



Ethiopian TVET-System



Basic Leather Garments and Goods Production Operations LEVEL I

Based on May 2012 Occupational Standards

May, 2020



Module Title: Using Hand Tools and Equipment

TTLM Code: IND BLG1 TTLM 0919V1

This module includes the following Learning Guides

LG12: Prepare for work

LG Code: IND BLG1 M03 LO1-LG12

LO13: Select and use hand tools

LG Code: IND BLG1 M03 LO2-LG 13

LG14: CLEAN UP

LG Code: IND BLG1 M03 LO3-LG 14

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

- Work instruction
- Conforming and interpreting relevant quality requirements
- Obtaining safety requirements

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 instructions, specifications, quality requirements and operational details relevant to the tasks are obtained, confirmed and interpreted
- Safety requirements are obtained from the organizational policies and procedures, confirmed and applied to the allotted task.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 25.
3. Read the information written in the “Information Sheets 1”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
4. Accomplish the “Self-check 1” in page 7.
5. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).
6. 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 instruction #3.
7. Read the information written in the “Information Sheets 2”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
8. Accomplish the “Self-check 2” in page 13.



9. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 2).
10. 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 instruction #7.
11. Read the information written in the “Information Sheets 3”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
12. Accomplish the “Self-check 1” in page 20.
13. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 3).
14. If you earned a satisfactory evaluation proceed to “Learning guide 13”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning instruction #11.
15. Submit your accomplished Self-check. This will form part of your training portfolio.

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Information Sheet-1

Work Instruction

A Work instruction is a document that provides specific instruction to carry out an activity. A work instruction is a step by step guide to perform a single instruction. A work instruction contains more detail than a procedure and is only created if detailed step-by-step instructions are needed.

A detailed set of instructions that describe exactly how a low-level activity must be carried out. For example, describing precisely the function and quality requirement of leather garment and goods production tools and equipment.

Work instruction are “how you address satisfying the SOP” documents.

Standards state that you must have documented procedure for conducting audits.

SOPs/ procedures outlines how/when audits will be performed. Work instructions who one level down and show the exact steps required to trained the auditors, prepare the documents etc.

Another way of looking at work instructions v procedures is that:

Procedure describe:

- What is the activity is
- Who performs it
- When it is performed

Work instruction describe:

- How the activity is performed.

A work instruction is a tool provided to help someone to a job correctly. This simple statement implies that the purpose of the work instruction is quality and that the target user is the worker. Unfortunately, in many work places, today's work instructions have little connection with this fundamental focus.

Key sections in each work instructions

Each work instructions has the following sections.

Purpose

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In the opening paragraph, describe what the work instruction does in a single sentence.

Start with; the purpose of this document is to provide instructions for obtain, conform and interpret relevant quality requirements of leather hand tools and equipment.

Scope

Describe the scope of the work instruction. For example; technical work instructions may refer to specific operating system.

Responsibilities

Identify the personnel involved in the work instruction and describe how their responsibilities relate to this activity.

If necessary, include contact information, such as Name, Role and E mail. This keep brief or point the reader to the procedures manual.

Criteria

Where appropriate, identify any technical or workmanship standards that are required to perform these instructions.

Instructions

Provide the steps required to perform the work instruction.

- Use short words, active verbs and avoid ambiguity.
- List the steps to be taken in the correct sequence.
- Use flowcharts, bullet instructions, text, images, numbered instructions or any combination, providing the instructions are easily understood and accurate.
- Use a Naming Convention for the Work Instructions so you can track them in your Document Management System, for example, WI-Dept-Date-F. Dept refers to the business unit; Date is the date when it was last updated, and F refers to Final document. Use D for Draft documents.
- List the steps in numeric order.
- Use an If-Then table to describe steps where the user is presented with different options.

Revision History

- Describe previous changes made to this document. Include the Revision,
- Description of Change and the Effective Date

References

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- List the name and reference numbers of any documents referenced in this Work Instruction. You must also reference procedures that control the Work Instruction including its control number. You may also include resources that may be useful when performing this procedure, such as for industry standards and links to other Procedure

Manuals. Include the:

- Doc #
- Author
- Document Title

Tools, Software or Fixtures

- If appropriate, list any tools required to perform the tasks described in this document.

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Self-Check -1	Written Test
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Name: _____

Date: _____

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

1. Define work instruction. (5 Points)
2. Explain the difference between work instruction and procedures. (5 Points)
3. What is the purpose of work instruction? (5 Points)
4. List and define section of work instruction. (5 Points)

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Note: Satisfactory rating - 20 points

Unsatisfactory - below 20 points

You can ask you teacher for the copy of the correct answers.

