Basic Footwear Production Operations LEVEL I

Based on Nov, 2019 V5 OS and Feb, 2020 V1 Curriculum

Module Title: - Operating footwear cutting machines

LG Code: BFP1 M08 LO(1-6) LG(37-42)

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Contents

LG #37	LO#1- Identify and use hand tools equipment and machines

Instruction sheet

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

- Identifying materials, tools and equipment
- Checking tools for serviceability and safety
- Clearing work area following workplace standard procedures.
- Cleaning, checking, maintaining and storing hand tools and equipment
- Obtaining work instructions, specifications and operation details
- Identifying safety with regard to tools, equipment and machine
- Identifying safety of operator and workplace

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Materials, *tools* and equipment which are consistent with machine cutting are identified.
- Tools are checked for serviceability and safety and faults.
- Work area is cleared following workplace standard procedures.
- Hand tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturers' specifications and work standard practices
- Work instructions, specifications and operation details related to *machine* cutting are obtained
- Safety with regard to tools, equipment and machine is identified.
- Safety of operator and workplace is identified as per *OHS practices*

Learning Instructions:

Learning Activities:-

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the “Information Sheets 1”.
3. Accomplish the “Self-check. Request the key answer / key to correction from your teacher or you can request your teacher to check it for you.
4. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Information Sheets 1.
5. Read the information written in the “Information Sheet 2”.

6.Accomplish the “Self-check 2”. Again you can request the key answer / key to correction from your teacher or you can request your teacher to check it for you.

Information Sheet 1- Identifying materials, tools and equipment

1 Identifying materials, tools and equipment

1.1 Tools used for cutting operation

- **Cutting dies**
- **Ruler**
- **Cutting board (Accessories)**
- **Dies**
- **Olfa knife**
- **Scissors**
- **Leather thickness measuring gauge**

Types of Dies and their Uses: Dies is of various types. Some of them are listed below

1. Dies as per Height
2. Dies as per Edge
3. Straight Edge and Decorative Edge Dies
4. Perforated Dies
5. Layer cutting motorized knife:

1. Dies as per Height

- ✓ **19 mm, 32 mm and 50 mm height Dies are available for various purposes. Normally19 mm die is used for leather upper and lining cutting.**
- ✓ **32 mm and 50 mm dies are normally used for synthetic cutting, layer cutting, insole and shank board cutting, interlining and reinforcement cutting**

2. Dies as per Edge

- ✓ Single edge and double edge Dies are made for cutting.
- ✓ Using double edge die we can cut right and left component from the same die which reduces the die cost.
- ✓ The single edge die is generally used for layer cutting.

3. Straight Edge and Decorative Edge Dies

Die edges can be straight or gimped as per the design requirements.

4. Perforated Dies

- ✓ Dies can be perforated. It can be perforated for punched designs e.g. Brogue, Moccasin etc

Dies for Upper and Lining Cutting (preferably 19 mm double edge).

Fig.1.1 Perforated die

Dies for Upper and Lining Cutting (preferably 19 mm double edge).

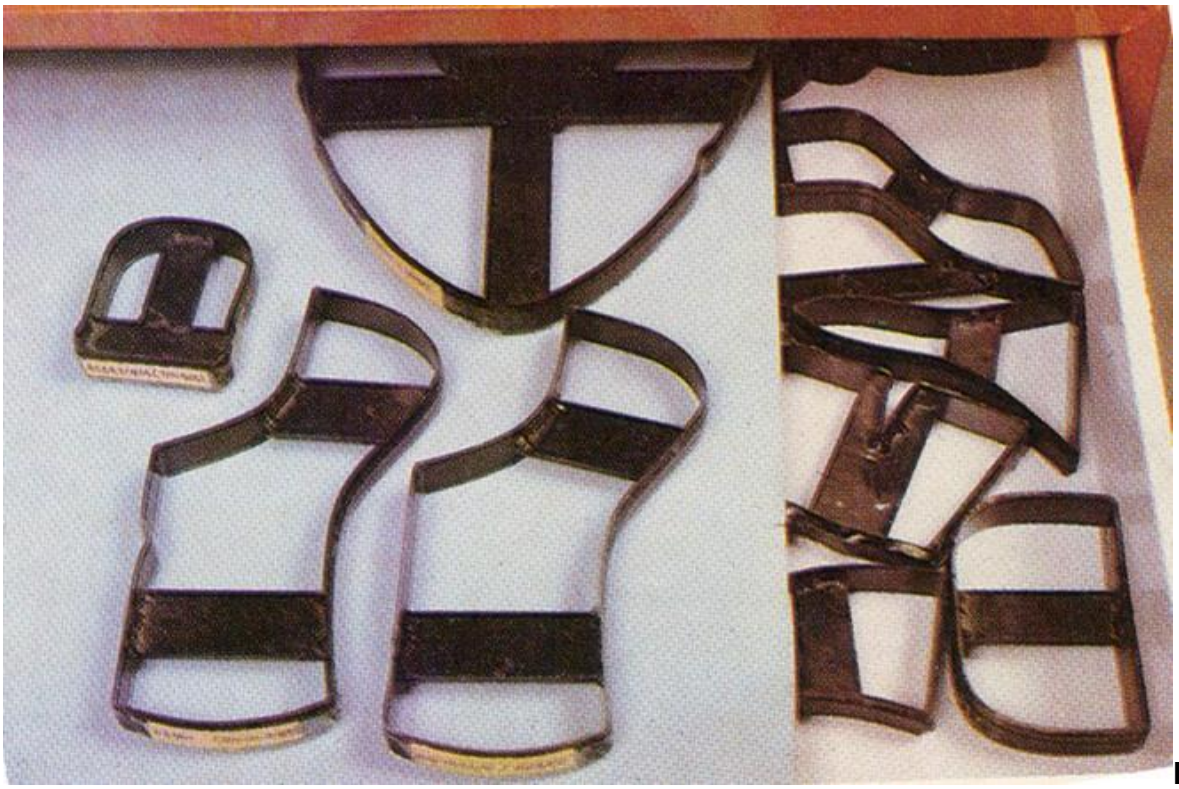


Fig.1.2 Dies for Upper and Lining Cutting

Bent Die / Breakage of die: **The edges/blade of dies may get deformed (bent) or broken at the edges during production**.

Fig.1.3 Bent Die / Breakage of die:

Dies for Insole board and Shank board Cutting (preferably 32 mm or 50 mm single edge).

Fig.1.4Dies for Insole board and Shank board Cutting

Dies for Foam, Textile, Toe-puff and Counter Stiffener Cutting (preferably 32 mm single edge)

Fig 1.5 Dies for Foam, Textile, Toe-puff and Counter Stiffener Cutting

Dies for Sole Cutting (preferably 32 mm or 50 mm single edge).

Fig 1.5 Dies for Sole Cutting

5. Layer cutting motorized knife:

- ✓ Generally used to cut fabric.
- ✓ It consists of a handle with a circular blade that rotates, thus the tool's name. Rotary blades can be found in different sizes and are used with a metal straight-edge to cut to straight lines of non-fraying materials.
- ✓ Several layers of fabric can be cut simultaneously, making it easier to cut out patchwork pieces of the same shape and size than with regular scissors.
- ✓ In conjunction with a rotary cutting mat – specially designed to be used with a rotary cutter, and made of thick and resistant plastic – it is also a practical tool for achieving the straight, squared lines that are so important in bag design.

Ruler

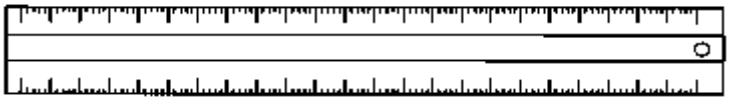


Fig 1.7 Ruler

Cutting board (Accessories)

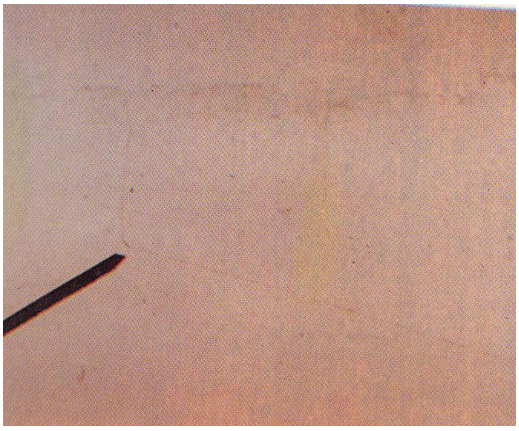


Fig 1.7 Cutting board

Self-check 1	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

Test I: Short answer questions: **Total (8)**

1. Write down the types of Dies----------(3points)
2. What the use of dies?----------(3points)

Test II Fill in the blank space

1._____is generally used for layer cutting. ---------- (1point)

2. Die edges can be _____ or _____as per the design requirements. ------- (1point)

Information Sheet 2- Checking tools for serviceability and safety

Information Sheet 3- Clearing work area following workplace standard procedures.

Clean work area and hand tools:

The objective of this information sheet is to show you how to keep work areas and tool clean and operational. At the end of each working day clean the tools and equipment you used and check them for any damage. If you note any damage, tag the tool as faulty and organize a repair or replacement.

Preparation and Safety:

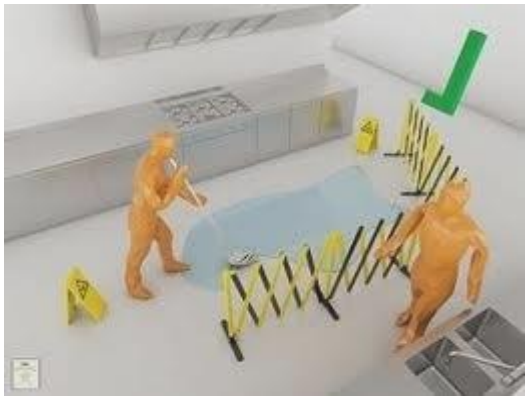
Personal safety:

Whenever you perform a task in the workshop you must use personal protective clothing and equipment. Among other items, this may include:

- Work clothing - such as coveralls and steel-capped footwear
- Eye protection - such as safety glasses and face masks
- Ear protection - such as earmuffs and earplugs
- Hand protection - such as rubber gloves and barrier cream
- Respiratory equipment - such as face masks and valved respirators

If you are not certain what are appropriate or required, ask your Instructor.

Safety check:



- Some cleaning agents are toxic. Refer the instructions on any cleaning agent and follow any recommendations before using it.
- Do not use flammable cleaners or water on electrical equipment.
- Make sure designated walkways are kept clear of any obstructions.
- Always wear protective clothing and the appropriate safety equipment.
- Make sure that you understand and observe all legislative and personal safety procedures when carrying out the maintenance tasks. If you are unsure of what these are, ask your Instructor.

Points to Note:

- Clean tools and equipment helps work more efficiently. At the end of each working day clean the tools and equipment you used and check them for any damage. If you note any damage, tag the tool as faulty and organize a repair or replacement.
- Electrical current can travel over oily or greasy surfaces. Keep electrical power tools free from dust and dirt and make sure they are free of oil and grease.
- All workshop equipment should have a maintenance schedule. Always complete the tasks described on the schedule at the required time. This will help to keep the equipment in safe working order.

- Store commonly used tools in an easy-to-reach location. If a tool, or piece of equipment, is too difficult to return, it could be left on a workbench or on the floor where it will become a safety hazard.
- Keep your work area tidy. This will help you work more efficiently and safely.
- Always use chemical gloves when using any cleaning material because excessive exposure to cleaning materials can damage skin.
- Some solvents are flammable. Never use cleaning materials near an open flame or cigarette.
- The fumes from cleaning chemicals can be toxic, so wear appropriate respirator and eye protection wherever you are using these products.
- When cleaning products lose their effectiveness they will need to be replaced. Refer to the suppliers' recommendations for collection or disposal. Do not pour solvents or other chemicals into the sewage system. This is both environmentally damaging and illegal.

Cleaning of equipments

To maintain cleaning equipment and keep it in a good working condition, it must be thoroughly cleaned and stored correctly every time it is used. If regular maintenance does not occur, the equipment may, over time, become dangerous to individuals.

Equipment and Floor that will need cleaning includes:

- Garbage receptacles
- Pans
- Brooms, dusters and brushes
- Mops and buckets
- Electrical equipment, Ex: vacuum cleaners, polishers, scrubbers.

Every time a piece of equipment is used, the general rule is to clean it straight away so it is ready for the next person to use. The manufacturers' instructions should be strictly followed when maintaining and cleaning equipment.

Cleaning of Work Area

You have to be:

- Clear and clean the area
- Store any reusable materials
- Check, clean and store away any tools and equipment
- Dispose of hazardous and non-hazardous waste according to legal and workplace requirements.

Information Sheet 4- Cleaning, checking, maintaining and storing hand tools and equipment

SKILLS AND ACTIONS NEED TO CLEAN UP YOUR OWN WORK AREA

Cleaning and clearing techniques:

- Select and use an appropriate method for cleaning
- tools and specialist equipment
- any leakages
- Restore your work area to a safe and tidy condition
- Make sure that any materials, components, tools and equipment that you may need for the next task are set up ready for use.

Material storage techniques:

- Sort reusable equipment, components and materials from waste
- Reusable materials are correctly stored
- All tools and equipment are properly stored.

Safe disposal techniques:

- Handle and dispose of waste materials appropriately according to organizational and legal requirements
- Recognize what materials are hazardous and require special procedures
- Report any problems associated with cleaning, storing or disposing of materials and equipment to the relevant person.

Hazardous and non-hazardous materials:

- Types of waste material generated in the work area
- Know how to handle hazardous waste and reusable materials safely including:
  - Fluids
  - Adhesives
  - Solvents.
- Personal protective equipment is required and how to use it.

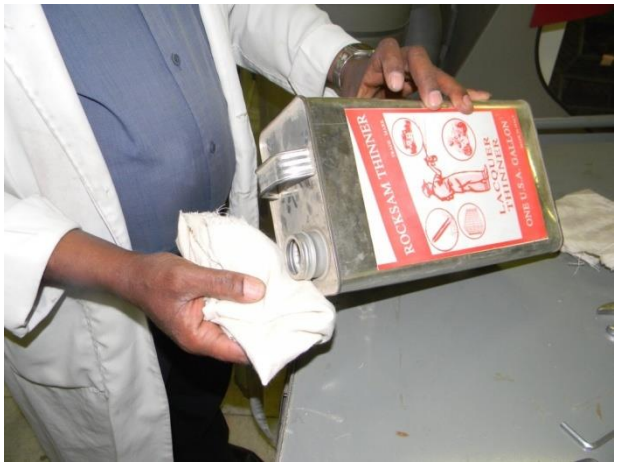
Step by Step Instructions:

Clean hand tools

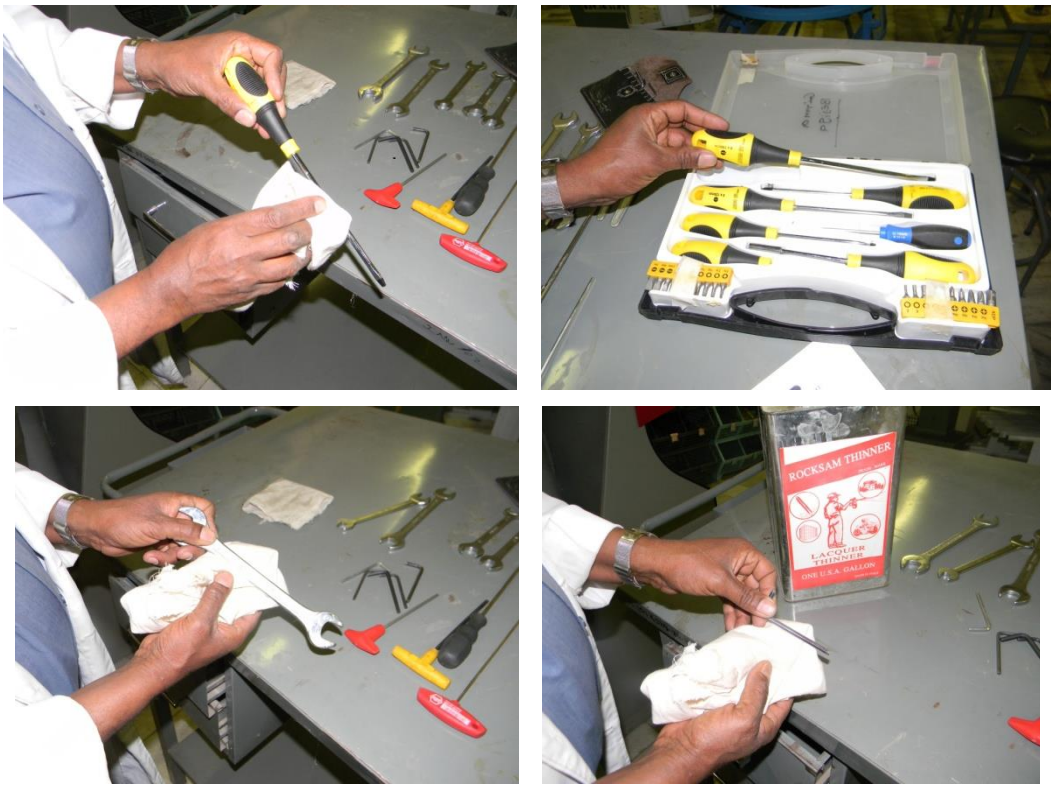
Keep your hand tools in good, clean condition with two sets of rags. One rag should be lint-free to clean or handle precision instruments or components.

The other should be oily to prevent rust and corrosion.

- Use kerosene/solvent for cleaning tools



- Clean tool and keep their place



Clean floor:

Wipe off any oil or grease on the floor and check for fluid leaks. If you find any, top up the hydraulic fluid. Occasionally, apply a few drops of lubricating oil to the wheels and a few drops to the posts of the safety stands.

Points to Note

- Clean tools and equipment helps work more efficiently. At the end of each working day clean the tools and equipment you used and check them for any damage. If you note any damage, tag the tool as faulty and organize a repair or replacement.
- Electrical current can travel over oily or greasy surfaces. Keep electrical power tools free from dust and dirt and make sure they are free of oil and grease.
- All workshop equipment should have a maintenance schedule. Always complete the tasks described on the schedule at the required time. This will help to keep the equipment in safe working order.
- Store commonly used tools in an easy-to-reach location. If a tool, or piece of equipment, is too difficult to return, it could be left on a workbench or on the floor where it will become a safety hazard.
- Keep your work area tidy. This will help you work more efficiently and safely.
- Always use chemical gloves when using any cleaning material because excessive exposure to cleaning materials can damage skin.
- Some solvents are flammable. Never use cleaning materials near an open flame or cigarette.
- The fumes from cleaning chemicals can be toxic, so wear appropriate respirator and eye protection wherever you are using these products.
- When cleaning products lose their effectiveness they will need to be replaced. Refer to the suppliers' recommendations for collection or disposal. Do not pour solvents or other chemicals into the sewage system. This is both environmentally damaging and illegal.

Work area should be cleaned as per standard procedure:

Work area should be cleaned by following workplace standard procedures:

- **Dust bins for bio-degradable waste materials**

  Bio-degradable garbage (waste materials) means the garbage or waste materials that are capable of being destroyed by the action of living beings.

- **Dust bins for non-biodegradable waste materials**

  A Non-bio-degradable waste material (garbage) means the garbage or waste materials that are not capable of being destroyed by the action of living beings.

- **Cleaning of workshop**

  Clean floors and decking at the end of each shift and place all rubbish and waste in approved containers for disposal.

- **Housekeeping of cutting department**

  -Good housekeeping promotes safety and prevents accidents.

  -Do not use any equipment if it is damaged. It is important to tag it out and report it to your supervisor immediately.

  - Always practice good housekeeping before, during and after the job.

- **Housekeeping of leather stores**

  In footwear manufacturing the leather must have good quality in order to be used for footwear production. Leather stores plays a big role in taking care of the leather stored so housekeeping of leather stores must be given an emphasis.

  The store must be clean and free of dusts and other waste materials.

Self-Check 3&4	Written Test

Instructions: Write all your answers in the provided answer sheet on page 13.

Test I: Short Answer Questions

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers. **(Total points: - 10)**

1. What is the difference between Bio-degradable and Non-bio-degradable waste materials? (Points: 2)
2. What is the need of housekeeping in cutting department? (Points: 2)
3. Why housekeeping is important for leather stores? (Points: 2)
4. What are the cleaning and checking method of hand tools? (Points: 4)

Information Sheet 5 Obtaining work instructions, specifications and operation details

Information Sheet 6- Identifying safety with regard to tools, equipment and machine

Information Sheet7 - Identifying safety of operator and workplace

1.7. Identifying safety of operator and workplace

1.7.1 OHS practices in machine cutting.

During machine cutting, an operator has to follow the following practices

1. Do not operate the machine without prior approval

2. Do not work without written job order

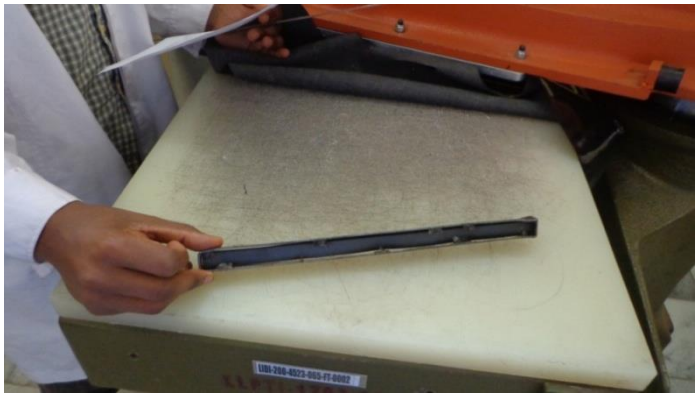
3. Only one person is allowed to work on the machine at one time. (Fig7.1)

4. Before the start of the cutting, check the die for the following: (Fig7.2)

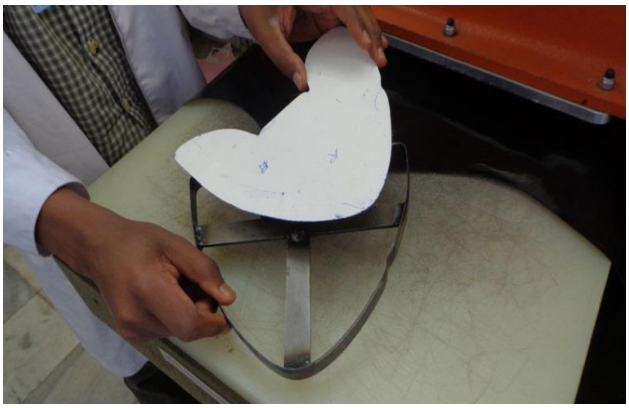
A.-article, b. - size, c. - upper /lining/interlining


6. Before starting cutting, set the pressure & adjust the

Aluminum plate 10 mm above the die. (Fig7.3)



7. Check the die for deformation of shape before proceeding for cutting. (Fig7.4)



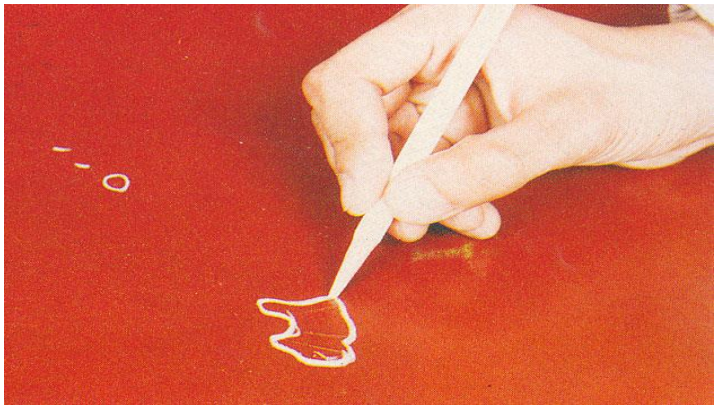
8. Match your die with the master pattern once a day. (Fig7.5)

9. 8.Do not keep the dies on top of other. (Fig7.6)

10. Switch off the machine when not in use. (Fig7.7)

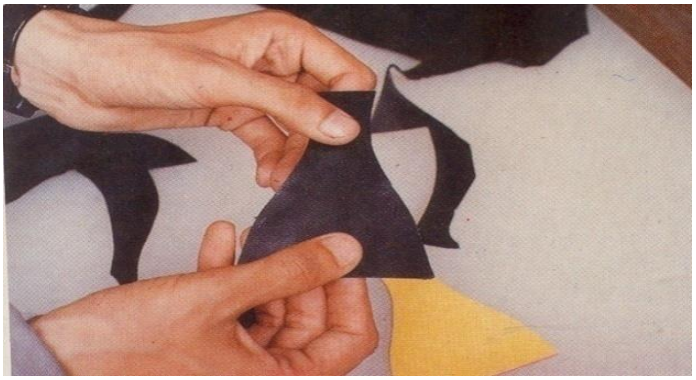
11. Put the leather on the leather horse. (Fig7.8)

12. Put the leather on the leather horse. (Fig7.8)



13. Mark the defect in leather before cutting. (Fig7.9)

14. Check leather before cutting each component. (Fig7.10)



15. Check leather before cutting each component. (Fig7.10)

16. Use only one die use on the nylon board while cutting material. (Fig7.12)

17. Do not cut leather in layers, (Fig7.13)

18. Cut large components first. Take small size from defective skin. (Fig7.14)

19. Components should be placed edge to edge to minimize waste. (Fig7.15)

20. Ensure that components are cut pair wise and make the bundles. (Fig7.16)

21. Dies, punch dies & leather should be handled carefully. (Fig7.17)
22. Always transfer the cut component with job-card.

23. Clean your work place after completing your work with dies. (Fig7.18)
24. Return the remaining quantity of leather after cutting to the department in charge.

