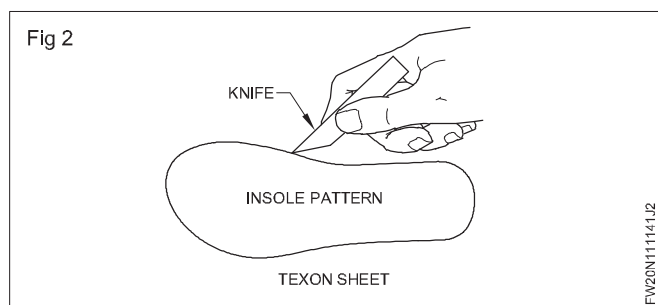
Note: Check skiving done upper and lining components by showing them to the instructor.

TASK 2: Preparation of bottom parts (Figs 1 to 7)

- Take the derby shoe Insole pattern and mark it on the texon sheet.

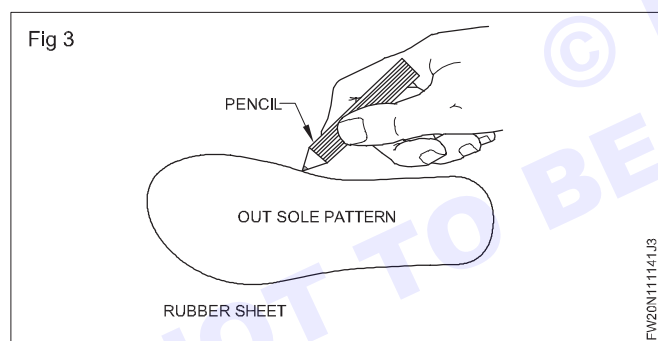


- Take the, outsole pattern of derby shoe, place it on rubber sheet and mark it.



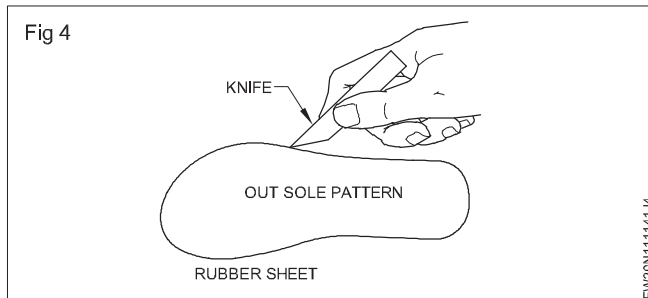
Step 2: Cutting (Figs 3 to 7)

- Cut out the Insole Pattern with the help of Knife.



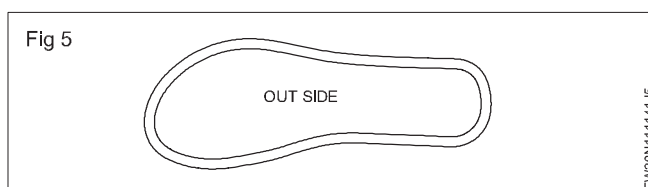
Note: Pair and check the cut insole pattern

- Cut Derby shoe Out Sole with knife.

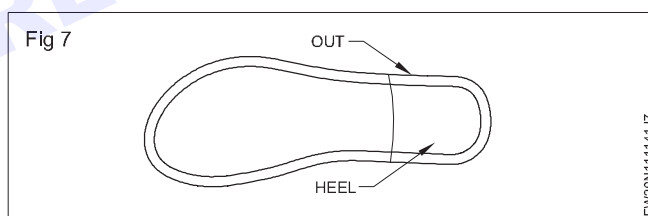
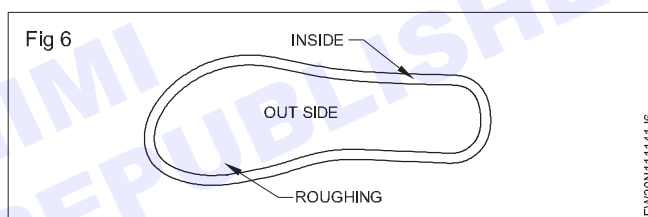


Note : Pair and check the cut Out Sole

- Roughing the cut Out Sole material with the help of Emery Paper to match the stickiness of the inside.



- Draw Heel Curve line on Out Sole - Out Side Heel area and do roughing with emery paper only on that area.



Note: Knife should be handled with care.

Note: Check the cut bottom components by showing them to the instructor

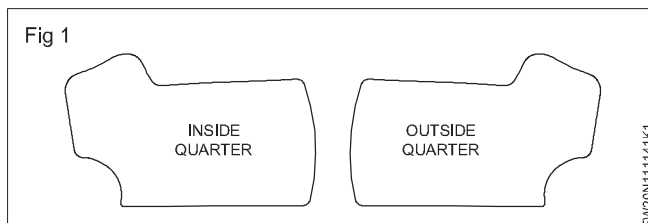
TASK 3: Folding and assembling parts (Figs 1 to 20)

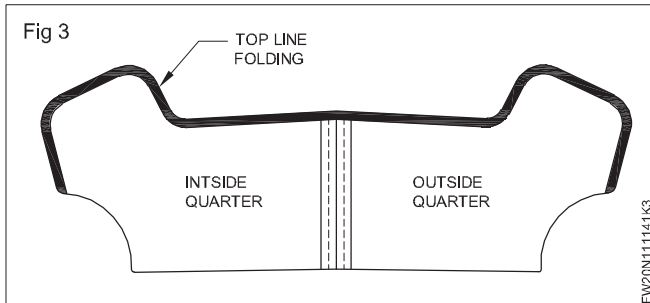
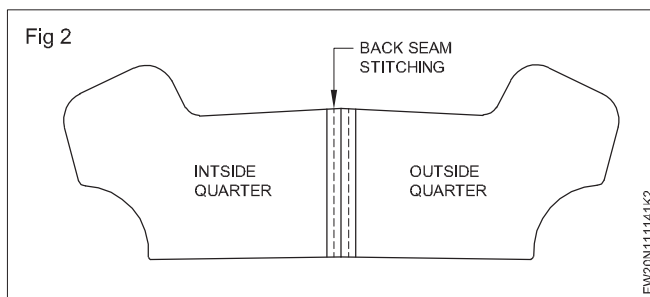
Note: After making the necessary adjustment on the post bed sewing machine, stitch on scrap leather and show it to the instructor and get it checked

Note: Check that the pair is correct by showing the skived derby shoe component to the instructor.

- Take Skiving done inside, outside.

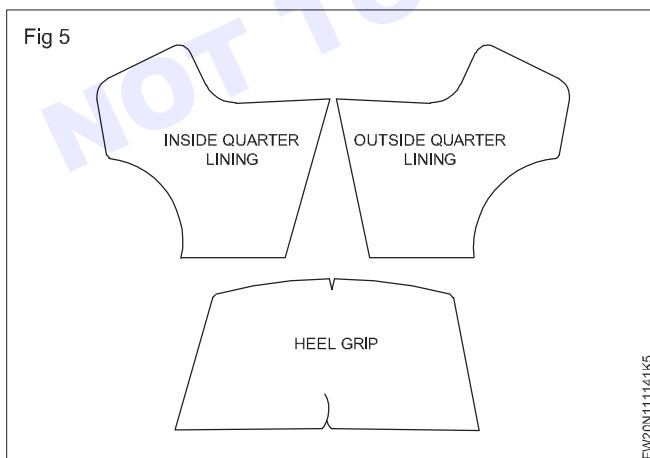
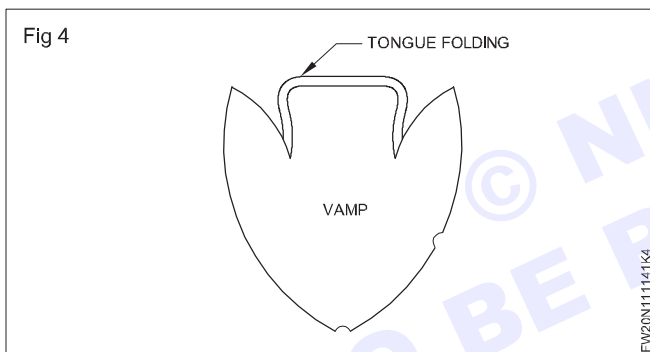
- Join the inside quarter with the outside quarter and sew the back seam on the post bed sewing machine.
- Attach seam tape by hammering on the seam.
- Apply dendrite on quarter top line.



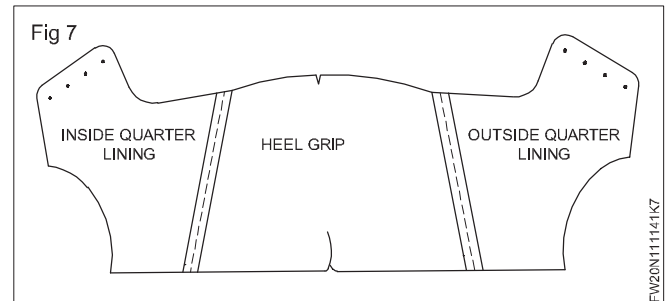
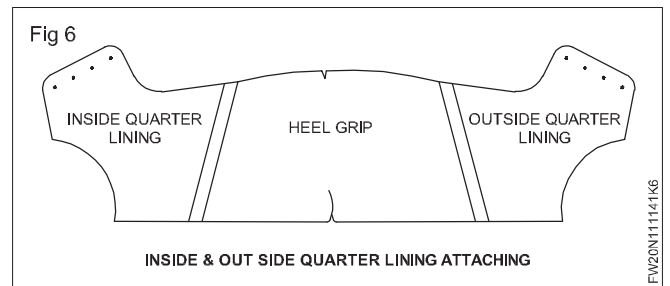


Note: Allow drying time of 10 minutes for dendrite to adhere well.

- Do top line folding with pointed hammer at the place of application.

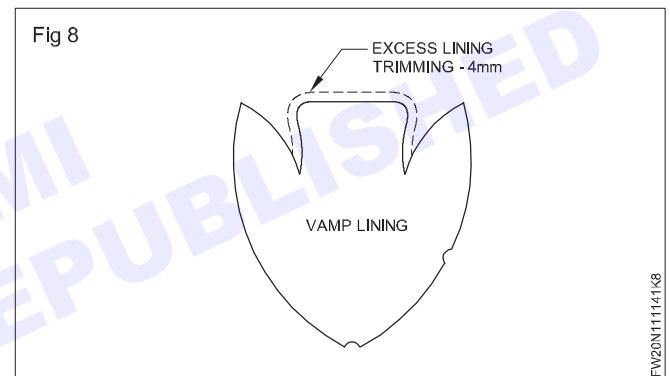


- Apply dendrite on In/out quarter lining + Heel grip and attach as shown in figure.
- Hammer and stitch at the place of attaching.



Attaching the lining to the derby shoe upper

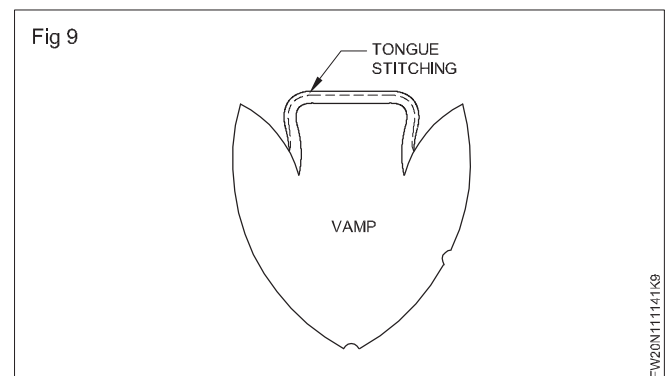
- Apply dendrite on top line of In/Out Quarter lining with In/Out Quarter upper.



Note: Allow 10 minutes for drying time.

- Adhere the lining to the upper to make a 4mm trimming on the lining top line.
- Hammer the top line.

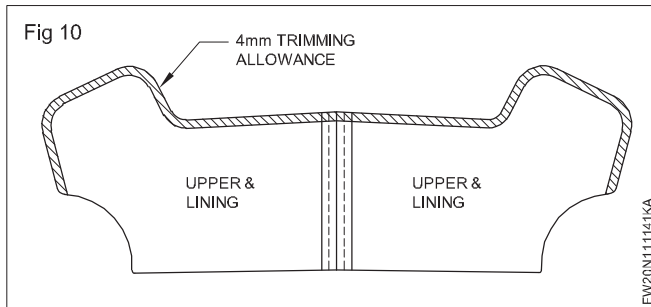
Note: Check the hammering by showing it to the instructor.



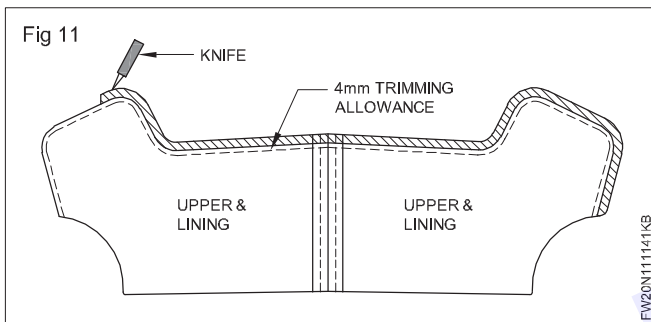
- After hammering do stitching on top line.

Note: Check the stitching by showing it to the instructor.

- Trim the excess lining on the top line.

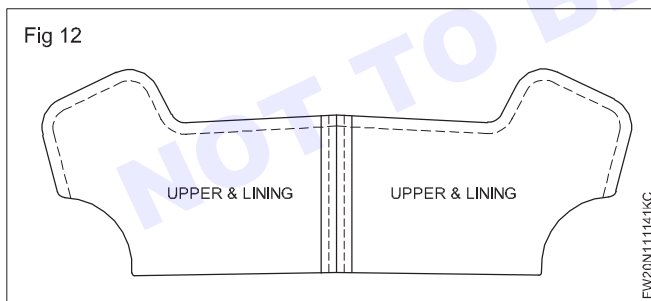


- Apply Vamp Upper + Vamp Lining Tongue with dendrite. Hammering the attaching
- Stitch where the hammering is done.



Note: Check the stitching by showing it to the instructor.

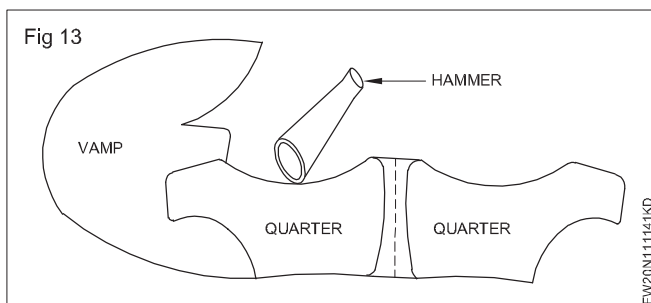
- Trim the excess lining where stitching is done.



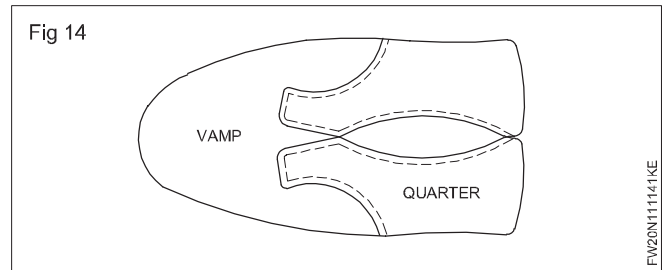
- Apply dendrite on Vamp + Quarter.

Note: Allow 10 minutes for drying time.

- Attach the place of application and do hammering.



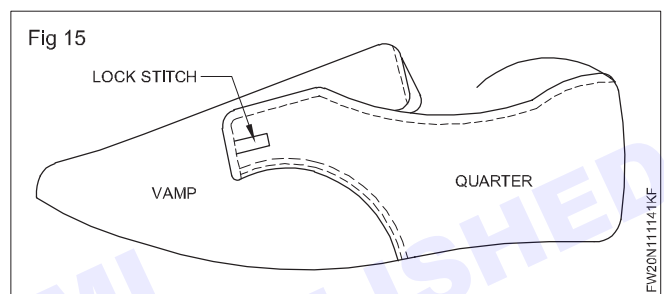
- Do double row stitching in place of hammering.



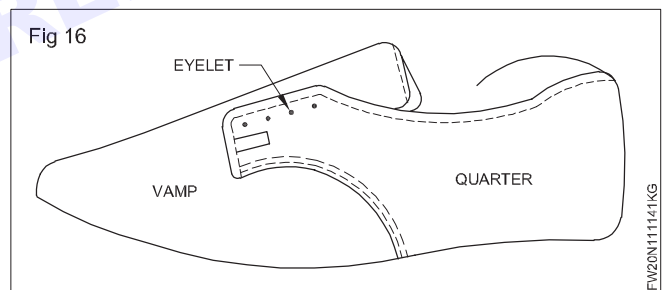
- Apply dendrite on Vamp Lining + Quarter Lining and attach it by giving drying time 10 minutes. Then do hammering and stitching.

Note: Check the stitching done by showing it to the instructor.

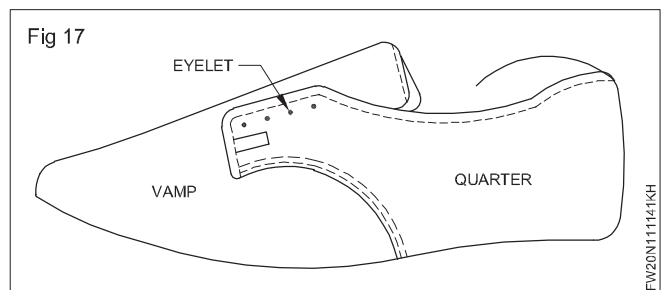
- Do Lock Stitching in In & out Quarter.



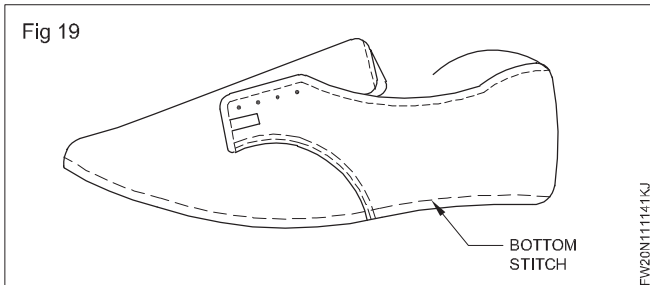
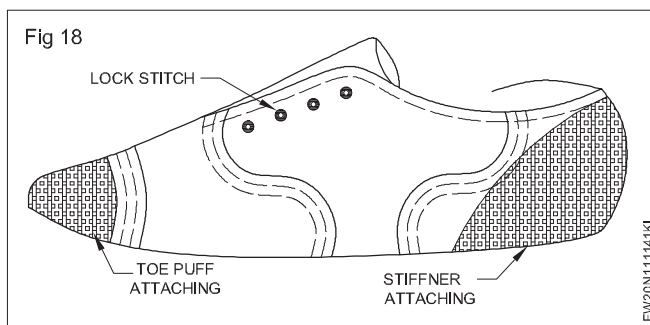
- Thread at the place where lock stitching was done, pull it to the inner side and apply dendrite and stick it.
- Punch holes at eyelet point in quarter.



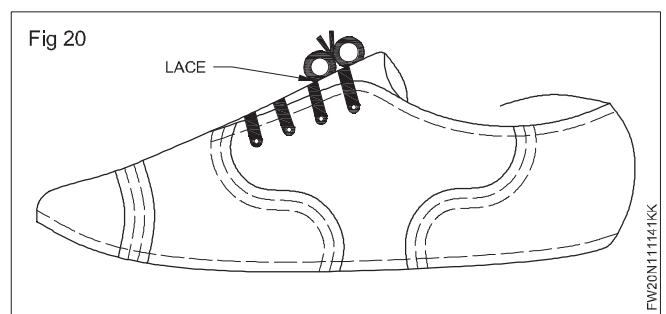
- Do eyelet fixing with eyelet fixer at the place where the hole is made.



- Glue the Toe puff to the front of the upper.
- Glue the stiffener to the back of the upper.



- Finally stick the Upper + Lining completely without any wrinkles and hammer it.



- Finally do bottom stitching.

Note: Check the stitching done by showing it to the instructor.

- Finally pair and tie the temporary Lace.

Note: Check the paired upper by showing it to the Instructor.

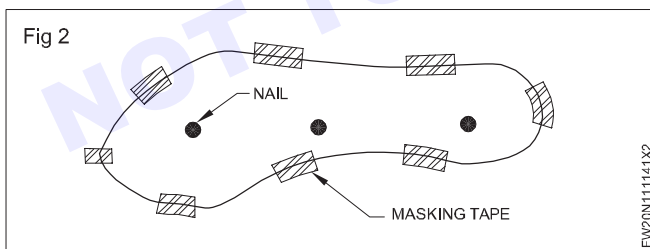
- Clean the checked upper.

TASK 4: Drafting and hand lasting (Figs 1-10)

- Keep the sample last, shoe upper (scrap), insole ready for drafting.

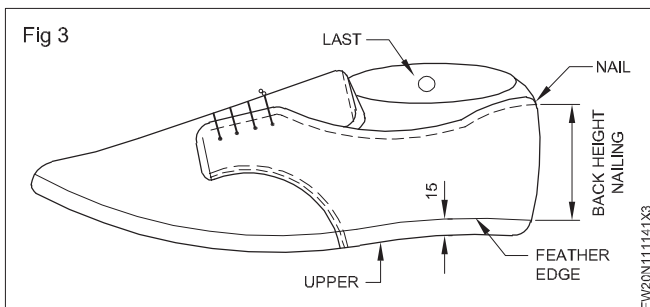


- Place the insole on the bottom of the last and attach the Insole with the help of nail and masking tape.