Answer sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

1. _____

2. _____

3. _____

4. _____



Information Sheet-2	Conforming And Interpreting Relevant Quality Requirements
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The quality of leather products is affected by accessories, design, materials (leathers), hand tools and equipment (machineries), and experts. In order to develop a more complete definition of quality, we must consider some of the key dimensions of a quality product or service.

The quality required for products are durability of a product, aesthetic, product features, performance, conformance, reliability, perception and serviceability. The goal of every operation or production system is to generate a useful product. The product may be a service, information, or physical object. Each production cycle begins with inputs that are transformed by a process into a more desired state or into the product. This production process classified production inputs to every process as: man (person executing or controlling the process); machine (equipment or machinery used in the execution of the process); material (raw materials or parts required in the process); methods (procedures and sequence used to execute the process); and information (work instructions, data, and sensor readings that guide process execution). In each process, excessive variations and errors can cause nonconformities, with three undesirable consequences: (a) scrapped or wasted resources; (b) degraded process throughput; (c) “contamination” from undetected nonconformities, reducing the value of the product to the customer.

The goal of quality control in every production system is to (a) eliminate nonconformities and their consequences, (b) eliminate rework and wasted resources, and (c) achieve these goals at the lowest possible cost.

2.1 Dimension; a measurement of the size of something in a particular direction, such as the length, width, height, or diameter. For example the dimension of hand tools and equipment of leather goods are not the same with leather garment.

2.2 Tolerance; an allowable amount of variation of a specified quantity, especially in the dimensions of a machine or part.

2.3 Material standards

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Material standards are specifications that specify material properties:

Typically may include, among others:

- Physical properties
- Mechanical properties
- Quality standards or requirements, like surface finish or specific performance criteria

Quality parameters required for specific products

- Performance
- Reliability
- Durability
- Perception
- Serviceability
- Conformance
- Aesthetics
- Features
- **Cutting mats**

It is a durable, flexible, vinyl mat having an open construction for easy cleaning, comfort and safety. The mat has a low profile to minimize interference with foot and cart traffic. The vinyl composition offers excellent resistance to a variety of chemicals, greases and detergents found in industrial or food service environments.

Standard Sizes

Pre-Cut Mats: 3 ft. x 5 ft.; 3 ft. x 10 ft.

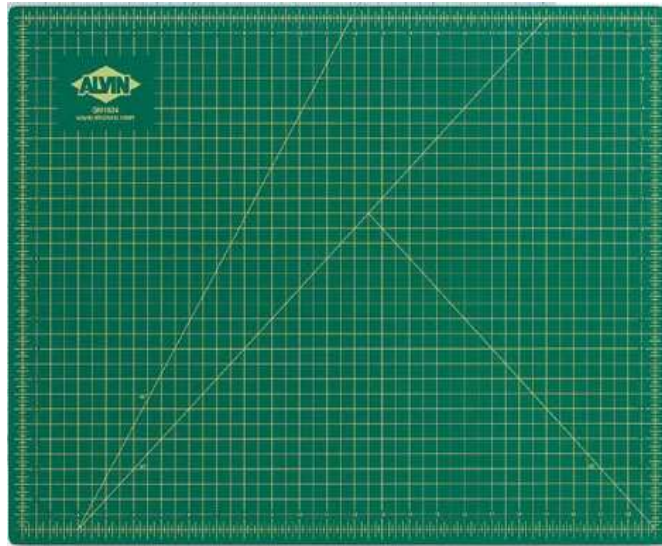
Pre-Cut Rolls: 3 ft. x 20 ft.

Custom Lengths:

Widths: 3 ft.

Length: 2 ft. to 30 ft. in 1ft. increment

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➤ **Extra Heavy-Duty Cutters (OLFA®)**

It handles the toughest heavy-duty cutting jobs with ease and safety. Combines power and accurate control to ensure smooth, effective cutting of even the toughest materials and features an easy-to-handle straight holder with non-slip rubber grip for control and safety and a screw lock. Durable, extra-sharp utility snap-off blades (0.7mm thick, 25mm wide) stand up to the strongest pressure. One blade includes OR-HB5B and OR-HB20 blades.



➤ **Heritage Scissors**

USA made with quality hardened steel these scissors will cut soft suede or tough belt leather with ease.



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➤ **High Quality stainless steel rulers**

High Quality, Etched Graduations, Heavy Duty, made of Hardened Steel with "Easy-Read" inch/metric graduation design. Rulers start with ZERO at the left edge (no leader), rounded right end and a hang hole. Upper edge is graduated in 1mm increments (0, 10, 20, 30 mm, etc... numbering). Lower edge is graduated in 1/32" increments. Rulers longer than 6" have angle finder/180° protractor with lines in 5° increments plus conversion tables on the reverse.



