National Technical and Vocational Qualification Framework

NTVQF

Competency-Based Learning Material

Machine Operator
NTVQ Level 1

Cutting Leather by Machine

Bangladesh Technical Education Board
Agargoan, Shere Bangla Nagar
Dhaka-1207

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HOW TO USE THIS COMPETENCY-BASED LEARNING MATERIAL

Welcome to the module **Cutting Leather by Machine**. This module contains training materials and activities for you to complete.

This unit of competency, **"Cut Leather by Machine"**, is one of the competencies of Machine Operator NTVQ Level 1 Occupation, a course which comprises the knowledge, skills and attitudes required to become a Basic-Skilled Worker.

You are required to go through a series of learning activities in order to complete each learning outcome of the module. These activities may be completed as part of structured classroom activities or you may be required to work at your own pace. These activities will ask you to complete associated learning and practice activities in order to gain knowledge and skills you need to achieve the learning outcomes.

Refer to **Learning Activity Page** to know the sequence of learning tasks to undergo and the appropriate resources to use in each task. This page will serve as your road map towards the achievement of competence.

Read the **Information Sheets**. These will give you an understanding of the work, and why things are done the way they are. Once you have finished reading the Information sheets complete the questions in the Self-Check Sheets.

Self-Checks follow the Information Sheets in the learning guide. Completing the Self-checks will help you know how you are progressing. To know how you fared with the self-checks, review the **Answer Key**.

Complete all activities as directed in the **Job Sheets and/or Activity sheets**. This is where you will apply your new knowledge while developing new skills.

When working though this module always be aware of safety requirements. If you have questions, do not hesitate to ask your facilitator for assistance.

When you have completed all the tasks required in this learning guide, an assessment event will be scheduled to evaluate if you have achieved competency in the specified learning outcomes and are ready for the next task.

MODULE CONTENT

MODULE TITLE: **Cutting Leather by Machine**

MODULE DESCRIPTOR:

This module covers portion of the required knowledge, skills and attitude in machine operation. This will guide you in cutting leather by machine. This module will also enable you to identify different types of machine used in cutting leather

After completing this module, you will be assessed through written tests and demonstration of some packaging techniques.

NOMINAL DURATION: 50 hours

LEARNING OUTCOMES:

At the end of this module you MUST be able to:

1. Observe OSH practices.
2. Identify different types and qualities of materials
3. .Maintain machines
4. Cut leather by machine (Set up machines)
5. Cut non-leather materials by machine
6. Check cut material

ASSESSMENT CRITERIA:

The trainee will be assessed by observing the following performance criteria:

1. All safety requirements/regulations are adhered to before, during and after use.
2. Unsafe or faulty tools are identified and repaired according to designated procedures before, during and after use.
3. Personal protective clothing (PPE) worn
4. Materials are assessed against job specifications.
5. Various types and finish of materials are checked according to work order.
6. Materials are inspected and sorted according to colours, shades, thickness and finish.
7. Cutting boards are planed, cleaned and maintained.
8. Cutting knives are sharpened, maintained and stored.
9. Machines are started up and shut down as per operation manual and company safety regulations.
10. Worn out striker plate replaced and reported
11. Pressure setting in the cutting press is adjusted according to the size and shape of the knives.

12. Parts are cut to workplace quality standards in relation to materials flaws and acceptable levels of matching of irregular and non-uniform finishes.
13. Distortions and defects on press cutting knives, dies and cutting boards are identified and appropriate action taken
14. Work is completed according to industry performance and quality standards.
15. Cut pieces are checked for quality and quantity standards.
16. Work place and machines are cleaned as per work place standard.
17. Waste is disposed of according to company regulations.

LEARNING OUTCOME 1: FOLLOW OSH PRACTICES

CONTENTS:

1. Follow safety requirements/regulations during and after use.
2. Identify safety precautions when using tools and equipment
3. Wear personal protective clothing (PPE)

ASSESSMENT CRITERIA:

1. All safety requirements/regulations are adhered to before, during and after use.
2. Unsafe or faulty tools are identified and repaired according to designated procedures before, during and after use.
3. Safety precautions in using power tools and equipment are identified
4. Personal protective clothing (PPE) is worn

CONDITIONS:

Students/trainees must be provided with the following:

- Books, manuals
- Modules/references

LEARNING ACTIVITIES

LEARNING OUTCOME: Follow OSH Practices

LEARNING ACTIVITIES	RESOURCES/SPECIAL INSTRUCTIONS
Identifying safety requirements and precautions before, during and after work	• Read Information Sheet 5. 1-1 • Answer Self-Check 5.1-1 and compare your answer with the answer key

INFORMATION SHEET NO 5.1-1

Safety Requirements and Regulations Before, During and After Work

Learning Objectives:

After reading this INFORMATION SHEET, you should be able to identify safety requirements and regulations before, during and after work.