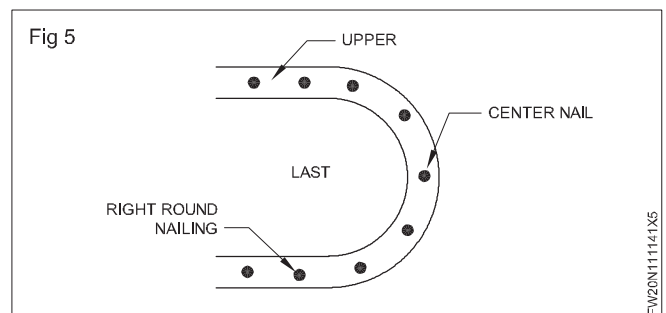
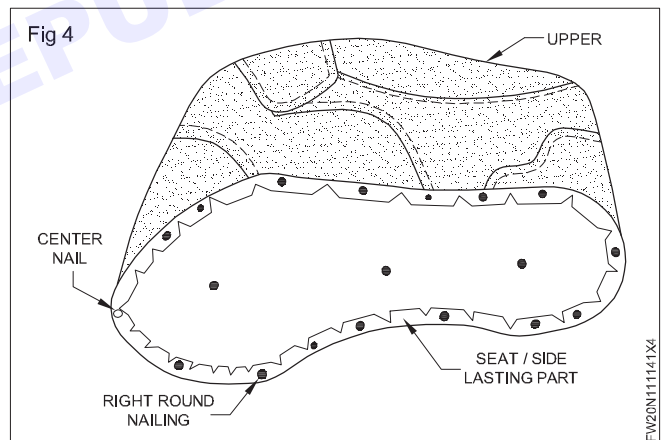


Back height nailing

- Place the upper on back curve of last. Do back height nailing using nail.



- Do center tacking with the help of pincer in the toe center area.
- Do center tacking in the heel seat area.



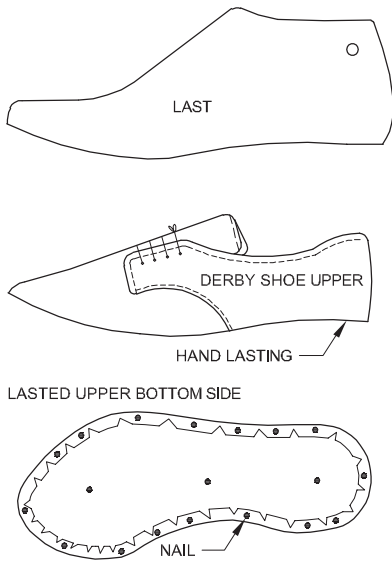
- Do right round drafting in heel seat area.
- Do right round drafting in the toe area.
- Do right round drafting in the side area.

Note: Nail with the help of Pincer so that there is no shrinks in feather edge.

Note: Keep your fingers safe while nailing.

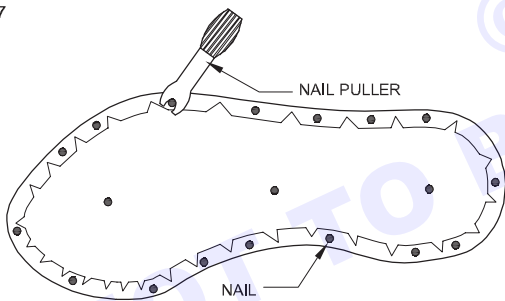
Note: Check the drafting done by showing it to the Instructor.

Fig 6



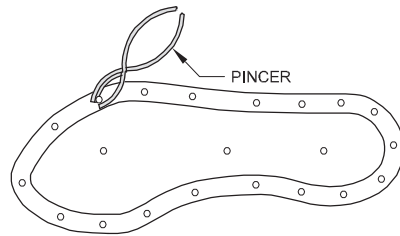
- Loosen the nails on the lasted upper by using a nail puller and flatten the upper a bit.

Fig 7



- Apply adhesive on the loosened lasted upper using a brush.

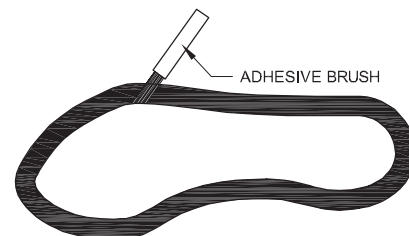
Fig 8



Note: Allow 10 minutes for drying time.

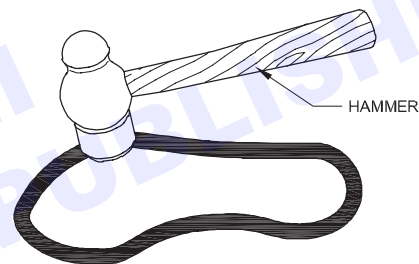
- Using pincer loosen each nail and stick with last.

Fig 9



- Hammer the adhesive applied area using the hammer.

Fig 10



- Loosen each nail at right round and stick to last.
- Hammer the right round feather edge so that there are no shrinks.

Note: Check the Lasting done by showing it to the Instructor.

Note: If you want to get shoes in the shape of Last, you have to give 5 hours setting time.

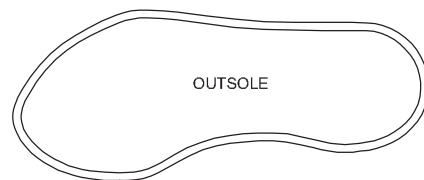
TASK 5: Bottom and heel fixing (Figs 1-15)

Applying dendrite 1st coat (Fig 1 & 2)

- Clean and rough the out sole first.
- Apply adhesive solution where roughing is done on out sole. (1st coat)
- Apply adhesive on the roughed area of lasted upper.

Note: Give 10 minutes drying time for both.

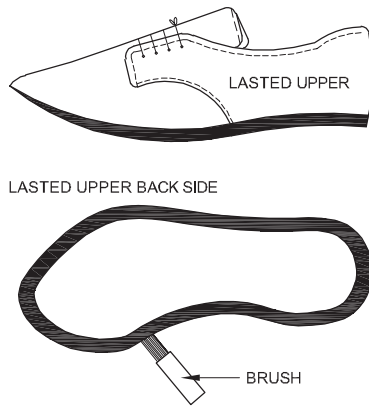
Fig 1



Applying dendrite 2nd coat

- Apply adhesive on outsole and last upper.

Fig 2

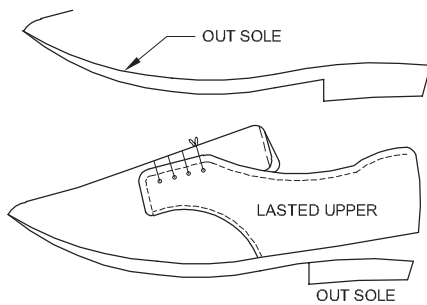


FW20N11141Y2

Note: Allow 10 minutes for drying time.

- Then glue the lasted upper and out sole to the marking size.

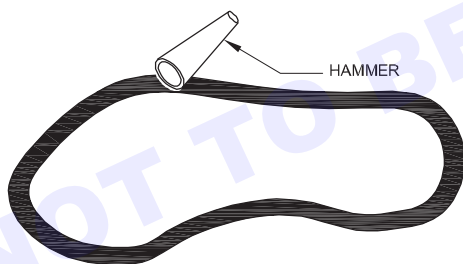
Fig 3



FW20N11141Y3

- After gluing do hammering well using 3 leg Iron last.

Fig 4



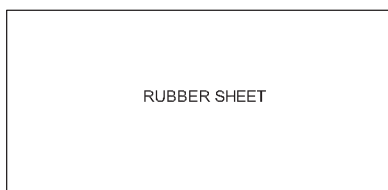
FW20N11141Y4

Note: Check if the shoe is fully attached to the bottom by showing it to the instructor.

Heel cutting

- First place the Rubber Sheet on the table.
- Place the Heel Pattern on the rubber sheet and make 2 piece marks.

Fig 5

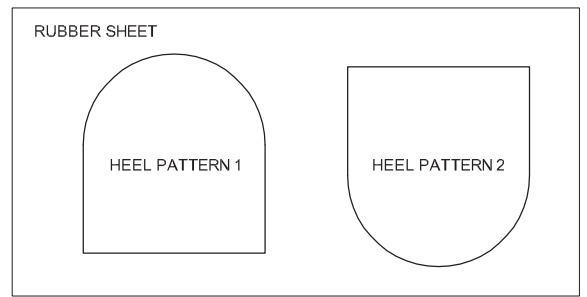


FW20N11141Y5

Note: Check marking done

- Then cut 2 pieces of heels.

Fig 6

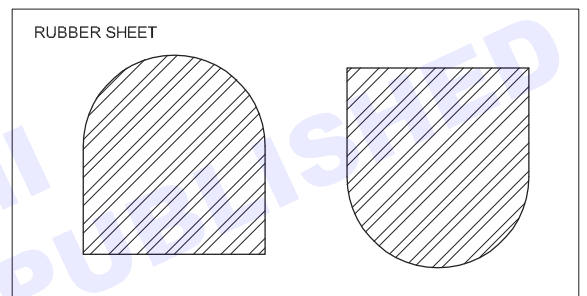


FW20N11141Y6

Note: Check the cut pieces

- Roughing the bottom and top of a heel piece with the help of emery sheet.

Fig 7

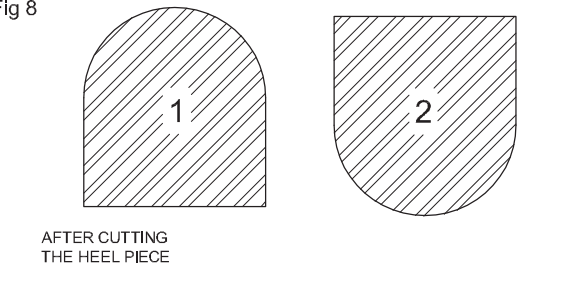


FW20N11141Y7

Note: Rubber Sheet should be rubbed with Emery Sheet until it becomes rough (or) coarse)

- Rub only on top of another heel piece.
- Apply adhesive on the rubbed heel pieces.

Fig 8



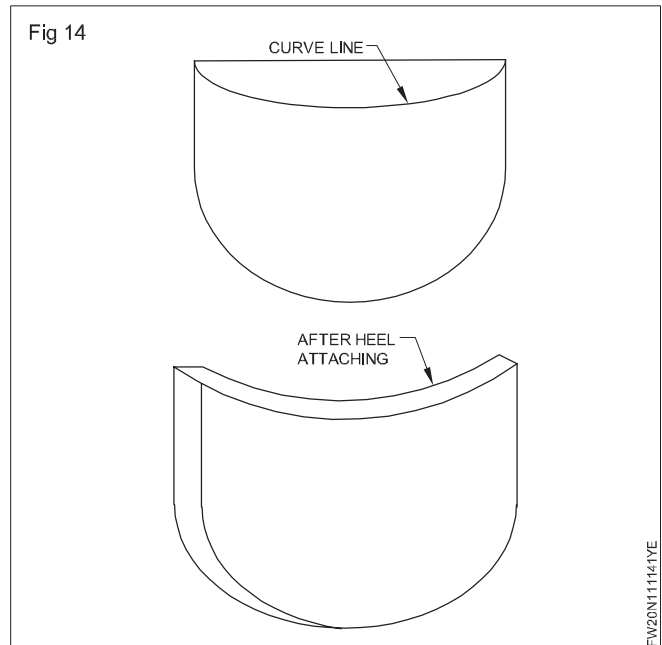
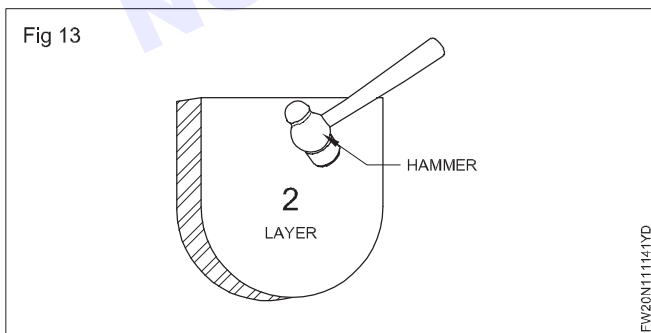
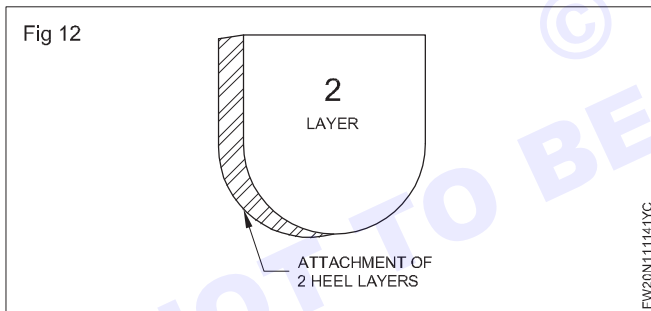
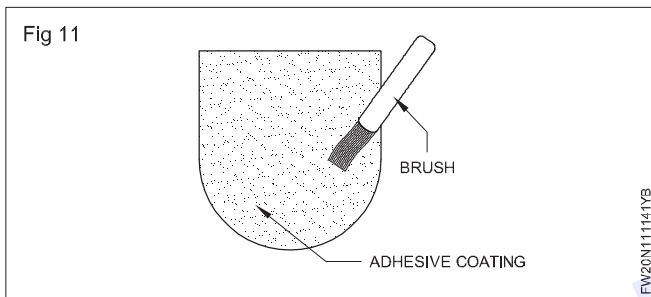
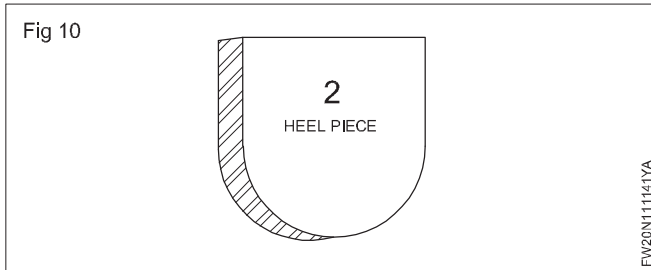
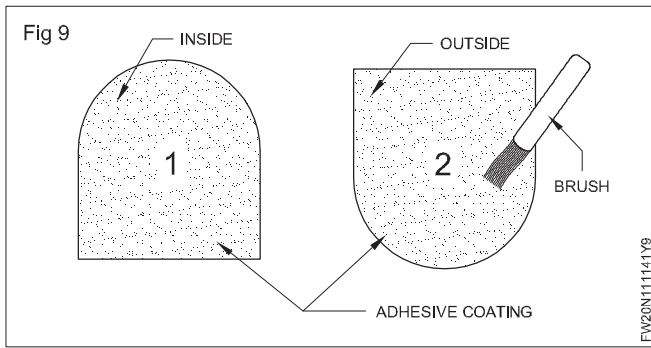
FW20N11141Y8

Note: Allow 10 minutes for drying time.

- After the drying time is over, glue the two heel pieces together.
- After gluing, use lasting hammer to hammer for good adhesion.

Heel curve marking and cutting

- After hammering, make a curve line mark on the attached heel with the heel curve pattern.



- Cut the curve line of the heel with the help of Mackay knife.
- Check the cut heel curve.

Note: Cut with the help of a sharp knife.

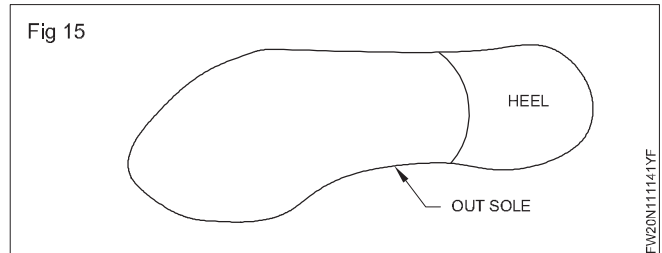
Note: Care should be taken while handling knife.

- Apply adhesive to the cut out sole and prepared curved heel.

Note: Drying time should be 10 minutes.

- Attach the out sole and heel and hammer it.

Note: Check the attaching done by showing it to the instructor.

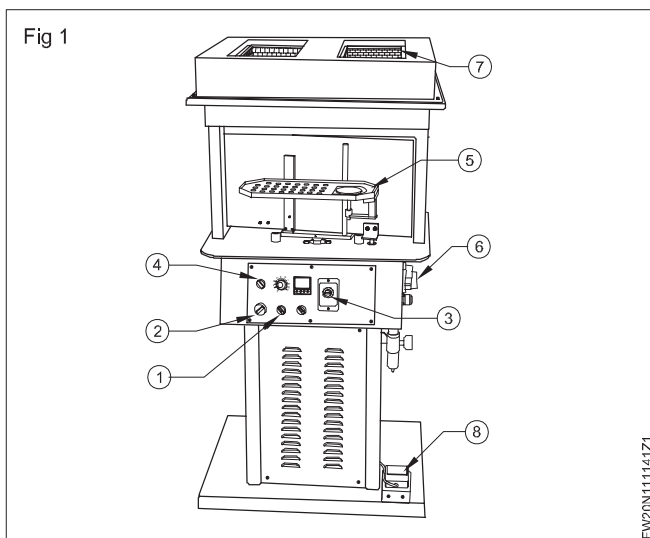


TASK 6: Sole attaching (Fig 1 & 2)

Identification of parts of heat reactivating machine (Fig 1)

Note: Instructor will show the heat reactivating machine and explain its parts and functions

- 1 Air pressure adjusting button
- 2 Heat adjusting button
- 3 On/Off switch
- 4 Timing adjusting button



5 Movable rotating tray

6 Emergency button

7 Heat chamber

8 Pedal

- Look at each component and write its name in the Table-1 given below.
- Draw the figure of the component in Table 1 with name specified.
- Write the functions of each component in Table 1.

Table 1

S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			

Practice to operate the heat re-activating machine

- Turn ON the Heat Re-activating machine.
- Adjust Pressure, Heat and Timing for re-activating.
- Rough the readymade Pu sole and lasted upper with emery Sheet.

Note: While roughing the shoe upper, it should be done without damaging the upper.

- Apply the first coat of Pu Solution with a brush on the readymade Pu sole and lasted upper after roughing.
- Let it cool for 20 minutes.
- After 20 minutes, apply second coat of Pu solution on the lasted Shoe upper Pu Sole.
- Let it cool for 20 minutes.

Note: Do not test if the Pu Solution is dry by hand

- Press the Pedal of the Heat Re-activating machine.
- Place the Pu sole (Left and Right) on the Moveable Tray.
- Place the Lasted Shoe upper in the Heat Chamber on top of the machine.
- Press the Pedal again.
- Light heat falls on Pu Sole in Moveable Tray.

- Heat falls on the lasted shoe upper in the Heat Chamber.
- After specific time, pressure and heating the movable tray will move.
- Now the Pu sole will be re-activating.

Note: Do not put your hand in the hot Moveable Tray and heat chamber.

Note: Show the heat re-activated Pu sole lasted shoe upper to the instructor and get it checked.

- Turn ON the machine
- Pu sole and lasted shoe upper after reacting will be in ready state for sole attach

Identification of various parts of hydraulic sole pressing machine (Fig 2)

Parts

- 1 Height adjusting arm (Left and right side)
- 2 Height adjusting knob
- 3 Heel and Toe adjusting knob
- 4 Pressure adjusting button
- 5 Timing adjusting button
- 6 Pedal

- 7 On/Off switch
- 8 Emergency button
- 9 Hydraulic press button

Note: The instructor will demonstrate the Hydraulic Sole Pressing machine and explain its parts and functions.

- Look at each component and write its name in Table 2 given below.
- Draw the image of the component next to name specified in Table 2
- Write the functions of each component in Table 2.

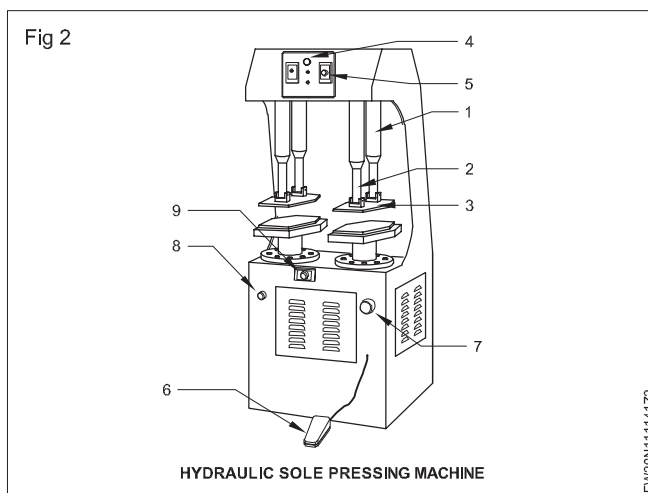


Table 2

S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			
6			
7			
8			
9			

Practice to operate the hydraulic sole pressing machine

- Take heat reactivating lasted shoe upper and Pu sole.
- Take the left side Pu sole, right side Pu sole to match with the marking of lasted shoe upper left and right side and join properly.

Note: Check the attached Pu sole and lasted Shoe upper by showing it to instructor.

- Switch ON the machine.
- Place the lasted Shoe upper Left and Right side attached to Pu sole properly on the hydraulic press.

Note: Shoe lasted upper left and right side attached to Pu Sole should be shown to the instructor and get it checked.

- Adjust the timing and pressure to fit the sole.
- Hydraulic sole press button and pedal simultaneously.

Note: Care should be taken while working on Sole Pressing machine.

- The height adjusting arm applies pressure on the lasted shoe upper and the hydraulic press sole is pressed and glued.
- Take out the lasted shoe upper after the specified time.

Note: Check with the instructor that the sole is properly attached to the lasted shoe upper.

- Turn OFF the engine.

Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Identify and repair of boots and shoes, half soling, heeling, resoling

Objectives: At the end of this exercise you shall be able to

- identify and repair defects in boots (half-soling, heeling, resoling).

Requirements			
Tools/Instruments		Materials	
• Steel rule - 12"	- 1 No.	• Men's boots (Sample)	- as reqd.
• Clicking knife	- 1 No.	• Half sole	- as reqd.
• Folding hammer	- 1 No.	• Heel	- as reqd.
Equipments/Machines		• Bottom sole (Size 8 Men's)	- as reqd.
• Three leg iron last	- 1 No.	• Adhesive glue	- 200 ml.
		• Pigment	- 50 gm.

PROCEDURE

TASK 1: Identify and repair defects in boots

The instructor to show various boots to the trainees and explain their defects and methods to correct them.

- Trainees to mention in Table 1 the methods by which they can closely inspect various boots and correct their defects.

Table 1

S.No.	Defects in of boots	Fixing methods
1	Heel bearing	
2	Sole/heel gap	
3	Leather scratches	
4	Upper contractions	
5	Wrong shape of shoes	
6	Half soling	
7	Resoling	
8	Heeling	
9	Color matching	

Trainees to show their completed Table to the instructor and get approval.

Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Construct and design making different sizes safety boots, industrial boots and winter boots

Objectives: At the end of this exercise you shall be able to

- draw a mean form
- preparation of boot upper standard
- preparation of boot upper sectional pattern
- preparation of boot lining standard
- preparation of boot lining sectional pattern.

Requirements

Tools/Instruments

- Knife 150 mm - 1 No.
- Steel rule 300 mm - 1 No.
- Cutting mat (A3) - 1 No.

Materials

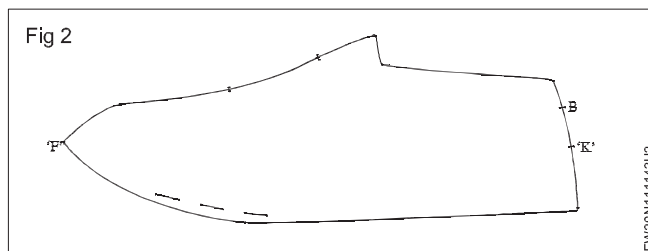
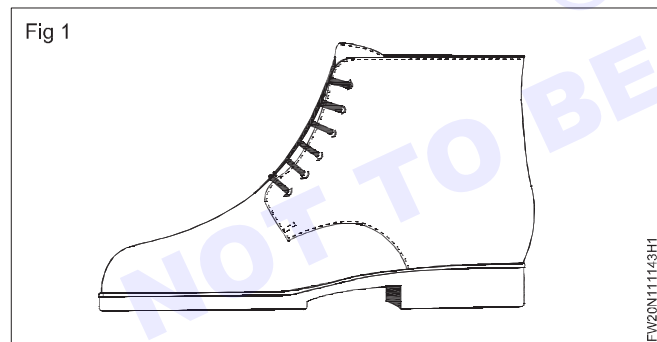
- Pencil - 1 No.
- Eraser - 1 No.
- Chart paper - 5 Nos.
- Cutting mat - 1 No.
- Sharpener - 1 No.

PROCEDURE

TASK 1: Draw a mean form (Fig 1 & 2)

Instructor to explain mean form to the trainees

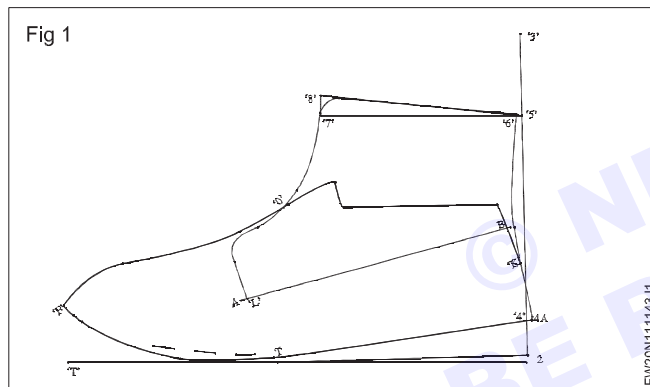
- Finished boot Fig 1



ANKLE BOOT MEASUREMENTS

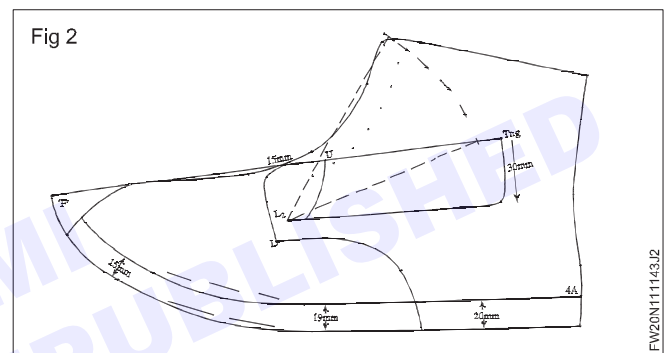
SIZE French Point	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
BACK Height, cm	7.2	7.5	7.9	8.3	8.7	9.0	9.4	9.8	10.2	10.5	10.9	11.3	11.7	12.0	12.4	12.8	13.2	13.5	13.9	14.3	14.7	15.0	15.4
ANKLE Girth, cm	6.7	7.0	7.4	7.8	8.2	8.5	8.9	9.3	9.7	10.0	10.4	10.8	11.2	11.5	11.9	12.3	12.7	13.0	13.4	13.8	14.2	14.5	14.9

- 1-2-3 dot vertically as shown.
- Measure heel height from point '2' and mark it as point '4'.
- Point '4A' is 3mm away from point 4.
- Then position the bottom edge of the fish form at point '4A' and lower the forepart to touch the 1-2 line.
- Now trace the outline of the fish form and connect vamp point (V) strut point (T), center point (A), instep point (O) back center point (K) and back height point (B).
- Measure back height from point '4' and mark point '5' (Refer to ankle table and mark back height)
- Draw a vertical line from point '5'.
- Point '6' is 3mm apart from point '5'.
- Refer to the boot girth chart and mark point 7 from '6'
- Connect point '8' and point '6' with a straight line.
- Quarter lock point is 5mm away from 'A' point. (Fig 1)



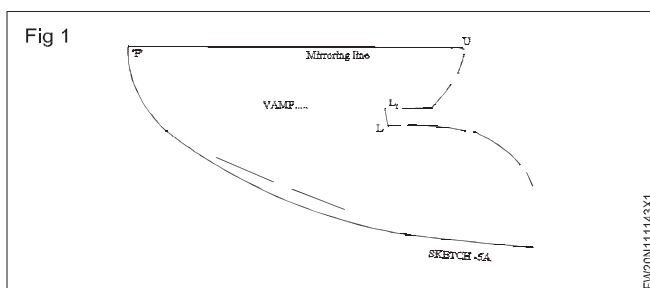
- Join the points 'L'-'O'-'7'-'8'-'6' with hands and draw quarter.
- Also draw the boot back curve by including points '6'-'K'-'4A'.

- From point L' draw a parallel line to 'AT' and get 'LT'.
- Cut around the outer edge.
- Trace the basic pattern of this derby boot upper and make all the dots come in style lines.
- Mark the point of intersection 1.5mm above (quarter line and vamp line)
- From this point of intersection draw a straight line in height up to the toe area and slightly increase on either side.
- Add lasting allowance
- Toe to Tread line-15mm, Waist to Waist 19mm, Heel to Heel-20mm
- Draw the line as shown in figure.
- From L2 point with compass circle line from L2 to vamp line. (Fig 2)

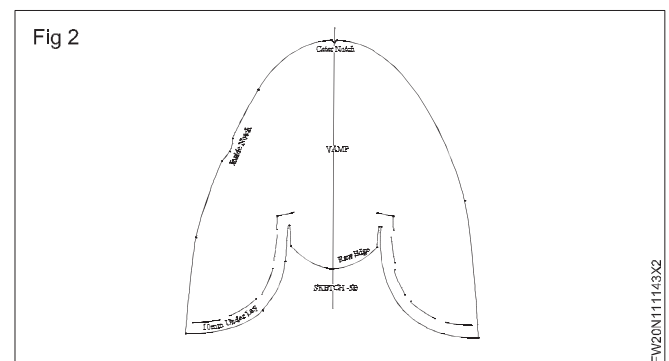


- Add the top of the 15mm mirroring line and get the tang point
- A joint is required as the vamp portion is large (vamp is made up of two parts vamp and tongue).
- The vamp and tongue connection is found between the second and third eyelets as shown in the figure.
- Cut along the style lines and make slots.
- This is the derby boot upper.

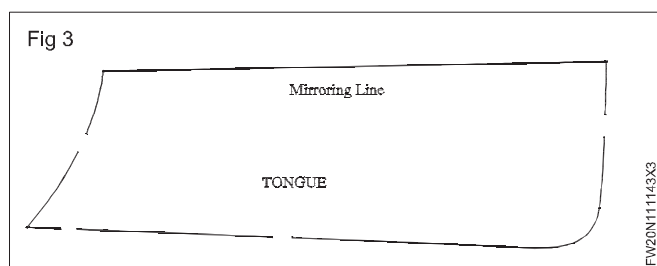
- On the folded pattern sheet, match the vamp mirroring line FU and trace the vamp style line as shown.
- Add 10mm underlay allowance and add a small bend from L2 to join the tongue
- Cut the outline (Fig 1)



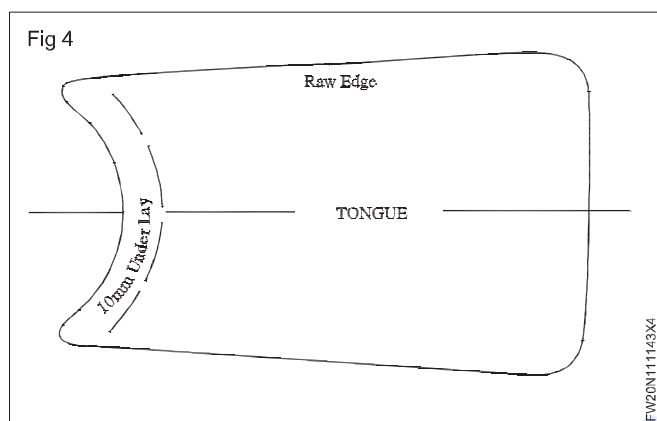
- Unfold the folded vamp pattern and cut along the inside line.
- Cut the stencil cut, center notch, inner notch.
- It is vamp upper pattern (Fig 2)



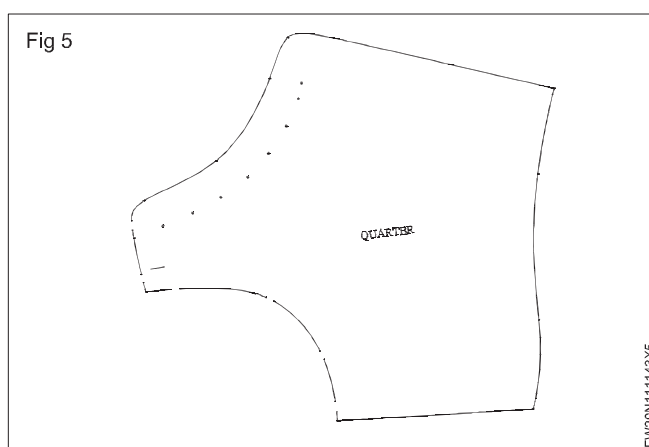
- Compare the folded pattern sheet with the tongue mirroring line and trace the tongue line.
- Add 10 mm underlay allowance and cut the outline. (Fig 3)



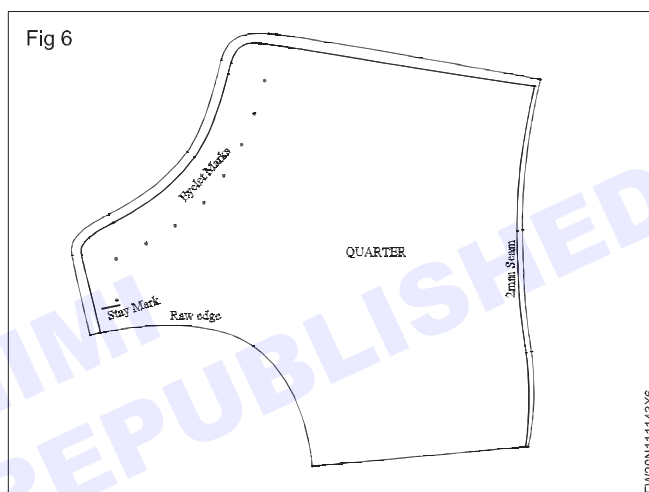
- Cut the stencil mark on the underlay line
- This is the tongue pattern (Fig 4)



- Trace the stay mark and eyelet holes along the quarter line on the chart paper (Fig 5)



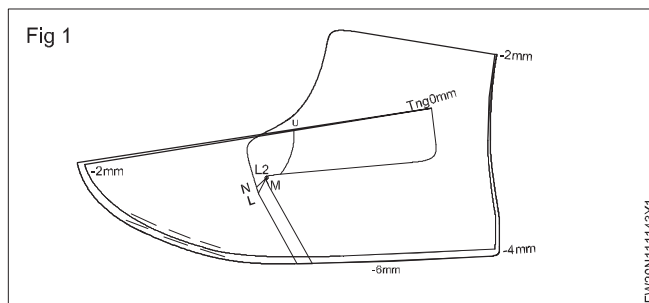
- Add 5mm folding allowance to the quarter top line and 2mm seam allowance to the back bend.
- Cut on the outline and take a quarter pattern. (Fig 6)



TASK 4: Preparation of boot lining standard (Fig 1)

- Trace the boot upper cell on the pattern sheet so that all points are visible.
- Cut in lines as follows.
- At 'F' point - 2mm, Tongue-0mm, at back curve - 2mm to 4mm and 6mm at lasting line evenly.
- The area shown by the black dots should be subtracted from the upper cell.
- From L2 draw a parallel line to 'L' line at a distance of 10mm.

- Cut along the cut lines and make slots.
- This is done by lining the derby boot (Fig 1)

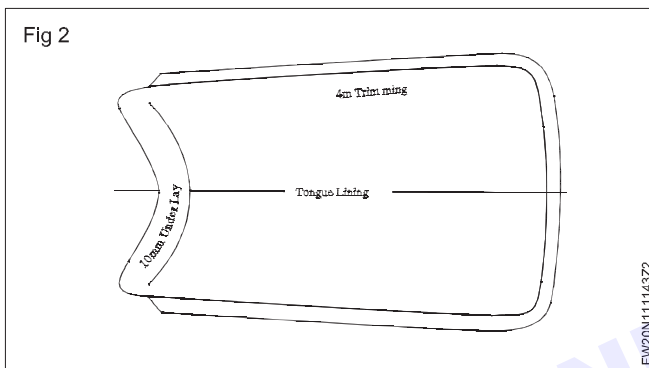
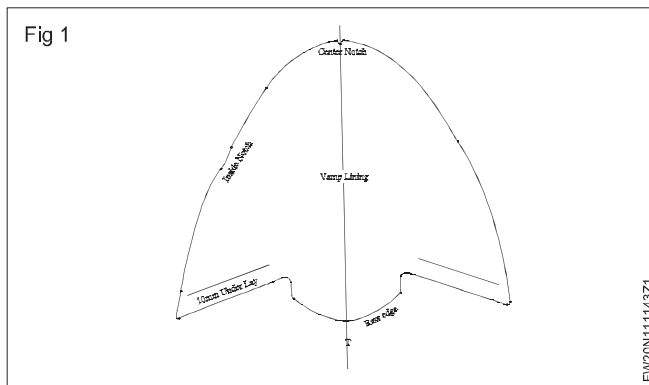


TASK 5: Preparation of boot lining sectional pattern (Figs 1-3)

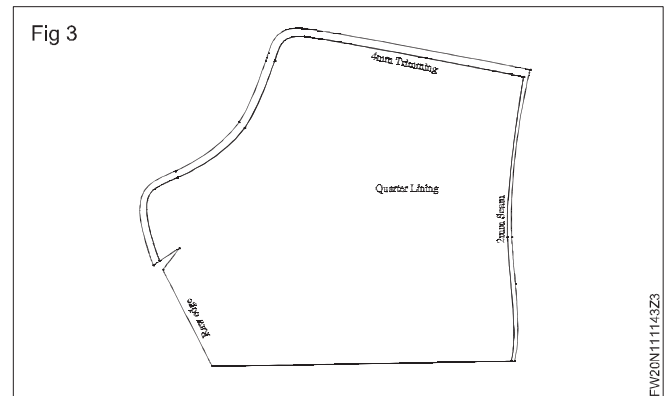
- Match vamp mirror line 'FU' and trace vamp line on folded pattern with underlay allowance
- Cut out the outline
- Unfold the folded vamp lining pattern and cut along the inside line

- Then cut out the inner notch, center notch and stencil mark.
- This is the vamp lining pattern (Fig 1)
- Match the tang mirroring line (U - tongue) and then trace the tongue line on the folded pattern seat.

- Add 10mm underlay allowance and 4mm trimming allowance to this.
- Cut out the outline and take the tongue lining pattern
- Cut the underlay lining stencil mark (Fig 2)



- Trace the quarter line as seen in the pattern figure.
- Add 4mm trimming allowance to the quarter top line and 2mm seam allowance to the back curve.
- Cut on the outline and take the quarter lining Pattern (Fig 3)



Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Construct & design different sizes of styles/fashion shoes

Objectives: At the end of this exercise you shall be able to

- practice drawing, cutting and skiving oxford shoe uppers
- practice cutting oxford shoe bottom parts
- practice folding and assembling oxford shoe uppers
- practice oxford shoe lasting and bottom attaching.

Requirements

Tools/Instruments

- Clicking knife - 1 No.
- Scissors and scale - 1 No.
- Pencil - 1 No.
- Eraser - 1 No.
- Cutting mat (A3) - 1 No.
- Mackay knife - 1 No.
- Oil stone - 1 No.
- Hammer - 1 No.
- Adhesive can - 1 No.
- Brush - 1 No.
- Kadapa stone - 1 No.
- Pincer - 1 No.
- 3 Leg iron last - 1 No.
- Shoe last - 1 No.

Equipment/ Machines

- Skiving machine - 1 No.
- Cutting table - 1 No.

- Leather thickness measuring gauge - 1 No.
- Work bench - 1 No.
- Heat activating machine - 1 No.
- Combined finishing machine - 1 No.

Materials

- Oxford shoe pattern - 2 Set.
- Cow upper leather - 5 sq.ft.
- Lining leather (Cow cop) - 5 sq.ft.
- Rubber sheet - 1 No.
- Emery sheet - 1 No.
- Texan sheet - 1 No.
- Thread - 1 No.
- Needle - 1 No.
- Seam tape - 1 No.
- Nail - 50 g.

PROCEDURE

TASK 1: Practice drawing, cutting and skiving Oxford shoe upper parts (Figs 1-8)

Marking of Oxford shoe pattern (Fig 1 & 2)

Note: Check with the instructor whether the tools and equipment required for practice are correct.

- Spread the leather on the table.
- Take the Oxford upper patterns.
- Mark the defects in leather.
- First mark the Vamp and Toe cap components in an interlocking manner in the area of defect-free resilience and stretch ability.
- Similarly, mark quarter and counter patterns as shown in the figure.
- Spread the Lining leather over the table and mark the defective area.
- Keep Oxford Lining Patterns ready.
- Place the Vamp Lining Pattern over the Lining Leather and look at the tightness, stretchiness direction and complete the outline.

Fig 1

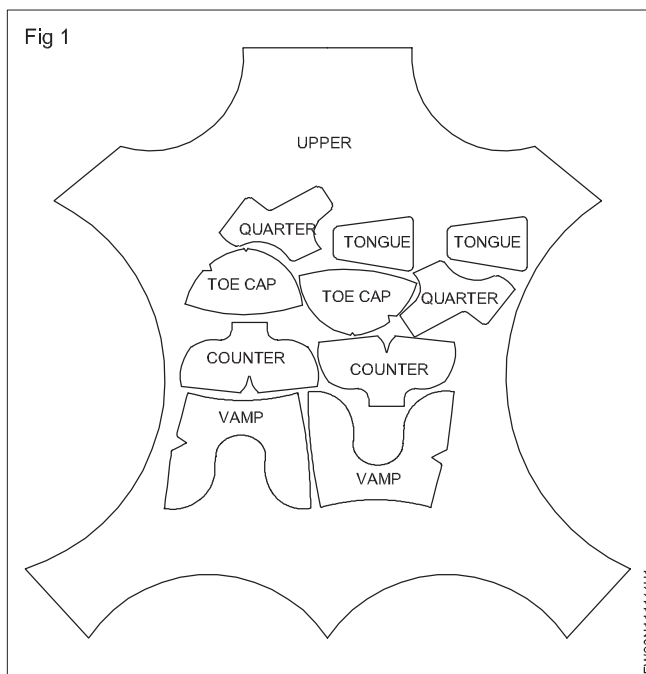
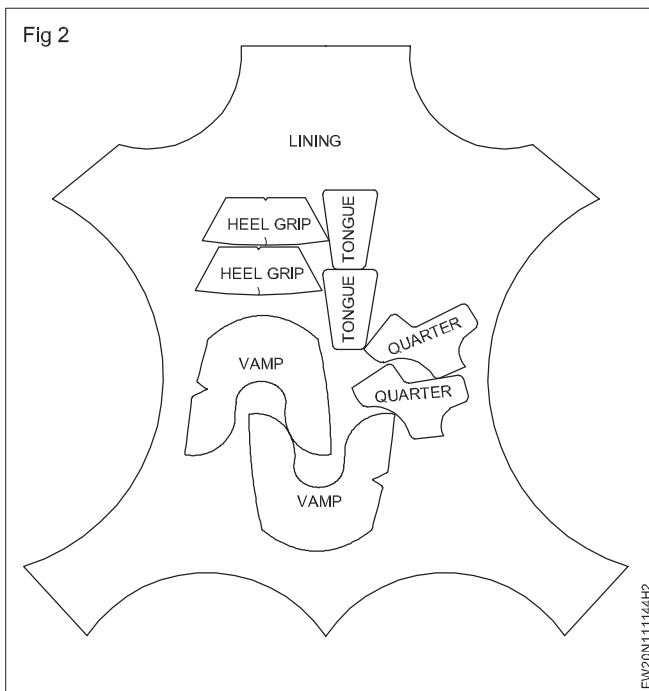


Fig 2



- Keep the quarter lining pattern in inter locking mode and draw the outline.
- Draw the heel grip lining pattern, tongue lining pattern as shown in figure.

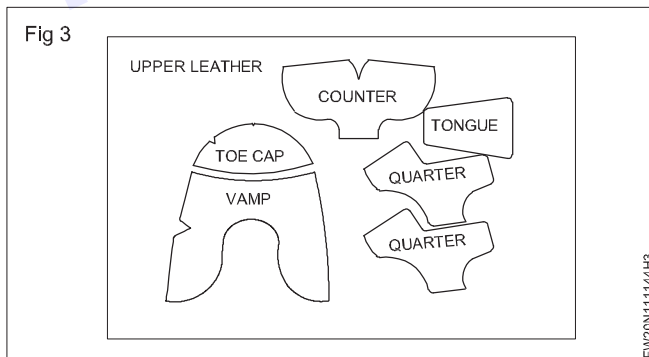
Note: After marking, check the upper and lining leather by showing it to the instructor.