25. Throw the leather waste in to bin only. (Fig7.19)
26. While changing the oil use container to remove the hydraulic oil.

Self-Check 7	**Written Test**

Name: _____ **Date:** _____

Directions: Answer all the questions listed below.

1, List four points of OHS practices in machine cutting. (Marks:- 4)

LG #38	LO #2 Set up work station

Instruction sheet

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

- **Setup work station according to work specification**
- **Cutting equipment and patterns**
- **Collection and sorting of the material**
- **Maintaining records**

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- **Work station is to be setup and arranged according to work specifications**
- **Cutting equipment and patterns are selected and are prepared according to work specification and manufacturer's instructions Materials are collected sorted and laid out in preparation of cutting Records are maintained**.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.

2. Read the information written in the “Information Sheets 1”.

3. Accomplish the “Self-check. Request the key answer / key to correction from your teacher or you can request your teacher to check it for you.

4. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Information Sheets 1.

5. Read the information written in the “Information Sheet 2”.

6. Accomplish the “Self-check 2”. Again you can request the key answer / key to correction from your teacher or you can request your teacher to check it for you.

7 If you earned a satisfactory evaluation proceed to “Information Sheet 3”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Information Sheet 2.

8 Read the information written in the “Information Sheet 3”.

9. Accomplish the “Self-check 3”. Request the key answer / key to correction from your teacher or you can request your teacher to check it for you.

10. If you earned a satisfactory evaluation proceed to “Information Sheet 4”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Information Sheet 3

Information Sheet 1- Setup work station according to work specification

Participants should be able to understand about setting up and arranging work station according to work specifications such as Leather, Synthetics, Textile, Toe puff and counter stiffener sheets, Insole board, and Shank board. All concerns activities help to participants to produce quality and productivity.

2.1.1 Setting the Machine

Setting the Arm Stroke

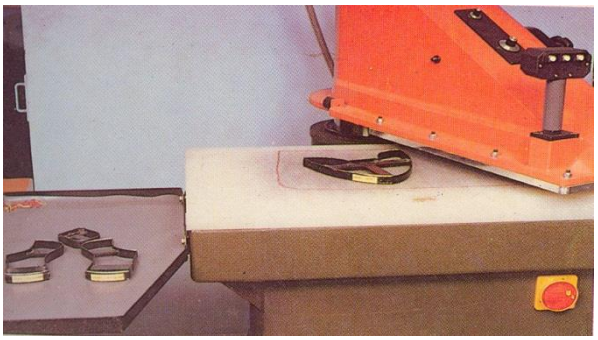


Fig1.1 Place the knife on the clicking board.

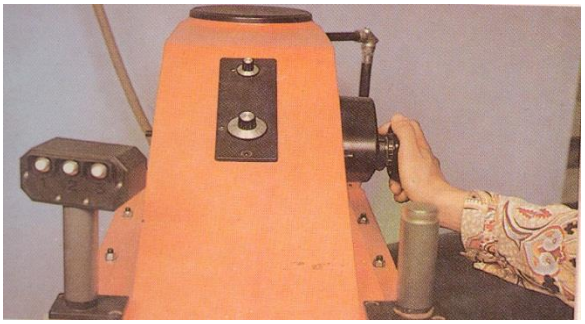


Fig1.2 Setting of Pressure Control

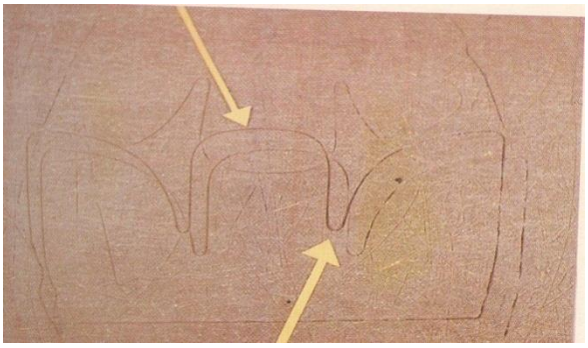


Fig1.3 Turn the arm stroke adjustment control: Clockwise for down position and Anti clockwise for up position. Approx. 10 mm to 15 mm clearance is required depending on the substance of the leather.

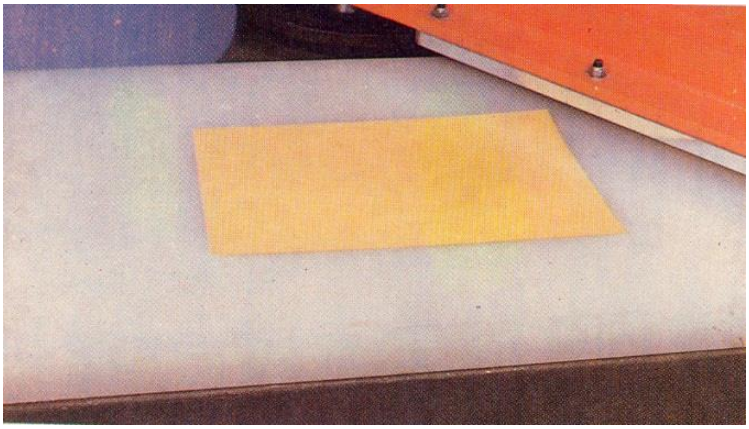


Fig1.4 Place 1 piece of thin cardboard on the clicking board.

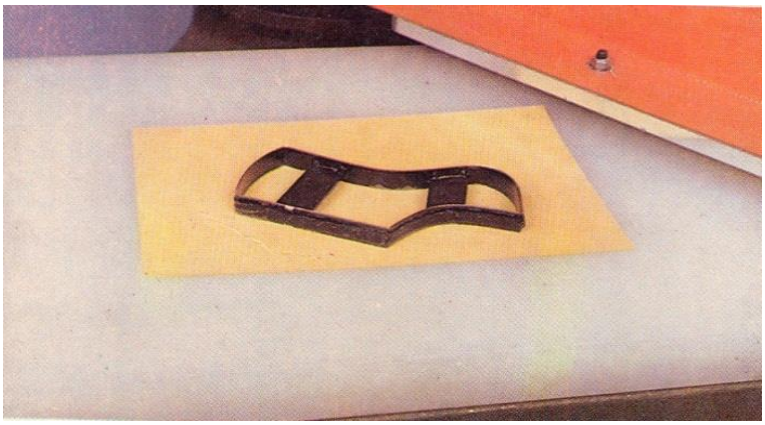


Fig1.5 Place the small knife on the cardboard.

Fig1.5 Test the machine for cutting depth.

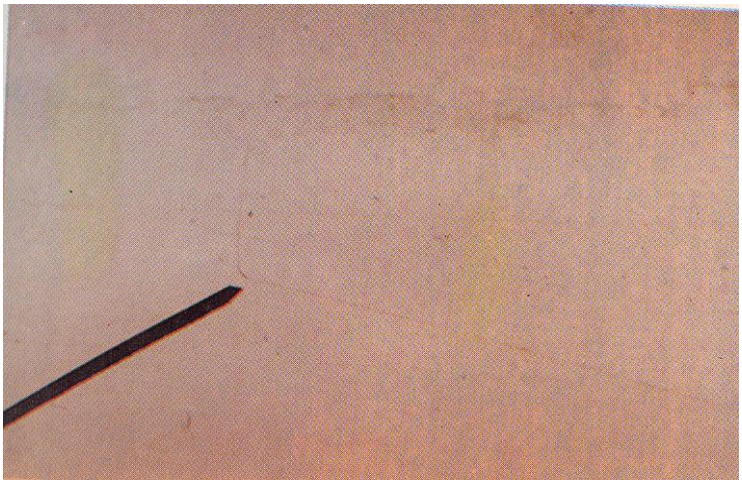


Fig1.6 If the machine has been set correctly it should cut through and only show a very small imprint on the cutting board.

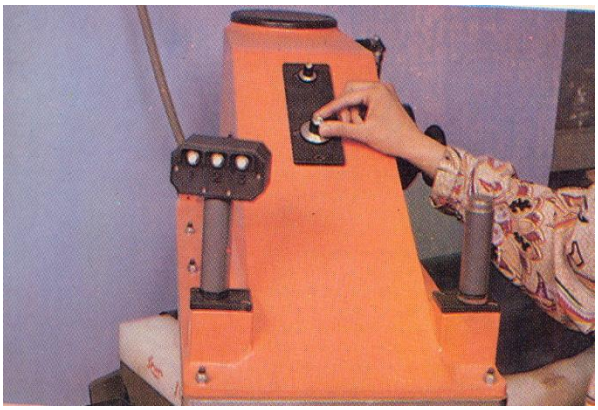


Fig1.7 If the knife cuts deeply into the nylon board reduce the pressure.

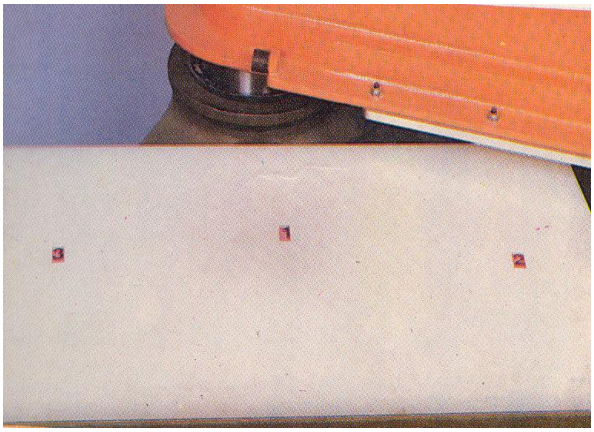


Fig1.8 Test the cutting depth in three different areas of the board.

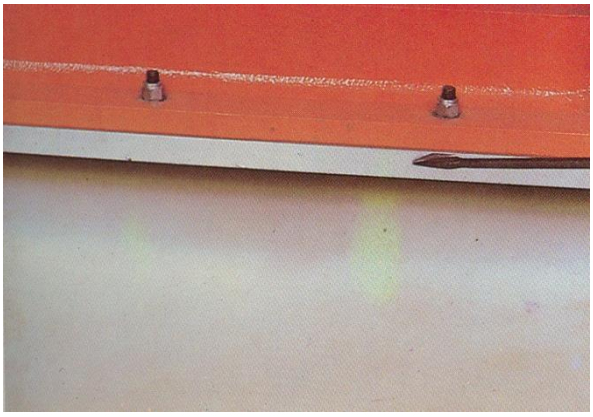


Fig1.9 this system can only be used if the cutting block and the aluminum plate are in good condition.

Fig1.10 If this system does not work adjust the cutting stroke pressure until you have minimum knife penetration into the board.

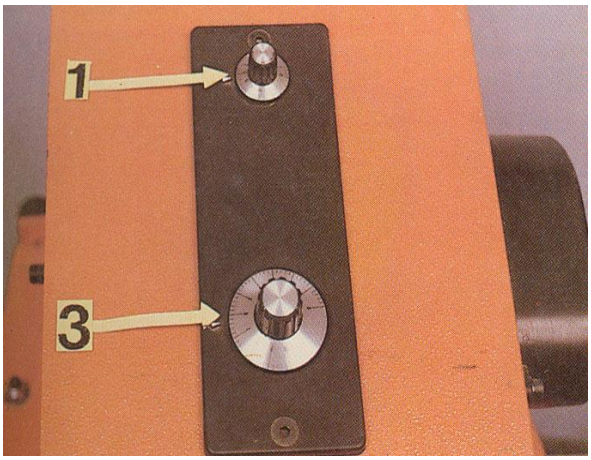


Fig1.11 Depth of the cut can be altered by button no.1 and button no.3.

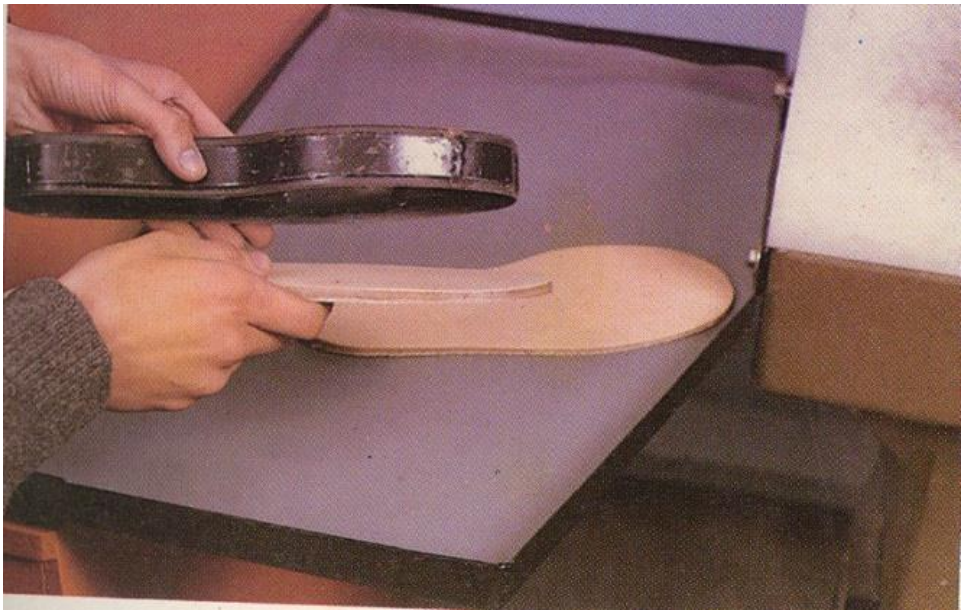


Fig1.12 Button No.3 or heavy cutting stroke button should be operated when an operator is using a large knife with heavy leather.

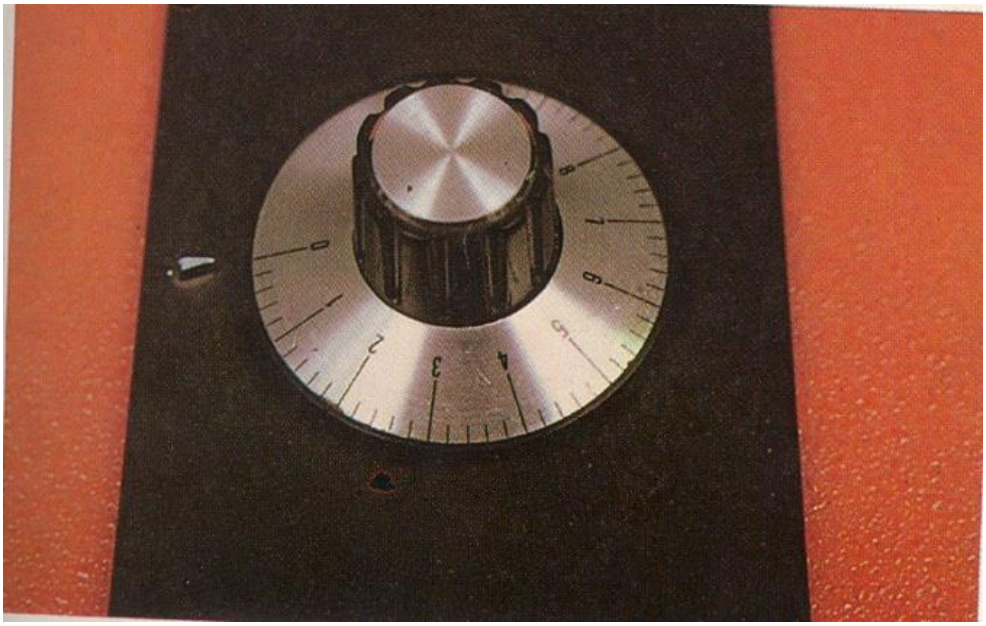
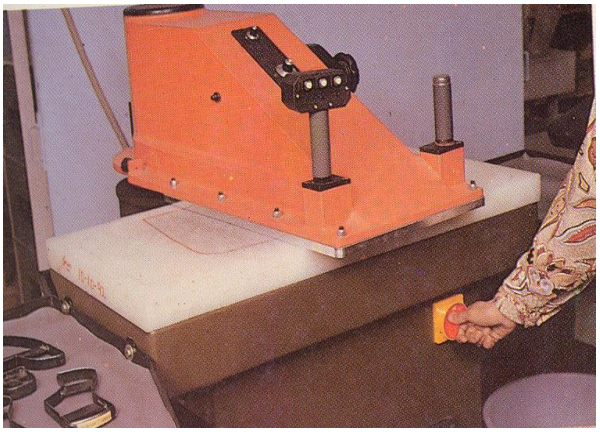
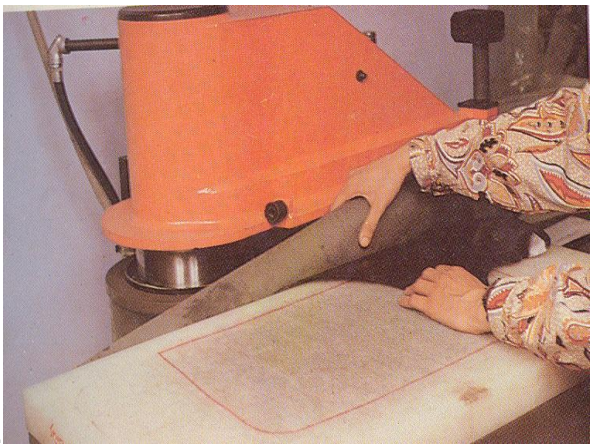


Fig1.13 The pressure control adjustment is completed by turning the lower potentiometer clockwise for extra pressure and anti clockwise for less pressure.

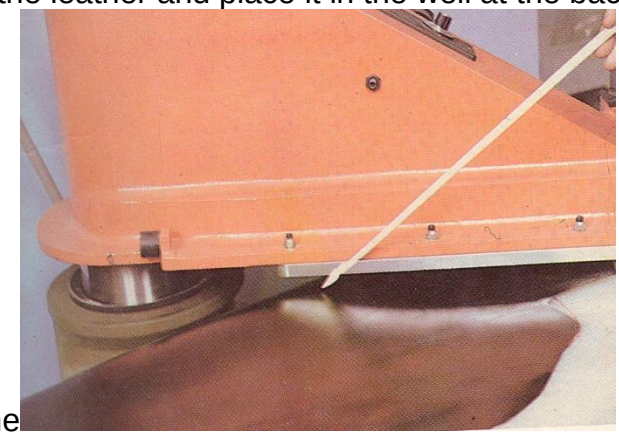
2.1.2Operating the Machine



Turn the machine on and wait for 2 to 3 minutes to allow the machine to circulate the oil.

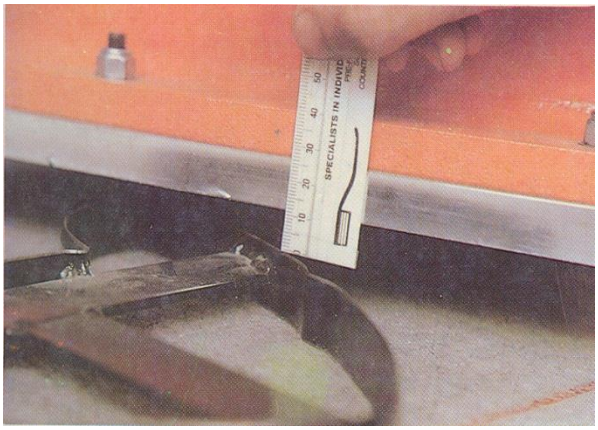


Select the leather and place it in the well at the back of the machine

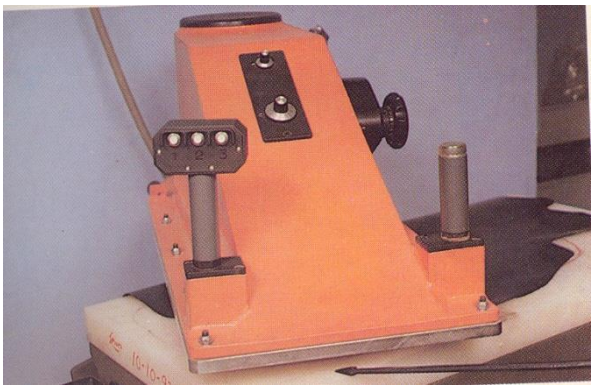


Bring the leather over the cutting board; care should be taken not to scratch the leather grain surface on the aluminum plate.

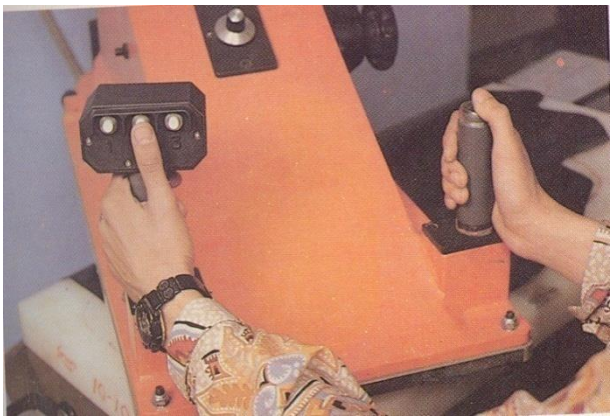
Select the required knife



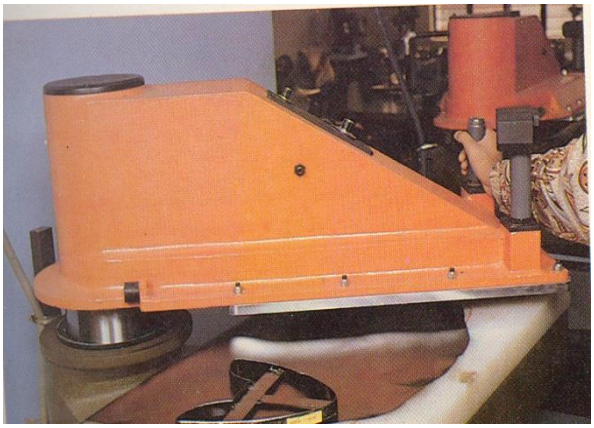
Adjust the pressure stroke being, if required, this should be a minimum of 10 mm above the knife and no more than 15 mm..



Adjust the pressure of the cutting depth if required. Swing the beam over the center of the knife

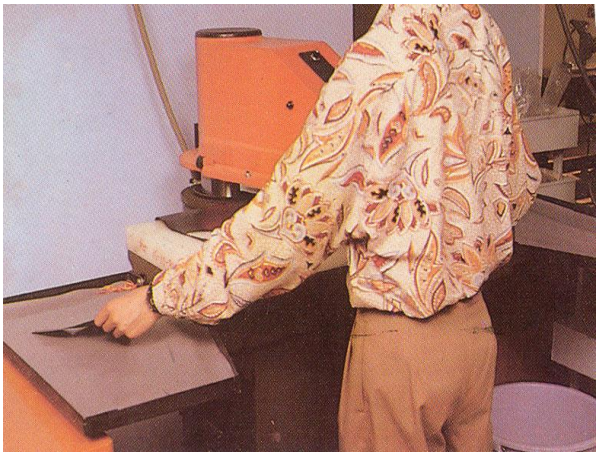


Press the selected button on the left hand control at the same time as you press the button on top of the right hand control. Hold the button down until you feel the press coming up.

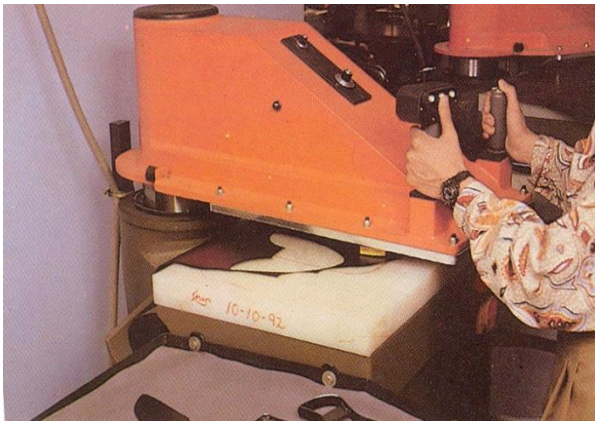


Swing the beam away from the knife.

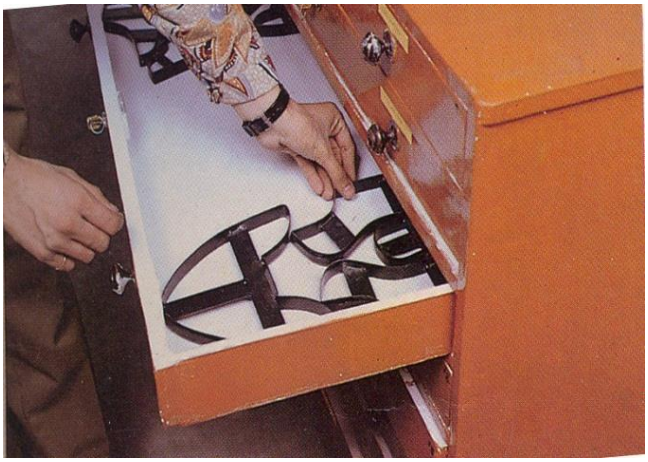
Pick up the knife and the cut component



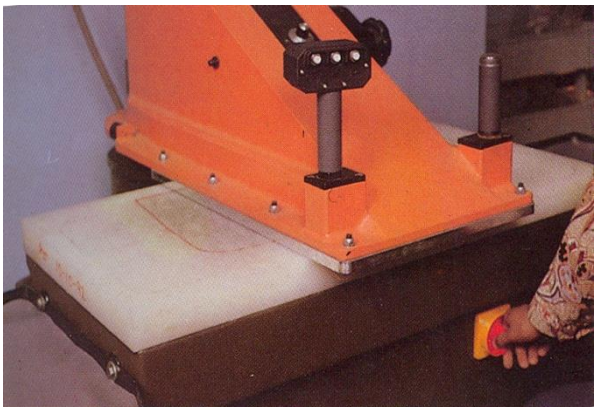
Place the cut component in an orderly fashion on the side bench.



Repeat the same procedure, change knives when required.