Safety requirement in performing leather cutting by machine

- All clicking presses should only operate with the use of both hands.
- Only the actual knife being used should be on the clicking board.
- Scissors and knife should not be allowed on the clicking board.
- Clicking knife should not be struck on the edge of the beam to release them, from the board, they can spring up.
- When using the grind stone for making or sharpening hand cutting knives use safety. Do not use a grind stone without glasses.
- Switch off grindstone when not in use
- Avoid wearing loose clothing it can get caught in machinery.
- Long hair or loose clothing should not be allowed near machinery.
- Care should be taken when handling knives many have sharp edges, pins etc. Which can cut your fingers?
- Never place your hands or fingers under the beam of the press to release a knife.
- Do not have anything on the clicking board after you turn off the machine. When the power is turned off the beam automatically lowers itself on the cutting board.
- When you working in machine not to be careless.
- Know your Fire drill.
- Do not attempt to do your own electrical repairs.

Safety precautions on the use of Power tools and equipment

You may be required to use power tools if you work in a leather industry. These tools and equipment has the potential to cause serious injury, particularly if they’re poorly maintained or used without due caution.

Before you start

- Never use a power tool or piece of equipment unless you have been trained and authorized do so. Follow safe work procedures.
- Inspect tools prior to use. Only use tools that are in good operating condition. Check power cords daily for tears or cuts in the insulation, loose connections (plug to wire and wire to tool), and poor ground connections. Report all defective tools to your supervisor, and mark them “Not to be used.”
- Wear hearing protection and tie back long hair.

- Check that all guards and safety devices are in place and functioning properly. Check that the power switch is in the off position before plugging the tool in. Only the operator should turn the tool on.

While the tool or equipment is operating:

- Stay with running power tools or equipment
- Do not walk away from a machine you have been using until it comes to a complete stop. It takes only a few seconds for a power tool to “wind down” after it has been shut off, but it still has the potential to injure someone if the parts are still moving.
- Keep your hands away from moving parts.
- Make sure the cutting part of a tool will not come in contact with the power cord.
- Maintain a firm grip at all times.
- Turn off power tools before making adjustments. Always unplug or lock out the tool before making adjustments or changing settings if there is any chance that the tool could accidently start up.

Use Personal Protective equipment such as the following:

Safety Goggles:

Masks:

Safety Apron:

Hand Gloves:

SELF-CHECK 5.1-1

Answer the following:

1. What are the safety requirements when performing leather cutting by machine?
2. Enumerate the safety precautions when using power tools and equipment.

ANSWER KEY 5.1-1

1. Safety requirement in performing leather cutting by machine

- All clicking presses should only operate with the use of both hands.
- Only the actual knife being used should be on the clicking board.
- Scissors and knife should not be allowed on the clicking board.
- Clicking knife should not be struck on the edge of the beam to release them, from the board, they can spring up.
- When using the grind stone for making or sharpening hand cutting knives use safety. Do not use a grind stone without glasses.
- Switch off grindstone when not in use
- Avoid wearing loose clothing it can get caught in machinery.
- Long hair or loose clothing should not be allowed near machinery.
- Care should be taken when handling knives many have sharp edges, pins etc. Which can cut your fingers?
- Never place your hands or fingers under the beam of the press to release a knife.
- Do not have anything on the clicking board after you turn off the machine. When the power is turned off the beam automatically lowers itself on the cutting board.
- When you working in machine not to be careless.
- Know your Fire drill.
- Do not attempt to do your own electrical repairs.

2. Safety precautions when using power tools

- Never use a power tool or piece of equipment unless you have been trained and authorized do so. Follow safe work procedures.
- Inspect tools prior to use. Only use tools that are in good operating condition. Check power cords daily for tears or cuts in the insulation, loose connections (plug to wire and wire to tool), and poor ground connections. Report all defective tools to your supervisor, and mark them “Not to be used.”
- Wear hearing protection and tie back long hair.
- Check that all guards and safety devices are in place and functioning properly. Check that the power switch is in the off position before plugging the tool in. Only the operator should turn the tool on.
- Stay with running power tools or equipment
- Do not walk away from a machine you have been using until it comes to a complete stop. It takes only a few seconds for a power tool to “wind down” after it has been shut off, but it still has the potential to injure someone if the parts are still moving.

- Keep your hands away from moving parts.
- Make sure the cutting part of a tool will not come in contact with the power cord.
- Maintain a firm grip at all times.
- Turn off power tools before making adjustments. Always unplug or lock out the tool before making adjustments or changing settings if there is any chance that the tool could accidently start up.

LEARNING OUTCOME 2: IDENTIFY DIFFERENT TYPES AND QUALITIES OF MATERIALS

CONTENTS:

1. Identify types of real leather
2. Determine the forms of leather used in the leather goods industry
3. Identify the different classifications of leather according to source

ASSESSMENT CRITERIA:

1. Types of real leather are identified
2. Forms of leather used in the leather goods industry are determined
3. Different classifications of leather according to source are identified.