Cutting of Upper and Lining components

Note: Knife must be handled with care in a safe manner.

- Place the marked leather on the cutting mat and cut the vamp, toe cap on the upper leather.
- Hold the knife at a 45° angle in the curved area and cut.
- Cut the quarter, counter, tongue upper leather as shown in the figure without fringes.

Fig 3



- Pair the cut components and check the notches and punch holes.
- Place the marked lining on the cutting mat and cut the vamp lining leather at a 45° angle with the knife.

Fig 4

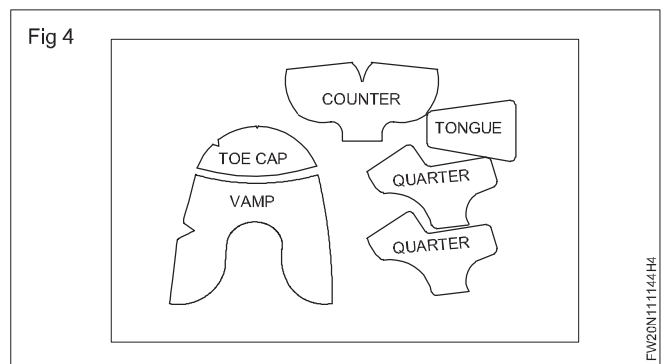
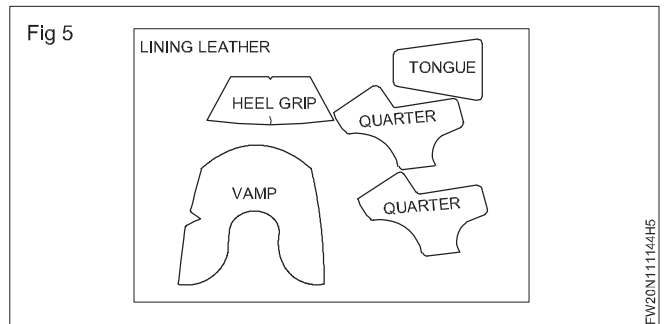
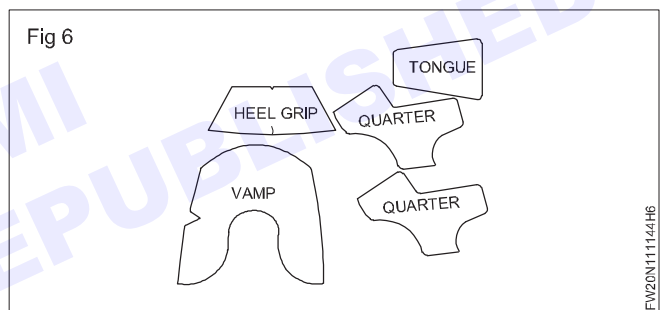


Fig 5



- Cut the quarter lining, heel grip lining, tongue lining without fringes as shown in the figure.

Fig 6



- Look at the notches and nicks of the cut lining components and pair them as left and right.
- Check pairing.

Skiving of upper and lining components

Note: Make necessary adjustments in the Skiving Machine and skive with the sample and show it to the instructor and get it checked.

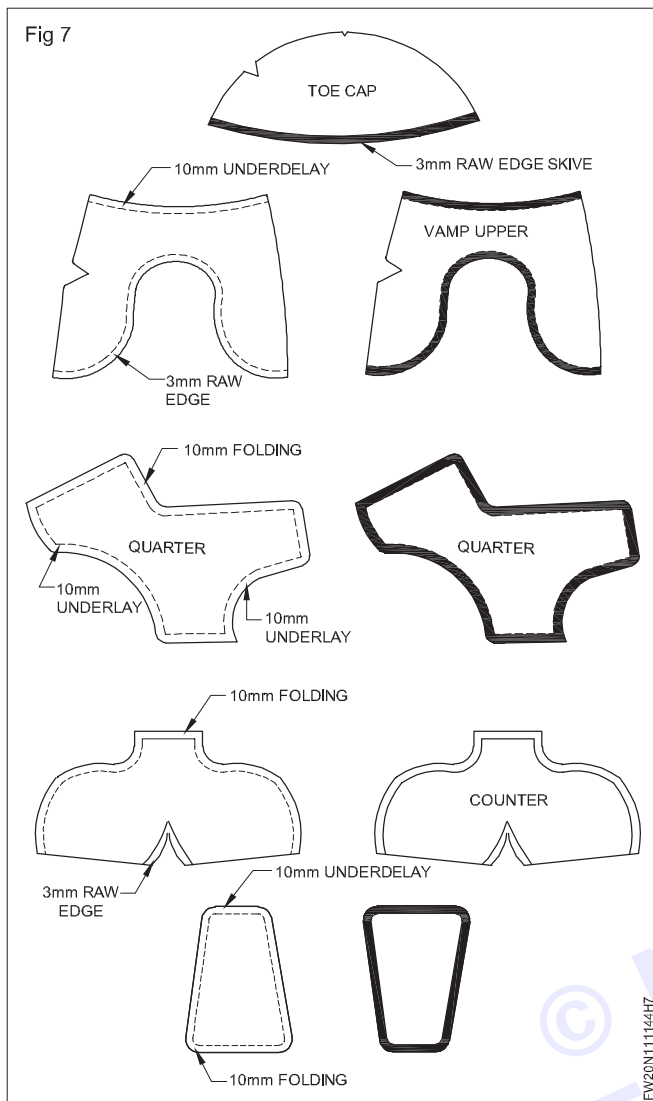
- Check thickness of cut Oxford upper components.
- Turn on the skiving machine and adjust the pressure foot as required.
- Skive the raw edge for 3mm at the toe cap.
- Take the vamp leather and skive the underlay to 10mm and raw edge to 3mm.

Note: Check if the skiving thickness is correct by showing it to the instructor.

- Do 10mm folding 10mm underlay skiving in top line in quarter leather.

Note: Adjust the pressure foot.

Fig 7



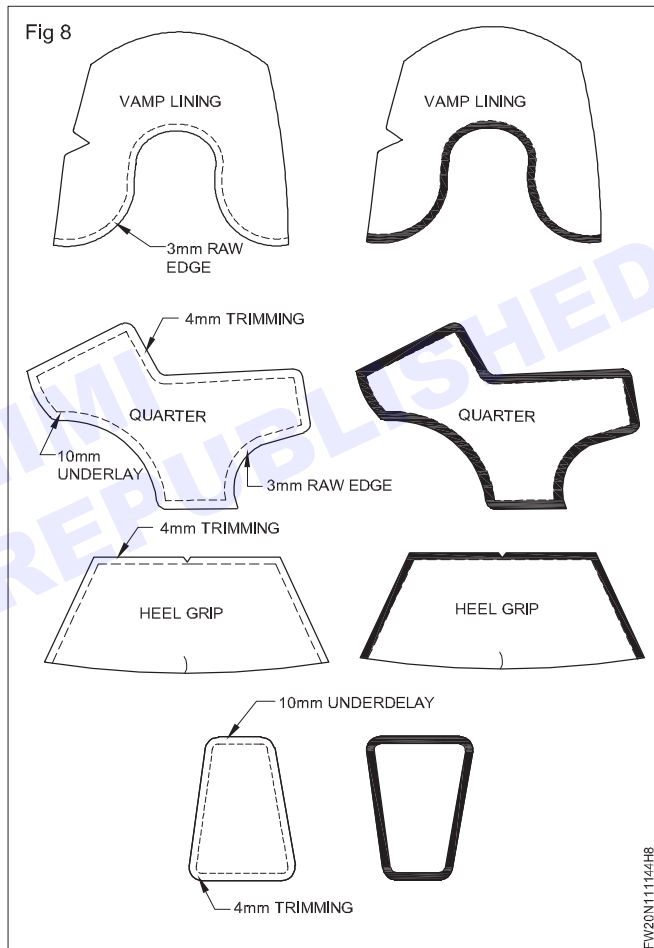
- Do - 3mm raw edge skiving in counter back seam.
- 3mm raw edge, 10mm folding allowance skiving in attachment area of counter.
- Do all round 10mm skiving on tongue.

Note: Check the skived upper components by showing them to the instructor and get it checked

- Check the thickness of the cut Oxford lining components.
- Turn on the skiving machine and adjust the pressure foot as required.
- Take the vamp lining and skive the raw edge to 3mm.
- In quarter lining, do top line 4mm skiving 10mm underlay skiving, 3mm raw edge skiving.
- Underlay skiving 10mm in heel grip lining. skive 4mm underlay on topline.
- Check skiving done and pair it.

Note: Check Skiving - done upper and Lining Components by showing them to the instructor and get it checked.

Fig 8



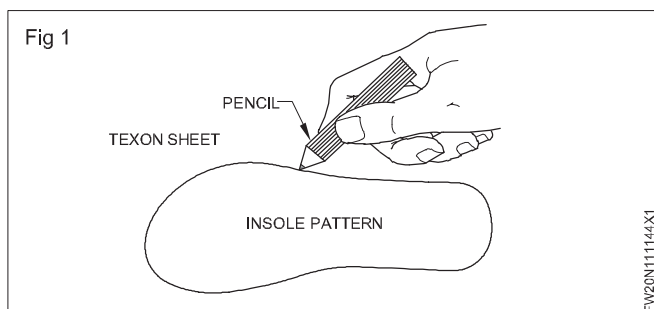
TASK 2: Practice cutting oxford shoe bottom parts (Figs 1 - 7)

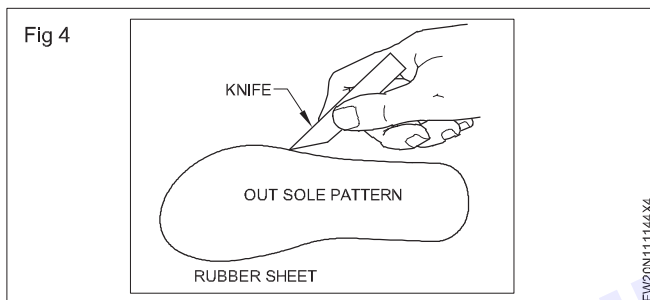
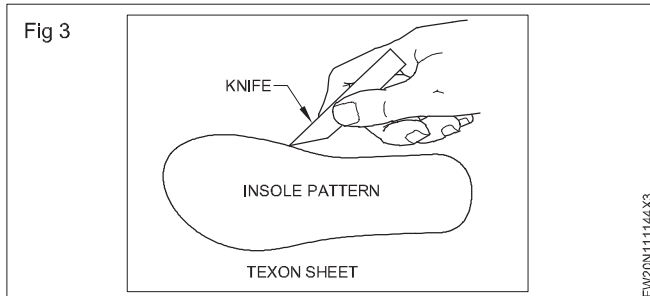
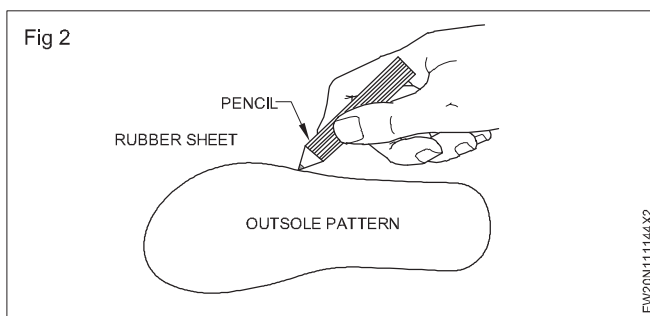
- Take the Oxford Shoe Insole Pattern and mark it on the Texon Sheet.
- Take the Oxford Shoe Outsole Pattern and place it on the Rubber Sheet and mark it.
- Cut the Insole Pattern with the help of Knife.

Note: Pair and check the cut Insole Pattern.

- Cut the Oxford shoe outsole with the help of knife.

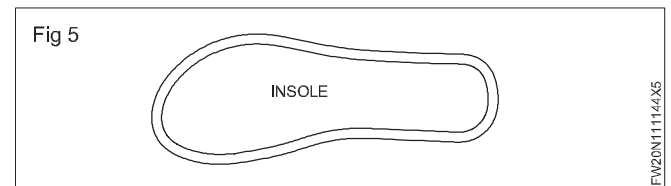
Fig 1





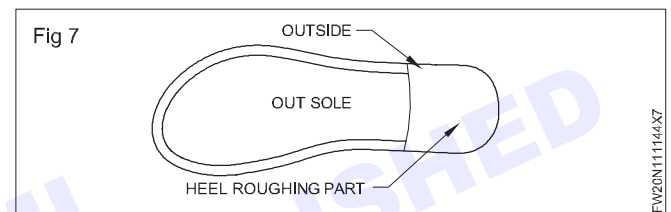
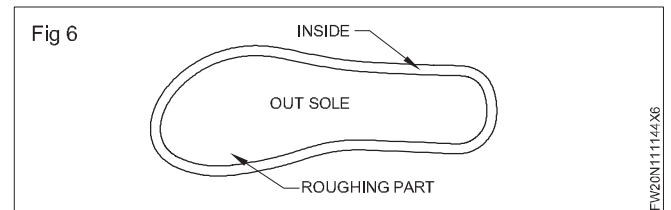
Note: Pair and check the cut outsole.

- Roughing the cut outsole material with the help of emery paper to match the stickiness inside.



- Draw a heel curve line on the outside heel area of the outsole and roughen that area alone with emery paper.

Note: Knife should be handled with care.

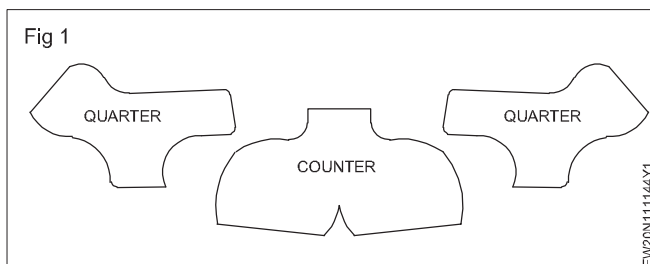


Note: Check the cut bottom components by showing them to the instructor and get it checked.

TASK 3: Practice folding and assembling Oxford shoe uppers (Figs 1-20)

Note: Make necessary adjustments on Post bed sewing machine and show it to the instructor by stitching on Scrap Leather and get it checked.

- Take the counter piece. Sew back seam on counter.
- Hammer the seam and attach the seam tape.



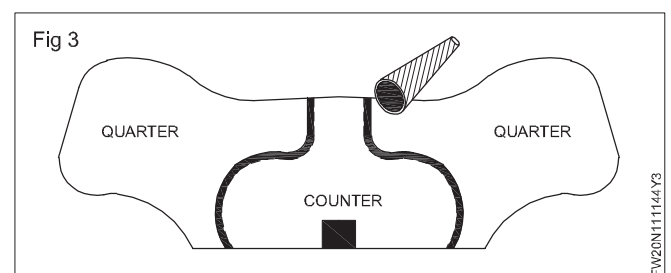
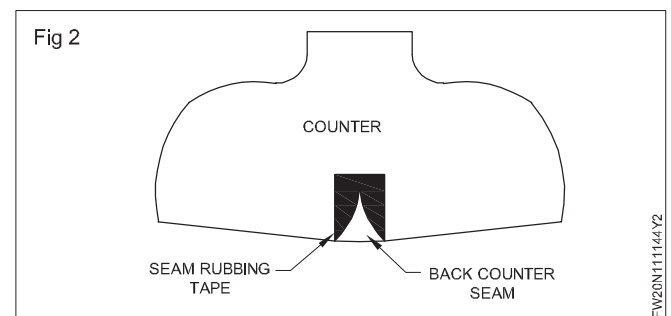
- Apply dendrite in Quarter + Counter.

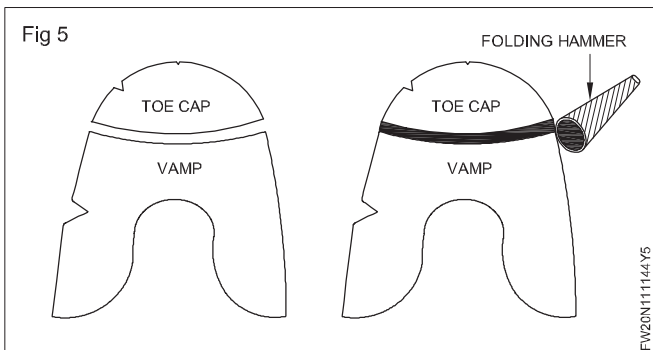
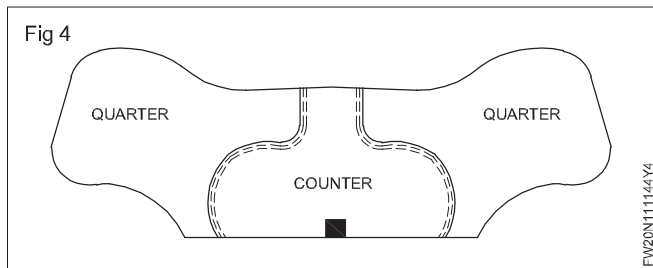
Note: Allow drying time of 10 minutes for Dendrite to adhere well.

- Attach at the place of apply and hammer it.
- Do double row stitching at the place of attachment.

Note: Check the stitching done by showing it to the instructor.

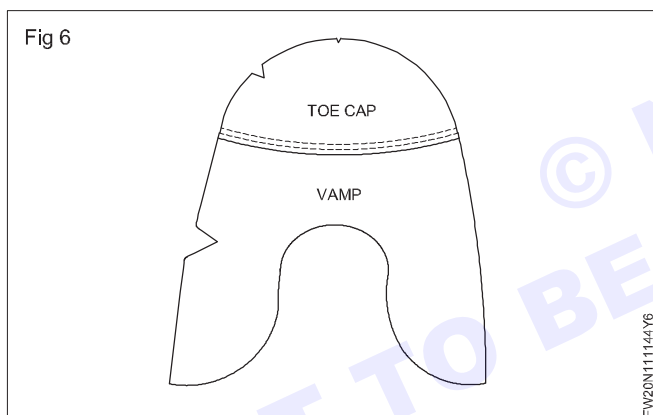
- Take toe cap, vamp pieces. Apply dendrite on Toe cap, vamp.



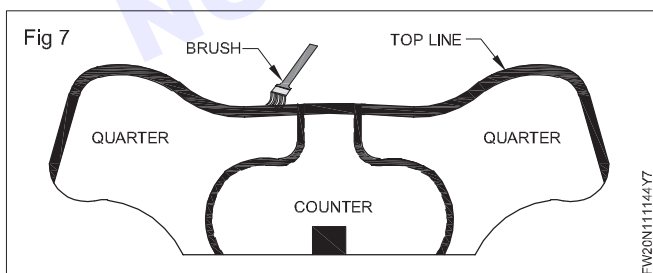


Note: Allow drying time of 10 minutes for Dendrite to adhere well.

- Attach and hammer at the place of application and do double row stitching.



- Apply dendrite in Quarter + Counter.

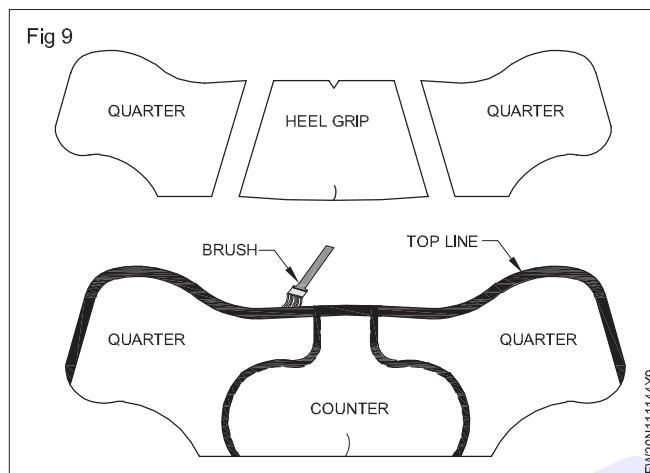
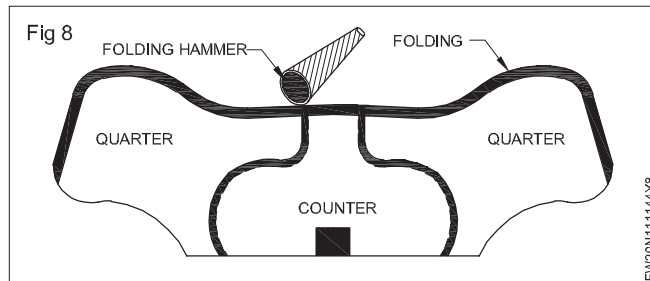


Note: Allow drying time of 10 minutes for Dendrite to adhere well.

- Fold and hammer at the place of application.
- Apply dendrite on tongue upper + tongue lining and do folding and hammering.

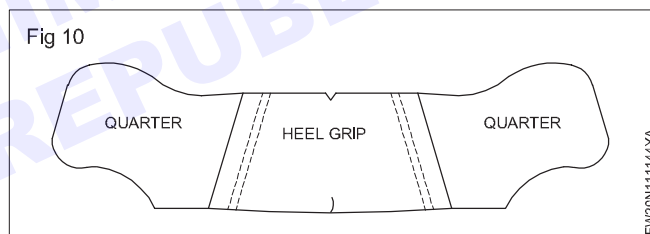
Practice on oxford shoe upper and lining attaching

- Apply dendrite in In/Out Quarter + Heel grip.

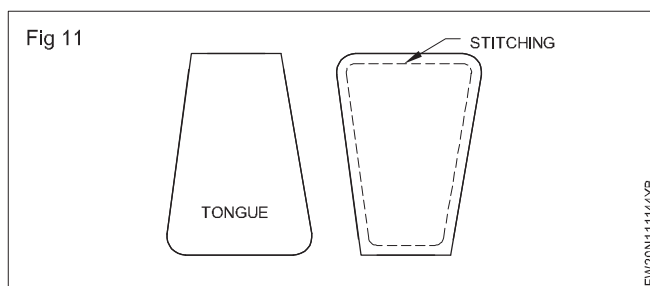


Note: Allow drying time of 10 minutes for Dendrite to adhere well.