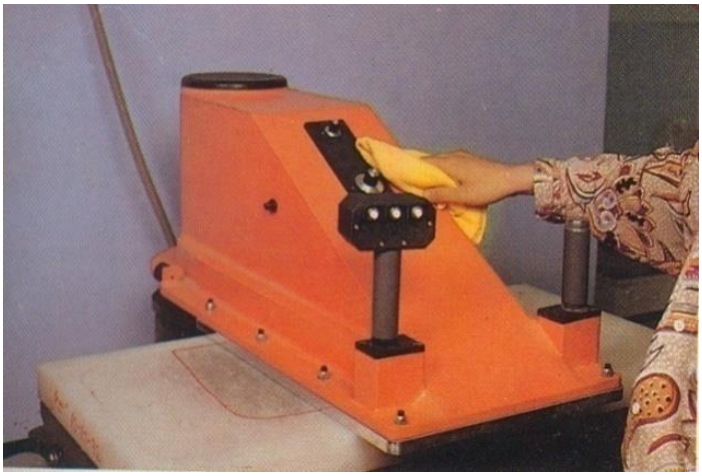


On completion of cutting, replace knife and leather.



Turn off machine. The machine will rest on the cutting block when turned off.

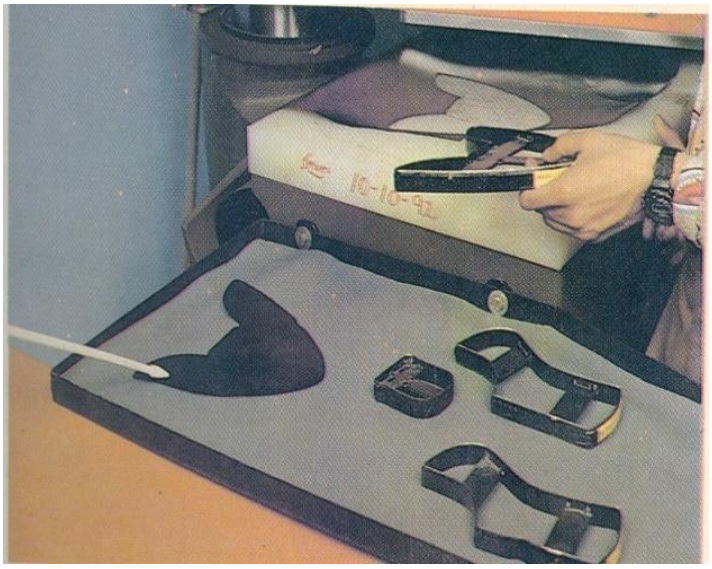
Pack and bundle cut components



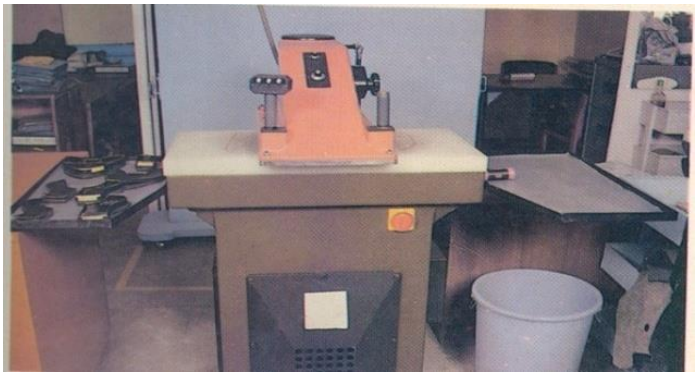
Clean down machine.

2.1.3 Bench Utilization

Bench usage will vary from clicker to clicker. Some clicker may be right handed, others may be left-handed.



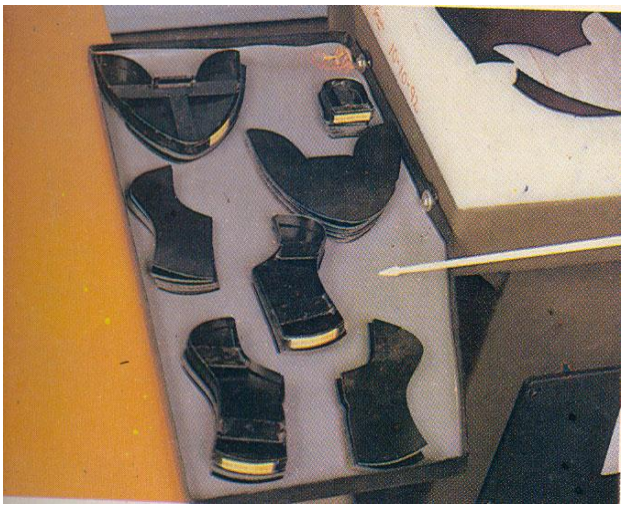
The main thing to remember is that the bench should be used in an orderly method.



Normally a clicker will favor one side of his machine either left or right.

The favored side he can place his main components, vamps and quarters.

On the opposite side the clicker may place his counters, straps, fingers etc. if the design requires them.



All work should be placed neatly and stacked for easy bundling.

Do not mix components; this only reduces output, each time the clicker's stops cutting output is reduced.

65% of a good clicker's time is spent on preparation and packing, only 35% of the time is actually used in cutting.

When cutting tongues, bars, etc. small jigs to hold the work will speed it up.

Do not try to count large numbers when cutting, find a method of counting. Example after each 10 pieces turn 45 degree to the last cut when stacking, this allows you to keep count of various components at the same time.


A. setting up and arranging work station for leather cutting

B. setting up and arranging work station for textile, insole board, shank board, foam and reinforcement material cutting

Self-Check 1	**Written Test**

Name: _____ Date: _____

Time started: _____ Time finished: _____

Directions: Answer all the questions listed below.

(Total marks 6*1=6)

One word answer:

1Write down the one main parts of the clicking mahcine. (1 mark)

2Write one points about the bench layout. (1 mark)

3What is the use of arm strock adjustment control. (1 mark)

4After turn on the machine, how much time we should wail for oil circulation.(1 mark)

Multiple choice

5During the arm stroke adjustment, what is the approximate clearance between the aluminum plate and cutting die? (1 mark)

a. 10mm -15mm b.5mm -10mm c. 15mm - 20mm d. 6mm – 8mm

6What is the ratio of time spent by a good clicker on preparation and packing to actually used in cutting? (1 mark)

a. 35% - 65% b. 65% - 35% c. 50% -50% d. 30% – 70%

Information Sheet 2_ Cutting equipments and patterns storage

Participants should be able to understand about Selecting and preparing cutting equipment such as cutting dies, layer cutting motorized knife and patterns according to work specifications and customer's instructions. Selection of dies for cutting depends on the type of materials such as Upper, Lining, Foam, Textile, Insole board, Shank board, Elastics, Inter-lining and Re-enforcements. All concerns activities help to participants to produce quality and productivity.

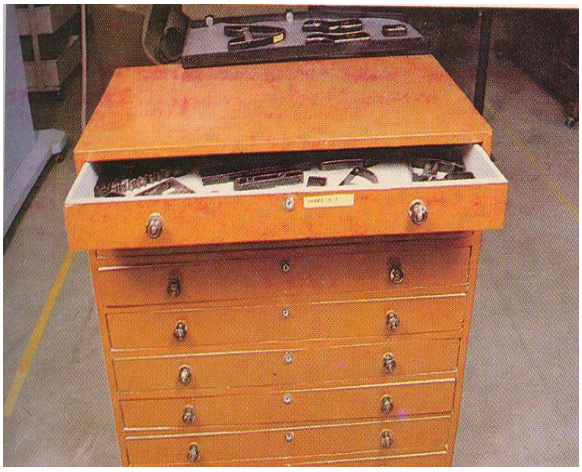
2.2.1. Storage of Knives

When knives are damaged through bad storage the cost can be quite high. The cost of replacement or repair plus the cost of lost production and often excess board wear must also be considered.

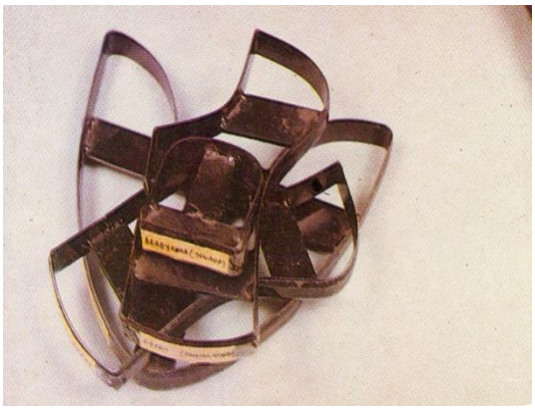
Knives can be stored in shelves or draws; these are normally specially made for this purpose.

Knife Racks

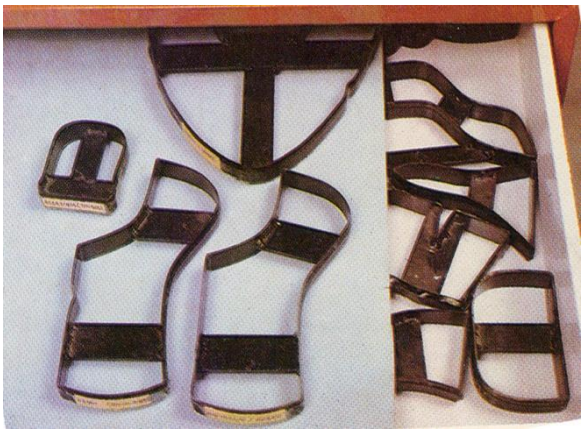
These do not have to be fancy, but can be made out of simple building methods.



The main storage method required should be such that no knife is placed on top of another. This reduces the life of the cutting blade.



If knives must be placed on top of each other they should have a layer of paper or cardboard between each layer.



This is especially important when packing knives away after order has been completed. They should be boxed and labeled to allow quick access and should not be damaged in storage.

Self-Check 2	Written Test

Name: _____ Date: _____

Time started: _____ Time finished: _____

Directions: Answer all the questions listed below.

(Total marks 8)

I Multiple choices:

1. Which type of height of cutting knife is suitable for leather upper and lining cutting?
   a. 50mm b. 32mm c. 19mm d. no difference among them
2. Before starting the cutting what should check in the cutting dies by the cutter?
   a. Cutting edge quality b. dimension c. design d. all
3. Before starting the cutting what should not be checked by the cutter?
   a. knives and patterns b. work tickets
   b. production samples and production guides d. none
4. Knife as per the edge can be:
   a. Single edge b. double edge c. both single and double edge d. none

II Fill in the blanks:

5. _____knives are used for punched designs
6. Knives can be stored in ----------.
7. ---------- we can cut right and left component from the same die which reduces the die cost.
8. While cutting by machine, mixing components reduces _____.

Information Sheet 3- Collection and sorting of the material

Participants should be able to understand how to collect, sort and lay out materials such as Upper leather, Lining leather, Textiles, Re-enforcements and Bottom components in preparation of cutting. All concerns activities help to participants to produce quality and productivity.

2.3.1 Collect, sort and lay out materials in preparation of cutting

2.3.1.1**Material collection:** It means the amount of the material issued to the clicker from the store for a particular order or plan. A work ticket is issued to the clicker. In this work ticket order no., color of the leather, sizes of the pairs, sizes of the skins, no. of the pairs to be cut etc. is mentioned. On the basis of this work ticket leather is issued to the clicker. Clicker collects the leather from the store.

Cutter's ticket

NAME OF THE ORGANIZATION
CUTTERS' JOB TICKET.
CUTTER'S NAME:-_____
DATE:-_____
MATERIAL:-_____
COLOR:-_____
GRADE:-_____ LAST NO:-_____
STYLE MODEL:-_____

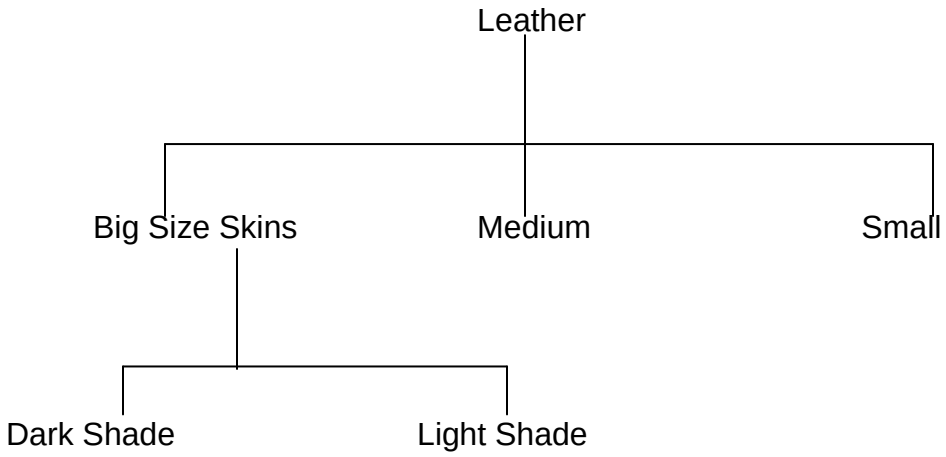
SIZE	PAIRS

MATERIAL ISSUED:-_____
MATERIAL RETURN/EXTRA:-_____
SAVED/WASTE MATERIAL:-_____

DEPARTMENT'S SINGNATURE:-

2.3.1.2 Sorting of Leather

Leather may be sorted for standard **size, grain and shade**. This increases his productivity. The sorting is done as follows:



Before starting cutting the cutter must check

1. Knives and patterns
2. Work tickets
3. Production samples and production guide

The perfect state of clicking dies has the important task at clicking out. At the check the clicker concentrate on

- ✓ Cutting edge quality
- ✓ Dimension (time to time the dies are checked with the master pattern in production)
- ✓ Design
- ✓ Faults

The material is put on the leather horse according to the following rules

- At first he can put thinner leather and thicker ones are put up.
- Color shades are put from the darkest to the lightest ones step by step (for an easier pairing).
- Whole leather is over loaded at the longitudinal axis by grain up and shifted out slightly.

2.3.1.3 Sorting of Textile

This term describes any-woven or knitted material. Yarns used for weaving and knitting are of natural origin, such as cotton, wool or linen, or a host of synthetic yarns, such as viscose, nylon, etc. Some fabrics are made of a blend of natural and synthetic fibers. All textiles used in shoe production must be backed with another material, usually cotton sheeting or drill, or double-woven in such a way to provide the necessary weight or thickness required of shoe uppers and linings.

- **In shoe uppers:** There is a wide variety of non-coated fabrics used for shoe uppers. Textile fabrics such as cotton duck, corduroy and denim are in great demand for rubber-soled shoes and sneakers. Nylon straw and mesh find their place in summer shoes for men, women and children. Textile fabrics are also used for many types of slippers. Fake furs that are essentially a textile product imitating sealskin, leopard and a host of other animal skins, are used in winter footwear.

- **In Linings:** The most commonly used vamp lining fabric for women's dress shoes used to be a textile fabric known as faille. Today, because of the demand for softness in footwear, nylon tricots backed by foam, are now the most commonly used women's footwear linings. They have a padded or soft feel. The use of cotton drills for the vamp linings of men's and boy's shoes are still common practice.

2.3.1.3 Sorting of reinforcement

Reinforcements are used to give extra strength to the weaker areas of the shoes, which are prone to failure. In shoe making reinforcement are small pieces of leather or other material or tapes which are stitched to the upper between the upper shell and lining shell to strengthen the points where strain and wear are greatest for example, the top lines, back seam, Punches and derby stay etc.

Different types of reinforcements are available in percent shapes or tapes and sheets to suit the different category of footwear. Now days various materials like nylon, Polyester, Cotton, Paper etc are being used as reinforcement for footwear. Reinforcements are available in different width and colors and thickness of reinforcement may vary from 0.2mm to 0.5mm. These may be either pressure sensitive or heat sensitive or self-adhesive and may be woven, non-woven, knitted or braided.

Need of reinforcement

As the name implies, reinforcements means adding strength or reinforce the material to which they are attached. Their purposes are as follows:

- Reinforces the material to which it is attached.
- Adds strength to the material, thus ensuring durability.
- Helps in overcoming shoemaking problems by preventing stretching of material.
- Helps in retaining the appearance/ shape of the shoe.
- Enhances the final get up and appearance of the shoe.

Choice/type of Material for reinforcement depends upon many factors

- Material of upper
- Style of upper
- Possible areas for reinforcement in relation to design and function.

2.3.1.4 Bottom component

This is a term which refers to the whole of the bottom of shoe as opposed to the upper. It generally includes some of the following, depending on type of construction.

a. Insole

b. Sole.

c. Welt.

d. Bottom fillings.

e. Heel, heel lifts and top piece.

COMPONENTS: This is collective term which is used to describe items which is in Corporate in shoe and includes the following.

a. Toe puff.

b. Stiffener.

c. Shank.

d. Socks

Self-Check 3	**Written Test**

Name: _____ Date: _____

Time started: _____ Time finished: _____

Directions: Answer all the questions listed below.

(Total marks:-8*1=8)

Test I: Fill in the blanks:

1. Leather may be sorted for standard ----------.

2. Before starting cutting the cutter must check ----------.

3. ---------- are used to give extra strength to the weaker areas of the shoes.

4. ---------- is the property of leather.

Test II: One word answer:

1. One the basis of what document the clicker knows about the detail of cutting.
2. Write down the name of one bottom component.
3. What is the use of reinforcement?
4. On what basis leather is sorted.

Information Sheet 4- Maintain records

participants should be able to understand how records are maintained concerning upper material consumption, number of pairs cut, lining material consumption, other material consumption, productivity of upper cutting, productivity of lining cutting. All concerns activities help to participants to produce quality and productivity.

For both establishing the initial cost of style and to control the consumption of material by the clicker it is necessary to determine the amount of material required.

It is important to get an accurate figure because:

1. The upper is typically the largest single item in the cost of materials of the shoe and sufficiently accurate figures are needed to set material consumption allowance for product development, product costing, material requirement planning.
2. The profitability of the company depends on accurate costing.
3. The consumption allowance relating to a batch for a clicker to cut is called.

2.4.1 Clicker allowance can be used as a basis for payment by results on "Leather saved" against the allowance by the clicker.

Any system for predetermining the material consumption allowance needs the following attributes:

1. Consistency between styles and shoe sizes.
2. Consistency between material types.
3. Sufficient accuracy to be used as a standard against which cutting results can be compared so that steps can be taken to eliminate excessive wastage.

2.4.2 Work Order Sheet

The most important document is the work order sheet. This document gives the details of the buyers order and for the companies. 'The current order position'. The planning department of the organization to prepare this keeping the customer's priority listed. The order is broken down to the pair's basis. The delivery dates are also mentioned to ensure that goods are required to be delivered on time.

2.4.3 Lot Number

To follow the safeguard and convenience during shoe production is to divide the complete shoe order in to the quantities or lots as per the dispatch schedule. This is because of:

- Buyers are very rear asks for the whole order quantity at once,
- Different destination suggested to ship,
- Storage cost or any damage against heavy loading unloading.
- Payment releases and
- Working capital.

The planned dispatch quantities of shoes are divided in to the small lots and Lot No is allocated accordingly. The Lot No is stamped over the components edges or (suitable area), which helps to recognize the component against any happening during production.

Example
Suppose on Ist January, 5000 pairs of shoe uppers order has been received from buyer, which is to be dispatched according to following:

- Pairs 500 to be dispatched by 31st January,
- Pairs 500 to be dispatched by 31st March,
- Pairs 1200 to be dispatched by 3oth April,
- Pairs 1400 to be dispatched by 31st May,
- Pairs 1400 to be dispatched by 3oth June,

Now for the convenience during the production is to divide the Ist dispatch quantity in following ways:

- Order break up of first 500 pairs will divided in to five equal lots.
- One Lot of 100 pairs (even number) is considered suitable for calculation purposes during recording and planning.
- Serial all the concerns Lots in numbers like 1, 2, 3, 4 and 5 (100 each).

This 100 pair Lot is allocated further by providing numbering in following ways:

- Take lot number one of 100 pairs and start planning the serial number from one to hundred.
- Material to be issued for cutting will be according to the lot number one.
- Stamping done on above lot material will be given as serial number like **order number/article number/size/lot number/serial number.**

2.4.4 Plan Sheet

The work orders are broken in to plans. This typical plan sheet indicates breaking up of the order in to small lot. Usually the production is broken down in to small lots of 10 pairs in

every size though; the lot size is variable from company to company. The breaking of the order is necessary to track the pairs and ensure that the pair mix-up is not taking place. Also the company – for the buyer they remain in the fair position to check that whether the orders are reaching on time or in case of delay how much delay can occur.

The plan sheet depicted indicated here shows the article/design details for tracking and then breakup of the plan.

Note

- The size break up is 10 prs. Per size.
- The plan number cannot be repeated within the order no. and article number.
- The article number can be alfa – numeric.
- Each plan contains equal number of pairs.
- The issue of the material has to be plan wise only depending on the day's capacities.
- The daily lot has to be completed.

Sheet (Daily Plan production)

Date	8.30 9.30	9.30 10.30	10.30 11.30	11.30 12.30	Total Production	1 to 2	2 to 3	3 to 4	4 to 5	Total Production
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										
Total										

2.4.5 Work Loading Chart

1. Based on the planning sheet the daily loading chart is prepared this is necessary for loading the individual workstation.

2. The example shown here is for the daily load plan for any workday. For the preparation of the day plan following things are required :

- Capacity of the department

- Individual department's capacity
- Availability of the material
- Capacity of the individual cutter
- Size assortment to be cut
- Delivery dates
- Types of material to be cut on individual machine
- Skill of the operator.

4. Based on the individual capacities of the workstation the loading is carried out. You may note that individual sizes (big and smaller sizes) are mixed together. This is done to save the material.

5. This is merged with the plan. Therefore the cutter will have to cut 10 plans. Each plans containing the 10prs. Of the individual plan. Number e.g. 001 (pl. refer plan sheet). There fore 10 plans of the 10 prs. Each is given accounting to 100 prs.

6. The clicker cuts the material as per the plan. The cutting ticket shows the plan numbers to be cut. That is the reason why lots are accepted in 10 prs. The qc personnel marks this out (the plan number) and the checking is carried out as per the plan number work allocation.

2.4.6 Specification Sheet:

Generally specification sheet is designed according to the order sample and maximum time it is sent by customer along with the order sheet. This helps in identifying the material concern for the shoe upper to be made and dictate all production terms as per the sample. This is a kind of agreement between buyer and manufacturer regarding deal of particular products.

Manufacturer cannot neglect the given specifications during making the shoe and buyer will have to accept the related product, if it is to be made according to the specifications given. Specification can be of regarding following types:

- Material specifications,
- Technical specifications
- Machinery specifications,
- Method specifications and
- Packing and dispatch specifications.

These specifications are collected from the buyer and recording has been done at various levels of the system. All the concerns information is sent to the respective departments and

necessary considerations are taken care of. Transparency is made at all levels of production for the necessary specifications to be followed and necessary steps are taken for the remedial action.

2.4.7Clicker/Cutter's Ticket

The clicking ticket is prepared after preparing the load chart. This is prepared as per the load chart. Changes may occur in case of absentees of the operator or certain priority orders.

This is made on accounting principles. The amount of the material required as well as issue quantity is also mentioned. The amount of the material returned is credited to the cutters accounts.

This also shows the sizes to be cut along with article details and materials to be used. In some cases die numbers are also mentioned. It is better to mention quality requirements on the cutting tickets to ensure that the quality remains addressed in all respects such as shade matching, defects, or grain matching.

Cutter's ticket

NAME OF THE ORGANIZATION
CUTTERS' JOB TICKET.
CUTTER'S NAME:-_____
DATE:-_____
MATERIAL:-_____
COLOR:-_____
GRADE:-_____ **LAST NO:-**_____
STYLE MODEL:-_____

SIZE	PAIRS

MATERIAL ISSUED:-_____
MATERIAL RETURN/EXTRA:-_____
SAVED/WASTE MATERIAL:-_____

DEPARTMENT'S SINGNATURE:-

2.4.8 Demo Layouts

Demo layouts are used to explain the operators that how the cutting process is to be followed this helps the operator to understand the quality requirements as well as the allowances.

The simple process that is explaining on the board or tracing one skin with actual patterns is the commonly used method. The operators usually follow this before cutting.

2.4.9 Quality Report

The quality reports are prepared for the control of the defective pieces going through the process thereby preventing the production of the defective footwear. This is required to be carried out for the 100% inspection, unless such is not the case (cutting of the synthetics).

The QC report is prepared in accordance of the work plan and load chart. In inconsistency is noted therefore preventive actions are initiated to prevent the reasons. Cause analysis helps the company to prevent future happening or higher rate of rejections.

2.4.10Dispatch Report

Dispatch records are maintained to ascertain that how much work is completed against the load schedule. The QC passed complete uppers are only entered in the dispatch record .This is recorded as per the plan number and work allocations.

Date	Dept.	Order No	Article No	Plan No	Size	Input (Prs)	WIP (Prs)	Rejection (Prs)	Output (Prs)	Packing (Prs)

READING A WORK TICKET

The clicking tickets can vary from company to company. The one explained here is only a demonstrative example.

There are two requirements of a clickers work ticket:

(i) To give clear cutting instructions.

(ii)To control material usage.

(i) <u>To give clear cutting instruction:</u>

When an order is received from the buyer the order may be broken in to economical cutting or planning reasons. The wok ticket that is issued to the clicker should never be more than one day's work and should also contain mix sizes.

(i i) Material Control:

This area of the ticket records material usage.

- **Calculated:** This is the amount of material that is cost to complete the work.
- **Received:** This is amount of material actually received by the clicker to complete the work.
  - ✓ QTY. The quantity of material issued by the store this will vary from the calculated quantity as the store may issue various grades of leather.
  - ✓ Price per unit in DM2 OR SQ. decimeter or mtr sq. for the grade of leather that has been issued 4TH grade leather would be cheaper than 1st grade leather.
  - ✓ R-Calculated value of material issued.
- **Returned:** This portion of the ticket records in the same way as previous. However care should be taken that the material returned by the clickers credited at the correct grade and price.
- **Calculated:** This is used to give a total loss or profit result for the order.