CONDITIONS:

Students/trainees must be provided with the following:

- Books, manuals
- Modules/references

LEARNING ACTIVITIES

LEARNING OUTCOME Identify Different Types and Qualities of Materials

LEARNING ACTIVITIES	RESOURCES/SPECIAL INSTRUCTIONS
Identifying different types and qualities of leather materials	• Read Information Sheet 5.2-1 • Answer Self-Check 5.2-1 and compare your answer with the answer key

INFORMATION SHEET 5.2-1

Different Types and Qualities of Leather Materials

Learning Objectives:

After reading this INFORMATION SHEET, you should be able to identify types and qualities of leather materials.

Types of Real Leather

There are several main types of leather this are listed as below.

Corrected grain

This is the most basic type of leather available. Corrected grain has a coated finish that creates a very uniform feel with a strong protective coating. Corrected grain has a fairly soft finish but it is not a luxurious as higher grades and is the favored type of leather in well known furniture stores. Corrected grain is a good choice for those who want a good hard wearing leather that can be wiped clean at a very keen price.

Fine grain/semi-aniline

A very soft smooth buffed hide ideal for those who want a soft warm inviting feel. Ideal on modern suites and soft sit designs. Fine grain leather is well protected and good for everyday use whilst being much softer and more luxurious than standard coated leather.

Double thickness

As indicated twice the thickness of normal hide and extremely durable. Looks fantastic on larger suites and square designs. Double thickness hide has a heavy grain and is very well protected and exceptionally good for everyday/ heavy use.

Extra thick hide

Very similar to double thickness hide but about 1.5 times thicker than normal leather. A good choice hard wearing hide that is exceptional value for money.

Natural waxed hide

The fastest growing hide on the market today. Looks fantastic on classic, modern and contemporary ranges. Pull up hide is totally authentic with variations, natural features (such as original scarring) all part of the appeal. Pull up hide will lighten on areas that are scratched (this is the wax or oil separating) but will re-color when rubbed or specialist cream applied. Generally has a light protective coating. A great leather for those who are looking for a totally natural exceptionally soft look and feel.

Full aniline leather

The softest most luxurious leather available anywhere today. Full aniline is 100% natural hide without any coating and has a gorgeous look and beautiful feel to it. It is a perfect leather for those who want the ultimate in looks and comfort. Full aniline leather has only a very light protective coating but is fully dyed so does not scratch like waxed hide.

Because of the high cost of this leather it is advisable, when possible, to the vamp out of the best part of the leather first.
Always try to keep skin square by moving across the skin and cutting the lowest part of the skin first.

Closely inspect the leather for any flaws or surface defects and highlight these areas with chalk for easy identification,

When cutting craft it must be examined very closely before each cut.

There are many types of leather items sold and described as leather, when in actual fact they are imitations. Some of the more common ones are described below.

Bonded Leather Fibre

'Hide or skin with its original fibrous structure more or less intact... If the tanned hide is disintegrated mechanically and/or chemically into fibrous particles, mall pieces or powders and then, with or without a binding agent is made into sheets, such sheets are not leather'
BS: 2780

It is possible to see the incorporation of several material types within this bonded leather structure as different color types.

Advantages
• Cheap
• Uniform cutting area

Disadvantages
•Not leather
• Poor flexibility
• Not durable
• Little strength
• Looks cheap

Coated Leather

'A product where the finish thickness does not exceed 30% but is in excess of 0.15mm'

The darker region toward the grain side of the leather contains the actual coating, which can be constructed with various chemical materials, such as a polyurethane mix. As the finish thickness exceeds 0.15mm, it cannot be termed genuine leather.

Advantages
• Cheap
• Consistent surface

Disadvantages
• Lacks natural look
• Not porous
• Physical performance, flex etc (low)

Laminated Leather

The main features of laminated leathers are that they are a composite of two or more layers, where the laminate has been affixed to the flesh side. Also a difference between this leather type and a coated leather is that the laminate accounts for greater than 30% of the leathers overall thickness.

Advantages
• Consistent surface
• Some flexibility and strength
• Color and light fastness good

Disadvantages
• Lacks natural look
• Not porous
• Physical performance not as good (tends to crack)

Areas

You would be surprised the first time you see a full hide. Not only are they much larger than you think, they vary much more than you would expect too.

Leather from different parts of the animal varies in its characteristics, and this has to be taken into account when using leather in products. The hide thickness varies all over the animal, and to get it to the right thickness it is usually split on a special cutting machine

or buffed to an even thickness. The main parts of the hide are shown in the diagram below

Shoulder - the shoulder is thick and strong but tends to crease easily as this part of the hide is affected by movements of the head

Butt - the fibers in this part of the hide are tightly packed and hence the strongest part of the hide

Belly - this part of the hide is quite thin and has a much looser fiber structure than the back, and often stretches under stress.

Axillae - these are like the human armpits - they move a lot - so the fibre structure is quite loose, making it even more prone to loosening than the belly areas.

Leather can be classified into calf, cow hide, kid, goat, buffalo, kangaroo, reptile, sheepskin

Calf Leathers: Skin from young animals have a fine texture and tight grain; they are very sample, and the leather is thinner than that of more mature animals. The younger the animal the more these factors and qualities are emphasized.