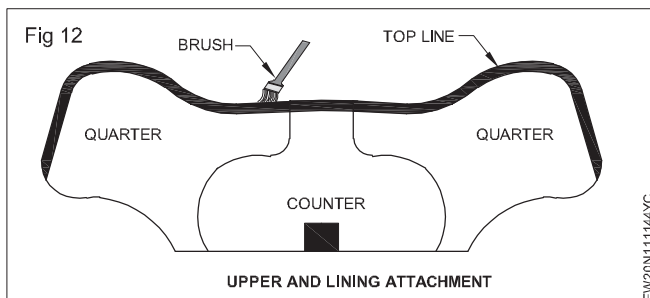
- Attach and stitch at the place of application.



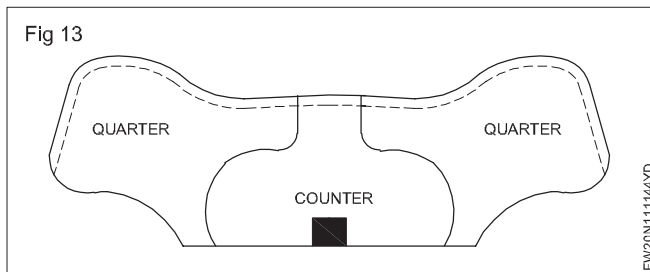
- Do tongue piece stitching.



- Trim the excess lining on the tongue
- Apply dendrite in Quarter upper+ Quarter lining and attach.



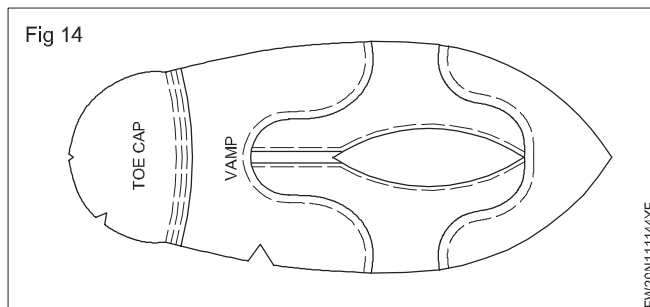
- Hammer it in place of attachment.
- Do stitching where hammering is done.



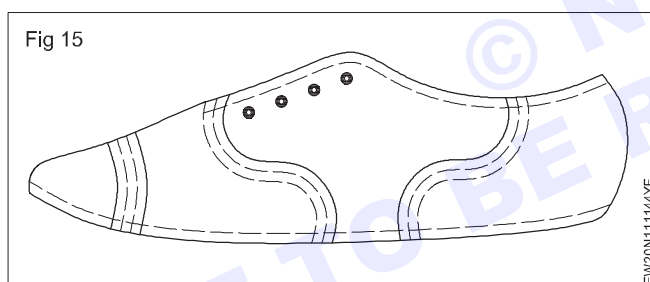
- Trim the excess lining.

Note: Check the stitching by showing it to the instructor.

- Do Vamp + Quarter attaching.

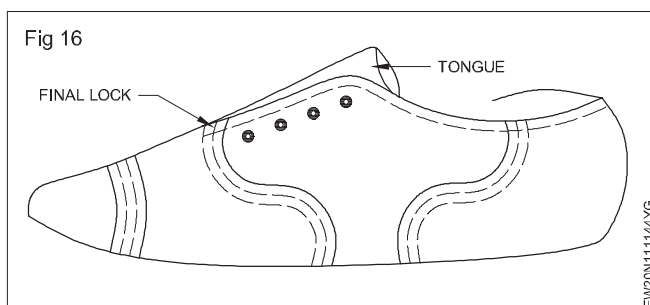


- Do double row stitching at the place of attaching.

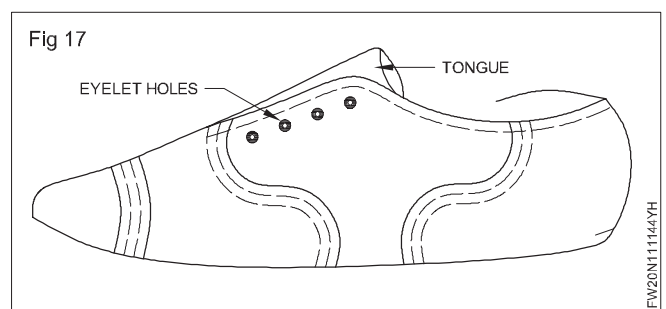


Note: Check the stitching by showing it to the instructor.

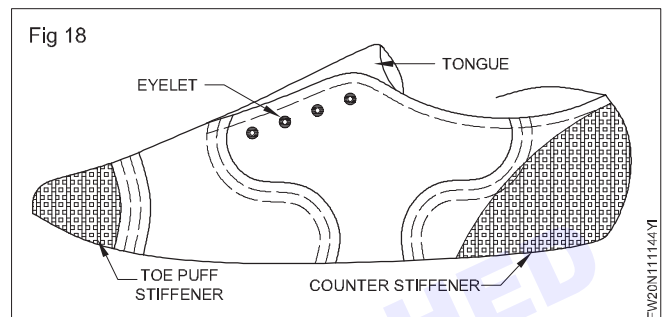
- Attach the tongue and do final lock stitching.



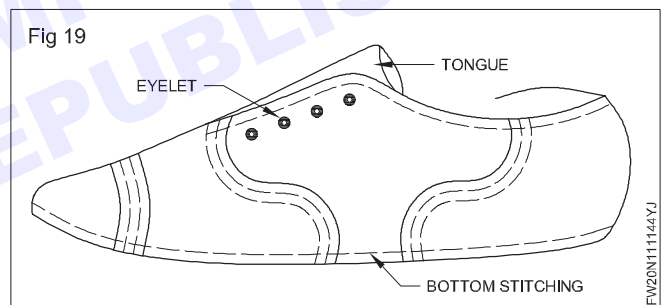
- Put holes in quarter at eyelet point.



- Fix eyelet where holes are made.
- Drive the toe puff into the front of the upper.
- Drive the counter stiffener into the rear of the upper.
- Hammer the Upper+Lining completely without shrinkage at last.

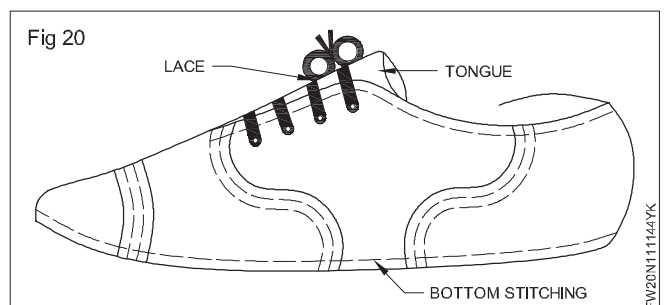


- Finally do bottom stitching.



Note: Check the stitching by showing it to the instructor.

- Finally pair and tie the temporary lace.



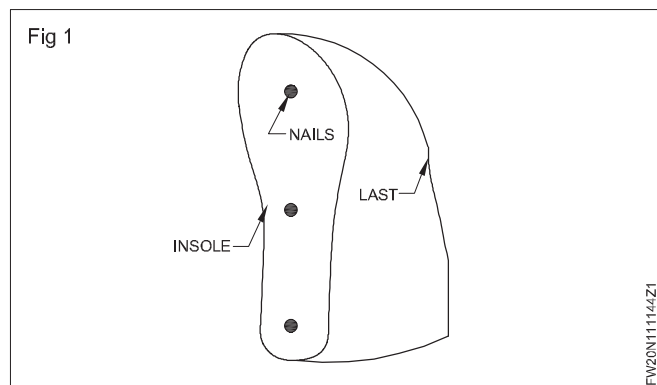
- Clean the paired upper.

Note: Check by showing the upper to the Instructor.

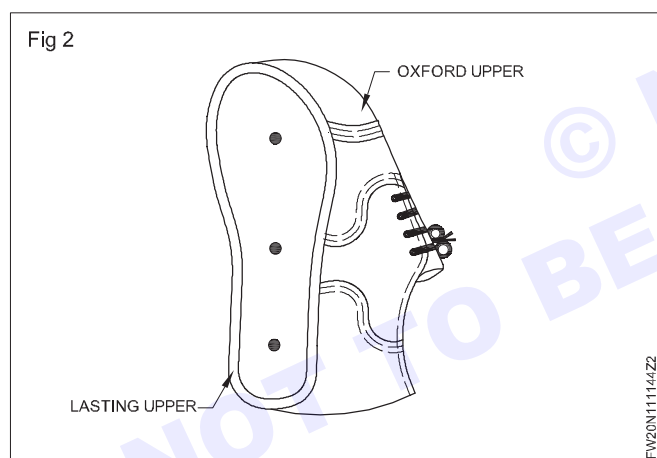
TASK 4: Practice Oxford shoe lasting and bottom attaching (Figs 1-6)

Note: Trainees to show the oxford shoe upper bottom components and get it checked by showing it to the instructor

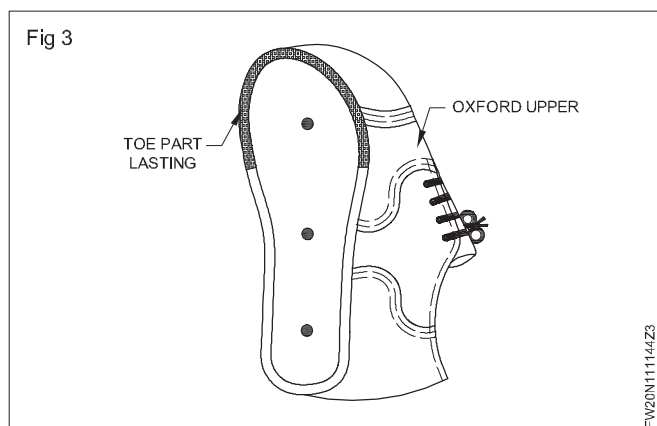
- Take a size 8 insole.
- Take an 8 size shoe last.
- 8 size Last- 8 size insole feather edge for perfect fit and nail the foot.



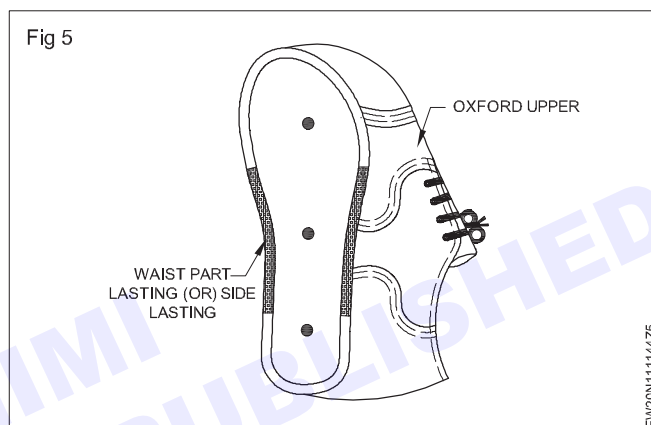
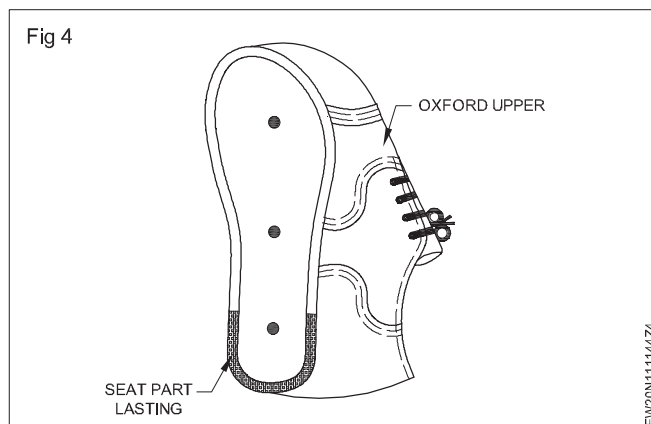
- 16 mm nail 5 counts with hammer as shown in figure.
- 8 size Oxford shoe upper.
- Fix the shoe upper on top of last.



- 13 mm below level from shoe upper last heel back side curve hit the nail at the stitched place.
- Make the toe part lasting to match the last of the shoe upper with the help of pincer and nail the lasting.



- With the help of pincer (seat part) back and side or waist part- pull up to 15mm and hit with a nail.

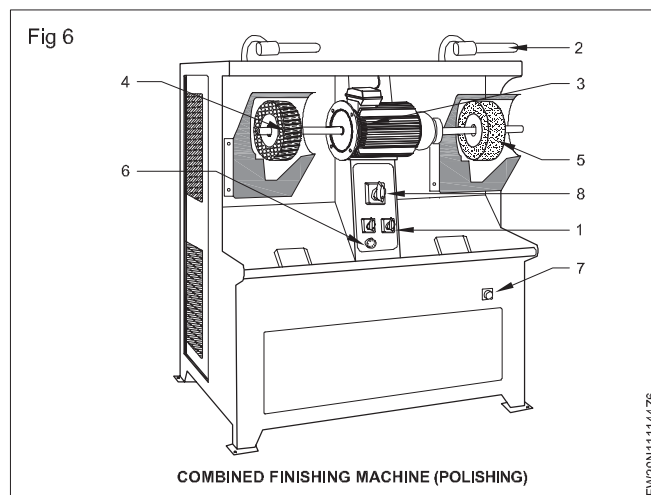


Note: Be careful not to get hit by the nail on the hand when nailing the lasting upper.

Note: Check if the lasting is correct by showing the lasting oxford shoe to the instructor.

Lasting done oxford shoe upper and bottom sole roughing in-combined finishing machine

Identify various parts of combined finishing machine



Parts

- 1 ON/OFF switch
- 2 Led light
- 3 Motor
- 4 Polishing wheel
- 5 Scouring wheel
- 6 Speed regulator
- 7 Emergency switch
- 8 Exhaust switch

Note: The instructor will demonstrate the Combined Finishing machine and explain its parts and the functions of each part.

- Look at each component and write its name in Table 1 below.
- Draw the figure of the component name specified in Table 1.
- Write the functions of each component in Table 1.

Table 1

S.No.	Name of parts	Image of parts	Functions of parts
1			
2			
3			
4			
5			

Practice to operate the combined finishing machine

- Turn ON the combined finishing machine.
- Adjust speed (RPM) to suit combined finishing.

Note: Trainees to Show the various adjustments done by them on the combined finishing machine and get approval from the trainer.

- Press the lasted Oxford shoe upper and bottom to be scoured on the scouring wheel.
- Scoure the bottom area to the required level.

Note: While scouring the bottom part on scouring wheel, operate the machine carefully so as not to touch the emery sheet by hand.

Note: Check if the scouring is correct by showing the scouring area to the instructor.

- Turn off the machine and clean the machine.

Practice to heat activating upper and bottom of roughed shoes

Note: Exercise No. 1.11.141 - TASK 6 step 2 procedure to be followed.

Note: Show the heat activating done Oxford shoe upper and bottom to the instructor and check it has required size for heat activating.

Practice to attach heat activated lasted upper and bottom in hydraulic sole pressing machine

Note: Exercise No. 1.11.141 - TASK 6 step 2 procedure to be followed.

Note: Show it to the instructor whether the sole pressed oxford shoe upper and bottom fit properly and get it checked.

Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Construct & design diff sizes of sports shoes, athletic shoes (child & adults)

Objectives: At the end of this exercise you shall be able to

- practice to take mean form
- practice to take tennis shoe upper and linings standard
- practice to take tennis shoe lining standard and sectional pattern.

Requirements

Tools/Instruments

- Hammer - 1 No.
- Steel scale 12" - 1 No.
- Cutting mat (A3) - 1 No.

Materials

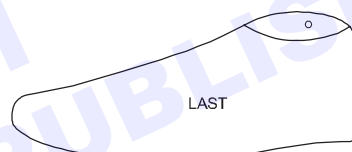
- Chart paper - 5 Nos.
- Pencil - 1 No.
- Rubber - 1 No.
- Men's last (8) - 1 Pair

PROCEDURE

TASK 1: Practice to take mean form

Instructor to explain the trainees about taking instructor mean form. (Fig 1)

Fig 1

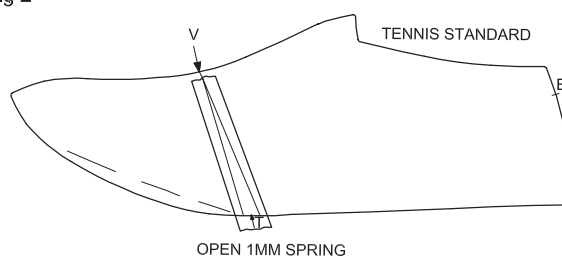


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TASK 2: Practice to take tennis shoe upper and linings standard (Figs 1-14)

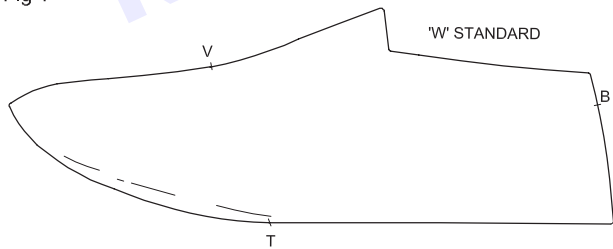
- Start with W standard (mean form). Trace vamp point, tread point and pack height (outline).
- Cut the traced outline (Fig 1)

Fig 2



FW20N11145J2

Fig 1

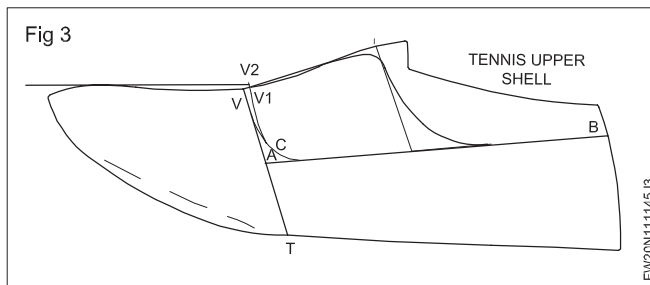


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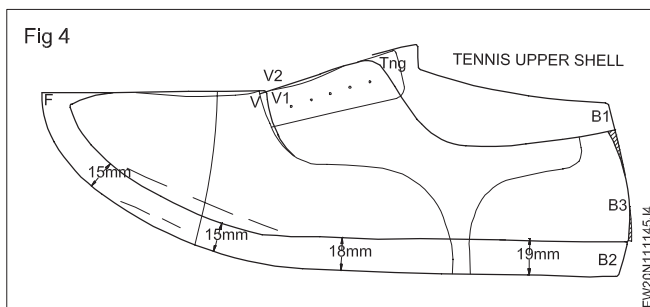
- Connect point V to point T.
- Cut up to T leaving 1.5 mm below V point.
- Open 8mm at T point and position it with cello tape. The 8mm midpoint is the "T". This is the standard for tennis shoes (Fig 2)
- Trace the tennis standard on chart paper.
- Join V with T. Divide VT into 2 equal parts and name it as 'A'.

- Draw line A straight and name it as "B".
- Mark 75mm from V and mark it as I. This is the instep part.
- Draw two perpendicular lines from I and join with AB.
- Draw 4 mm from vamp point V and mark V2.
- Draw 1.5 mm from V2 and get V3.
- Draw a straight line from V3 to the maximum extent of the toe and extend the same line.
- Draw a smooth curve from V and get VC. Trace the curve.

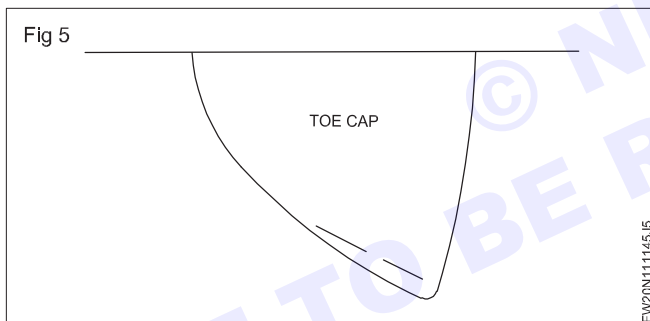
- Place the traced curve at V3 and trace again up to V3C. (Fig 3)



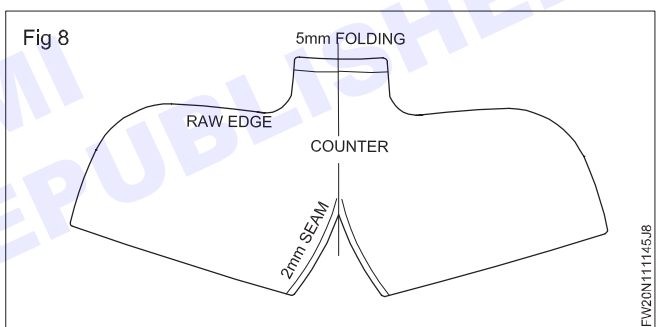
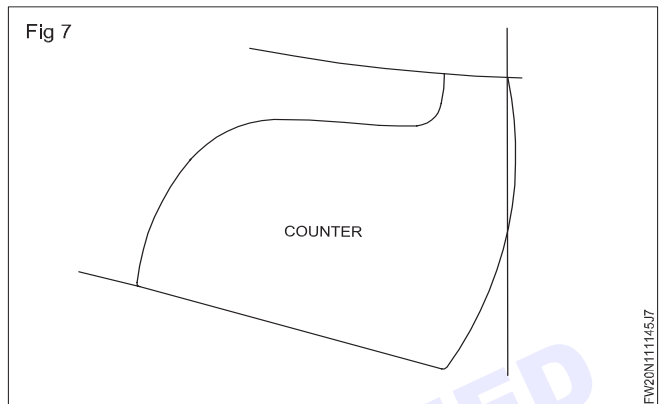
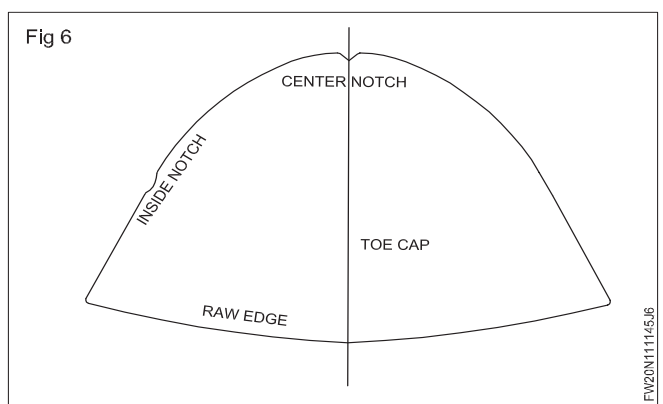
- Start from V and draw a quarter as shown in the figure and stop at B.
- Toe-15 mm, Waist-18mm Heel-19 mm as lasting allowance and draw it. (Fig 4)



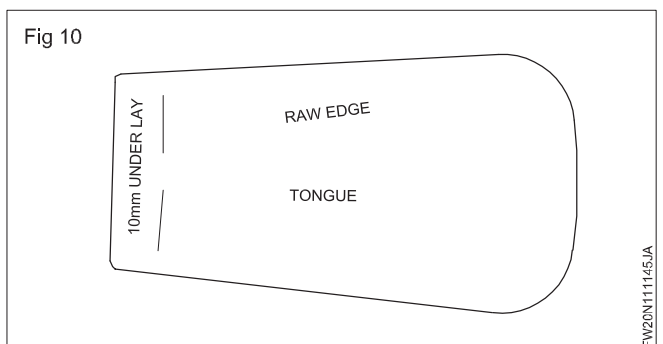
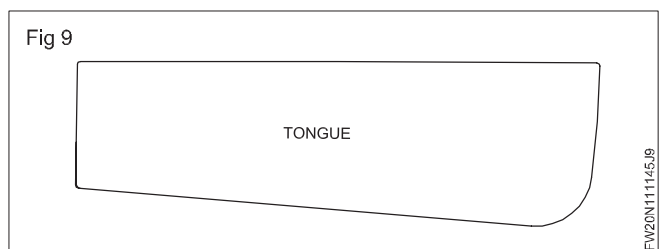
- Toecap: V2 to 26 mm
- Up to vamp curve as shown in Fig 5.