By keeping records of orders an assessment of each clicker is possible daily, weekly or monthly basis.

Self-Check 4	Written Test

Name: _____ Date: _____

Time started: _____ Time finished: _____

Directions: Answer all the questions listed below.

(Total marks 8*1=8)

Test I: Short answer questions:

1. What are the two requirements for maintaining the records? (1point)
2. What is clickers' allowance? (1 mark)
3. What is the use of work loading chart? (1 mark)
4. What is indicated in the plan sheet? (1 mark)

Test II: Fill in the blanks

5. The work orders are broken in to plans. (1mark)
6. ----------gives the details of the buyers order and for the companies. (1mark)
7. ---------- is designed according to the order sample and maximum time it is sent by customer along with the order sheet. (1mark)
8. Delivery date is also mentioned in the ----------. (1mark)

LG #39	LO #3- Materials are assessed against job specifications

Instruction sheet

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

- Materials are assessing against job specifications.
- Finishing of materials is checked for defects that may impact to cutting.
- Materials are sorted according to color or shade and other specifications

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Materials are assessed against job specifications
- Materials are checked for defects that may impact to cutting
- Material are sorted according to size, color, grain, shade, nap and other specifications

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the "Information Sheet 1".
3. Accomplish the "Self-check 1" .
4. If you earned a satisfactory evaluation proceed to "Information Sheet 2". However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #2
5. Submit your accomplished Self-check. This will form part of your training portfolio.
6. Read the information written in the "Information Sheets 2".
7. Accomplish the "Self-check 2".
8. If you earned a satisfactory evaluation proceed to "Information Sheet 3". However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6
9. Read the information written in the "Information Sheet 3".

10. Accomplish the “Self-check 3”.

11.Request you teacher to observe your demonstration of the exercises and give you feedback.

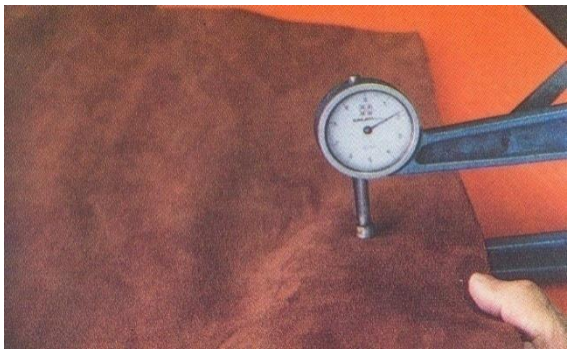
Information Sheet 1- Materials are assessing against job specifications

3.1 Material assessment

3.1.1 Assessing of leather

(a) Substance/thickness

The thickness of the leather is measured comparing with the reference sample leather and with the help of thickness gauge.



(b) Finish appearance

The finish appearance of the leather is checked by comparing with the reference sample leather or shoe.

(c) Feel/softness and stretch

Feel/softness of the leather is checked by filling up with palm with it at different places and comparing with the reference sample leather.

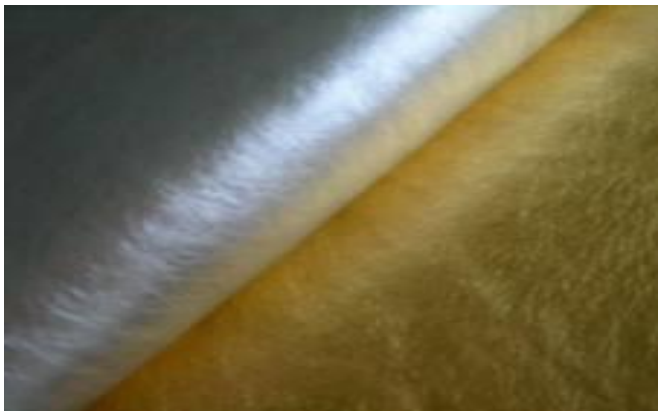
(d) Color

Color of the leather is checked by comparing with the reference sample leather or shoe.

3.1.2 Assessing of leather fabric

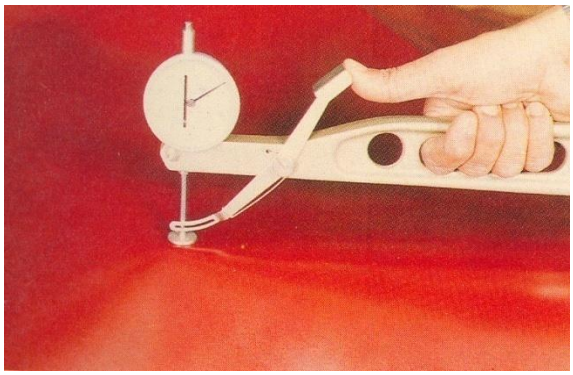
a) Color

Color of the fabric is checked by comparing with the reference sample fabric or shoe.



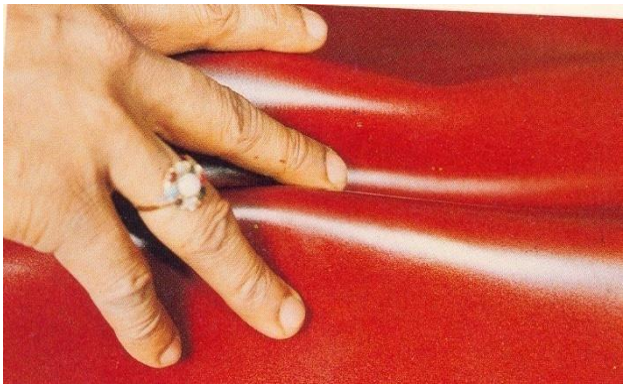
b) Substance/thickness

The thickness of the fabric is measured comparing with the reference sample fabric and with the help of thickness gauge.



C) Feel/softness and stretch

Feel/softness of the synthetic is checked by filling up with palm with it at different places and comparing with the reference sample fabric.



3.1.3 Toe –puff and counter stiffener material

Toe puffs:-is inserted in between the toe portion of a shoe the toe portion of the shoe upper and the lining. Toe puff preserves the toe shapes and protects the front portion of the foot. A toe puff material is to produce toes that are either soft and flexible or firm and extremely resilient with excellent shape retention in wear. Toe puff are produced from vegetable tanned leather, leather bored, polystyrene impregnated fabric, rubber **Leather** impregnated fabric and thermo plastic material

Vegetable tanned leather from shoulder or belly is split to the required thickness wetted and applied to the upper by an adhesive latex gum starch paste. Leather toe puff is strong durable but takes longer time to dry and costly

Nitrocellulose impregnated fabric

Woven cotton fabrics with a Napa non-woven needle fabric from a blend of synthetic fabrics are impregnated by a solution of nitrocellulose is precipitated on the fabric as discontinues particles dried and rolled into sheets. The toe puff is activated by a solvent using acetone and industrial spirits.

Polystyrene impregnated fabric

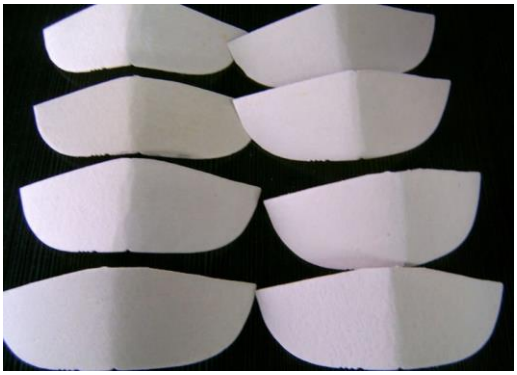
The fabric is impregnated by polystyrene using a solvent based impregnate.

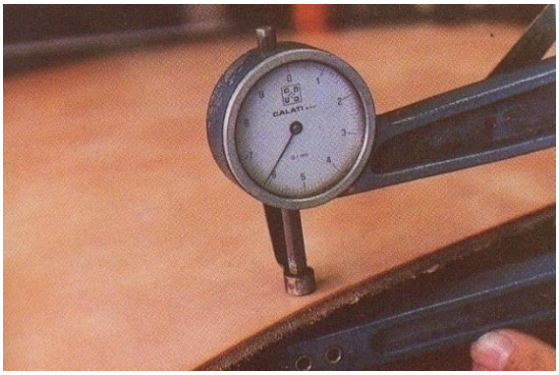
During attachment it is activated by a solvent containing toluene. Thermoplastic toe puffs these toe puff are made from (A) un vulcanized rubber fabric (b) synthetic fibers impregnated with styrene butadiene rubber lattices (C) poly chloroprene rubber lattices. The toe puff is given a coating of hot melt adhesive of EVA. Toe puffs are available at different thickness varying between 0.60mm to 1.7 mm. they are cut in multiple layers on the bias with the adhesive side on the top. The material is skived on the cylinder knife heavy duty skiving machine, or with silicon based lubricant applied to the ball knife edge. (D) styrene/acryl ate copolymer. Thermoplastic toe puffs are heat activated and applied under pressure**.**

- ✓ **The basic types of toe puff used by the footwear industry are:**

Paint on liquids

- ✓ Impregnated Fabrics
- ✓ Thermoplastic /Thermo adhesive (heat activated)
- ✓ Solvent activated
- ✓ Print on Hot-Melt Resin
- ✓ Steel toe cap and etc.





3.1.4 Stiffeners

Stiffeners or counters are attached in between the upper and the lining at the back part of the shoe. Stiffener imparts snug fit to thee foot and prevents the shoe from slipping. A stiffener should be stiff resilient moisture break down, give a soft flexible and firm back part in the finished shoe. It should also have excellent molding characteristics.

Materials used for stiffeners vegetable tanned leather, leather board, fiber board solvent activated plastics and thermo plastics and thermoplastic. Leather and leather board after cutting to shape is reduced to required thickness, bonded to the upper by latex or neoprene based adhesive.

Fiber board stiffener is polished and coated on both sides by a thermoplastic adhesive. These are pre molded to the shape of, the counter of the last, attached to the upper under heat and pressure.

Thermoplastic stiffeners

Non –woven needle fabrics made from a bland of synthetic fibers are impregnated with styrene copolymer containing plasticizer. The material is coated with hot melt EVA adhesive.

Solvent activated stiffeners

Non- woven needle fabric, from a blend of synthetic fibers and impregnated with polystyrene based synthetic latex. The counter is conditioned using a suitable polystyrene softener attached to the upper under pressure and lasted while still, there is solvent present in it. The solvent activated stiffeners are used mostly in tack lasted shoe leather bored stiffeners for welted high grade women's shoes and thermo plastic stiffeners for all types of footwear.

Apart from the materials used which are similar to that used for toe puff except for the thickness, leather board can be used. There are three types of stiffener:

- ✓ Flat stiffener
- ✓ Semi-molded stiffener
- ✓ Fully-molded stiffener

Stiffener can be:

- ✓ Solvent dipped
- ✓ Thermal activated
- ✓ Pre molded leather board

Self-Check 1	**Written Test**

Name: _____ **Date:** _____

(Total marks:-8)

Instructions: **Write all your answers in the provided answer sheet.**

Test I: Fill in the blanks

Directions: **Answer all the questions listed below.**

1. ---------- is produced from the young ones of cow or buffalo(Mark:-1)
2. ----------are produced from cattle.(Mark:-1)
3. ---------- are from milk fed young ones of a goat having an area of --------(Mark:-1)

4. ----------have loose fibrous structure, loose grain surface and light substance with a soft feel.(Mark:-1)

5. ---------- have an area of 4 to 8 sq.ft with a coarse fibrous structure(Mark:-1)

6. ---------- have good strength and low elongation at break.(Mark:-1)

7. ----------are attached in between the upper and the lining at the back part of the shoe(Mark:-1)

8.The fabric is impregnated by ---------- using a solvent based impregnate. (Mark:-1)

Information Sheet 2- Finishing of materials is checked for defects that may impact to cutting.

3.2.1Leather defects

Leather is an incredibly wonderful natural fabric that's been used for thousands of years. No man made material has been able to surpass the natural beauty and toughness of leather but there are defects which may be caused during the life or after death of an animal which may finally appear on finished leather. Some of the common leather defects are listed below: Every skin of an incoming shipment of upper leather is examined for possible defects.

Types of Fault & surface defects of leather

1. Fig2.1 Flay cuts or butcher marks-These cuts are on the flesh side of the skin & usually trimmed off.

2. Fig2.2Patchy coloring- It's due to the size of the nap.

3. Fig2.3Strength- Full strength of suede split.

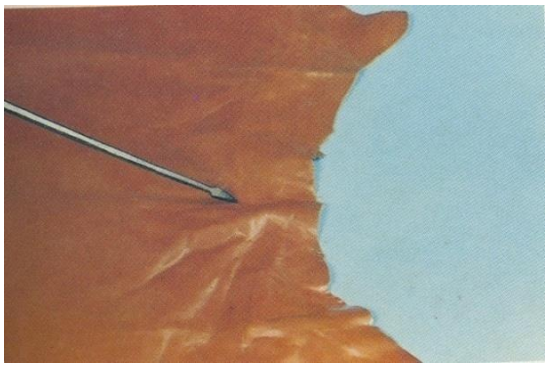
4.Fig2.4 **Scratches or Blemishes in the Grain: -** one of the most common damages of hide and skins is the grain scratches and tears. The main causes are barbed wire, nails, thorns, horns, etc. which encounter the animals during their grazing time, fighting each other or rubbing of the animal to get relief from insect bites, sores, etc.

5.Fig2.5 **Brand Marks in Butts: -** is burning of the hide/skin protein with a red hot iron. The animals are normally burned so deep that the scar tissue forms through the skin and the brands are visible on the flash side. Brands are made.

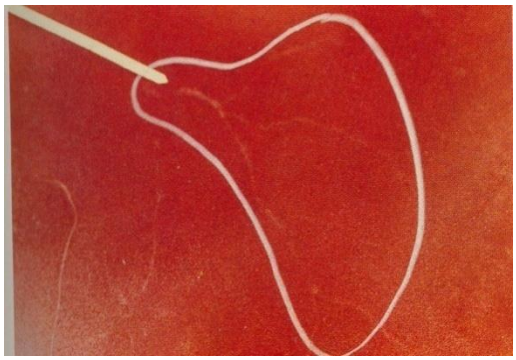
A. As a sign of ownership.

B. As a cure from disease.

4. Fig2.6 **Growth Marks in the Neck**

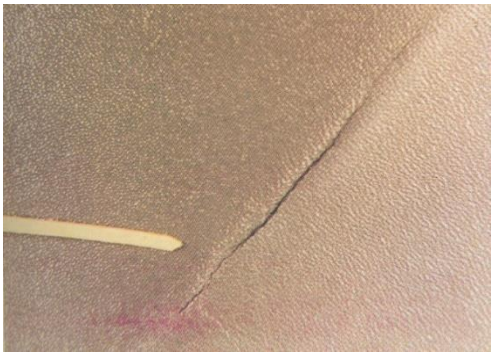


5. Fig2.7 **Loose Flanks**



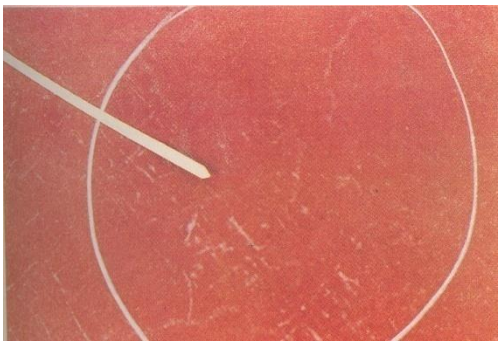
6. Fig2.8 **Vain Marks.**

Vainness in which branching lines of blood vessels can be seen on the flesh side. (If, because of poor curing or old age, for example, the structure around them becomes loose, the skin is said to be veiny, and the branching pattern of the veins usually shows through on the grain side.

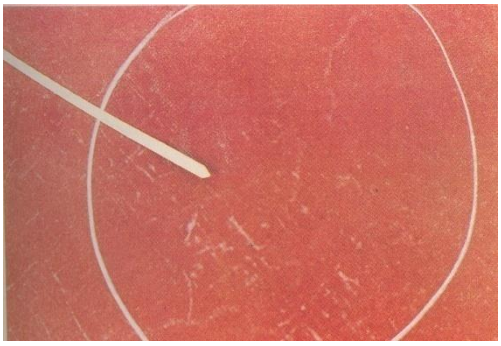


7. Fig2.9 **Flay Cuts**:- these flaying defects reduce considerably the value of a hide (skin). The damages can all be avoided since they are caused by carelessness or flaying by inexperienced person or by using improper tool.

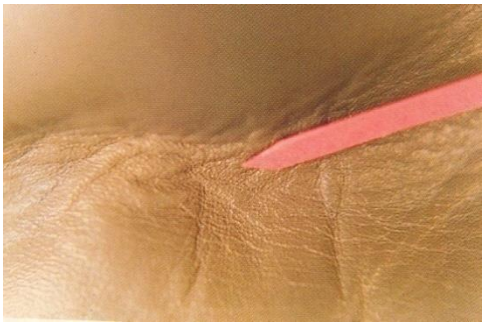
10. Fig2.10 **Stain Marks on Reverse Side, if used for Unlined Shoes**



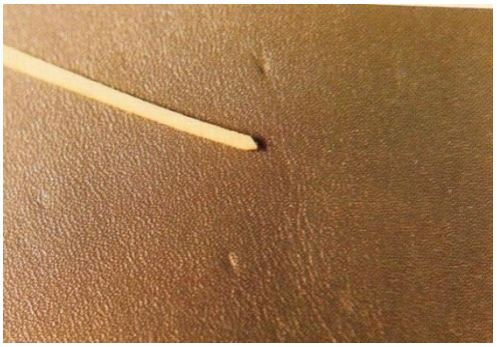
11. Fig2.11**Coarse finish**



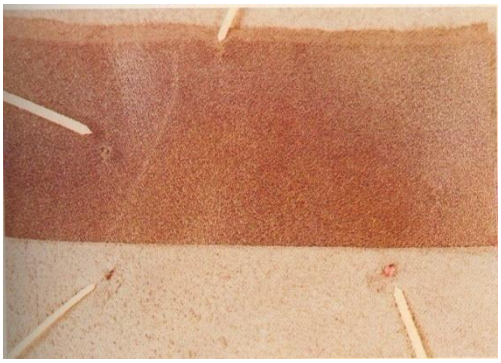
12. Fig2.12 **Heavy Break**



13. Fig2.13 **Tick Marks:-** leave scars or pits on the hide (skin) or on the finished or semi-finished leather. Rubbing to get relief from the itching leads to grain scratching or tearing and secondary infection. Ticks usually attack the tender part of the skin/hide (bellies). Grain correction cannot remove all damages.



14.Fig2.14 **Warble Holes: -** The larvae of the warble fly known as grab live in the flesh and lower depths of the corium makes holes through the hide for breathing and later on for escaping from the animal. Warble flies are found in hot countries**.**



14. Fig2.15 **Loose Fibers**

Parameters of checking leather defect

1. Fig2.16 closely looks at the leather for the defects, these include surface marks, flay cuts, loose offal, and mark these areas lightly with white pencil.

2. Fig2.17 Check the flesh side of the skin for warble holes & flay cuts.

3. Fig2.18 Check for the correct line of tightness, this will vary from skin to skin.
4. Check the components to make sure that all the patterns are there, if you are missing a pattern you may find it impossible to grain match later.
5. Ensure that your workbench is clean.
6. From your cutting sheet always when possible start cutting with the largest size pattern & the larger skins. This will give you better material usage.
7. Using a suede split this skin is regarded as perfect i.e. no flay cuts, brand marks etc. As you are laying out the skin keep in the mind to lay the components in pairs, left & right, inside or outside. This is imperative because the finished skin must be in pairs of complete upper.

Lining leather

Color and thickness should match according to the specifications. Color of all the components should match in each pair. Thickness of all the components also in pair should match with each other.

INSOLE BOARD:

1. No uniformity of thickness
2. Creaking due to moisture
3. No flexibility
4. No resistance to shrinkage or growth
5. Dust and dirt on the board
6. No ability to hold tacks adhesives or stitches.
7. More bulky

FACTORS OF DETERIORATION:

Deterioration is a change of original state of any material by interaction between the object and the factors of destruction. The different types of deterioration of the cellulose board materials are reflected in wear and tear, shrinkage, cracks, discoloration, abrasion, hole, dust and dirt etc.

Humidity and Moisture: - Humidity is the amount of moisture in the atmospheric air. The moisture is measured in terms of relative humidity. All organic objects absorbs water to a greater or lower extent and the water goes inside the object through surrounding air. Because of this absorbency property, the fiber board absorbs more moisture when there is high humidity. Certain amount of humidity is necessary for the flexibility of fiber board but in prolonged high humid condition, board becomes wet and the moisture weakens the fibers of board.

Dust and Dirt: - Fine dry particles of any matter present in the air are known as dust. Since dust is air borne it settles down on any surface of the object

HEEL:

a. Not good quality finish.

b. Color not matching.

c. Cracking on attachment.

d. Last bottom profile not match with heel

e. Size not matching

f. Inadequate pin holding strength

Toe puff and stiffener sheet

1. No uniformity of thickness.
2. Less tack retention.
3. No ability to survive molding and shape retention.
4. Skiving problem.
5. Coating of adhesive not good.

SHANK

1. Variation of thickness
2. Strength or performance
3. Length & width problem
4. Shank design not match

Self-Check 2	Written Test

Name: _____ Date: _____

(Total marks:-10)

Instructions: **Write all your answers in the provided answer sheet .**

Test II: Fill in the blanks

Directions: **Answer all the questions listed below.**

1. ---------- are on the flesh side of the skin & usually trimmed off. (Marks 1)
2. Patchy coloring is due to the size of the ----------. (Marks 1)
3. ---------- in Butts is burning of the hide/skin protein with a red hot iron. (Marks 1)
4. Check the flesh side of the skin for ----------. (Marks 1)
5. Check skin for the correct ----------, this will vary from skin to skin. (Marks 1)
6. ----------is the amount of moisture in the atmospheric air. (Marks 1)
7. ---------- is a change of original state of any material by interaction between the object and the factors of destruction. (Marks 1)

8. Fine dry particles of any matter present in the air are known as ---------. (Marks 1)
9. ----------leave scars or pits on the hide (skin) or on the finished or semi-finished leather. (Marks 1)
10. ---------- in which branching lines of blood vessels can be seen on the flesh side.(Marks 1)

Information Sheet 3- Materials are sorted according to color or shade and other specifications

3.3.1 Leather sorting

Leather is the most suitable Material for uppers, linings, insoles, outsoles, heals toe puffs and stiffeners. Leathers for foot wear are commonly produced from calf, cow buffalo, kid, goat and sheep. Most high quality shoes sold today are still made of leather just as they have been for centuries. Leather is still the material of choice for its durability and flexibility. Some leathers are more desirable than others and in this article we will go over some of the qualities of different leathers and how they are used.

Full grain side leather: - which is used to make the uppers for shoes is one of the most versatile of all leathers as well as being the most common. This type of leather is very durable and malleable while possessing the other desired characteristics of leather such as breathability.

Corrected grain leather: - as the name indicates has had the surface grain either partially or completely removed due to the fact that the tannery has deemed that the hide has too many natural hallmarks on the surface. This of course would reduce the cutting efficiency of the hide so the tannery will buff the surface and then apply a simulated grain to the surface after the pigmented finish is applied. This improves the durability of the surface. When

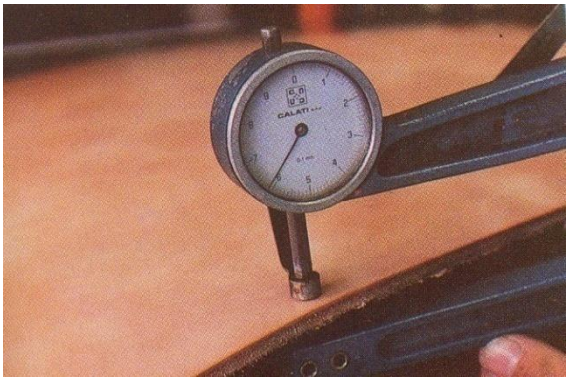
produced by a tannery experienced in the manufacture of leather, corrected grain leathers can be expected to give excellent service.

Nubuck leather is a type of leather with a soft, velvety surface and is some of the most expensive leather to purchase. Unlike the less expensive suede, Nubuck leather is far more durable and is excellent for use in shoe because it will last much longer than suede.

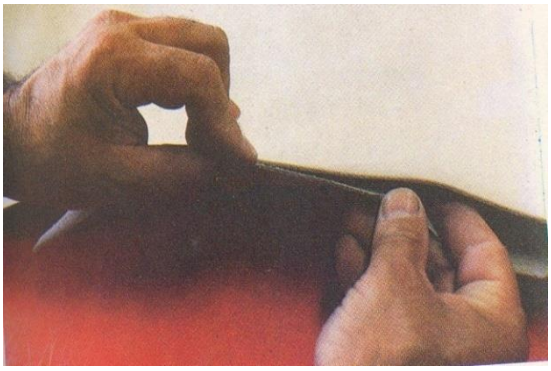
Suede is produced from the under layer of the hide that has been split. The split side is aniline dyed and buffed to create the typical velvety effect. Suede splits are used in shoes, garment and handbag industries.