Calf is recognized all over the world as the finest material available for marking top quality footwear uppers.

Goat Leather: “Kid” is the term applied to full chrome tanned leather made for kid of goat skins for use as footwear uppers.

The size of these skins various considerable according to the age of the animal when slaughtered. Just as in bovine leathers, where the grain is tighter and finer in calf leather than in side leather a different is apparent between the skins of young and old goat. Although goat skins are relatively thin they are strong and have a very hard-wearing grain.

Sheepskin: Sheep are grown in most countries for their wool or meal, with the skin or “pelt” being a by-product. Wool pelts do not have great strength characteristics and more suited to use in clothing. With proper selection and processing they could be used as lining leathers.

Crust vegetable tanned “Persian” sheep skins come from the Middle East, where the sheep grow a wool-fiber resembling hair. The resulting skin is tighter in grain that the sheepskin and must stronger. It is excellent for use as shoe linings, usually dyed and finished is fawn or grey shades.

Leather Types:

In general, leather is sold in three forms:

Full-Grain leather, made from the finest raw material, are clean natural hides which have not been sanded to remove imperfections. Only the hair has been removed. The grain remains in its natural state which will allow the best fiber strength, resulting in greater durability. The natural grain also has natural breathability, resulting in greater comfort for clothing. The natural Full-Grain surface will wear better than other leather. Rather than wearing out, it will develop a natural "Patina" and grow more beautiful over time. The finest leather furniture and footwear are made from Full-Grain leather. Full grain leathers can mainly be bought as two finish types: aniline and semi-aniline.

Corrected-Grain leather, also known as Top-Grain leather, is fuzzy on one side and smooth on the other. The smooth side is the side where the hair and natural grain used to be. The hides, which are made from inferior quality raw materials, have all of the natural grain sanded off and an artificial grain applied. Top grain leather generally must be heavily painted to cover up the sanding and stamping operation. Corrected grain leathers can mainly be bought as two finish types: semi-aniline and pigmented.

Suede, is leather that has had the grain completely removed or is an interior split of the hide/skin. During the splitting operation the grain and drop split are separated. The drop split can be further split (thickness allowing) into a middle split or a flesh split. In very thick hides the middle split can be separated into multiple layers until the thickness prevents further splitting. The strongest suedes are usually made from grain splits (that have the grain completely removed) or from the flesh split that has been shaved to the correct thickness. Suede is "fuzzy" on both sides. Suede is less durable than top-grain. Suede is cheaper because many pieces of suede can be split from a single thickness of hide, whereas only one piece of top-grain can be made. However, manufacturers use a variety of techniques to make suede appear to be full-grain. For example, in one operation, glue is mixed with one side of the suede, which is then pressed through rollers; these flatten and even out one side of the material, giving it the smooth appearance of full-grain. Latino is one of the trade names for this product. A reversed suede is grained leather that has been designed into the leather article with the grain facing away from the visible surface. It is not a true form of suede.

SELF-CHECK 5.2-1

Enumeration:

1. What are the types of real leather?
2. Enumerate the different classification of leather according to source.
3. What are the forms of leather commonly sold in the market?

ANSWER KEY 5.2-1

1. Types of real leather
   - Corrected grain
   - Fine grain/semi aniline
   - Double thickness
   - Extra thick hide
   - Natural waxed hide
   - Full aniline
2. Classification of leather according to source
   - Goat leather
   - Calf l leather
   - Sheep skin
3. Types of leather commonly sold in the market
   - Full grain leather
   - Corrected grain leather
   - Suede leather

LEARNING OUTCOME 3: CUT LEATHER BY MACHINE

CONTENTS:

1. Identify tools and equipment used in cutting leather by machine
2. Sharpen, maintain and store cutting knives
3. Adjust pressure setting in the cutting press according to the size and shape of knives
4. Set up machine according to job requirement
5. Cut leather by machine

ASSESSMENT CRITERIA:

1. Cutting boards are planed, cleaned and maintained.
2. Cutting knives are sharpened, maintained and stored.
3. Pressure setting in the cutting press is adjusted according to the size and shape of the knives
4. Parts are cut to workplace quality standards in relation to materials flaws and acceptable levels of matching of irregular and non-uniform finishes.
5. Distortions and defects on press cutting knives, dies and cutting boards are identified and appropriate action taken

CONDITIONS:

Students/trainees must be provided with the following:

- 3.manual of operation for machine
- Leather cutting machine
- Cutting board
- Leather material
- Cutting knives
- Sharpening tool

Learning Materials

- Books, manuals
- Modules/references

LEARNING ACTIVITIES

LEARNING OUTCOME Cut leather by Machine

LEARNING ACTIVITIES	RESOURCES/SPECIAL INSTRUCTIONS
Identify materials and tools for cutting leather by machine	• Read Information Sheet 5.3-1 • Answer Self-Check 5.3-1 and compare your answer with the answer key
Perform cutting leather by machine	• Read Information sheet 5.3-2 • Perform Activity Sheet 5.3-1 Cut leather by machine • Check your performance against performance criteria checklist

INFORMATION SHEET 5.3-1

Materials and Tools for Cutting Leather By Machine

Learning Objectives:

After reading this INFORMATION SHEET, you should be able to identify materials and tools for cutting leather by machine.