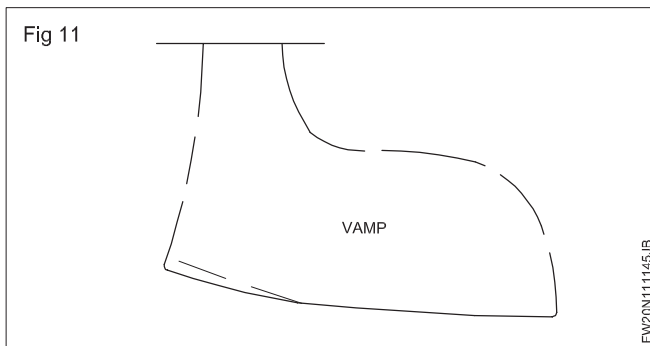
- Draw counter as shown in figure.
- Draw a line parallel to V1 and mark at 12 mm. Mark 13 mm first eyelet on both sides of outline. Divide the rest equally and draw the remaining eyelet.
- Tongue
- 1 to 12 mm, draw a smooth line of 12 mm wide.
- Draw a slot by cutting the outer line. This is the upper shell.
- Trace the Toe Cap. Match F and V1 on the folded sheet.
- Cut the traced outline.
- Open the folden pattern sheet. Cut the inside line (Fig 6)
- Thus take the toe gap pattern (Fig 7)
- Match the counter mirroring line on the folded pattern sheet to draw the trace line.
- 2 mm seam allowance, folding allowance up to 5mm draw at top.
- This is the counter pattern. (Fig 8)



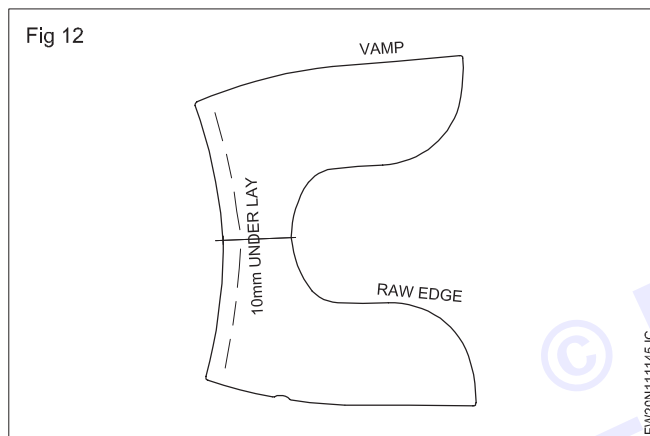
- Trace the V1 line on the folded pattern sheet.
- Add underlay allowance 10mm and cut the line.
- Stencil cut on the underlay line.
- Open the folded pattern and take out the tongue pattern. (Fig 9 & 10)



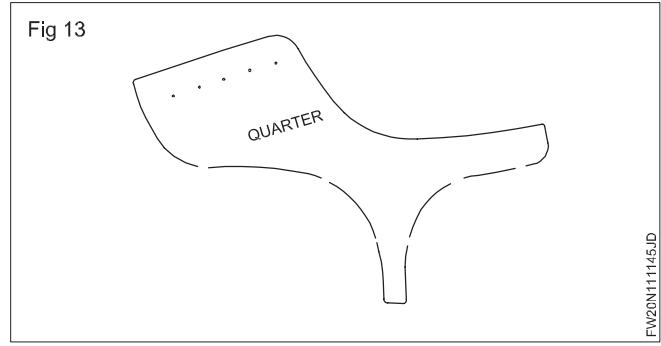
- In folded pattern sheet match the FV3 line and draw vamp style V3 - curve. (Fig 11)



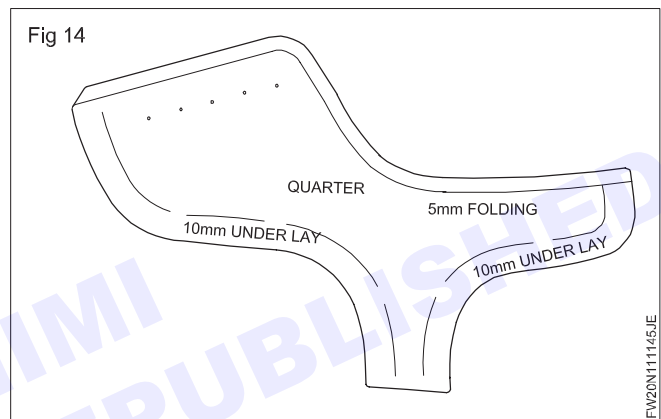
- Give an underlay allowance of 10mm in toe gap.
- Cut the traced outer line.
- Cut the stencil on the underlay line.
- Open the pattern and make an inside cut.
- Cut inside notch. This is the vamp pattern. (Fig 12)



- Trace the quarter line on the plain pattern sheet to get the VC curve. (Fig 13)



- Add Allowance
- Cut the outline and take the quarter pattern.
- Stencil mark on the underline line and cut. Also mark the eyelet. (Fig 14)

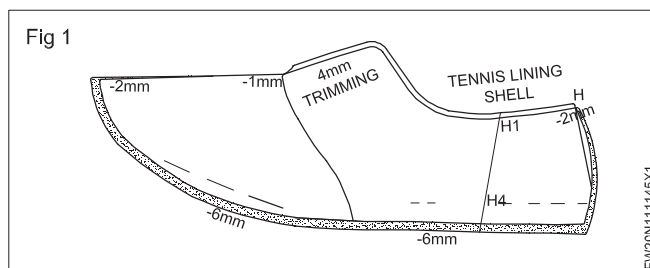


TASK 3: Practice to take tennis shoe lining standard and sectional pattern (Figs 1-7)

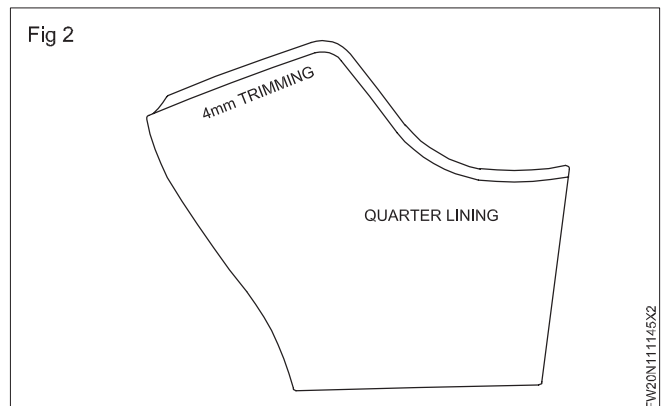
- From vamp point to toe - 1 mm to 2 mm
- 2mm to 4mm decrease in counter curve line
- 6mm decrease in lasting line
- Draw from V to vamp lining curve as shown in figure.
- Add 4mm trimming allowance to topline.

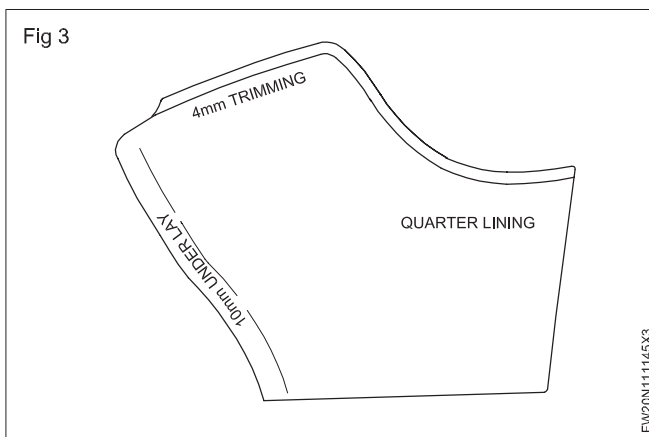
Heel grip

Draw 45mm from H and mark it as H1. Mark 65mm H4 on Feather edge. Draw the heel grip as shown in the figure. (Fig 1)

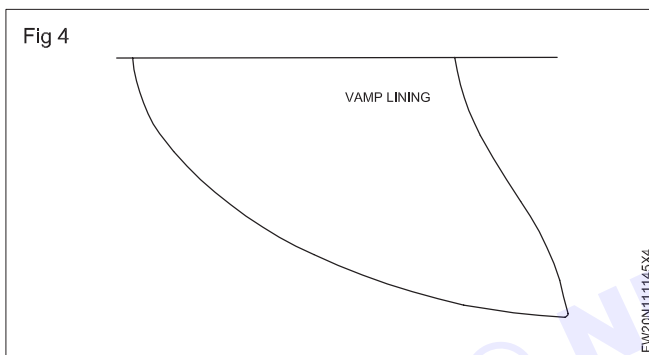


- This is the lining shell.
- Trace the quarter line on the unfolded sheet.
- Add 10mm underlay allowance
- Cut the outer line and take a quarter lining pattern.
- Cut out the stencil on the underlay lining
- Match the vamp mirroring line on the folded pattern sheet and draw the vamp style line. (Fig 2 & 3)

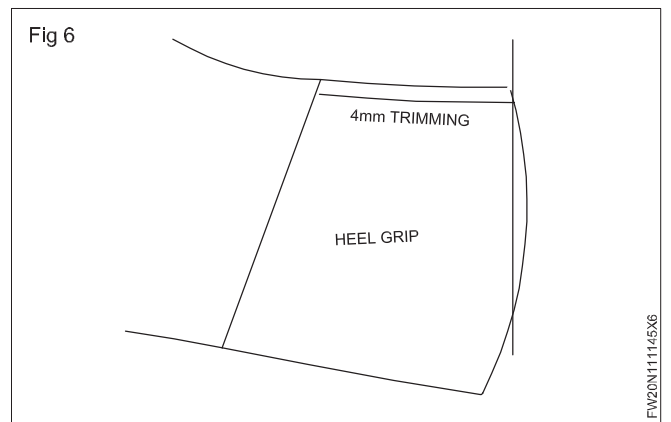
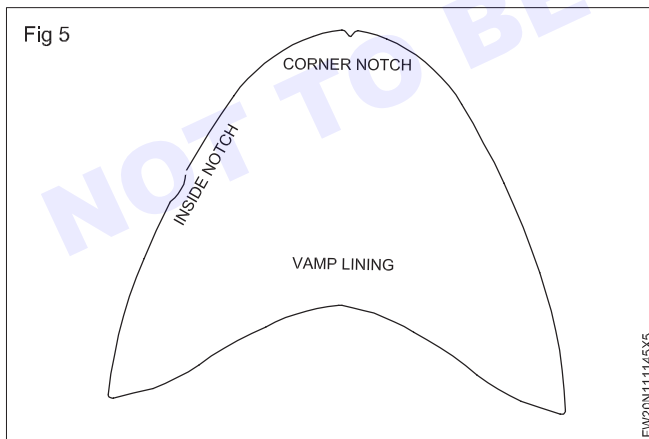




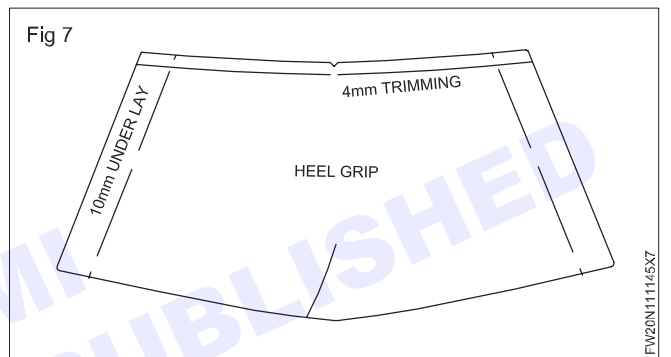
- Cut the traced line
- Open the folded vamp pattern. Cut the inside line.
- Cut inside notch, center notch and take vamp lining. (Fig 4)



- Trace the heel grip mirroring the heel grip line on the folded pattern sheet – give a trimming allowance (Fig 5)



- Draw 10mm underlay line and cut.
- Make a stencil mark on the underlay line.
- Open the pattern sheet and draw the heel grip pattern. (Fig 7)



Trainees to show the pattern they have designed to the instructor and get approval.

Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Check manufacturer defect on the shoes of test method by machine

Objectives: At the end of this exercise you shall be able to

- find out the defects made by the manufacturers by subjecting the shoes to various tests.

Requirements			
Tools/Instruments		Materials	
• Leather thickness gauge	- 1 No.	• Model shoes (Men)	- as reqd.
Equipments/Machines			
• Universal testing machine	- 1 No.		

PROCEDURE

TASK 1: Find out the defects made by the manufacturers by subjecting the shoes to various tests

Instructor to demonstrate the various test methods to the trainees and mark the defects in Table 1.

Table 1

S.No.	Shoe model	Defects
1	Derby shoes (men) (size 8)	
2		
3		
4		

Show the completed Table to the instructor and get approval.

Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Identify various scuff damage, adhesive & solvent taints are to be rectified

Objectives: At the end of this exercise you shall be able to

- identify and repair scuff defect
- identify and repair adhesive and solvent stains.

Requirements

Tools/Instruments

- | | |
|---------------------------|----------|
| • Leather thickness gauge | - 1 No. |
| • Screw driver | - 1 Set. |
| • Polishing brush | - 1 No. |
| • Scissors | - 1 No. |

Materials

- | | |
|---------------------------|------------|
| • Different shoes (model) | - as reqd. |
| • Acetone solvent | - as reqd. |
| • Gasoline (Methylated) | - as reqd. |
| • Crape rubber | - as reqd. |
| • Pigment | - as reqd. |

PROCEDURE

TASK 1: Identify and repair scuff defect (Figs 1-8)

The instructor to show various models of shoes to the trainees and explain how to identify the defects and correct them. (Fig 1)

Fig 1



- Trainees to take shoes with a scuff defect.
- Take a sponge, dip it in water and rub it on the affected area.
- Take a rubber and rub the area. (Fig 2 & 3)

Fig 2



Fig 3



- Take petroleum jelly on a sponge and rub it on the affected areas. (Fig 4)

Fig 4



- Follow the steps below if the scuff defect is large.
- Cut the opened out leather with a scissor.
- Scrub the area with leather soap. (Fig 5)

Fig 5



- Choose a cream that matches the color of the shoe and apply it. (Fig 6)

Fig 6



- Take a small cloth and rub it on the polished area. (Fig 7)

Fig 7



- Polish the shoes with a polishing brush.

Fig 8



TASK 2: Identify and repair adhesive and solvent stains (Fig 1 & 2)

The instructor will demonstrate various adhesive and solvent stain defects to the trainees and explain the methods of correcting them.

- Rub sticky glue stains with a rubber eraser to remove the glue.
- To correct solvent stains, apply pigment of the same color to the area, dry and polish. (Fig 1 & 2)

Fig 1



Fig 2



Trainees to show the rectified shoe to the instructor and get the approval.

Footwear Maker - Prepare Different Types of Boots Applying Latest Fashion & Check Defects of Finished Products

Identify various damage & defects on the shoe to be rectified

Objectives: At the end of this exercise you shall be able to

- identify and rectify different damages and defects that may occur in shoes.

Requirements

Tools/Instruments

- Knife - 1 No.
- Measuring scale 300 mm - 1 No.
- Cutting mat A3 - 1 No.
- Lasting pincer - 1 No.
- Polishing brush - 1 No.

Materials

- Chart paper - 1 No.
- Pencil - 1 No.
- Rubber - 1 No.
- Glue brush - 1 No.

PROCEDURE

TASK 1: Identify and rectify different damages and defects that may occur in shoes

Instructor to explain the different damages and defects that may occur in shoes.

- Then classify the possible defects in the shoe.

Trainees to mark the causes of damages in Table 1.

- First classify the possible damage to the shoe.

Table 1

S.No.	Possible damages to the shoe	Cause of damages
1	Cut in the upper part	
2	Angled upper	
3	Pairs are not identical	
4	Stitch holes	
5	Upper tear	
6	Too much friction	
7	Bottom melting	
8	Islet damage	

Instructor to explain the methods of repairing the shoe damage.

Indicate in Table 2 the methods by which trainees repaired the shoe damage.

Table 2

S.No.	Possible damages to the shoe	Fixing methods
1	Cut in the upper part	
2	Angled upper	
3	Pairs are not identical	
4	Stitch holes	
5	Upper tear	
6	Too much friction	
7	Bottom melting	
8	Islet damage	

Instructor to explain the contents from Fig 1 to Fig 10

Shrinks in upper (Fig 1)

Fig 1



Sole, heel gap (Fig 2)

Fig 2



Shrinks in lining (Fig 3)

Fig 3



Toe pressure (Fig 4)

Fig 4



Shrinks in lateral lasting (Fig 5)

Fig 5



Dirty bottom (Fig 6)

Fig 6



Discoloration (Fig 7)

Fig 7



Dust deposition (Fig 8)

Fig 8



Trainees to mention the possible causes of defects in shoes in Table 3.

Table 3

S.No.	Defects that can occur in shoes	Reasons
1	Shrinks in upper	
2	Sole, heel gap	
3	Shrinks in lining	
4	Toe pressure	
5	Shrinks in lateral lasting	
6	Dirty bottom	
7	Discoloration	
8	Dust deposition	
9	Incorrect setting	
10	Skip stitch	

Incorrect setting (Fig 9)

Fig 9



Instructor to explain the defects and remedial methods to trainees.

Skip stitch (Fig 10)

Fig 10



Trainees to indicate the method by which to address the shoe defects in Table 4

Table 4

S.No.	Defects that can occur in shoes	Remedial method
1	Shrinks in upper	
2	Sole, heel gap	
3	Shrinks in lining	
4	Toe pressure	
5	Shrinks in lateral lasting	
6	Dirty bottom	
7	Discoloration	
8	Dust deposition	
9	Incorrect setting	
10	Skip stitch	

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Exercise on calculation of material consumption, reduction of wastage

Objectives: At the end of this exercise you shall be able to

- calculate usage of raw materials, practice to reduce wastes.

Requirements			
Tools/Instruments		Materials	
• Steel rule 300 mm	- 1 No.	• Derby shoe size 8	- 1 Pair
• Protractor (Semicircle)	- 1 No.	• Oxford shoe size 8	- 1 Pair
Equipments/Machines		• Chart paper	- 1 No.
• Work bench	- 1 No.	• Pencil	- 1 No.
		• Rubber	- 1 No.

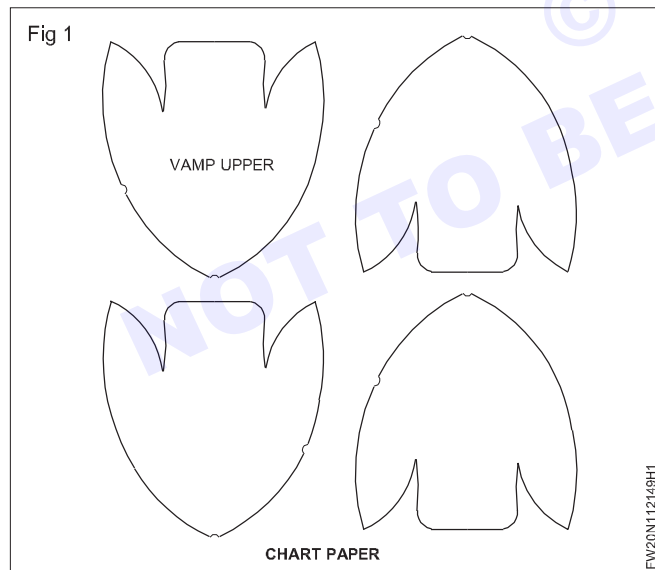
PROCEDURE

TASK 1: Calculate usage of raw materials, practice to reduce wastes (Figs 1-9)

Practice to calculate the upper size used to make a Derby shoe

- Spread the chart paper on work bench.
- Take the upper pattern of the derby shoe.

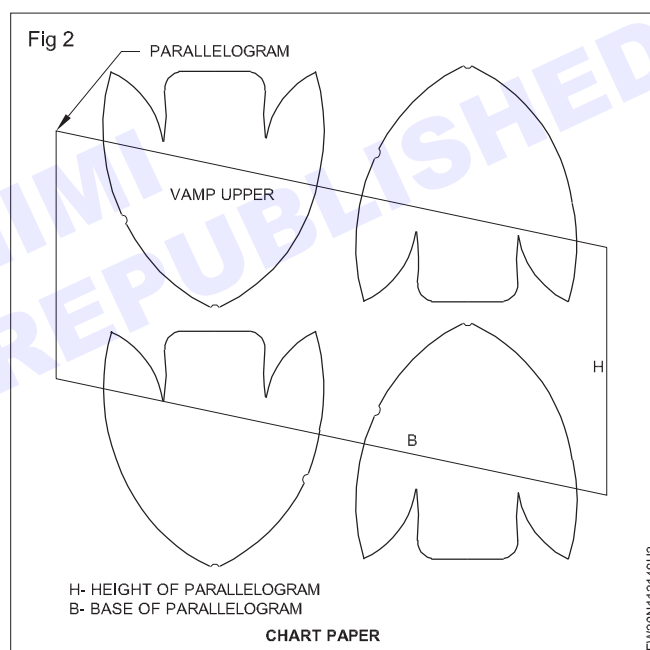
Note: Check all Upper Pattern Components of Derby Shoe by showing it to the instructor



- Mark the Vamp Pattern- as shown in figure

Note: While marking the pair, show it and get it checked by the instructor.