3.3.1.1 Sorting of the suede leather

For doing this exercise following points is to be considered

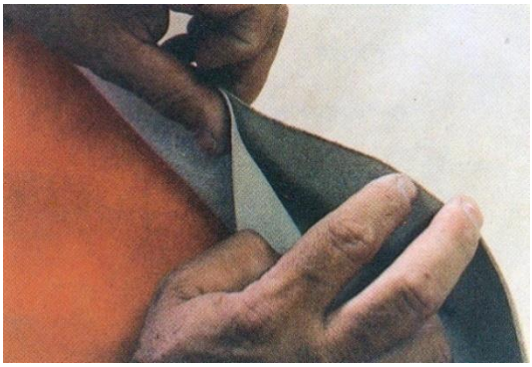


1. Fig 3.1 Suede split –The skins are usually too thick & heavy for footwear upper.

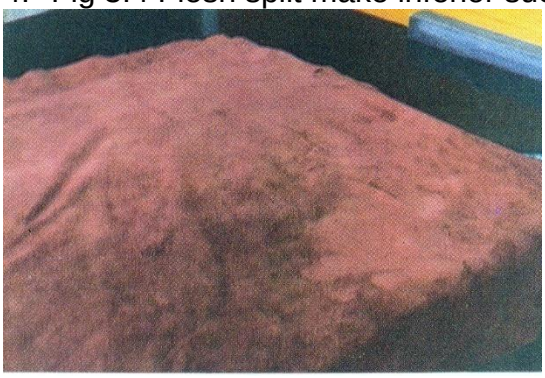


2. Fig 3.2 They are usually split

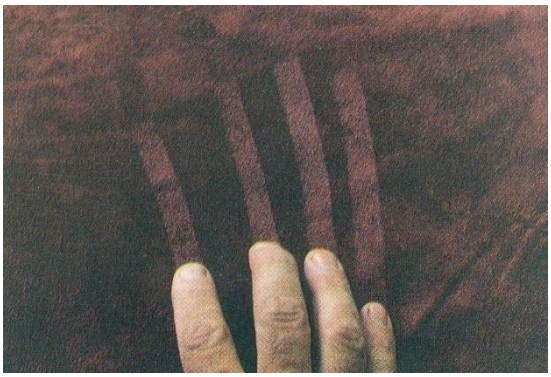
3. Fig 3.3 The flesh side is made in to suede.



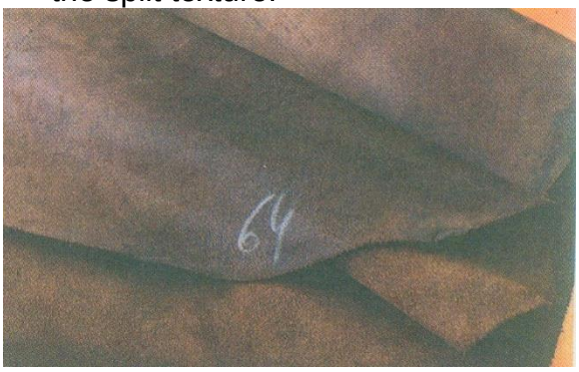
4. Fig 3.4 Flesh split make inferior suede leather(splitting cuts the fiber structure)



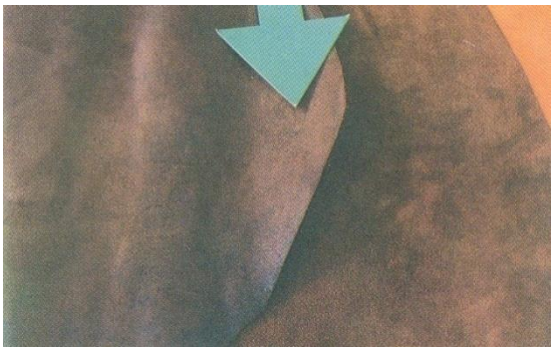
5. Fig 3.5The skins vary in colors.



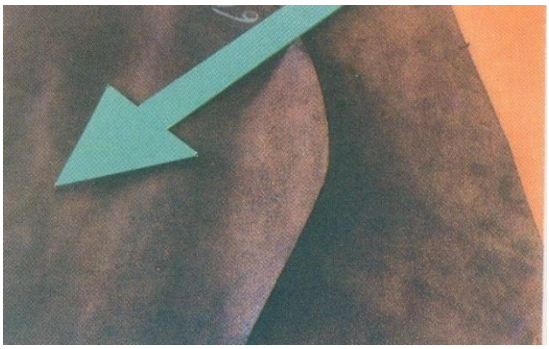
6. Fig 3.6 The nap varies all over the skins (the nap refers to the fineness or coarseness of the split texture.



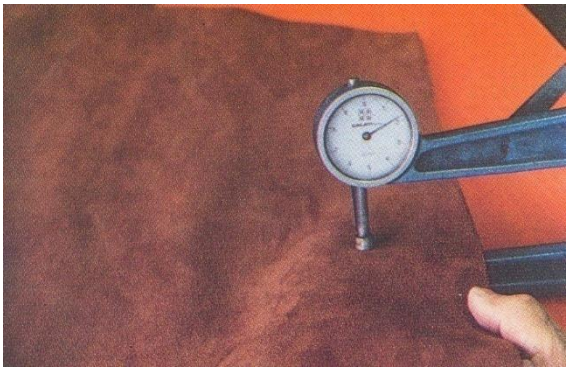
7. Fig 3.7The size of the suede usually varies from 50-150 sdm.



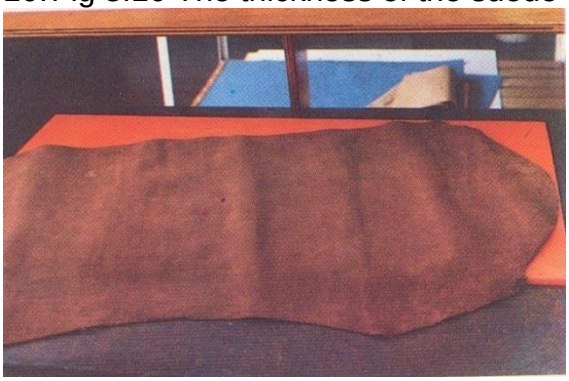
8. Fig 3.8Sealed break: The reverse side (back) of suede is sealed on the flesh side of the skin.



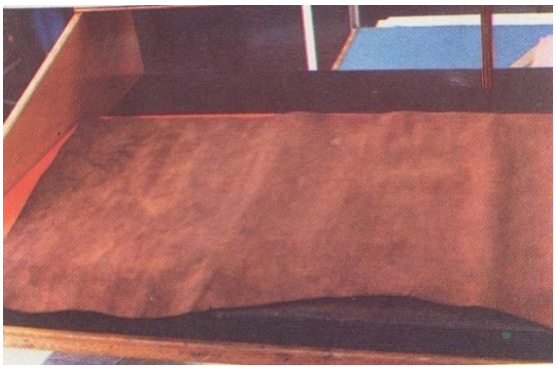
9. Fig 3.9 Sealed back: Sealing back also waterproofs the material & improves the comfort in an unlined shoe.



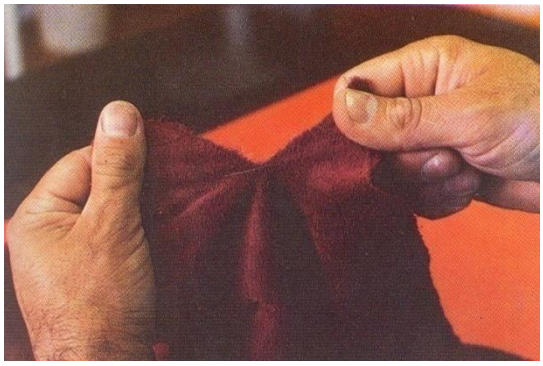
10. Fig 3.10 The thickness of the suede varies from 1.2-2.5mm.



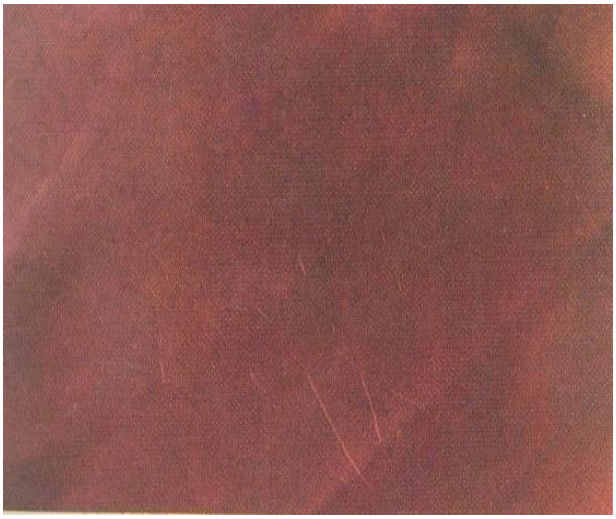
11. Fig 3.11The skins are usually trimmed severely.



12. Fig 3.12 They are almost trimmed in square.



13. Fig 3.13 Suede split have a weak fiber structure.



14. Fig 3.14Full grain suede-When the grain surface of otherwise good quality skins is damaged. The flesh side is snuffed to make the suede. This leave grain layer as backer to the flesh side.& thereby making strong leather.

15. Fig 3.15 The color of the suede may vary due to the nap. The nap varies greatly especially in the belly & flank area.

Self-Check 3	**Written Test**

Name: _____ **Date:** _____

Instructions: **Write all your answers in the provided answer sheet on page 32.**

Directions: **Answer all the questions listed below.**

(Total marks:-8)

Test I: Fill in the blanks

1. Cutter should ensure that patterns are --------- & the knife is ----------. (Mark 1)
2. The thickness of the suede varies from ----------. (Mark 1)
3. --------is produced from the under layer of the hide that has been split. (Mark 1)

4. ---------- leather is a type of leather with a soft, velvety surface (Mark 1)

Test II: One word answer:

5. Write down about the range of size of suede. (Mark 1)

6. What is the name of the best region of the skin? (Mark 1)
7. What is nap? (Mark 1)
8. What is the reason of variation in color of suede? (Mark 1)

LG #40	LO # 4 Prepare tool and equipments/machines
Instruction sheet	

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

- Machine and its accessories and the necessary tools are checked for functionality and any defects reported for repair
- Clicking knives are selected according to job specifications and size requirements
- Pressures on press are adjusted to knife sizes and shapes
- Problems or faults with press, patterns, knives and cutting boards are recognized and referred for repair or correction

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

- Checked machine and its accessories and the necessary tools for functionality and report any defects for repair
- Selected clicking knives according to job specifications and size requirements
- Adjusted pressures on press to knife sizes and shapes
- Recognize and refer problems or faults with press, patterns, knives and cutting boards for repair or correction

Learning Instructions:

Learning Activities:-

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the “Information Sheet 1 & 2”.
3. Accomplish the “Self-check 1”.
4. If you earned a satisfactory evaluation proceed to “Operation Sheet 1”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #2
5. Submit your accomplished Self-check. This will form part of your training portfolio.
6. Read the information written in the “Operation Sheets 2”.
7. Accomplish the “Lap test 1” .
8. Request you teacher to observe your demonstration of the exercises and give you feedback.
9. Accomplish the “Self-check 1”.
10. If you earned a satisfactory evaluation proceed to “Operation Sheet 1”. However, if

your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #2

11. Submit your accomplished Self-check. This will form part of your training portfolio.

12.Read the information written in the “Operation Sheets 2”

13. Accomplish the “Lap test 1” .

14. Request you teacher to observe your demonstration of the exercises and give you feedback.

Information Sheet 1- Check machine, accessories and the necessary tools for functionality

, articipants should be able to understand about checking machine, accessories and tools for functionalities. This includes

- Check lighting of the cutting area of the swing arm cutting machine
- Check the pressure knobs of the cutting machine and adjust as per the need
- Check cutting board for plain
- Check the clicking/Cutting knives/dies for

  - ✓ Sharpness
  - ✓ Bends

- ✓ Breakage
- ✓ Check punches and pickers
- ✓ Check size notches

All concerns activities help to participants to produce quality and productivity.

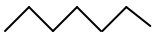
4.1.1 Quality of light

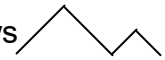
Poor lighting leads to low productivity and poor quality, as workers will start suffering from eye strain, fatigue and headache. Better lighting does not mean that more light bulbs have to be fixed in many cases, rearrangement of existing lighting and proper maintenance and cleanliness of reflectors/fittings will result in improvements.

- Make full use of natural daylight by installing skylights or modifying size and location of window. Keeps window clean all the time. You save the electricity cost of artificial lighting.
- Paint callings and inner walls in lighter colors. This provides better reflection and distribution of existing light sources besides resulting in better visual condition and a pleasant work environment.
- Avoid direct and indirect glare, glare can distract the workers concentration, possibly resulting in poorer quality or even accidents.

4.1.2 Check size notches

The size notches on dies for upper components cutting can be done as per the specification given and could be in following ways:

- Size can be marked in various size systems like English and French sizes.
- It also can be marked as 41 
- It also can be marked as 42 
- It also can be marked as 43 
- And so on

For English size marking “V” shape notch shows size 5. For 6 sizes it shows 

This information might be used to:

- Trace faulty footwear back to the unit that made it.
- ”. Order new stocks of the same styles, sometimes known as “repeats
- Ensure that any returned shoes can repair on the correct size and shape lasts.
- Enable the production units to see what size uppers they are dealing with.

4.1.3 Figurative Description of different trends of dies

Underlay pickers

Moccasin Punches

Bended die

Breakage of die

Inside notche

Center notch

Size of Die

‘

Self-Check 1	**Written Test**

Name: _____ Date: _____

.

Directions: **Answer the questions listed below.**

(Total point:-4)

Test I: Fill in the blanks

1. For English size marking _____ shape notch shows size 5. (Mark 2)
2. Order new stocks of the same styles, sometimes known as _____. (Mark 2)

Information Sheet 2- Select clicking knives according to job specifications

participants should be able to understand about selecting Clicking/cutting knives/dies according to job specification and size requirements. This includes

- Checking the article number of the dies/knives
- Checking number of components to be cut from each die/knife
- Checking the sizes of the dies/knifes

*4.2.1*Types of the dies their uses and storage

Types of dies and their Uses

Knives are of various types. Some of them are listed below

- **Knife as per Height** – 19 mm, 32 mm and 50 mm height knife are available for various purposes. Normally19 mm die is used for leather upper and lining cutting 32 mm and 50 mm dies are normally used for synthetic cutting, layer cutting or cutting thick materials.
- **Knives as per Edge** – Single edge and double edge knives are available. Using Double edge die we can cut right and left component from the same die which reduces the die cost.
- **Straight Knife and Decorative Edges** – Knife edges can be straight or gimped as per the design.
- **Perforated Knives** – Knives can be perforated. It can be perforated for punched designs.

4.2.2 Storage of Knives

When knives are damaged through bad storage the cost can be quite high.

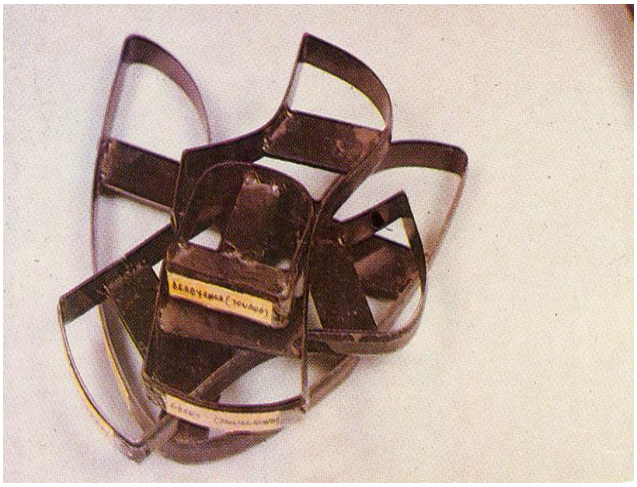
The cost of replacement or repair plus the cost of lost production and often excess board wear must also be considered.

Knives can be stored in shelves or draws; these are normally specially made for this purpose.

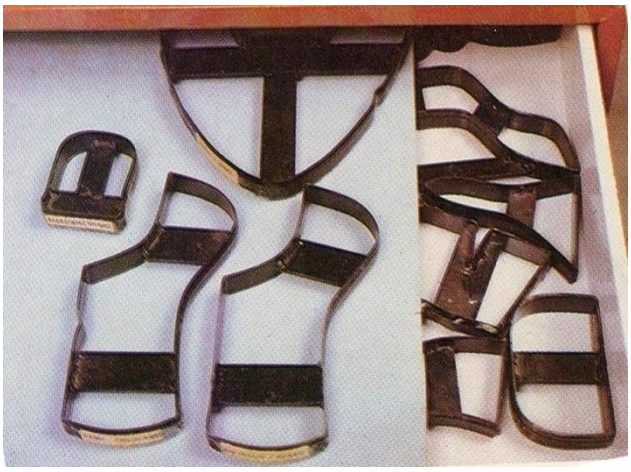
Knife Racks

These do not have to be fancy, but can be made out of simple building methods.

The main storage method required should be such that no knife is placed on top of another. This reduces the life of the cutting blade.



If knives are to be placed on top of each other they should have a layer of paper or cardboard between each layer.



This is especially important when packing knives away after order has been completed. They should be boxed and labeled to allow quick access and should not be damaged in storage.

Self-Check 2	**Written Test**

Name: _____ **Date:** _____

(Total marks 9)

Directions: Answer all the questions listed below.

One word answers:

1) What is perforated die? (Mark 1)
2) What is the use of 19mm die? (Mark 1)

3) Where we can keep the knives. (Mark 1)

4) What is the result of poor lighting in the stitching room? (Mark 1)

Fill in the blanks

5) If knives are to be placed on top of each other they should have a layer of ---------- ---------- between each layer. (Mark 1)

6) The main storage method required should be such that no knife is placed on ---------- ----------. (Mark 1)

7) ---------- we can cut right and left component. (Mark 1)

8) Knives can be stored in ----------. (Mark 1)

9) Make full use of --------- and can save the electricity cost of artificial lighting(Mark1)

Information Sheet 3 Adjust pressures on press to knife sizes and shapes -

, participants should be able to understand how to adjust pressure on cutting press on knife/die size and shape. This is done during machine adjustment according to the following procedures:

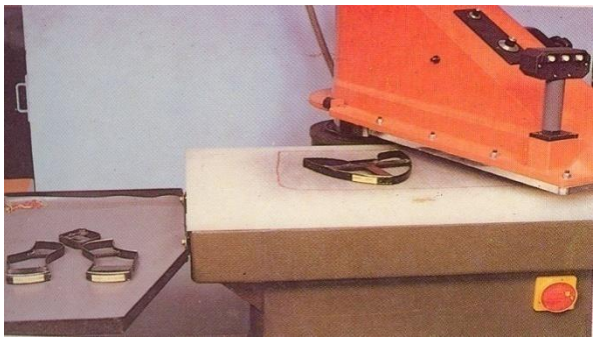
- Start machine
- Check die/knife height
- Adjust machine arm height
- Adjust the pressure of machine
- Cut and readjust pressure

All concerns activities help to participants to produce quality and productivity.

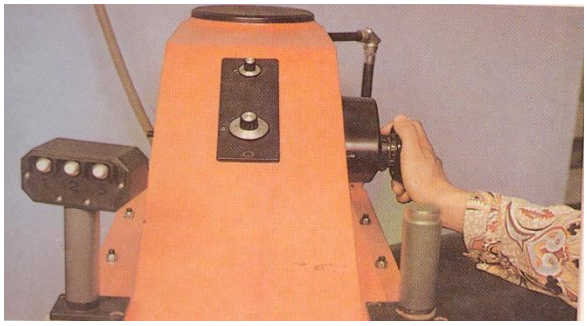
Adjust pressures on press to knife sizes and shapes

Setting the Arm Stroke

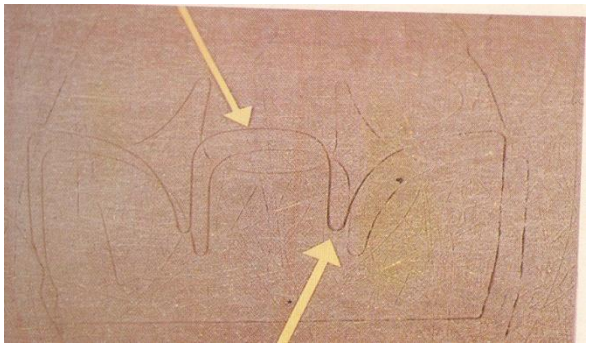
Place the knife on the clicking board.



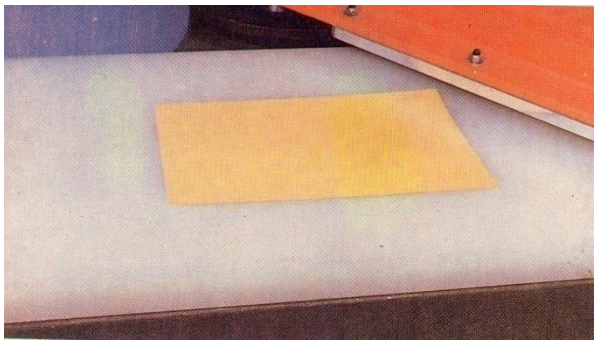
Setting of Pressure Control



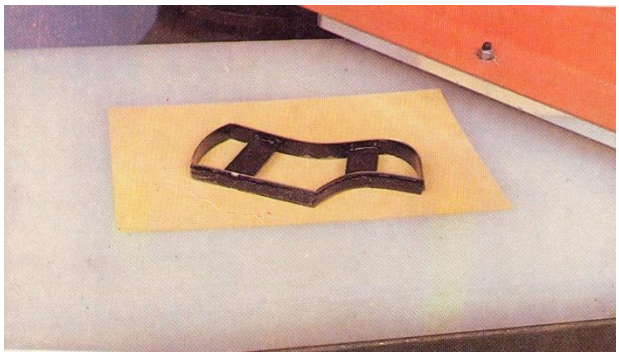
Turn the arm stroke adjustment control. Clockwise for down position. Anti clockwise for up position. Approx. 10 mm to 15 mm clearance is required depending on the substance of the leather.



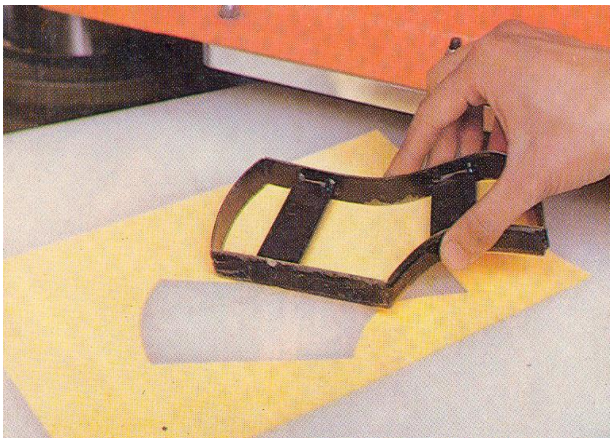
Place 1 piece of thin cardboard on the clicking board.



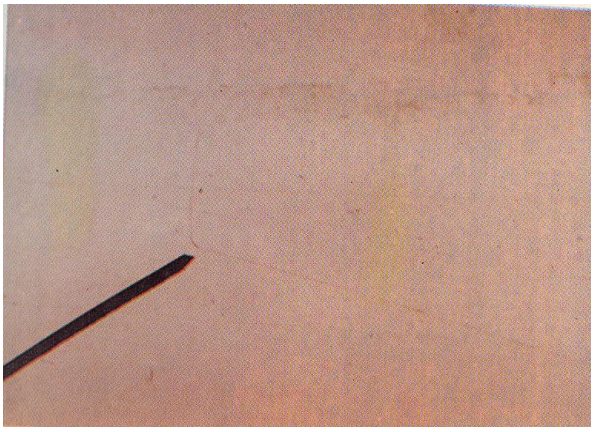
Place the small knife on the cardboard.



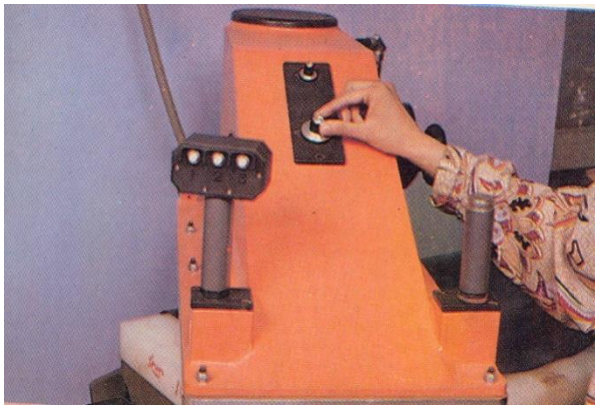
Test the machine for cutting depth.



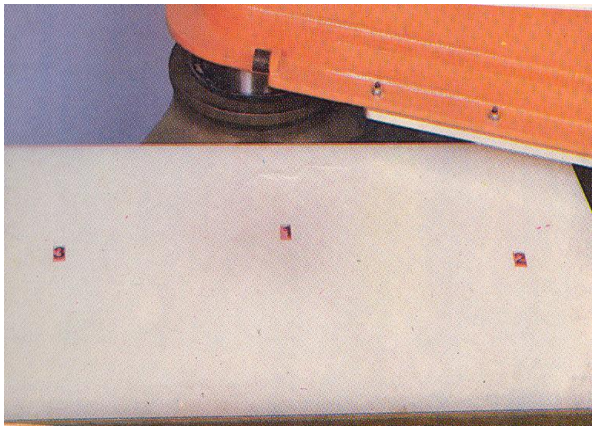
If the machine has been set correctly it should cut through and only show a very small imprint on the cutting board.



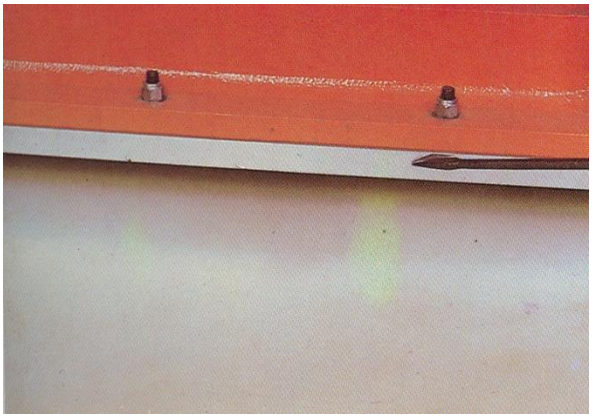
If the knife cuts deeply into the nylon board reduce the pressure.