Cutting Board:

a. There are various types of clicking boards for clicking press available today, the main type that is used in India is the nylon board. There boards are available in various thicknesses.

b. Cutting boards are also available in various hardness. The color of the nylon also represents the type of hardness. The main colors are white, green and red.

Cutting board: Cutting boards are planed by the planning machine.

This is a planned board .This board is used for cutting leather by machine.

Cutting knife:

Forged steel knife:

Forged steel knives are made by the hand with the use of forge to temper the steel. Forged knives are generally more accurately made than cold bent knives.

Due to high manufacturing costs forged knifes are generally used only for Insoles' fancy trim, and often for high packed material such as vamp lining. Although the cost of forged knives high proportionally some of this cost is recuperated in the extra life of the clicking board. Forged knives do not cut as deeply into the board if the machine has been correctly.

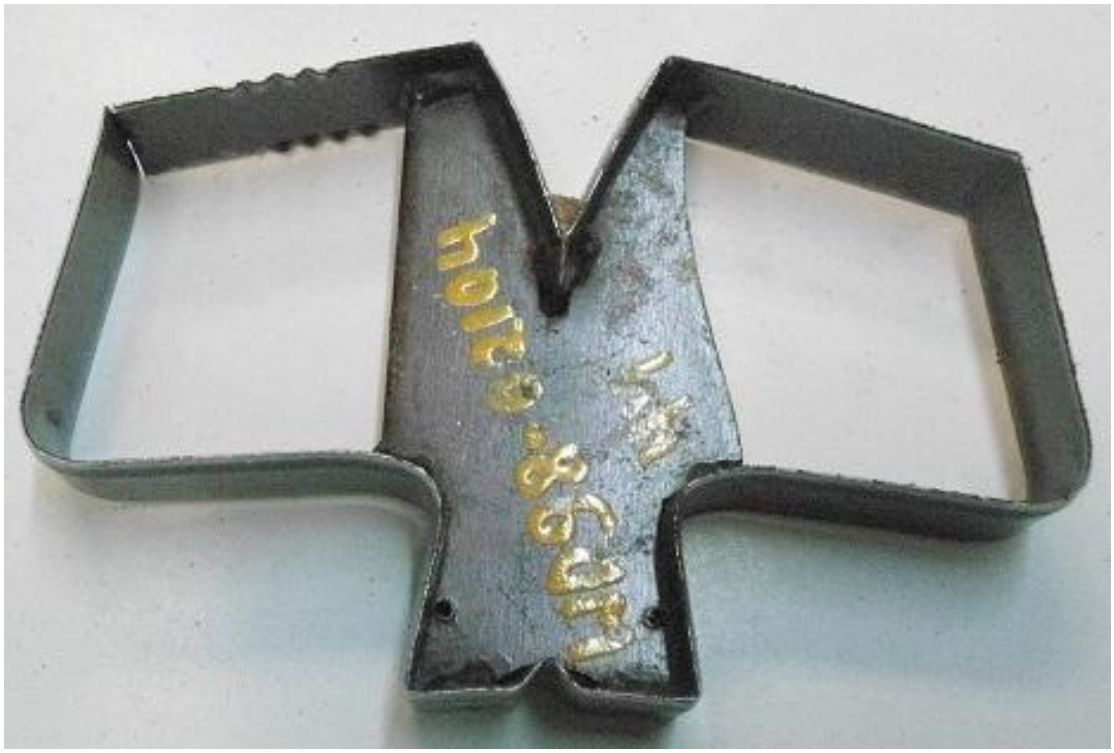
Forged knives do tend to chip more than cold bend knifes, this is due to their fine cutting edge.

Cold bent knife.