- Draw a parallelogram to include all 4 components. (Fig 2)
- Take the baseline of the parallelogram as "Base".
- Draw a vertical line (90°) from the base to the top as indicated in Fig 2. Consider this as Height (h).



Note: Use the Steel Rule to measure the height in cm

Area $A = b \times h$

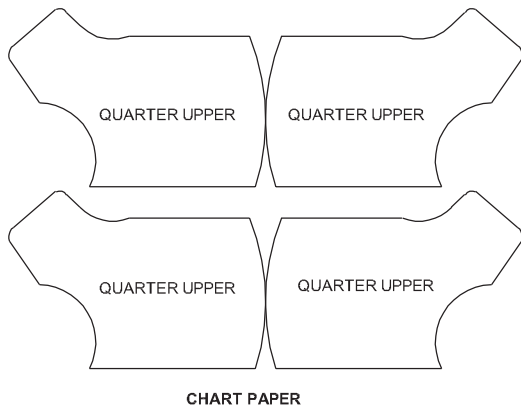
- Calculate the area of the parallelogram using the above formula.
- Mark the Quarter Pattern as shown in Fig 3 and Fig 4 and draw a parallelogram and calculate the area as Vamp Pattern.
- Calculate the area of Upper Leather in sq.dm. by adding the area of Vamp Pattern and Quarter Pattern and then dividing it by 100.

Note :

10 cm. = 1 dm

100 sq.cm. = 1 sq.dm. (or) 1 dm²

Fig 3



FW20N112149H3

Practice to calculate the quantity of Lining used to make a Derby Shoe

- Spread the chart paper on work bench
- Take the Derby Shoe's Lining Pattern.

Note: Check all the Lining Pattern Components of Derby Shoe by showing it to the instructor.

- Marking the Vamp Lining Pattern as shown in the Fig 5.

Note: While marking the pair, show it and get it checked by the instructor

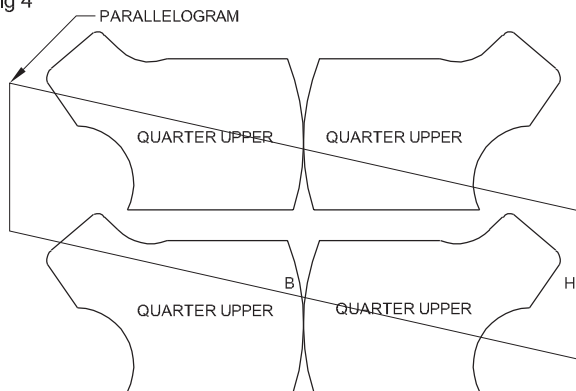
- Draw a parallelogram to include all 4 components.
- Take the baseline of the parallelogram as "Base".
- Draw a vertical line (90°) from the base to the top as indicated in Fig 6. Consider this as Height (h).

Note: Use the steel rule to measure the height in cm.

$$(\text{Area}) A = b \times h$$

- Calculate the area of the parallelogram using the above formula.

Fig 4

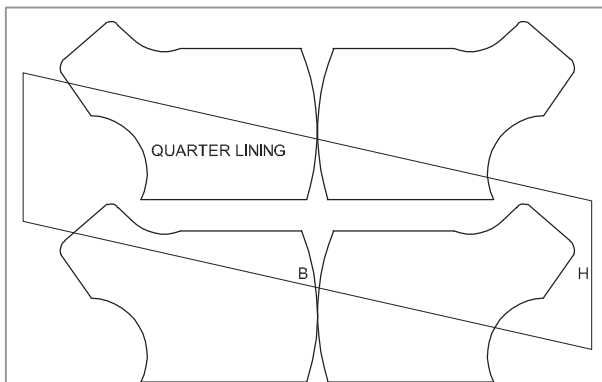
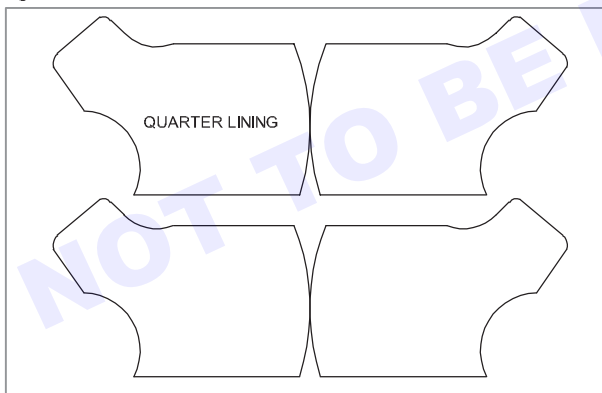


H- HEIGHT OF PARALLELOGRAM
B- BASE OF PARALLELOGRAM

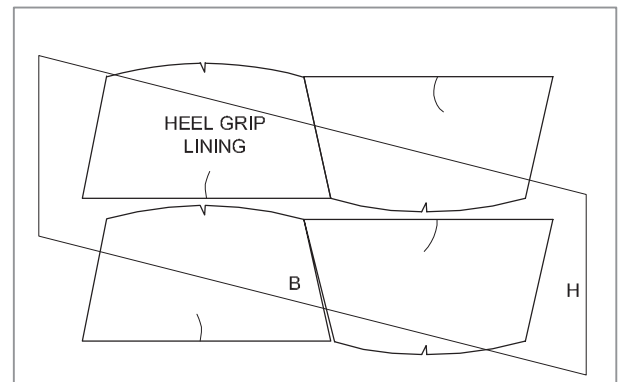
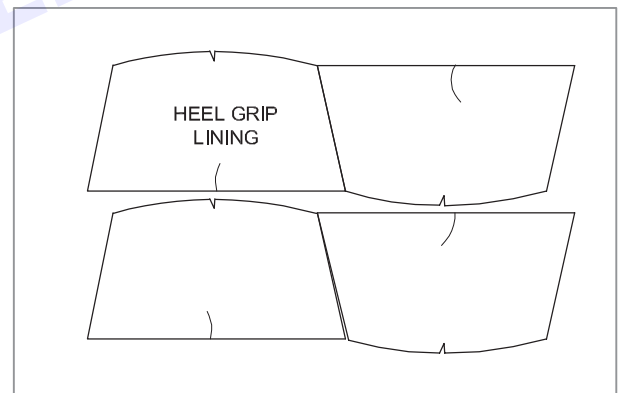
CHART PAPER

FW20N112149H4

Fig 6



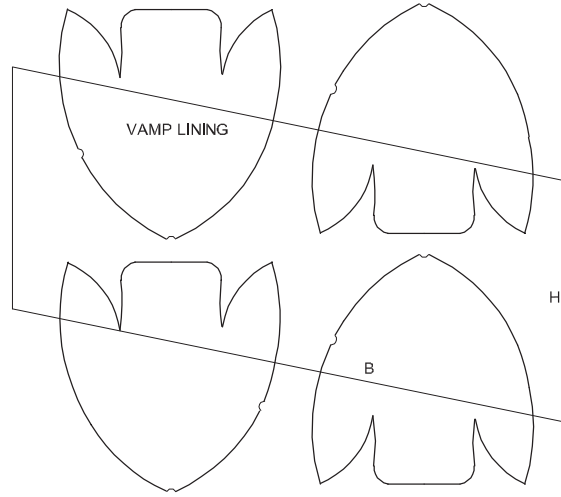
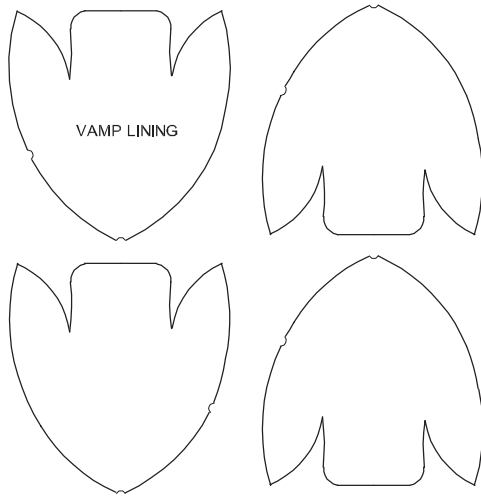
H- HEIGHT OF PARALLELOGRAM
B- BASE OF PARALLELOGRAM



H- HEIGHT OF PARALLELOGRAM
B- BASE OF PARALLELOGRAM

FW20N112149H6

Fig 5



H- HEIGHT OF PARALLELOGRAM
B- BASE OF PARALLELOGRAM

CHART PAPER

FW20N112149H5

Practice to calculate the quantity of Stiffener and Insole size used to make a Derby Shoe: (Figs 7-9)

Fig 7

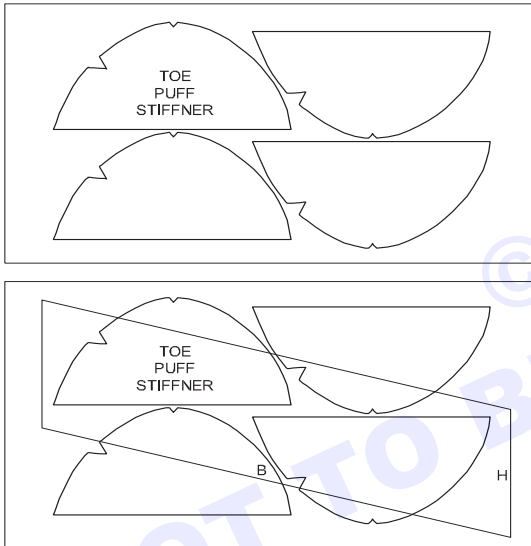


CHART PAPER

FW20N112149H7

Fig 9

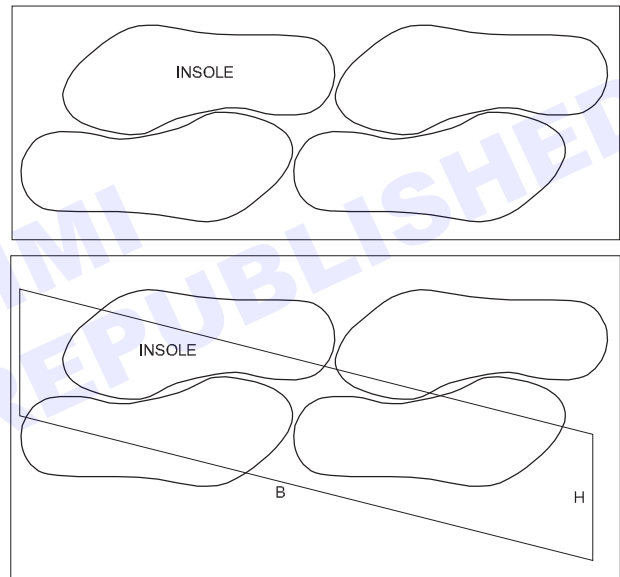


CHART PAPER

FW20N112149H9

Follow Step -1 of this exercise

Note: Check all the Insole Pattern Components of the Derby Shoe by showing it to the instructor

Note: Mark stiffener and insole pattern on chart paper and get it checked by the instructor

Calculate fittings

Note: If the instructor show the derby shoes to the trainees and explain the fitting devices and their cost details in Table 1 if any.

Fig 8

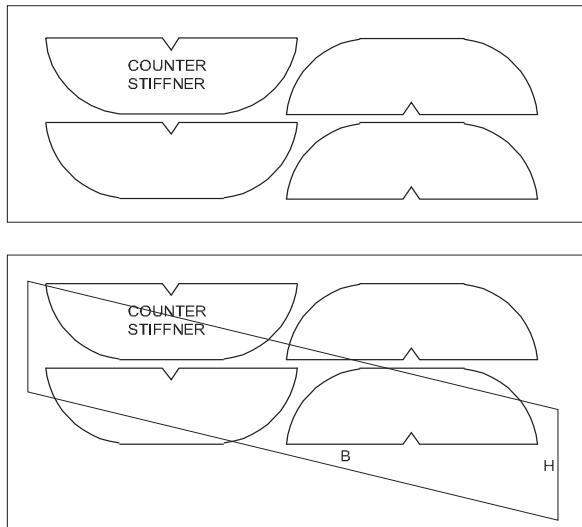


CHART PAPER

FW20N112149H8

Table 1

S.No.	Name of matching devices	Price
1		
2		
3		
4		
5		

Note: Show the calculated consumable from Level 1 to Level 4 by showing it to the instructor and get it checked.

Show the marked chart paper to the instructor and get approval.

Instructor to check the chart paper on which the trainees have marked and ask the trainees to redraw and explain the marking pattern as if there is too much waste.

Practice to reduce wastes

- Take half a sheet of chart paper.
- Take the derby shoe pattern size 8.
- Place the chart paper on the table.
- Place the pattern of the shoe on the chart paper and trace mark with the help of a pencil.

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Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Preparation of cost sheets for finished foot wear

Objectives: At the end of this exercise you shall be able to

- practice preparing cost sheets for finished shoes.

Requirements			
Tools/Instruments		Materials	
• Steel rule 300 mm	- 1 No.	• Model Oxford shoe	- 1 Pair
Equipments/Machines		• Chart paper	- 1 No.
• Work bench	- 1 No.	• Pencil	- 1 No.
		• Rubber	- 1 No.

PROCEDURE

TASK 1: Practice preparing cost sheets for finished shoes

Oxford Shoe-Making Consumables List

Note: The instructor will open the Oxford shoe to the trainees and explain the consumables used in it and ask them to list it in Table 1.

Table 1

S.No.	Name of consumer goods
1	
2	
3	
4	
5	
6	
7	

Calculating the quantity of consumables required to make an Oxford Shoe

- Refer Ex. No.1.12.149 and Calculate the consumables required for making Oxford Shoe.

- Write the calculated consumables in Table 2.

Table 2

S.No.	Name of consumer goods	Quantity
1		
2		
3		
4		
5		
6		
7		

Know the market rate of consumer goods

- Write the market price of the consumer goods in Table 3 directly next to their names.

Note: Instructor to explain the trainees about the market price of the materials used to make Oxford Shoe.

Table 3

S.No.	Name of consumer goods	Rate
1		
2		
3		
4		
5		
6		
7		

Preparing Cost sheet

Note: Instructor to explain various aspects of making Oxford shoe related to cost sheet of consumables, profit, miscellaneous expenses etc., to the trainees.

- Write the Cost sheet in Table 4.

Table 4

S. No.	Name of consumer goods	Required Quantity	Rate	Rate
1	Consumables/Raw Materials			
			Total amount	
			Miscellaneous expenses 10%	
			Total amount	
			Labor Cost	
			Total amount	
			(OverheadCharges-12.5%)	
			Total amount	
			Profit 10%	
			Total amount	
			CGST 9%	
			SGGST 9%	
			Cost of Oxford Shoe (1 Pair)	

Price determination of Oxford Shoe 1 Pair by listing the name, quantity and price of the consumables.

- Determine the price of Oxford Shoe 1 Pair by listing various aspects like name, quantity, price and profit, miscellaneous expenses etc. of consumables in Table 1, Table 2, Table 3 and Table 4.

Note: Check the price of Oxford Shoe 1 Pair by showing it to the instructor.

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Identify length and thickness of the raw material in model shoes

Objectives: At the end of this exercise you shall be able to

- practice to identify the raw materials in sample shoes
- practice to find the quantities of raw materials in sample shoes.

Requirements

Tools/Instruments

- Leather thickness gauge - 1 No.
- Clicking knife - 1 No.
- Stainless steel scale 12" - 1 No.

Equipments/Machines

- Work bench - 1 No.

Materials

- Model shoes - 1 Pair
- Pencil (HB) - 1 No.
- Chart paper - as reqd.

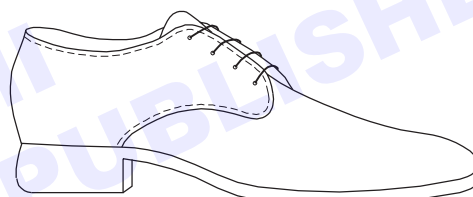
PROCEDURE

TASK 1: Practice to identify the raw materials in sample shoes (Fig 1 & 2)

The instructor will show the trainees the finished shoe in their workshop and explain the raw materials needed to make the shoe (Fig 1 & 2).

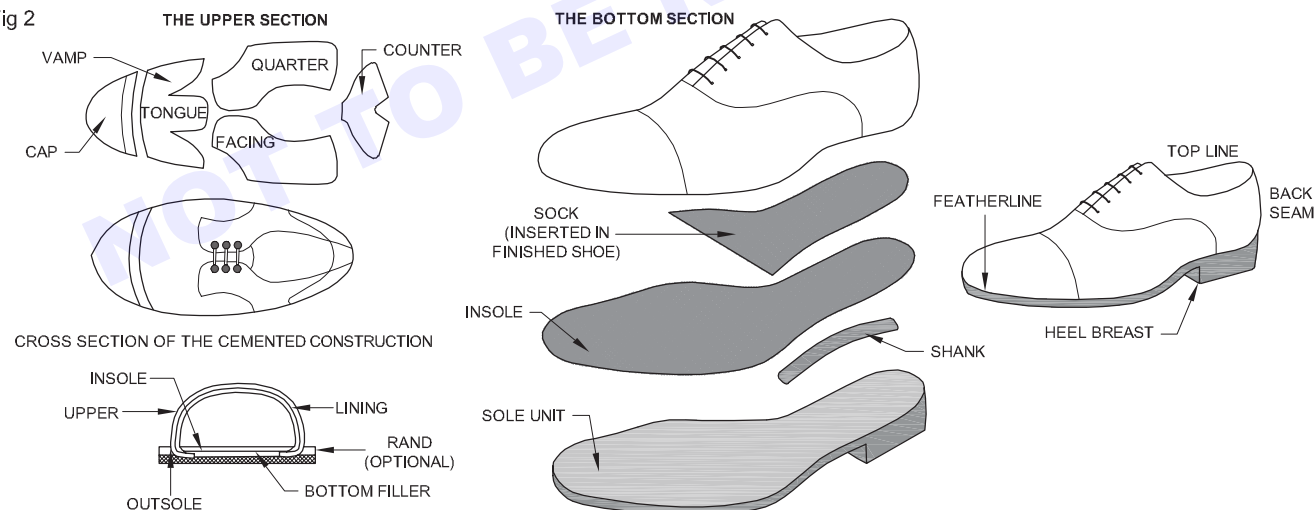
- Trainees to find out the raw materials used in the sample shoes given by the instructor and mark them in Table 1.

Fig 1



FW20N112151H1

Fig 2



FW20N112151H2

Table 1

S.No.	Name of raw materials
1	
2	
3	
4	

S.No.	Name of raw materials
5	
6	
7	

Trainees to show the completed Table to the instructor and get his approval.

— — — — —

TASK 2: Practice to find the quantities of raw materials in sample shoes

Instructor to explain about the raw material specification, quantity etc., to trainees.

- Trainees to find and indicate the specifications and measuring method of leather thickness, required volume, stiffener thickness bottom size, eyelet size, lace etc. in Table 2. Find out

Table 2

S.No.	Description of raw materials	Specification	Required Quantity
1	Upper leather		
2	Lining leather		
3	Stiffener (topup, counter)		
4	Insole sheet		
5	Eyelet		
6	Bottom		
7	Thread		
8	Sticky glue		
9	Lace		
10	Wax		
11	Polish		
12	Di solution		

Trainees to complete Table 2 and show it to the instructor for approval.

- Trainers should identify the raw materials of the shoes they have made and familiarize themselves with their sizes.

— — — — —

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Prepare the graded exercise can do one sheet

Objectives: At the end of this exercise you shall be able to

- practice to do hand grading tool
- practice hand grading.

Requirements

Tools/Instruments

- Leather thickness gauge - 1 No.
- Steel ruler 12" - 1 No.
- Compass - 1 No.
- Divider - 1 No.

Materials

- Pencil - 1 No.
- Rubber - 1 No.
- Chart paper - as reqd.
- Shoe sample pattern (Men - Size 8)

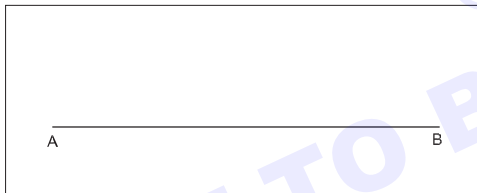
PROCEDURE

TASK 1: Practice to do hand grading tool (Figs 1-5)

Instructor to explain about grading to trainees. Explain the method of hand grading with men's size 8 pattern.

- Take a chart paper
- Draw a base line on it (A-B) (Fig 1)

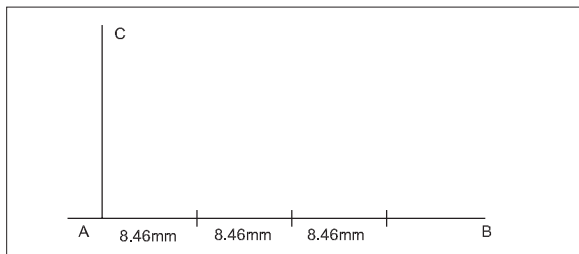
Fig 1



FW20N112152H1

- Draw a perpendicular line touching the base line (A-C) (Fig 2)

Fig 2

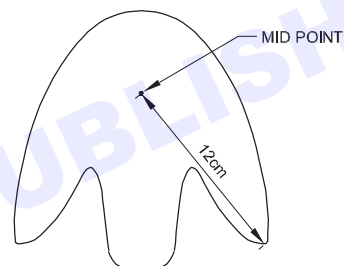


FW20N112152H2

- Make the English scale difference 8.46 mm between each size on AB line.
- To calculate the AC height make the centre of batters and add 4 cm to that (12cm+4cm)=16 cm.