Test the cutting depth in three different areas of the board.

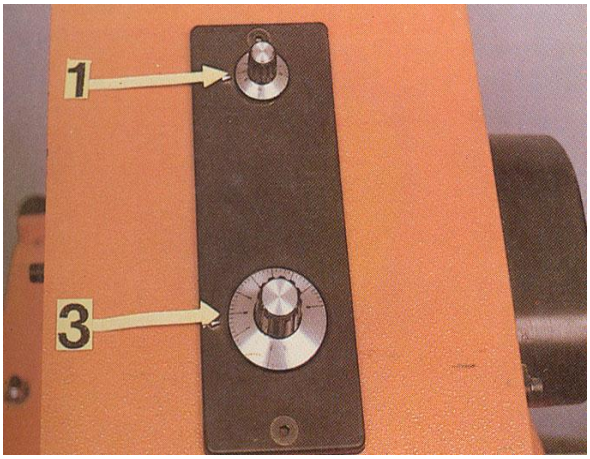


This system can only be used if the cutting block and the aluminum plate is in good condition.

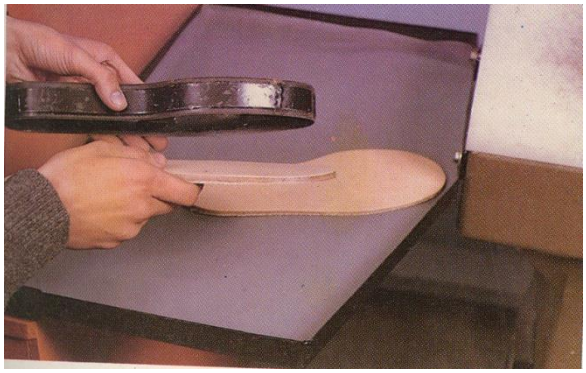


If this system does not work adjust the cutting stroke pressure until you have minimum knife penetration into the board.

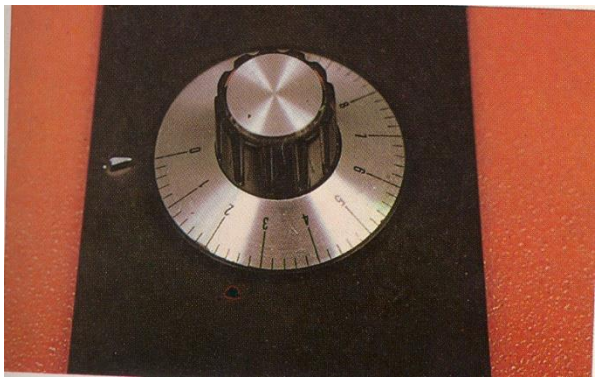
Depth of the cut can be altered by button no.1 and button no.3.



Button No.3 or heavy cutting stroke button should be operated when an operator is using a large knife with heavy leather.



The pressure control adjustment is completed by turning the lower potentiometer clockwise for extra pressure and anti clockwise for less pressure.



Operation title: - Adjust pressures on press to knife sizes and shapes

Purpose	To acquire the trainees how to adjust pressure on cutting press on knife/die size and shape.
	Tools and equipment used for this operation cutting dies /Knives/ Ruler Cutting boards (Accessories

Equipment ,tools and materials	Leather horse Nylon board
Conditions or situations for the operations	• All tools, equipment's and materials should be available on time when required. • Appropriate table, working area/ workshop Adjust pressures
Procedures	• Start machine • Check die/knife height • Adjust machine arm height • Adjust the pressure of machine • Cut and readjust pressure • Adjust pressures on press to knife sizes and shape • Setting the Arm Stroke • Place the knife on the clicking board. • Setting of Pressure Control • Turn the arm stroke adjustment control. Clockwise for down position. Anti clockwise for up position. Approx. 10 mm to 15 mm clearance is required depending on the substance of the leather. • Place 1 piece of thin cardboard on the clicking board. • Place the small knife on the cardboard. • Test the machine for cutting depth. • If the machine has been set correctly it should cut through and only show a very small imprint on the cutting board. • If the knife cuts deeply into the nylon board reduce the pressure.

	• Test the cutting depth in three different areas of the board. • This system can only be used if the cutting block and the aluminum plate is in good condition. • If this system does not work adjust the cutting stroke pressure until you have minimum knife penetration into the board. • Depth of the cut can be altered by button no.1 and button no.3. • Button No.3 or heavy cutting stroke button should be operated when an operator is using a large knife with heavy leather. • The pressure control adjustment is completed by turning the lower potentiometer clockwise for extra pressure and anti clockwise for less pressure.
Precautions	• Care should be taken while connecting with electric power, assembling, fitting and adjusting the machine • Preparing materials, tools and equipment are according to work instruction
Quality criteria	• Did personal protective equipment worn while fitting and adjusting cream separator machine • Did trainees adjusting the machine and cutting properly. • The machine functional cutting

Lap test 1	**Practical**

Name: _____ **Date:** _____ **Total point(10)**

Directions: Answer the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Adjust the pressure of the machine while leather cutting.

LG #41	LO #5- Cut material by machine

Instruction sheet

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

- Work ticket specifications are followed according to pieces and pairs
- Dies are positioned according to job specification.
- Parts are cut to achieve best yield according to appropriate allowance and workplace quality standards
- Pieces are selected, color or grain matched to workplace quality standards
- Distortion and defects on press cutting boards are identified and appropriate action taken

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

- Follow work ticket specifications according to pieces and pairs
- Use Clicking knives to gain optimal material utilization
- Position dies accordingly
- cut parts to achieve best yield according to appropriate allowance and workplace quality standards
- Select Pieces, match color or grain to workplace quality standards.
- Identify distortion and defects on press cutting boards and take appropriate action

Learning Instructions:

1. Read the specific objectives of this Learning Guide.

2. Read the information written in the “Information Sheets 1& 2”.

3. Accomplish the “Self-check 1”. Request the key answer / key to correction from your

teacher or you can request your teacher to check it for you.

4. If you earned a satisfactory evaluation proceed to “Information Sheet 3”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Information Sheets 1.

5. Read the information written in the “Information Sheet 3”.

6. Accomplish the “Self-check 2”. Again you can request the key answer / key to correction from your teacher or you can request your teacher to check it for you.

7. If you earned a satisfactory evaluation proceed to “Information Sheet 3”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Information Sheet 1 & 2.

Information Sheet 1- Follow Work ticket specifications according to pieces and pairs

5.1.1 Work ticket specifications

In this chapter, participants should be able to follow Work ticket specifications according to pieces and pairs. These specifications includes

- Article number
- Leather/material type
- Color
- Thickness
- Number of pairs to be cut in each size

All concerns activities help to participants to produce quality and productivity.

The purpose of job ticket is to ensure that the components are traced during the operations and accountability for such is maintained. It is always recommended to use a job ticket.

Any worker in a cutting department should do the following a work ticket specifications mentioned on the following sample ticket table below.
On the work ticket different materials such as leather, synthetic, toe puff, stiffener, and foam and so on have to be mentioned. The leather itself can be elaborated as Nubuck, suede, goat glazed, sheep and so on.

Work ticket in the cutting department

Sample work ticket in the cutting department

XYZ SHOE FACTORY

CUTTER'S TICKET

DATE			**SR.NO**
NAME	**LAST**	**ORDER NO.**	
MATERIAL TYPE	**MATERIAL-**	**COLOUR**	
DIE NO.	**THICKNESS**	**ARTICLE**	

	TYPE	**SIZES**										
	A	38	39	40	41	42	43	44	45	46	47	
	B	35	36	37	38	39	40					
	C	33	34	35	36	37						TOTAL
PAIRS												
Consumption/Pair												
QTY												

MATERIAL ISSUED **TOTAL LEATHER CONSUMED**

MATERIAL RETURNED **ACTUAL NORM(+/-)**

SUPERVISOR SIGN(STORE 1/C)

Self-Check 1	**Written Test**

Name: _____ **Date:** _____

(Total marks 4)

Directions: Answer the questions listed below.

i. **Explain** the purpose of job ticket.

Information Sheet 2- Position Dies/knives according to design for optimum material utilization

5.2 Position Dies/knives according to design for optimum material utilization

5.2.1 Nesting principles

Before proceeding for nesting exercise following points is to be considered

- The proper skin is to be regarded as perfect that is there is no defect anywhere.
- The person must be clear about the lines of tightness of all the components to make a pair of shoe, their quality division & the allowances.
- The cutter must be able to divide the paper skin correctly in various parts i.e. butt, belly, shoulder and should have a clear understanding of lines of tightness in different parts of the skin/side.
- The aim of the cutter should be to use his/her leather as economical as possible by avoiding wastage due to bad pattern interlocking.
- Before starting nesting on paper skin directly they must take interlocking trial one or more times with every pattern as for every pattern there is more than one method of pattern interlocking
- There are guidelines given for achieving better pattern interlocking one may consider these while interlocking.

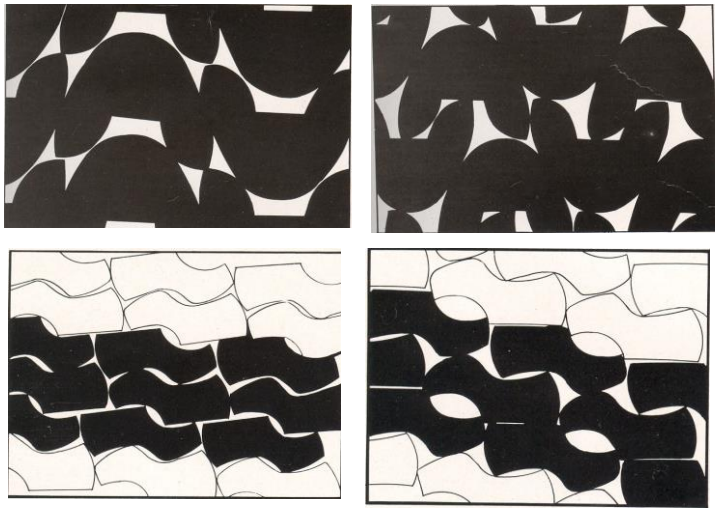


Fig2.1 A. Curve to curve interlocking. B.Straight edge to straight edge.

- Cutters are not required to nest components in pairs in the case of corrected grain cutting exercise. Rather on completion of the work, they should end up with approx. equal no. of pairs.

- Cutting usually commences from the butt, continue along the backbone, working outwards as far as the substance (thickness) and quality permits, utilizing the poor quality areas for the parts which have little or no strain during wear.
- If by reason of defects the material near the backbone is unsuitable, cutting should still be in accordance with the principle of working in the direction from backbone to bank commencing as more as possible to the defects, in order to ensure the minimum waste of the best material, which invariably is to be found in the butt.
- Change the direction of the patterns for getting components pair wise.

5.2.2 QUALITY REGIONS

The various areas of Hide and Skin have different quality regions.

Quality is directly related to the “Tightness & the compactness” of the fiber structure. Therefore, the “best quality” of an H/S is BUTT and the worst quality “part which is almost useless from users point of view is offal. The diagram gives you a description of the quality areas of hide/skin.

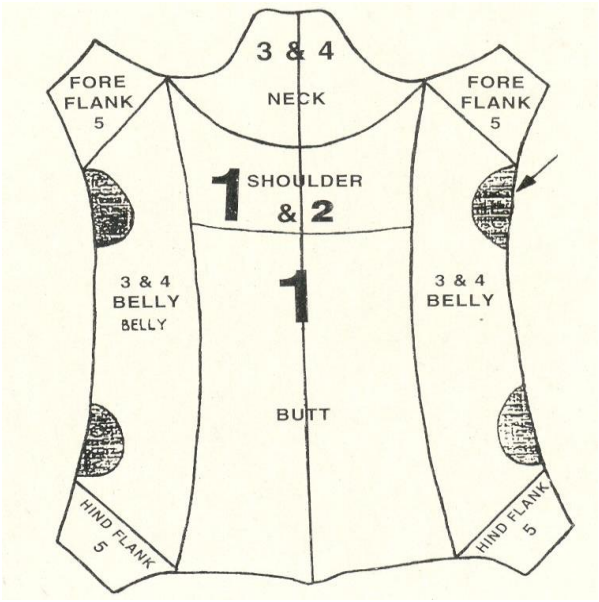


Fig2.2

Note: The quality areas are indicated by number i.e. 1, 2, 3 etc.

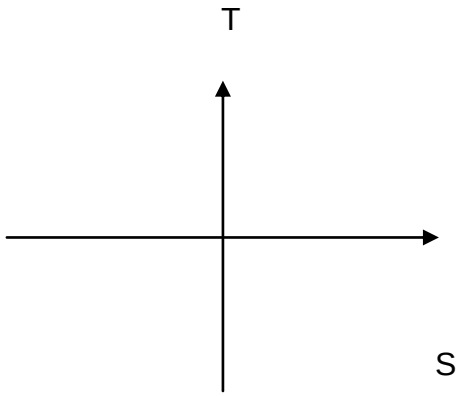
You will note here that the neck & belly both are marked by 3 to 4. This is just to explain that sometimes, neck is better than belly because of extensive looseness in belly and sometimes, belly is better than neck because of growth marks in neck.

The direction of lines of tightness and lines of stretch play a major role in cutting of pattern from hides or skin.

Lines of tightness are defined as the direction in which the material does not extend in length or very little increment in length takes place on applying force by two thumbs.

Whereas, in the direction of lines of stretch, material is increased in length or stretches more by applying the same amount of pulling force.

Normally, the line of tightness is just at 90° to the lines of stretch.



Line of tightness varies in case of skin & it is towards the butt from the flank region. Therefore the care shall be taken in the case of calf & kid leather whenever cutting process is initiated.

These lines are important in cutting because the upper component must be cut in such a way that the lines of tightness cut along the length of the shoe for proper shape retention in other words, we say that the component are cut “tight to toe”. This rule is strictly adhered to in cutting most types of footwear. It is disregarded only in special circumstances e.g. open toe sandal, boots etc.

Line of tightness and stretch of cow and buff skin:

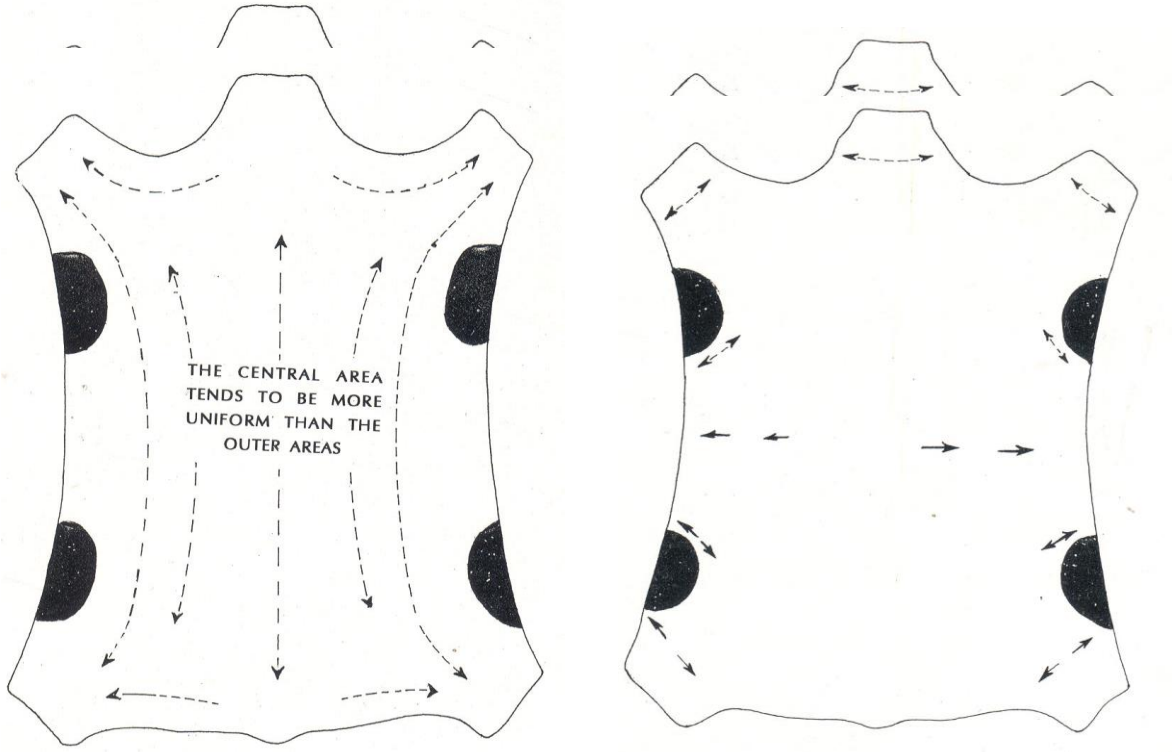


Fig. 2.3Line of tightness and stretch of cow and buff skin:

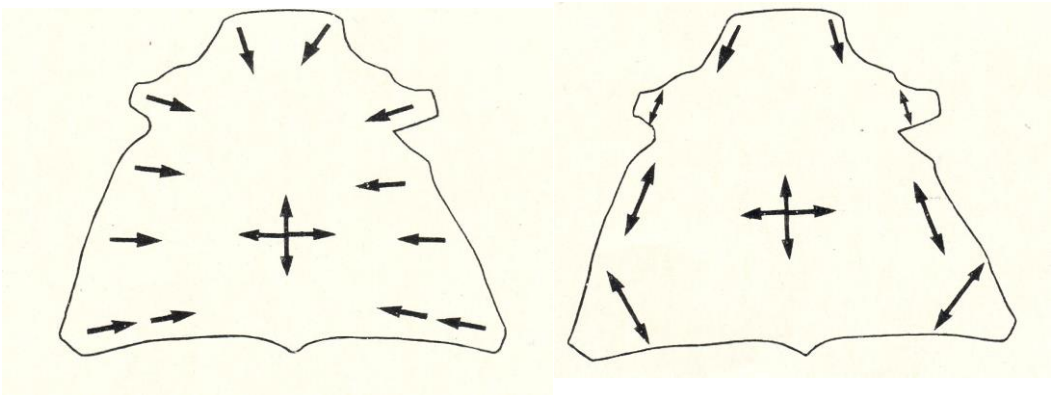


Fig. 2.4 Line of tightness and stretch of kid/goat skin:

Self-Check 2	Written Test

Name: _____ **Date:** _____

Instructions: Write all your answers in the provided answer sheet on page

(Total Marks: -6*1=6)

Instructions: Write all your answers in the provided answer sheet on page

Test I: <u>Fill in the blanks</u>

Directions: Answer all the questions listed below.

1. The proper skin is to be regarded as perfect that is there is no --------anywhere.
2. The direction of lines of tightness and ---------- play a major role in cutting of pattern from hides or skin.
3. Normally, the line of tightness is just at ---------- to the lines of stretch.
4. Quality is directly related to the ---------- of the fiber structure.
5. Cutting usually commences from the ----------.
6. Part which is almost useless from user's point of view is ----------.

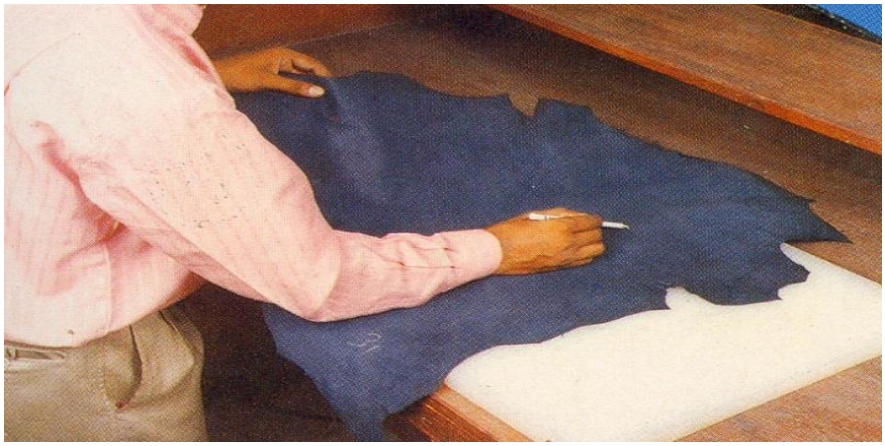
Information Sheet 3- Position Dies/knives to cut for color or grain matched to workplace quality standards.

5.3.1 Grain, color & shade matching:

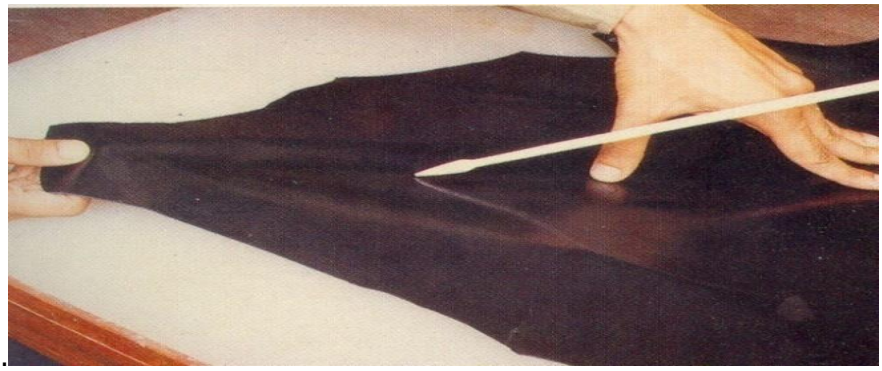
5.3.1.1 Shade matching of goat leather

Parameters of shade matching of goat leather

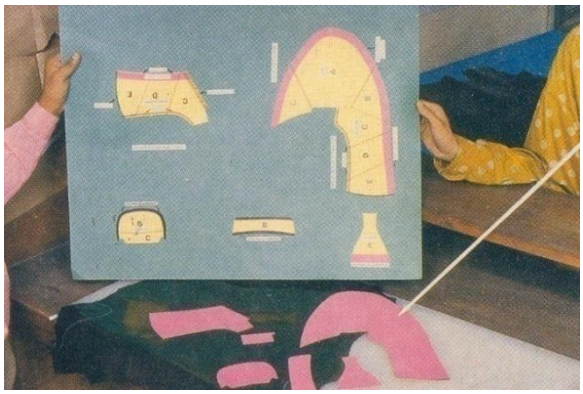
1. Closely inspect the leather for any defects. These include surface marks, flay cuts & loose offal. Mark these areas for easy identification.



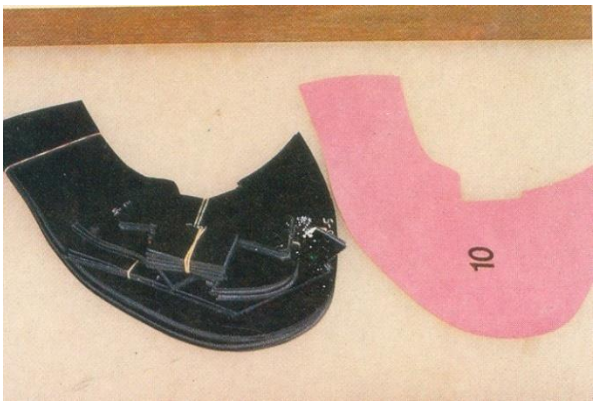
2. Check the flesh side of the leather for warble holes & flay cuts.



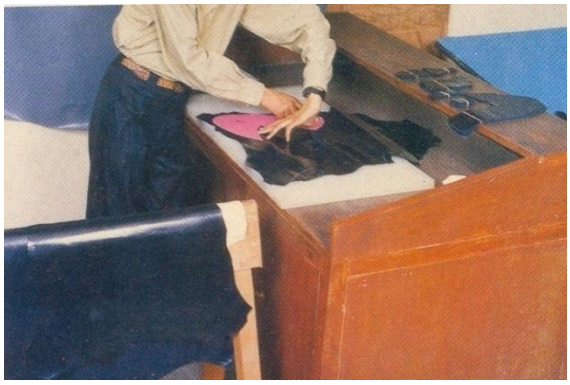
3. Check for the correct line of tightness as this will vary slightly form skin to skin



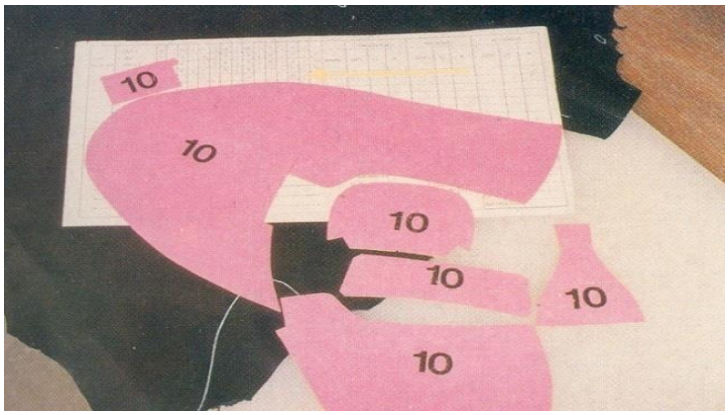
4. Check the components to be cut , make sure that all parts are there.(In case any pattern is missing then it is very difficult to match the grain at a later stage- so first check for the pattern)



5. Both kid & goat are stacked in the pair basis.



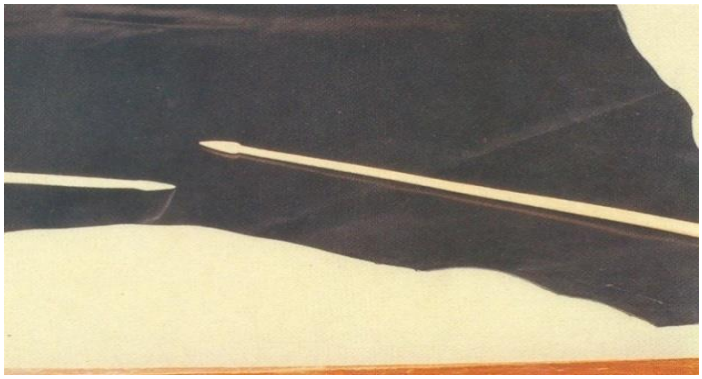
6. Ensure that the work bench is clean..