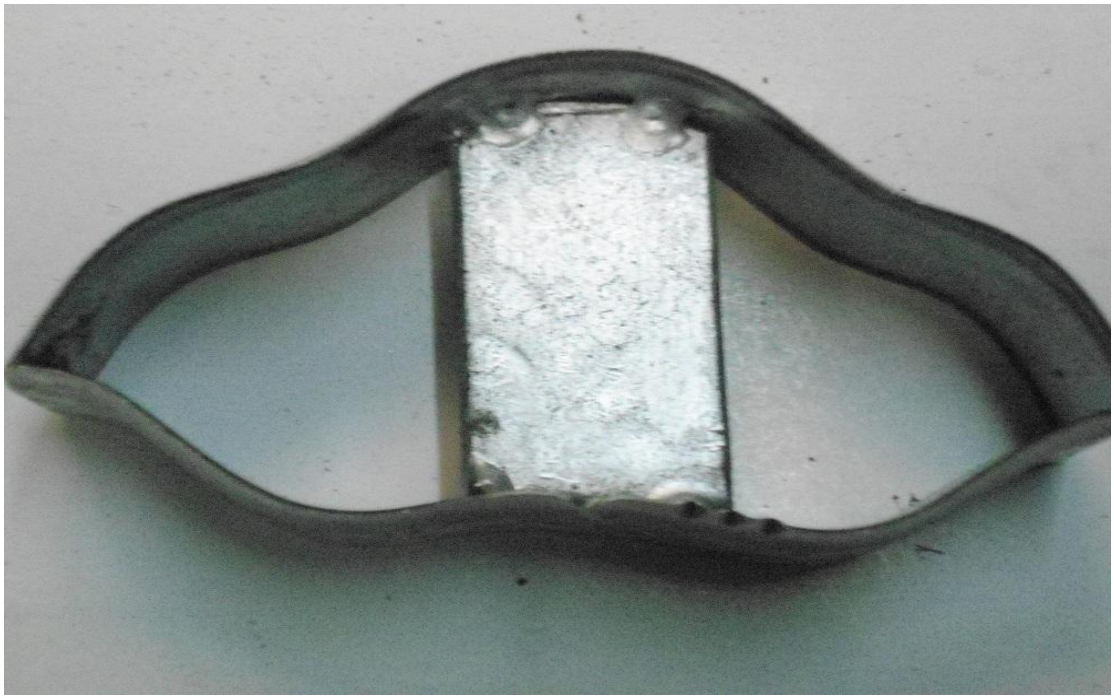
Cold bend knives are made from German or Swedish pre-formed steel, the steel blade is available in large rolls, in specified width and types

Vamp Knife: Although this knife is a ¾ cut, the front of the vamp must match the toe cap and strap for quality and grain. The area that is under the saddle can have marks in it. The outside portion of the vamp is allowed slightly less quality than the front of the vamp.

Counter knife: This knife cuts counter part of a shoe. The counter is divided up into three main quality regions.



Toe cap knife: This knife cuts toe cap part of a shoe. This is the main part of the shoe, it must be cut from the best quality regions there are 2 pieces of each cut of 1 pair of shoe.



Quarter knife: This knife cuts of only quarter part of shoe. The inside quarter is graded similarly to the outside but the complete quarter is generally accepted to be a grade lower than the outside quarter. There is one left and one right cut to a pair.

After selecting knives for cutting operation, ensure that all the knives are smooth and sharpened.

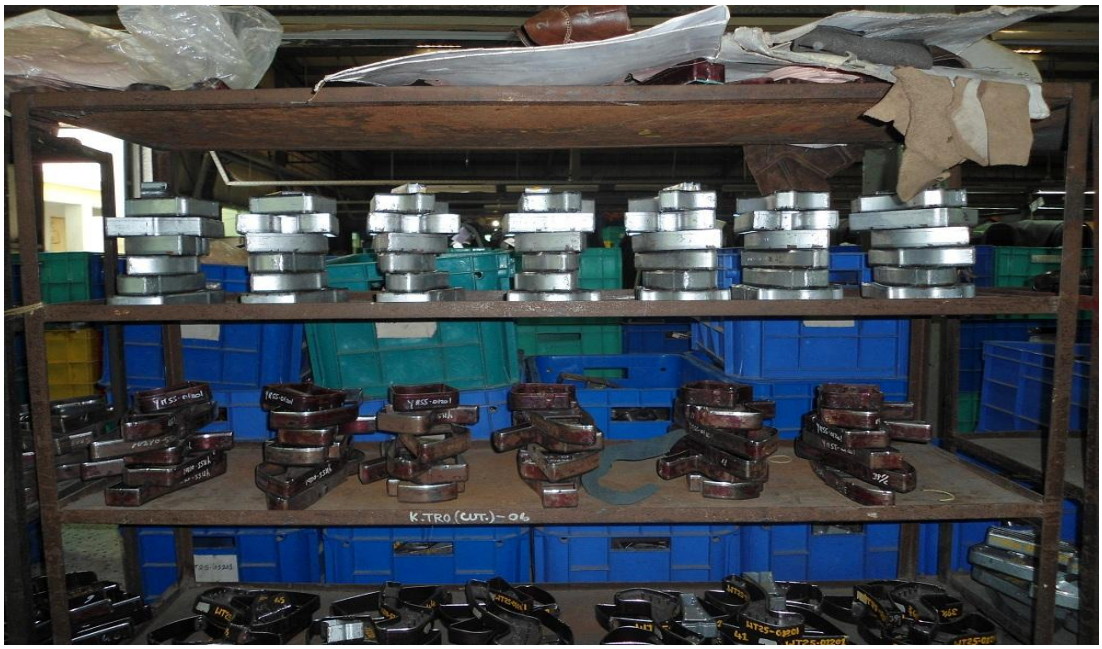
Cutting knives sharpening:

During knife sharpening, always use goggles to protect the eyes from injuries.

Switch off grindstone when not in use.