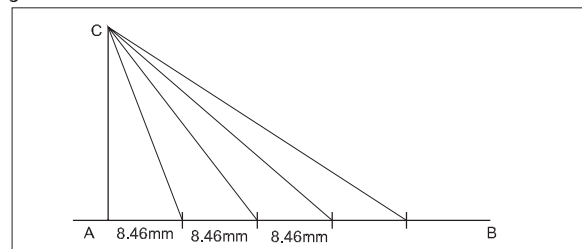
- Cut out the marked grading tool (Fig 5).

Fig 3



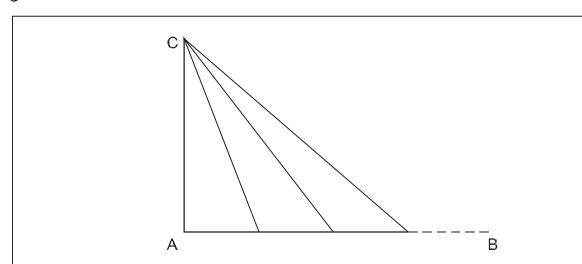
FW20N112152H3

Fig 4



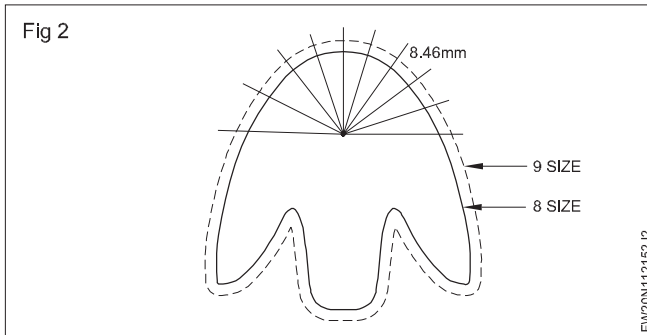
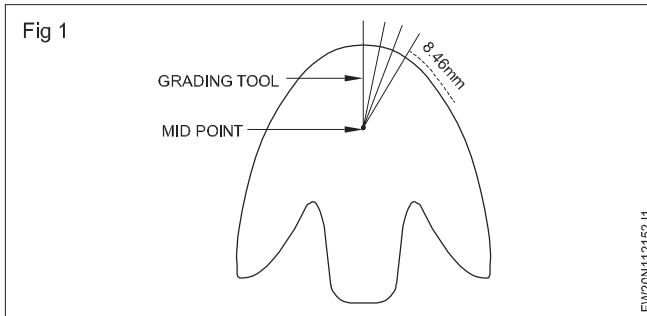
FW20N112152H4

Fig 5



FW20N112152H5

TASK 2: Practice Hand Grading (Fig 1 & 2)



Instructor to ask the trainees to take the Grading Tool for US, German etc. shoe sizes too.

- Take the toe cap pattern (size 8).
- Mark the mid point on it.
- Draw an outline of the toe cap.
- Take the grading tool and match the toe cap pattern to the midpoint.
- After matching the pattern mark 8.46mm on it fold it and draw around the circumference.
- After drawing around the circumference join the line (size 9) and cut the pattern (Fig 2).

Instructor to explain the trainees to draw the perimeter line.

- Have the trainees draw and grade other components in a similar manner by showing the instructor to get his approval.

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Draw the sketch as per exercise

Objectives: At the end of this exercise you shall be able to

- practice to draw the given sketch.

Requirements

Tools/Instruments

- Scale 12" - 1 No.
- Compass - 1 No.
- Divider - 1 No.
- Protractor - 1 No.

Materials

- Chart paper - as reqd.
- Pencil - 1 No.
- Rubber - 1 No.
- Color pencil - 1 Set.

Equipments/Machines

- Work bench - 1 No.

PROCEDURE

TASK 1: Practice to draw the given sketches (Fig 1 & 2)

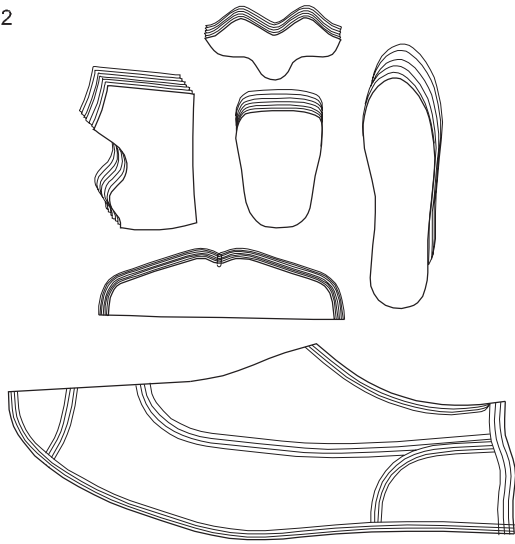
Fig 1



DIFFERENT TYPES OF SHOES

FW20N112153H1

Fig 2



FW20N112153H2

Instructor to show different shapes and styles of shoes to the trainees and ask them to draw them. (Fig 1 & 2)

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Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Calculate total length and no. of pieces required for exercise

Objectives: At the end of this exercise you shall be able to

- practice to calculate the total number of pieces and total quantities of raw materials required to make shoes.

Requirements			
Tools/Instruments		Materials	
• Leather thickness gauge	- 1 No.	• Chart paper	- as reqd.
• Clicking knife	- 1 No.	• Pencil (HB)	- 1 No.
• Stainless steel scale 12"	- 1 No.	• Rubber	- 1 No.
Equipments/Machines		• Model shoes	- 1 Pair
• Work bench	- 1 No.		

PROCEDURE

TASK 1: Practice to calculate the number of pieces and total quantities of raw materials needed to make shoes

Refer Ex. No. 1.12.151 - TASK 1 & 2

Refer Ex. No. 1.12.151 to find the raw materials and quantities required for shoes.

- Trainees to indicate in Table 1 the raw materials and quantities needed for one pair of shoes.
- In Table 1, know the number of shoes you are going to produce and indicate the raw materials and quantities required for the same (Example – 100 shoes)

Table 1

Raw material and quantities required for 100 shoes

S.No.	Detail of the shoe	Raw materials required	Quantity required (for 1 shoe)	Quantity required to make 100 shoes
1	Model Number XXXX (size 8)	Glazed kit leather (0.8 to 1.0 mm)	2.5 sq.ft	
		Bub lining leather (0.6 to 0.8 mm)	2.sq.ft	
		Stiffener sheet	1/4 sheet	
		Insole sheet	1/4 sheet	
		Eyelet button	10 numbers (Black, 3 mm)	
		Bottom sole	1 pair-8 size	
		Lace	1 pair 140 cm long)	
		Sticky glue	Dendrite 25 ml/pair	
		Wax	50 gm	
		Polish	Black (20 gm)	
		Dissolution	Black color (25 ml)	

Trainees to record the quantities of raw materials needed to make 100 shoes in Table 1 show it to the trainer and get his approval.

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Prepare for construction of materials & reduction of wastage

Objectives: At the end of this exercise you shall be able to

- prepare raw materials for construction work
- practice to reduce waste.

Requirements			
Tools/Instruments		Materials	
• Hammer	- 1 No.	• Lost	- 1 Pair
• Knife	- 1 No.	• Upper	- 1 Pair
• Scissors	- 1 No.	• Bottom	- 1 Pair
• Lasting pincer	- 1 No.	• Heel	- 1 Pair
Equipments/Machines		• Adhesive glue	- 100 ml.
• Lasting machine	- 1 No.	• Glue can	- 1 No.
• Sole attaching machine	- 1 No.	• Glue brush	- 1 No.
		• Cotton waste	- 50 g.

PROCEDURE

TASK 1: Prepare raw materials for construction work

- List separately the tools, machinery, equipment and raw materials required to manufacture the product.
- Place the listed utensils separately on the table.
- Similarly, place the necessary raw materials on the table.
- Keep the required machinery and equipment ready for construction.
- Check that everything required for construction is kept ready.
- Fix any looseness.
- Trainees to mention the names of raw materials and quantity required in Table 1 used for construction.

Table 1

S.No.	Name of raw materials required for construction	Required Quantity
1		
2		
3		
4		
5		
6		
7		
8		

TASK 2: Practice to reduce waste

Refer Ex. No. 1.12.149

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Prepare & roll of quality control and its importance

Objectives: At the end of this exercise you shall be able to

- inspecting the quality of derby shoes
- defects found in inspection of derby shoe and its remedies.

Requirements			
Tools/Instruments		Materials	
• Trimming knife	- 1 No.	• Crape rubber	- 1 No.
• Scale is 300 mm	- 1 No.	• Shoe polish	- 1 No.
• Scissors	- 1 No.	• Derby shoe	- as reqd.
• Polish brush	- 1 No.		

PROCEDURE

TASK 1: Inspecting the quality of derby shoes

The instructor will explain to the trainees the various quality inspection components of the derby shoe and explain the quality inspection of the parts of the shoe.

- Trainees to, list the metrics of quality inspection in Table 1.

Table 1

S.No.	Elements of quality inspection	Required quantity	Result obtained	Note
1	Color matching			
2	Wet and dry rub stickiness			
3	Tensile strength			
4	Brittleness when bending			
5	Flexibility			
6	Softness			
7	Water absorption			
8	Stitch tear strength			

- Indicate the qualitative tests and their result of the above undergone derby shoe upper leather in Table 1
- If the results obtained are not to the required quantity, then the leather has to be upgraded.

TASK 2: Defects found in inspection of derby shoe and its remedies

Note: The instructor will show the finished derby shoes to the trainees and explain the defects and ask the trainees to list it in Table 2

Table 2

S.No.	Defects	Remedy
1	Shoe size	
2	Pair matching	
3	Shoe cleanliness	

S.No.	Defects	Remedy
4	Measurements of parts	
5	Shoe construction quality	
6	Defects of components	

S.No.	Defects	Remedy
7	Left Single and Right Single Check	
8	Shoes not fitting in the correct cardboard box	
9	Carton size	
10	Label matching, shoe color, model and size	

The instructor will show the oxford shoe to the trainees and explain the defects and remedies.

- Trainees to mention the defects and remedies of Oxford shoes in Table 3.

Table 3

S.No.	Defects in shoes	Remedy
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Inspection of foot wear

Objectives: At the end of this exercise you shall be able to
 • practice to inspect the quality of footwear.

Requirements			
Tools/Instruments			
• Knife	- 1 No.	• Work bench	- 1 No.
• Scissors	- 1 No.	• Inspection table	- 1 No.
• Measuring tape	- 1 No.	Materials	
• Folding hammer	- 1 No.	• Derby shoe	- 4 Pairs
• Iron last	- 1 No.	• Pencil	- 1 No.
• Braun device	- 1 No.	• Rubber	- 1 No.
Equipments/Machines		• Cotton waste (White)	- 100 g.
• Leather thickness gauge	- 1 No.		

PROCEDURE

TASK 1: Practice to inspect the quality of footwear

A Inspecting the quality of upper leather in Derby shoe

Note: The instructor should explain the trainees the various quality inspection components of the Upper Leather in the Derby Shoe, subject the Upper Leather to a quality inspection and list their results in Table 1.

Table 1

S.No.	Elements of quality inspection	Required quantity	Result obtained	Note
1	Color matching			
2	Wet and dry rub stickiness			
3	Tensile strength			
4	Brittleness when bending			
5	Flexibility			
6	Softness			
7	Water absorption			
8	Stitch strength (Tearability)			

- Indicate the qualitative tests and their results of the above undergone derby shoes upper leather in Table 1.
- If the results obtained are not to the required quality, then the leather has been upgraded.

B Inspection of Derby Shoe and finding defects

Note: The instructor should show the Finished Derby Shoe to the trainees and explain the defects in it and list it in Table 2.

Table 2

S.No.	Defects	Remedy
1	Shoe size	
2	Pair matching	
3	Shoe cleanliness	

S.No.	Defects	Relief
4	Measurements of parts	
5	Shoe construction quality	
6	Defects of components	
7	Left single and right single check	
8	Shoes not fitting in the correct cardboard box	
9	Carton size	
10	Label-matching, shoe color, model and size	

Identify shoe defects

Note: The instructor should explain the trainees the defects of the footwear and list them in Table 3.

Table 3

S.No.	Defects in shoes	Remedy
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

- Mention the remedies for shoe defects in Table 3.

— — — — —

Footwear Maker - Calculate Material Consumption and Reduction of Wastage, Testing of Footwear and Their Assessment

Testing of footwear and their assessment

Objectives: At the end of this exercise you shall be able to

- practice putting shoes through various tests
- practice marking the results of various tests.

Requirements			
Tools/Instruments		Equipments/Machines	
• Leather thickness gauge	- 1 No.	• Universal leather testing machine	- 1 No.
• Lasting pincer (200 mm)	- 1 No.	Materials	
• Screw driver (150 mm, 200 mm, 250 mm)	- 1 Set.	• Model shoes	- as reqd.
• Spanner (6 to 32 mm)	- 1 Set.	• Chart paper	- as reqd.

PROCEDURE

TASK 1: Practice putting shoes through various tests

Instructor to perform various tests on the sample shoe with the Universal Testing Machine and explain to the trainees.

Refer Ex. No. 1.10.138 - Task 1

TASK 2: Practice marking the results of various tests

The trainees to test the sample shoe in universal testing machine and perform various tests and recorded the results in Table 1.

Table 1

S.No.	Details of tests	Average size required	Test size	Note
1	Tensile strength	8 to 25 N/mm ²		
2	Elongation at break	15.60%		
3	Stitch tear strength	30 kg/cm (2 mm cube)		

Trainees to show the completed Table 1 to the instructor and get approval.

Footwear Maker - Calculate Cost of Production and Quality Assessment of Footwear

Practice on cost of finished products & their selling prices, overhead costs & their distribution

Objectives: At the end of this exercise you shall be able to

- know the raw materials and their quantities required to make derby shoes
- know the price of raw materials
- know the price of shoes.

Requirements

Tools/Instruments

- Scale 12 - 1 No.
- Shoe Scale Tape - 1 No.

Materials

- Chart paper - 1 No.
- Pencil - 1 No.
- Rubber - 1 No.
- Derby shoe - as reqd.

PROCEDURE

TASK 1: Know the raw materials and their quantities required to make derby shoes

- Instructor to explain the trainees the consumables used to make derby shoes and how to know their sizes.
- Trainees to arrange to list the consumables required for making derby shoes and write them in Table 1.

Table 1

S.No.	Consumables name	Note
1		
2		
3		
4		
5		
6		
7		
8		

TASK 2: Know the price of raw materials

- Mark the total cost, consumables quantity, approximate cost to produce the shoes in following Table 2.

Table 2

S.No.	Consumables name	Consumabled quantity	Approximate price	Total price
1	Upper leather			
2	Lining leather			
3	Stiffeners			
4	Insole			
5	Outsole			
6	Lace			
7	Eyelet			
8	Insox			
9	Pillars			

TASK 3: Know the price of shoes

- To find out the price of shoes in the following table 3, fill in the blanks with the percentage indicated and find out the price.

Table 3

S.No.	Name of consumer goods	Consumabled quantity	Approximate price	Total price
1	Upper leather			
2	Lining leather			
3	Stiffeners			
4	Insole			
5	Outsole			
6	Lace			
7	Eyelet			
8	Insox			
9	Reinforcement Material			
10	Consumables(thread, glue, polish etc.)			
		Total price		
		Wages		
		Total price		
		Overhead Charges 12.5%		
		Total price		
		Profit 10%		
		Total price		
		CGST 9%		
		SGGST 9%		
		Total price		

Note: Instructor to find out the cost of shoes made by trainees in his trade.

Leather Footwear Maker - Calculate Cost of Production and Quality Assessment of Footwear

Exercise 1.13.160

Identify testing equipment & test methods developed for different styles & designs for footwear

Objective: At the end of this exercise you shall be able to

- practice to identify quality testing equipment and testing methods that are suitable for the style and shape of footwear.

Requirements			
Tools/Instruments		Equipments/Machines	
• Leather thickness gauge	- 1 No.	• Universal leather testing machine	- 1 No.
• Lasting pincer (200 mm)	- 1 No.	Materials	
• Screw driver (150 mm, 200 mm, 250 mm)	- 1 set		
• Spanner (6 to 32 mm)	- 1 set		
• 3 (1 to 10 mm)	- 1 set		
		• Various styles and shaped shoes	- as reqd.
		• Chart paper	- as reqd.
		• Pencil	- 1 No.
		• Rubber	- 1 No.

PROCEDURE

TASK 1: Practice to identify quality testing equipment to check different styles and shoes

The instructor will explain the different styles and shapes of shoes to the trainers and explain the procedures for quality testing them.

- Trainees should classify different footwear and indicate the standard testing and equipment for them in Table 1.

Table 1

S.No.	The style of the shoe	Required Standard Test	Equipment required	Note
1	Men's derby shoe (size 8)			
2	Women's court shoes (size 6)			
3	Long boot			
4	Sports shoes			

- Trainees to show the completed Table to the instructor and get approval.

Footwear Maker - Calculate Cost of Production and Quality Assessment of Footwear

Testing and quality assessment

Objective: At the end of this exercise you shall be able to

- testing done on shoes and practice to quality assessment them.

PROCEDURE

TASK 1: Testing done on shoes and practice to quality assessment them

Refer Ex. No. 1.12.158

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Leather Footwear Maker - Calculate Cost of Production and Quality Assessment of Footwear

Exercise 1.13.162

Shoe & Allied Trades Research Association (SATRA)

Objective: At the end of this exercise you shall be able to

- know about SATRA.

Requirements

Materials

- Chart paper - 1 No.
- Pencil - 1 No.
- Rubber - 1 No.

PROCEDURE

TASK 1: Know about SATRA

Instructor explain to the trainees about the organization SATRA, its objectives and features.

- Trainees to mention the various a features of SATRA in Table 1.

Table 1

S.No.	SATRA	Special features
1	Special features	
2	Established year	
3	Expansion of SATRA	
4	Upper tests	
6	Bottom tests	

Trainees to show the completed Table 1 to the instructor and get approval.

Footwear Maker - Calculate Cost of Production and Quality Assessment of Footwear

Specification of British, German & International Standard widely used

Objectives: At the end of this exercise you shall be able to

- practice to take British measurements
- practice to take German measurements
- practice to take ISO measurements.

Requirements			
Tools/Instruments		Materials	
• Leather thickness gauge	- 1 No.	• Chart paper	- 1 No.
• Shoe size tape	- 1 No.	• Pencil	- 1 No.
• Scale - 12"	- 1 No.	• Rubber	- 1 No.

PROCEDURE

TASK 1: Practice to take British measurements

Instructor to explain about british measurement to trainees and ask them to practice calculating measurements.

- Instructor to explain the British size system and its measurements to trainees
- Trainees mark the British size system and its measurements in Table 1.

Table 1

S.No.	British size	Size (Inches)	Size (mm)
1	Children's size 8		
2	Men's size 8		
3	Women's size 6		
4	Men's size 10		
6	Men's size 11		

Trainees to show the completed Table to the instructor and get approval.

TASK 2: Practice to take German measurements

Instructor to explain about the German measurement type and its size.

- Trainees to take German measurements and indicates size in Table 2.

Table 2

S.No.	German shoe size	Size (in mm)
1	15	
2	18	

S.No.	German shoe size	Size (in mm)
3	30	
4	41	
5	43	
6	44	
7	45	

Trainees to show the completed Table to the instructor and get approval.

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TASK 3: Practice to take ISO measurements

Instructor to explain about the ISO standard (Mondo Point) of a shoe.

- Trainees to take ISO measurements (Mondo point) and indicate its size in Table 3.

Table 3

S.No.	ISO measurements (Mondo Point)	Size (cm)
1	15	
2	15.5	
3	18	
4	19.5	
5	30	

Trainees fill in Table 3 by showing it to the instructor and get approval.

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Footwear Maker - Calculate Cost of Production and Quality Assessment of Footwear

Require minimum any shoe industry of a testing laboratory are specified

Objective: At the end of this exercise you shall be able to

- know about the minimum testing laboratory required for a footwear industry.

Requirements			
Tools/Instruments		Equipments/Machines	
• Leather thickness gauge	- 1 No.	• Universal leather testing machine	- 1 No.
• Knife	- 1 No.		
• Scale 12"	- 1 No.	Materials	
		• Oxford men shoes (8)	- 1 Pair
		• Pencil	- 1 No.
		• Rubber	- 1 No.

PROCEDURE

- Know about the minimum testing laboratory required for a footwear industry.

Instructor to explain the important tests performed on about shoes and the specialized tests to trainees.

- Also explain the trainees the minimum testing required for a general footwear factory and corresponding laboratories.

- Explain to the trainees about the labs and machinery required for specialized footwear.

- Trainees should take a pair of oxford shoes.

- Trainees to mention the raw materials of that shoe and the minimum tests required to check their quality in Table 1.

Table 1

S.No.	Shoe design	Required tests
1	Oxford gents shoes (size-8)	

Trainees to show the completed Table to the instructor and get approval.

Project works

Objective: At the end of this exercise you shall be able to

- selection of project works as per requirement
- preparation of list of required materials and their collecting them
- preparation of list of required tools
- preparation of detailed introductory information about the project
- preparation and submission of detailed project report.

Note: The instructor should explain in detail about how to complete the footwear maker project. According to the number of trainees in the footwear maker section they should be divided into groups. Also should give all the details about how to prepare the project work and how to complete it with precise workmanship.

- Start the project job and follow it up.
- Teams should be proactive about the future impact and the technology used in it.
- Divide the work equally and ensure that trainees participate fully in the work.
- Start and complete the project job step by step.
- Test the implementation and usability of the completed project.

- Prepare a project report for technical parameters, quantities, materials required and their cost, process of operation, maintenance application and marketing.
- Opportunity for future expansion, ease of switching to another plan in a high-quality replacement format should be mentioned.
- Show it and get it checked your instructor.
- Complete the project by including all operating instructions.
- Fit the safety equipment required for the project and its functioning.
- Instructions for maintenance and repair should be clearly indicated.

Note: For project work, all records and reports must be evaluated by the instructor. Marks should be awarded for project work. Accuracy, efficiency, safety features and working methods should be used for oral examination.

Project work

- Model the various joints in the human foot.
- Make various fittings with patterned paper.
- Find the differences between human foot and last.
- Measure how the body's weight is distributed on the foot while walking, running, and standing.
- Create a variety of new patterns.

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