7. From your cutting sheet select the largest size patterns

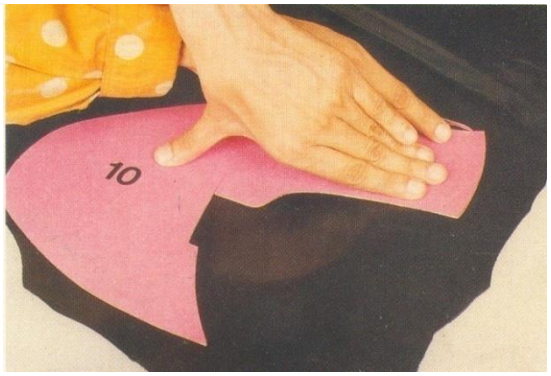
8. Select your skins (Large skins for large sizes.)

9. A clicker would also have a set of small size patterns to run in. Sometimes he would cut 1 prs. Large size & one pair of small size from the same ski



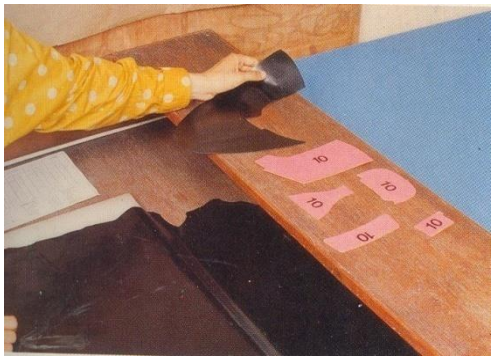
10. A clicker would cut flank to back bone then the opposite flank to the back bone. It is a personal preference as to which side is to start first.

11. For identification purpose we have covered the tine pattern with different patterns.

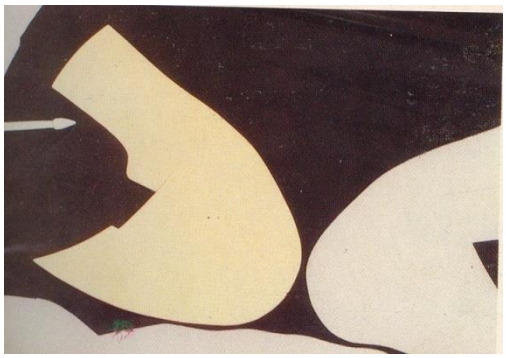


12. The first cut is the vamp however he should ensure that the wastage does not takes place during placement.

13. After cutting the clicker must check the quality of the product

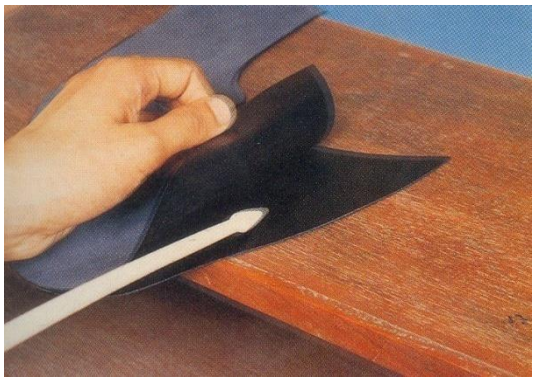


14. Then place the cutting on the top of the bench, in front of him.

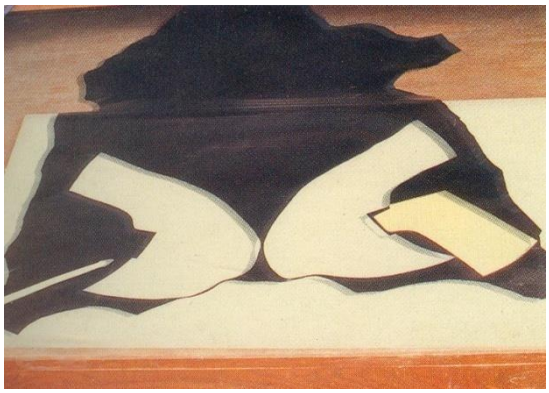


15. No.-2 cut left ¾ cut vamp (pr.no.-1). This is the matching opposite foot. It is a mirror image cut of the 1st cut; the toe is put close to the back bone.

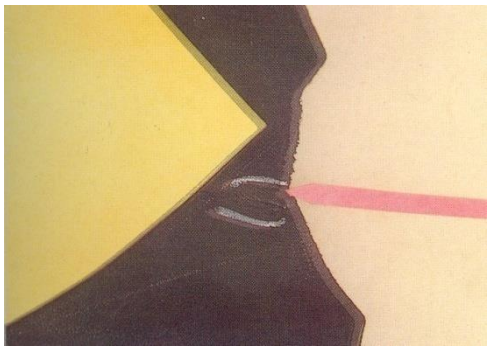
16. After cutting clicker must check the cut components for tightness.



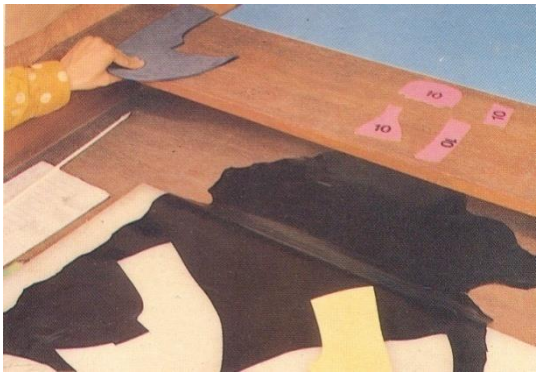
17. Then place the vamp on the top of the 1st vamp, grain side down (face to face).



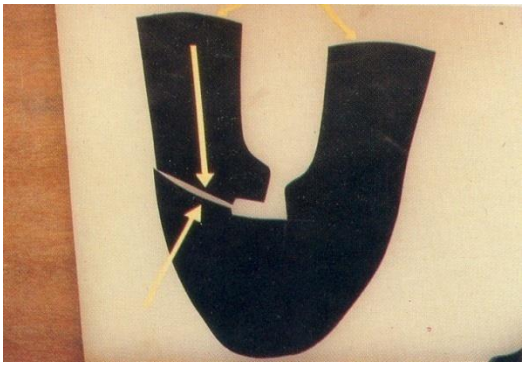
18. No. 3 cut left inside quarter (pr.no.-1). This quarter will actually match the vamp cut from the opposite side of the skin.



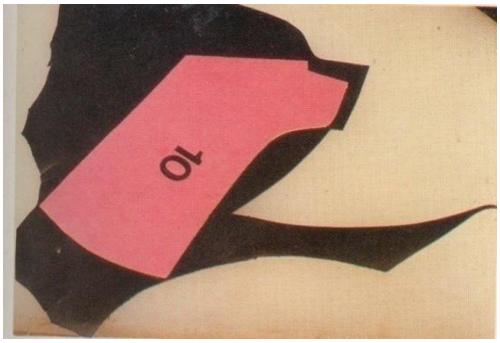
19. The small flaw found in the flank must not be allowed to enter the back seam as this could stretch the line of tightness runs from heel to toe.



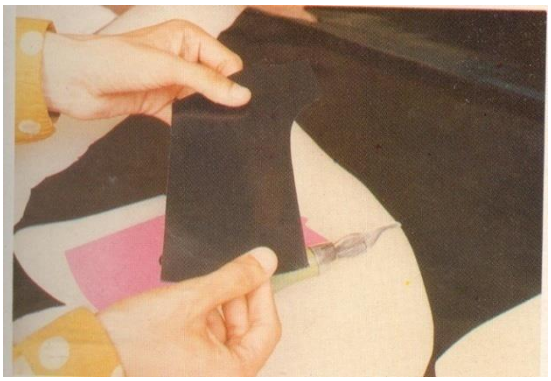
20. After cutting the clicker must check the quality then place it on the bench in front of him..



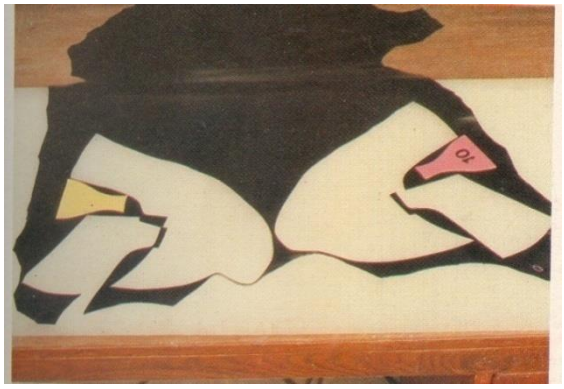
21. If unsure of the grain match he could check it against the vamp. The quarter should grain match on the front of the quarter & the back seam



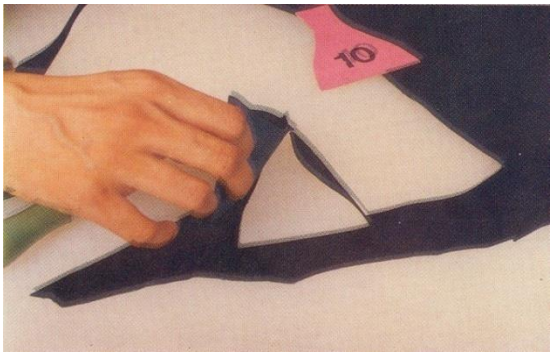
22. Cut-4left outside quarter (pr-1). This is a mirror image of the previous cut.



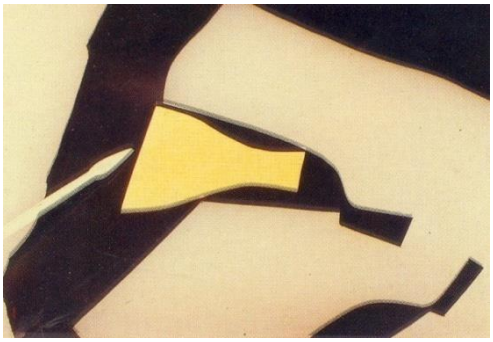
23. After cutting check for the stretch or defect then place this quarter on the previous quarter to face.



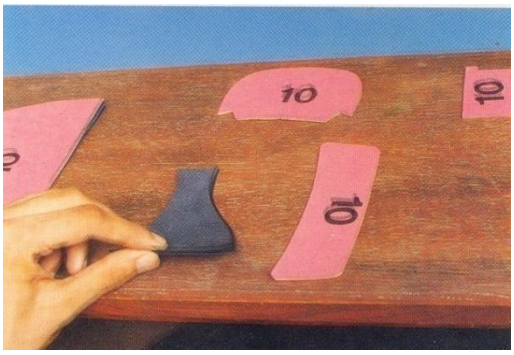
24. Cut no.-5 counter pr.-no-1Both counters are cut from the same portion of the skin in a mirror image itself.



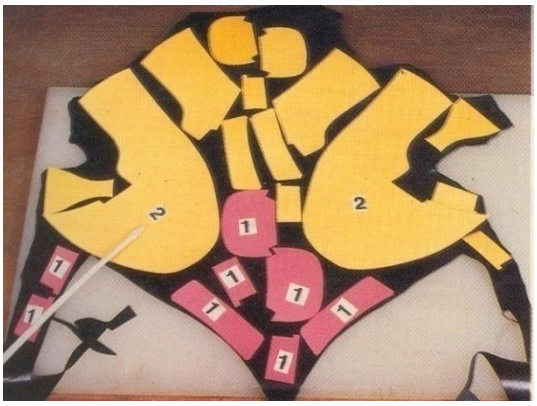
25. The right counter would be cut first.



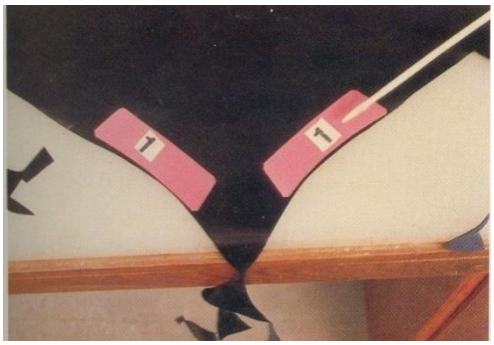
26. Then the left notice how the lasting allowance was put closest to the edge of the skin.



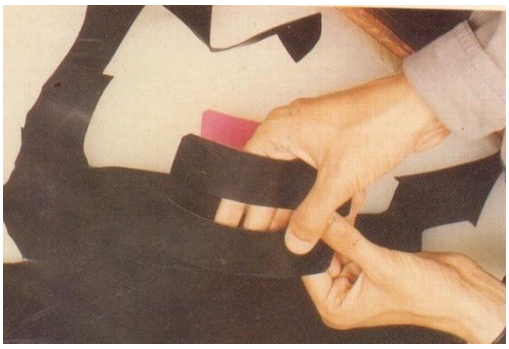
27. After cutting both pieces are inspected and placed face to face as a pair.



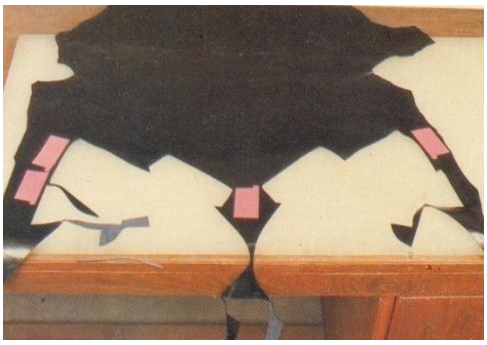
28. We are now half way up the skin. At this point the clicker must visualize what he is going to cut from the remaining skin. He must also consider grain match



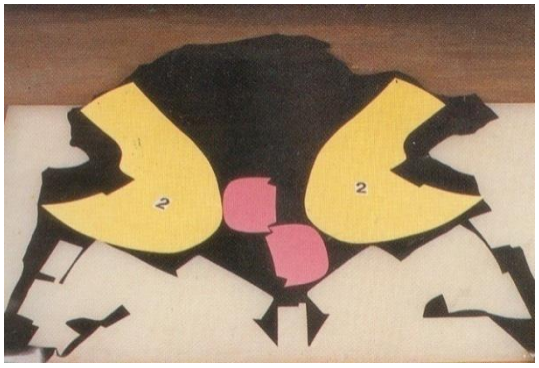
29. Cut number-6, saddle s bars pair number –1.The saddle divides the tongue & the vamp as it crosses the two, the saddle needs to have a similar grain match, although some times the saddle can be used as an area to slightly break up the grain variation will depend on the price structure of the shoe.



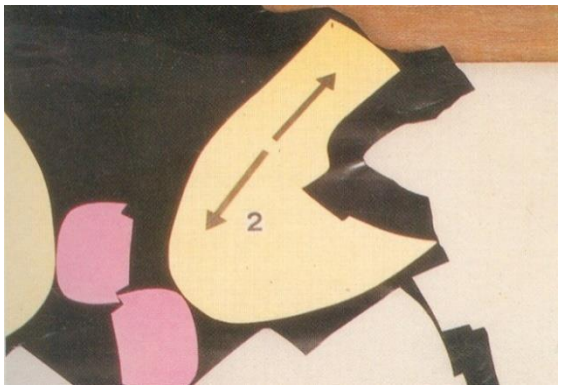
30. After cutting, the clicker inspects the grain & places the saddles on the bench as a matching pair



31. Cut no.-7, there are four saddles to a pair; grain match is minimum as they are rolled up to make the decoration.



32. At this point the clicker must make sure that the next pair of ¾ cut vamps can fit, here must also allow enough grain matching grain to be left for the tongue.

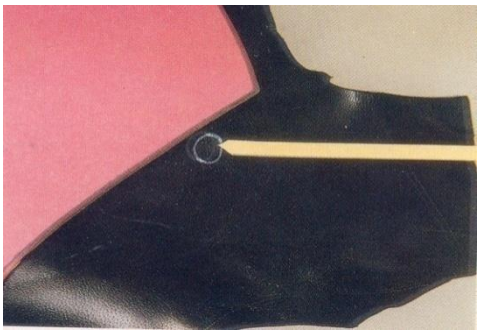


33. The vamps are most important before cutting the clicker must also check the line of tightness in the leather.

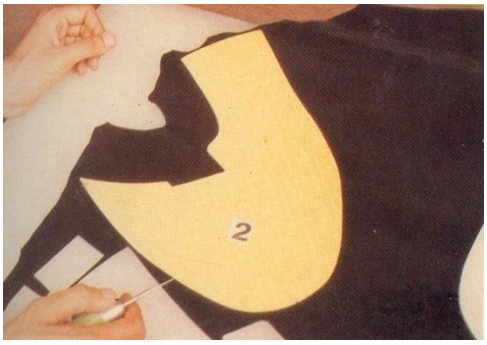
34. Pattern interlocking is the key to the good clicking. Leather is money do not waste it.

.

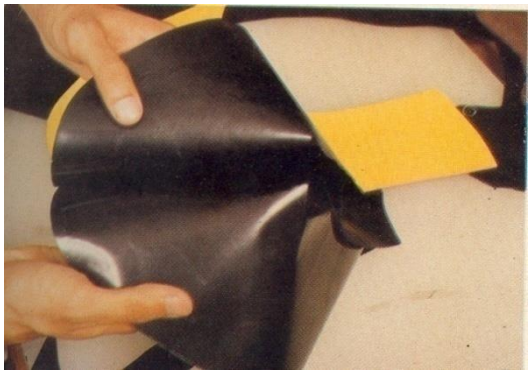
35. Although we have not completed the 1st pair at this stage we would cut the second vamp. This is to ensure pattern interlocking.



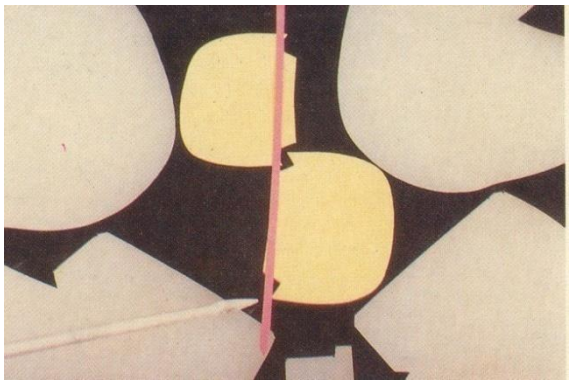
36. Cut number 8,right vamp(pair –2). The top line would be reinforced with tape or string to give extra strength. Defects should not put in to top line.



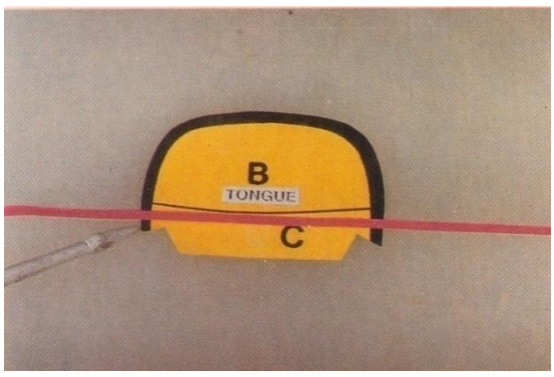
37. Cut no.-9(left vamp prs.-2)



38. After cutting the clicker must check the pair for grain matches in the plug area.

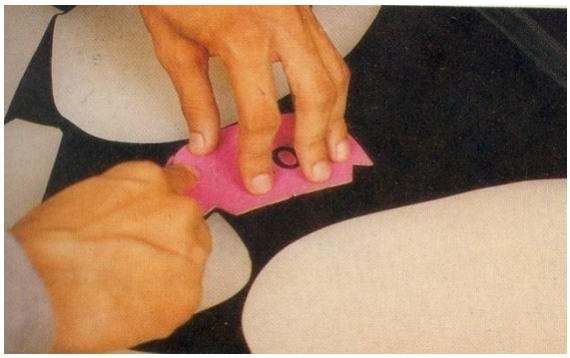


39. We now complete the tongue for pair no.-1.Down the center of the skin is the back bone. The top of the tongue should not be cut out of this area as the grain may pull out.

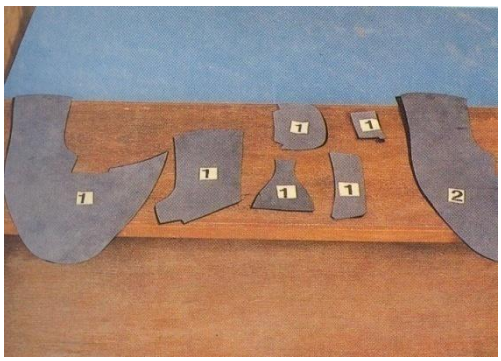


40. The grain from the back bone can be placed in the area that the saddle covers.

41. Cut no.-10, single tongue for pair no.-1.



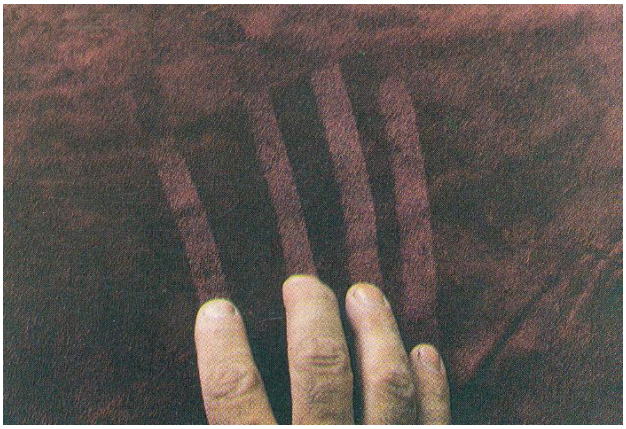
42. Cut no.-11, single tongue for pair number 1, this tongue has been reversed to allow the back bone to be placed under the saddle.



43. We have completed the pair no.-1.

5.3.1.2 Nap matching in suede and Nubuck

The color of the suede may vary due to the nap. The nap varies greatly especially in the belly & flank area. When pair of components is completed the operator has to stack them with the nap face to face.



The nap varies all over the skins (the nap refers to the fineness or coarseness of the split texture.

Self-Check 3	Written Test

Name: _____ **Date:** _____

(Total marks:-8*1=8)

Instructions: Write all your answers in the provided answer sheet on page

Directions: Answer all the questions listed below.

One word answer:

1. We should always start cutting bigger size or smaller size. (Marks:-1)
2. We should always start cutting with larger skin or small skin. (Marks:-1)
3. What are the biggest problems in full grain leather cutting? (Marks:-1)
4. After cutting what clicker should check? (Marks:-1)

Fill in the blank:

1. The color of the suede may vary due to the --------. (Marks:-1)
2. The nap varies greatly especially in the ---------- area. (Marks:-1)
3. The nap refers to the ---------- of the split texture. (Marks:-1)

4. He should continue to check for ---------- after cutting. (Marks:-

LG #42	LO #6- Check cut components

Instruction sheet

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

- Cut component are arranged and tied grain to grain as per ticket number.
- Finished cut products are checked against job specifications and enterprise quality standards
- Necessary record and report are accomplished in accordance with work procedures and standard format.

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Arrange cut component and tied grain to grain as per ticket number
- Check finished cut products against job specifications and enterprise quality standards.
- Address faults and irregularities following company standard procedures.
- Accomplish necessary record and report in accordance with work procedures and standard format.

Learning Instructions:

Learning Activities

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the “Information Sheet 1”.
3. Accomplish the “Self-check 1” .
4. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is
5. unsatisfactory, see your teacher for further instructions or go back to Learning Activity #2.
6. Submit your accomplished Self-check. This will form part of your training portfolio.
7. Read the information written in the “Information Sheets 2”.
8. Accomplish the “Self-check 2” .

Information Sheet 1- Cut component are arranged and tied grain to grain as per ticket number

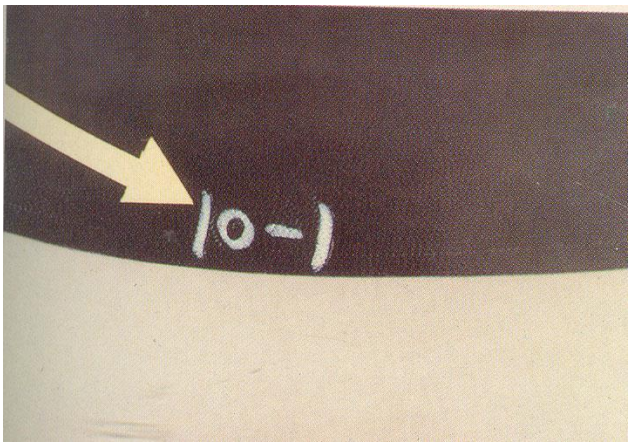
6.1 Cut component are arranged and tied grain to grain as per ticket number

6.1.1Bundling of the cut component :

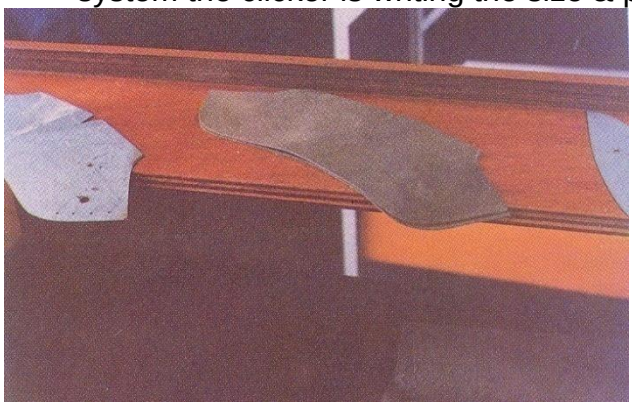
Check the color & shade of the components

Check the grains of the components particularly those cut in goat and kid skins

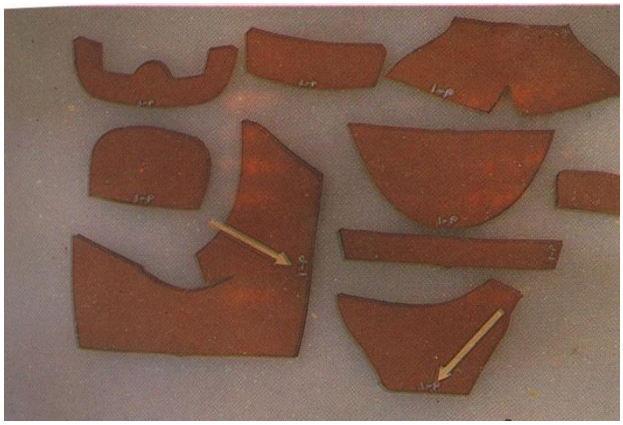
Arrange and tie cut components grain to grain as per ticket number.