Storage of Knives:

a. 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.
b. Knives can be stored in shelves; these are normally specially made for this purpose.
c. The main storage method required should be such that no knife is placed on top of another. This reduces the knife of the cutting blade.
d. If knives must be placed on top each other they should have a paper or card board between each layer.
e. 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.



Knives can be stored in steel rack, these are normally specially made for this purpose.

Sample leather cutting machine

SELF-CHECK 5.3-1

Answer the following questions briefly.

1. Differentiate the different knives used in cutting leather by machine.
2. Discuss the proper care and storage of knives used in leather cutting machine.

ANSWER KEY 5.3-1

1. The different knives include:
   - Forged steel knives - are made by the hand with the use of forge to temper the steel.
   - Cold bend knives - are made from German or Swedish pre-formed steel, the steel blade is available in large rolls, in specified width and types
   - Vamp Knife - this knife is a ¾ cut and the front of the vamp must match the toe cap and strap for quality and grain.
   - Counter knife - cut counter part of a shoe.
   - Toe cap knife - cut toe cap part of a shoe.
   - Quarter knife - cut of only quarter part of shoe.

2. Store knives in shelves which is specially made for this purpose. The main storage method required should be such that no knife is placed on top of another. This reduces the knife of the cutting blade .If knives must be placed on top each other they should have a paper or card board 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.

INFORMATION SHEET 5.3-2

Cut Leather by Machine

Learning Objectives:

After reading this INFORMATION SHEET, you should be able to perform cutting leather by machine.

SETTING THE PRESS FOR THE CORRECT DEPTH OF CUT:

1. Setting the arm stoke. Place the knife on the clicking board.
2. Setting of pressure control.
   It is very important that the press is set to the correct cutting pressure. Too much pressure will destroy the board and cause possible knife breakages.
3. Place 1 piece of thin cardboard on the clicking board.
4. Place the small knife on the cardboard.
5. Test the machine for cutting depth.
6. If the machine has been set correctly it should cut through, and only show a very small imprint on the cutting board.
7. If the knife cuts deeply into the nylon board reduce the pressure.
8. Test the cutting depth in three different areas of the board

Operating the clicking press:

1. Turn the machine on and wait for 2 to 3 minutes to allow the machine to circulate the oil.
2. Select the leather and place in the well at the back of the machine.
3. Bring the Leather over the cutting board; care should be taken not to scratch the leather grain surface on the aluminum plate.
4. Select the required knife.
5. Adjust the pressure stoke height, if required, this should be a minimum of 10 mm above the knife and more than 15 mm.
6. Swing the beam over the centre of the knife.
7. 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.
8. Swing the beam away from the knife.
9. Pick up the knife and the cut component.
10. Place the cut component in an orderly fashion on the side bench.
11. Repeat the same procedure, change knives when required.
12. On completion of cutting, replace knife and leather.
13. Turn off machine.
14. The machine will rest on the cutting block when turned off.
15. Pack and bundle cut components.

Cutting operation of the grain skin

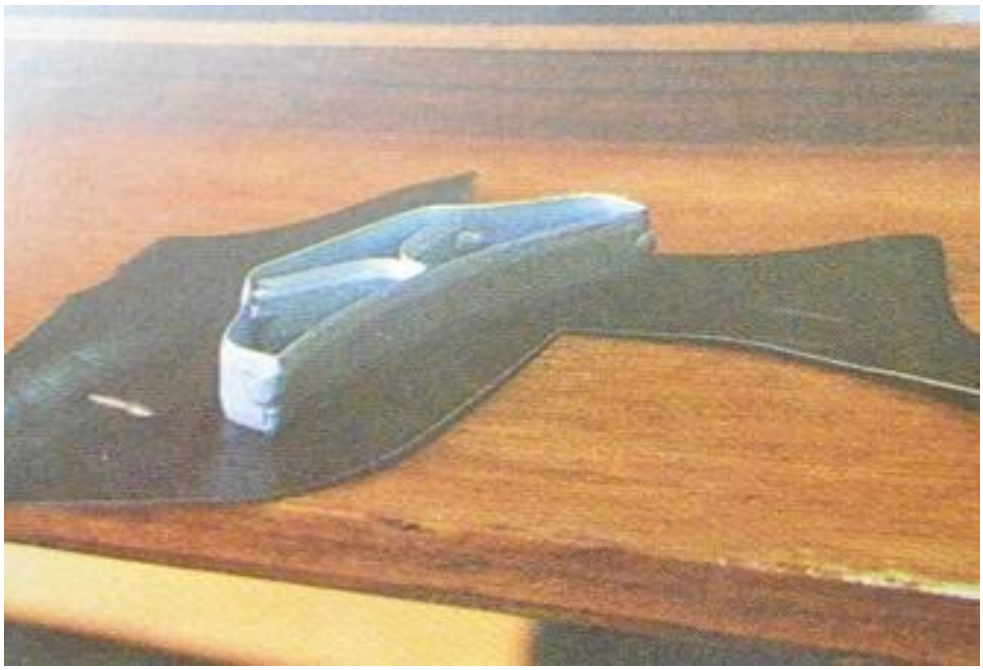
Selection of leather: Because of the high cost of this leather it is advisable, when possible, to the vamp out of the best part of the leather first.