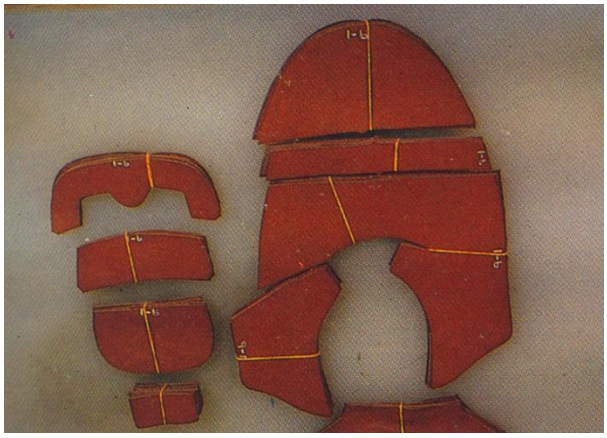
1. After checking the grain & color match the clicker must identify each pair. In this system the clicker is writing the size & pair number. Size 10-1 is the pair number.



2. When a pair of components are completed , stack them with the nap face to face



3. After grain matching the components are laid grain side out & pairs are numbered



4. Elastic bands are paced on each group of the components.

5. Then each completed 5 pairs are bundled securely together.

6. Both kid & goat are stacked in the pair basis.

Self-Check 1	Written Test

Name: _____ Date: _____

(Total marks:-4)

Instructions: **Write all your answers in the provided answer sheet on page**

Test I: Short Answer Questions

Directions: **Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.**

Fill in the blanks:

1. When a pair of components is completed, stack them with the nap ----------.

2. ----------are placed on each group of the components.

3. Check the ---------- of the components

4. Arrange and tie cut components ---------- as per ticket number.

Information Sheet 2- Finished cut products are checked against job specifications and enterprise quality standards

6.2 Finished cut products are checked against job specifications and enterprise quality standards

6.2.1 Inspection method for cut components

1. Check the visual defects on the cut components.

The cut components should be inspect for the following defects.

- Loose or fibrous material
- Brand marks operation scars and open flaws.
- Closed flaws wire marks and scratches
- Growth marks or fat wrinkles
- Veins
- Fly cuts
- Discolored areas
- Insect or parasitic damage.
- Any other defect that may render an area of leather unusable.

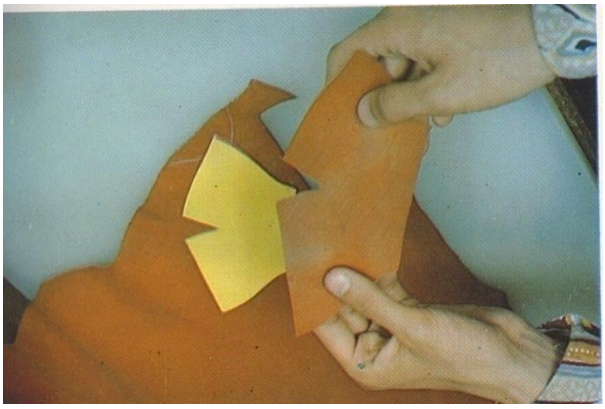
2. Check the edge of the cut components.

Components should be check if any fault on the edges of the components.

3. Check the line of tightness and stretch direction

The line of tightness runs from toe to heel.

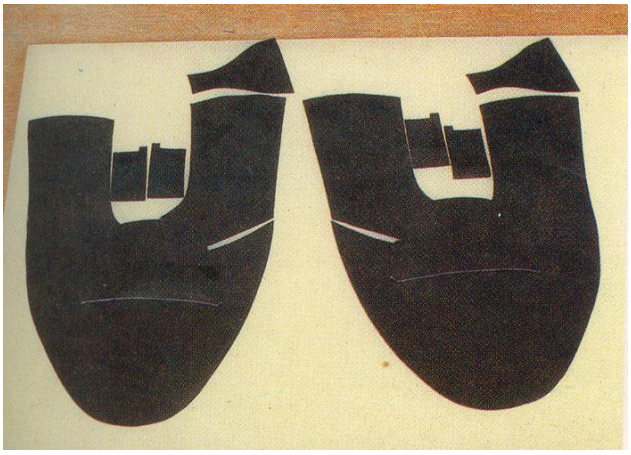
After cutting the clicker must check the component for quality & stretch1.



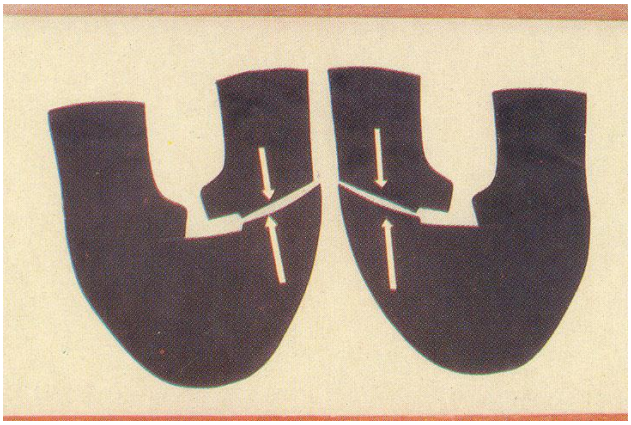
4. Check the thickness of the leather

a. Suede split –The skins are usually too thick & heavy for footwear upper.

c. All parts of the shoe should be collected for the grain matching.

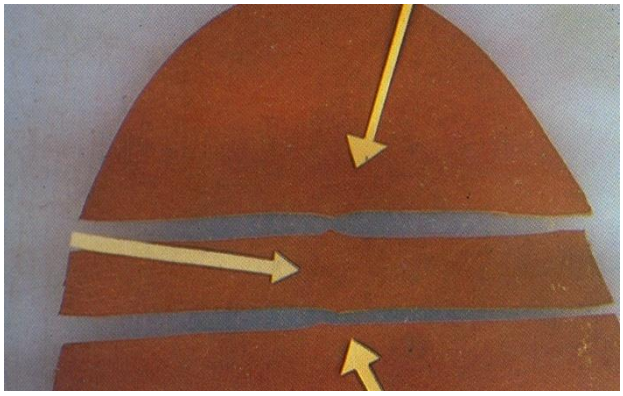


d. The front of the quarter must match with the area of the vamp. They are also to be inspected together.

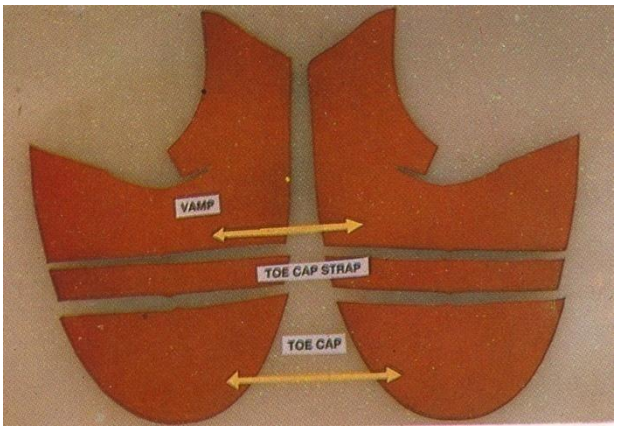


e. Both vamps should match.

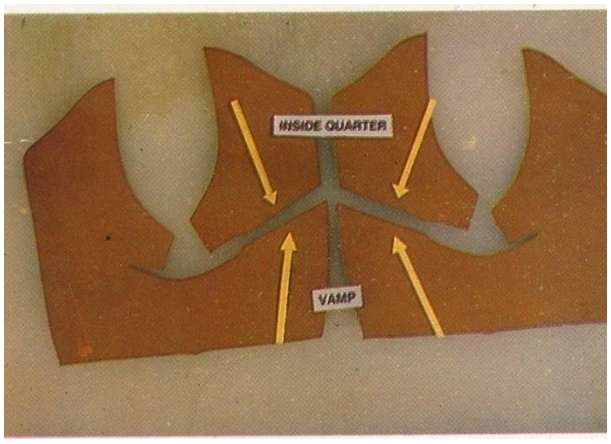
f. The toe cap must match the toe strap & the toe cap must match the vamp.



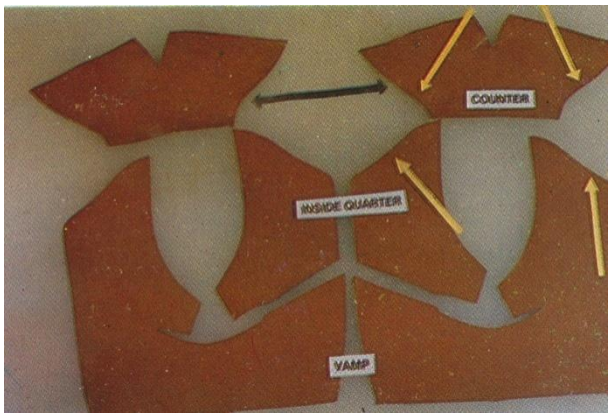
g. The left foot must match the right foot.



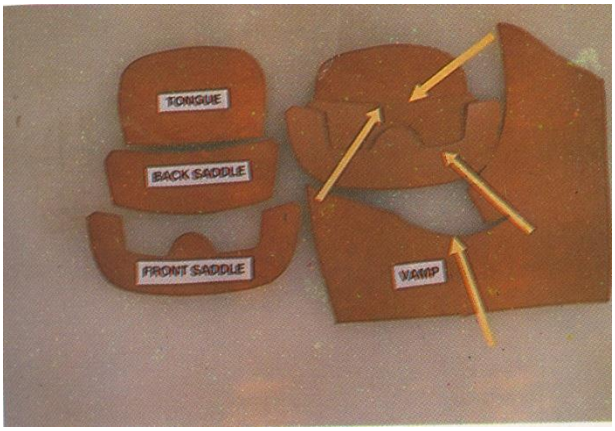
h. The front of the inside quarter must match the vamp.



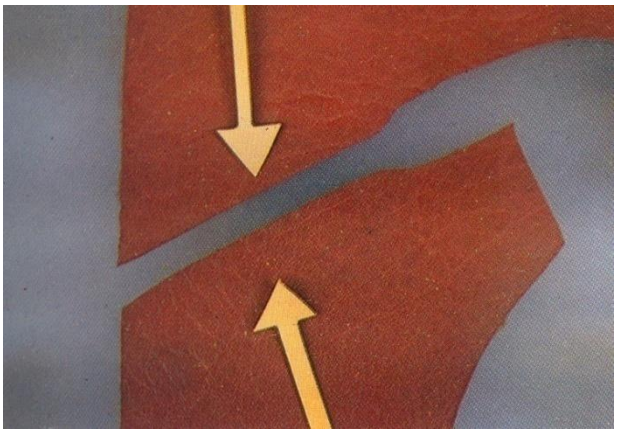
i. Counter must match with the quarter.



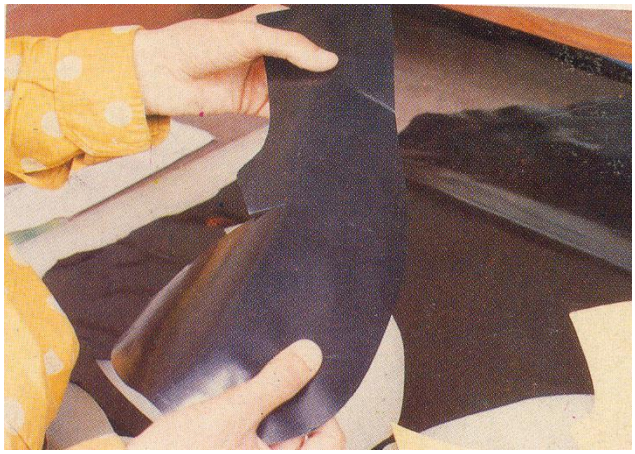
j. The decoration on the front of the vamp must also match. These tassels are not required to be matched.



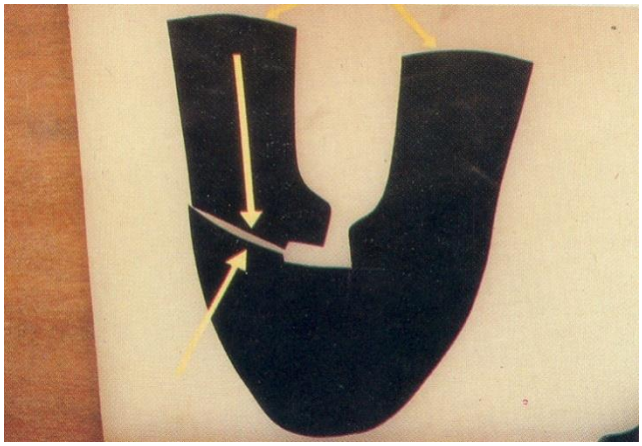
k. The quarter must match the vamp.



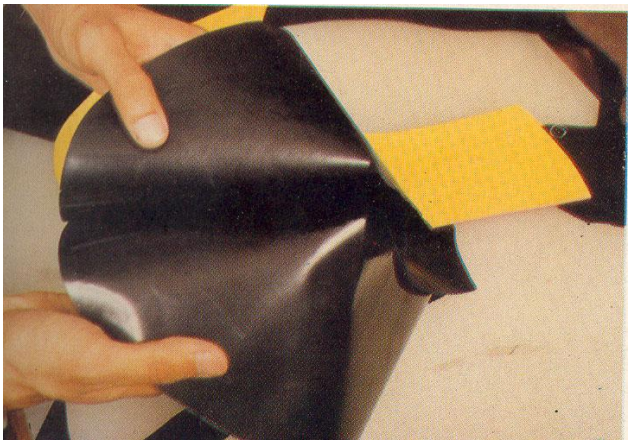
l. After cutting clicker must check the cut components for tightness.



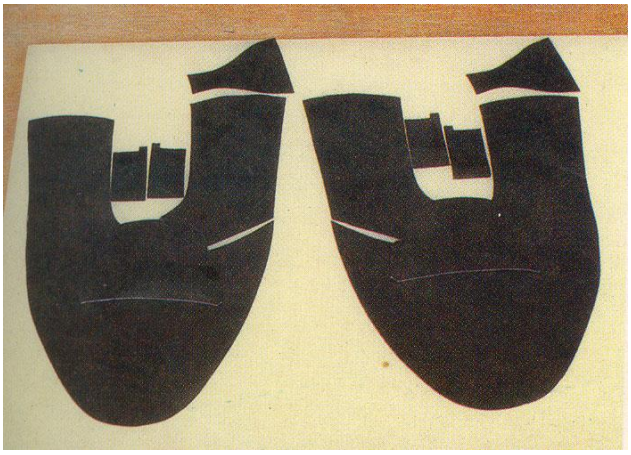
m. The quarter should grain match on the front of the quarter & the back seam.



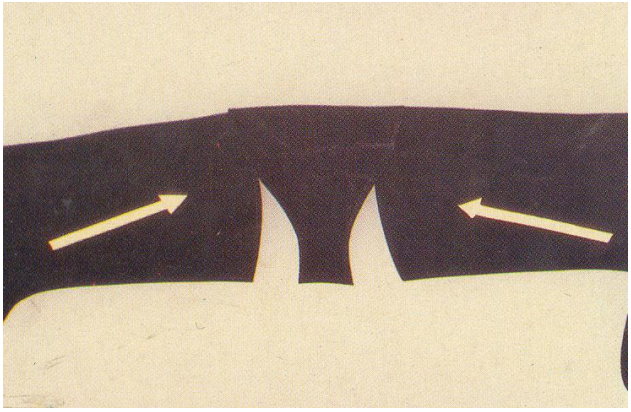
n. After cutting the clicker must check the pair for grain matches in the plug area.



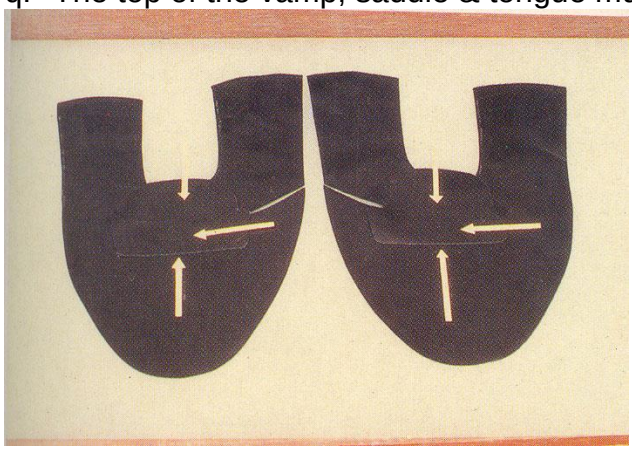
o. All parts of the shoe should be collected for the grain matching.



p. The back seamers should not stretch. In this shoe a counter covers the back seam. So preference should be placed on matching the counters & quarters.

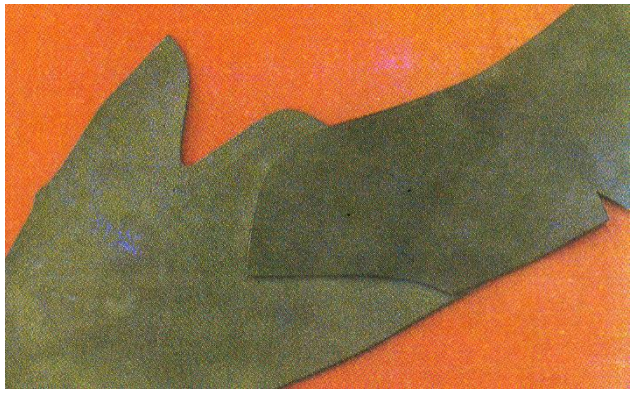


q. The top of the vamp, saddle & tongue must also match.

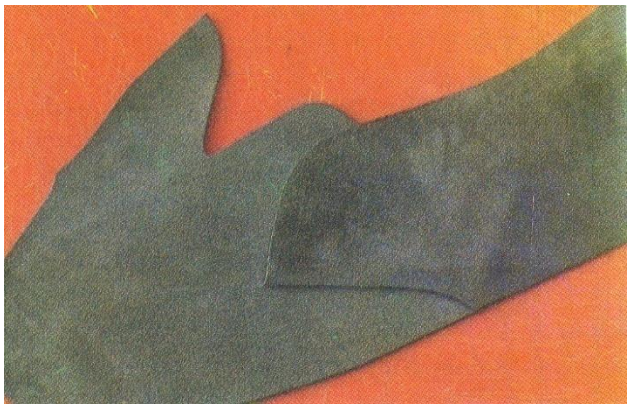


r. Counters: The grain of the counter may need to be checked against the back of the quarter.

s. Nap of suede and nubuck leather components should be matched.



t. Color of suede and nubuck leather components should be matched.



Self-Check 2	Written Test

Name: _____ **Date:** _____

(Total marks:-4)

Instructions: Write all your answers in the provided answer sheet on page

Test I: Short Answer Questions

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

Fill in the blanks:

1. ---------- of suede and nubuck leather components should be matched.
2. After cutting clicker must check the cut components for ----------.
3. All parts of the shoe should be collected for the ----------.
4. The left foot must match the ----------.

Information Sheet 3- Necessary record and report are accomplished in accordance with work procedures and standard format.

6.3.1 Cut component inspection report

Final inspection is very important in catching quality problems. This is the last check before the cut components are sent to the next operation. Skilled auditors are required to perform this job because many of the defects at this point require the attention of a skillful eye.

CUTTING FINAL INSPECTION

DATE:_____ **ART/COLOR:_____** **PASSED QTY: _____**

PLAN No:_____ **DESCRIPTION:_____** **REJECTED QTY:_____**

PLAN Qty:_____ **No of pairs seen:_____** **PERCENTAGE :_____**

S/	DEFECT	VAMP		QUARTER		COUNTER	H/GRIP /	SOCKS	TOUNGE		TOTAL		% age
		U	L	U	L	U	L	L	U	L	U	L	
1	Loose Leather												
2	Uneven Skiving												
3	Under Thickness												
4	Improper Skiving Allowance												
5	Edge Cut in Cutting												

6	**Improper Splitting**												
7	**Under Substance**												
8	**Skiving Damage**												
9	**Wrong Size**												
10	**Color Vibration**												
11	**Different Type Of Leather**												
12	**Stamping**												
13	**Plan No. Mixed**												
14	**Pair No.Size Not Stamped**												
15	**Embossing Not Clear**												

DAILY QUALITY REPORT

With the help of this report we can know the how much components are rejected in a particular plan. With this report we can know the name of the

Components and the percentage of the rejection can be known easily.

UPPER/LINING CUT COMPONENT INSPECTION

DATE:_____ **ART/COLOR:_____** **PASSED QTY: _____**

PLAN No:_____ **DESCRIPTION:_____** **REJECTED QTY:_____**

PERCENTAGE :_____

Plan Qty:_____ **No of pairs seen:_____**

S/N	DEFECT	VAMP/		QUARTER		COUNTER/ BACK STRAP	H/Grip	SOCKS	TOUNGE/		SADDLE		MUDGUARD		APRON		TOTAL		% age	
		U	L	U	L	U	L	L	U	L	U	L	U	L	U	L	U	L	U	L
1	Loose Leather																			
2	Open Defect																			
3	Cut/flaw																			

4	Vein Marks																			
5	Scratches																			
6	Growth Marks																			
7	Under thickness																			
8	Bossy nap																			

Daily production report

A daily production report (**DPR**) is a term for the form filled out each day of production for a shoe to summarize what occurred that day. There is standard template for a production report and the purpose of this form is to keep track of a production's progress

XXX COMPANY									
DAILY CUTTING PRODUCTION REPORT									
DATE									
MODEL NO									
PLAN NO									
COLOUR									
	TYPE	SIZES							
	M	38	39	40	41	42	43	44	
	W	34	35	36	37	38	39	40	
	C	33	34	35	36	37	38		
MATERIAL	SIZES								TOTAL
UPPER									
LINING									
TOE PUFF									
COUNTER STIFINER									
SOCKS									
FOAMS									

TEXTILE									
INSOLE									

Self-Check 3	**Written Test**

Name: _____ **Date:** _____

(Total point:-2)

Instructions: Write all your answers in the provided answer sheet on page

Test I:Short Answer Questions

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

1. What is the purpose of daily production report?
2. What is the purpose of final inspection?
3. Who can do the final inspection cut components?
4. Which report helps us in knowing the % rejection of the components?

Answer sheet

Key answer for LO 1Self check 1_7

Self check 1 (5point)

Short answer

1,_____

2,_____

Fill in the blank

1,_____

2._____

self check 7(9point)

List

1_____

2_____

Key answer for LO 2Self check 1_4

Self check 1

1._____

2._____

3._____

4._____

5._____

6._____

7._____

8._____

Self check 2

Multiple choose

1._____

2._____

3._____

4._____

Fill in the blank

5._____

6._____

7._____

8._____

Self check 3

Multiple choose Fill in the blank

1._____5._____

2._____6._____

3._____7._____

4._____8._____

Self check 3

Multiple choose Fill in the blank

1._____5._____

2._____6._____

3._____7._____

4._____8._____

Self check 4

1._____5._____

2._____6._____

3._____7._____

4._____8._____

Key answer for LO3Self check 1_3

Self check 1

1._____5._____

2._____6._____

3._____7._____

4._____8._____

Self check 2

Fill in the blank

1._____5._____

2._____6._____

3._____7._____

4._____8._____

5._____10._____

Self check 3

1._____&_____5._____

2._____6._____

3._____7._____

4._____8._____

Key answer for LO4Self check 1_2 &lap test

Self check 1

1._____

2._____

Self check 2

1._____

2._____6._____

3._____7._____

4._____8._____

5._____9._____

Lap test

Key answer for LO5 Self check 1_3

Self check 1

1._____

Self check 2

1._____4._____

2._____5._____

3._____6._____

Self check 3

1._____1._____

2._____2._____

3._____3._____

4._____4._____

Key answer for LO6 Self check 1_3

Self check 1

Fill in the blank

1._____

2._____

3._____

4._____

Self check 2

Fill in the blank

1._____

2._____

3._____

4._____

Self check 3

One word answers:

1._____

2._____

3._____

4._____

Reference Materials

Book:

TTLM of footwear level one on os Version 4January 2012 **Operating footwear cutting machines**

WEB ADDRESSES

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We wish to extend thanks and appreciation to the many representatives of TVET instructors and respective industry who revision new OS on footwear and Teaching, Training and Learning Materials (TTLM) proposed in LIDI (LEATHER INDUSTY DEVELOPMENT INSTITUTE) .

experts of Oromia Regional TVET bureau and Federal TVET bureau in Bishofitu city BIN INTERNATIONAL HOTEL

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