Always try to keep skin square by moving across the skin and cutting the lowest part of the skin first.

Closely inspect the leather for any flaws or surface defects and highlight these areas with chalk for easy identification,

Place the cut piece aside. It is good practice after making a cut to turn your pattern over, ready for the opposite foot.

Keep aside the good interlocking offal off cuts. This will be used for cutting the back straps on the press.



Take the back strap knife and interlocking offal off cuts to the press and cut the two pairs of back straps.

Bundle up the outsides into their individual components and place them nearly aside. Layout your upper materials and upper knives and proceed to cut the upper to match the insides as indicated on the work ticket.

The full back lining and tongue lining are cut out of Ceelon. The vamp lining is cut out of combined drill. The lining material indicated on the ticket.

After grain matching check the complete shoe, it must be numbered with the size and pair number.

After the cutting operation, bundle the materials. They would normally be bundled in 5 pair lots. Check them perfectly.

Bundle completed work. Please an elastic band at each end. The top piece should be turned over to protect the grain.

Then ensure each completed 5 pairs are bundled securely together.

ACTIVITY SHEET 5.3-1	
Activity Title	Cutting Leather by Hand
Purpose	To be able to cut leather by Hand
Supplies/Materials	Cutting machine, Cutting Board, Cutting Knives, Leather Materials
Procedures:	1. Inform your trainer that you are ready for this activity. 2. Your trainer will now provide you with cutting equipment and materials. 3. Select the appropriate knife for the job and perform cutting of leather according to job requirement. 4. Identify and report problems with machine, knives and cutting boards in order to achieve quality standard 5. Check the cut products for compliance with job specification and quality standard. 6. Identify and replace rejects 7. Record the results. 8. Clean workplace and equipment as per workplace standard 9. Dispose waste properly.
Assessment Method:	Performance Criteria Checklist

PERFORMANCE CRITERIA CHECKLIST

CRITERIA	YES	NO
Did I…		
• Select and prepare cutting equipment and pattern according to specified work and sizes, and manufacturing instructions.		
• Assess materials against job specifications.		
• Inspect and sort the materials according to colors, shades, thickness and finish		
• Sort out leather pieces for different parts and consider pattern for minimum wastage according to industry requirements.		
• Clean and maintain cutting boards		
• Sharpen cutting knives		
• Start up machine as per operation manual and company safety regulation		
• Adjust pressure setting in the cutting press according to the size and shape of the knives		
• Cut parts to workplace quality standards in relation to materials flaws and acceptable levels of matching of irregular and non-uniform finishes.		
• Identify distortions and defects on press cutting knives, dies and cutting boards		
• Check cut products for compliance with job specifications and quality standard set by the industry.		
• Replace reject pieces and maintain records		
• Bundle completed work and place an elastic band at each end.		
• Shut down machine according to standard procedure		
• Clean workplace and equipment as per workplace standard.		
• Dispose of waste according to company regulations.		

REVIEW OF COMPETENCY

Below is your performance criteria checklist for the module Cutting Leather by Machine

Performance Criteria	Yes	No
1. All safety requirements/regulations are adhered to before, during and after use	☐	☐
2. Unsafe or faulty tools are identified and marked for repair according to designated procedures before, during and after use.	☐	☐
3. Personal protective equipment (PPE) worn.	☐	☐
4. Workstation is set up to reflect specifications and to achieve operator comfort and minimize fatigue.	☐	☐
5. Machines are cleaned and check for irregularities.	☐	☐
6. Cutting board are routinely cleaned, turned and maintained.	☐	☐
7. Striker plate is regularly checked for distortion and damage and irregularities report.	☐	☐
8. Materials are assessed against job specification.	☐	☐
9. Various types and finished of materials are checked according to work order.	☐	☐
10. Materials are inspected and shorted according to colors, shades, thickness and finished.	☐	☐
11. Knives and patterns are used to gain optimal materials use against workplace quality standards.	☐	☐
12. Machine are started up and shut down according to safety regulations.	☐	☐
13. Cutting knives are sharpened maintained and	☐	☐

stored.		
14. Pressure setting in the cutting press is adjusted according to the size and shape of the knives.	☐	☐
15. Parts are cut to workplace quality standards in relation to materials flaws and acceptable levels of matching of irregular and non-uniform finishes.	☐	☐
16. Distortions and defect on press cutting knives, dies and cutting boards are identified and appropriate action taken.	☐	☐
17. Finish product is checked against workplace quality standard.	☐	☐
18. Faults are recorded.	☐	☐
19. Finish product is checked against workplace quality standard.	☐	☐
20. Work place and machine is cleaned as per workplace	☐	☐
21. Waste is disposed off according to company regulations.	☐	☐

I now feel ready to undertake my formal competency assessment.

Signed:

Date:

REFERENCES

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