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Self-Check -2

Written Test

Name: _____

Date: _____

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

1. What is the standard size of cutting mats? (5 points)
2. List 8 quality parameters/dimensions(5points)
3. What is the goal of quality control in every production system (5points)

Note: Satisfactory rating - 15 points

Unsatisfactory - below 15 points

You can ask you teacher for the copy of the correct answers.

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Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

1. _____

2. _____

3. _____



3.1 Organizational Safety policies and procedures.

Establishing safety policies and work rules is a critical process in any industry. Without safety policies and procedures, would safety even be part of your company's culture? Your expectations must be clear, both verbally and in writing. As important as it is to train and orient your employees, unless the information you provide is written into your policies and rules, you leave yourself open to legal battles, misunderstandings, and loopholes. These policies may be understandings that have evolved after working together for a period of time, but they are much easier to enforce if they are in writing. Such policies and rules, if written properly, protect you and your employees and provide your company with the flexibility to manage your business needs.

Creating a safe and healthful work environment is not only a requirement for new employers; it is also a "best practice" among top performing businesses. According to author and safety professional Larry L. Hansen, "Safety excellence is all about proactively designing, aligning, and improving operational processes." Great businesses know how to get their work done effectively, efficiently, and safely. Formalizing your expectations, including step-by-step instructions for job tasks, is a very effective way to emphasize to your employees that you are as serious about their safety and health as you are about production, quality, profitability, and customer service. This guide provides you with some practical information and examples to help you assess, update, or create your company's safety policies, procedures, and rules.

3.2 Handling of Tools and Equipment

Safety means the quality of being safe or freedom from danger or risk of injury. It is a contrivance or device designed to prevent injury. Work shop safety is extremely important both to workers and managers (owners). Generally leather product processing is not as dangerous as many other manufacturing plants, but occasionally accidents can happen. It is easier and cheaper to prevent accidents before it is occur rather than later. Accidents fall in to one or more of the following categories:-

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- **Electricity:** occurs when connections are faulty such as:
 - Cables are not fit for the quantity of power
 - Cable insulations badly connected
 - Loose cables and its connectors
 - Circuit breaker is not installed/ not working or too strong
 - Fuses are too strong to protect current flow
- **Fire:** can destroy all the work of years
 - Incorrect power connections can heat up cables and produce sparks (fire)
 - Scouring/rubbing of metal causes small sparks which can glow for hours before igniting (usually occurs when nobody is around)
 - Handling of flammable liquids such as alcohol, solvents and glue (the storage of all flammable materials must be away from the working area and stored safely)
- **Others**
 - Improper shelving of tools and materials can cause fatal accidents.
 - Badly placed tools/devices like hot air blower can injure people.
 - Poor furniture can cause serious damage.
 - Slippery surfaces can hinder the work flow and cause accidents.
 - Poor knowledge of machines and equipment can lead to wastage of time.
 - Poor condition of tools and equipment leads to serious problems.

Safety Rules and Regulations for Stitching Machine

- Make sure to set your machine on a stable surface
- Make sure the area is tidy before you begin sewing
- Wire must be tucked / inserted neatly and correctly
- Tie up all loose hair before you begin
- Proper man management is needed for working on the machines.
- Always check that dials are set correctly.
- Presser foot should be lowered while starting the machine.

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- Always do Test stitch on a scrap.
- Proper distance should be maintained in between needle and finger.
- Turn off the power off when you have finished
- Turn off the power when threading the needle and changing the bobbin.
- Do not drink or eat near a sewing machine.

3.3 Self-protective clothing and equipment

Personal protective equipment (PPE) is designed to protect an individual from a potentially harmful substance, noise hazards or injury. PPE includes gloves, booties, gowns, boots, masks, respirators, face masks, helmets, goggles, hearing preservation equipment and specialized protective clothing. The Occupational Safety & Health Administration (OSHA) provides guidelines for the appropriate use of PPE.

3.4 Workplace environment and safety

Safety means not only preventing accidents but also doing something about poor working conditions such as very loud noise, poor light, dangerous liquids therefore in order to have a safe environment one must:-

- Follow – up and respect written instructions (manuals) on how to use machines particularly a new one as well as other equipment.
- Get detailed instructions on how to use machines, tools and chemicals like glue and solvents.
- Never try to operate, repair or adjust machines
- Keep the tools sharp at all times
- Electric wiring, cables, main switch must be in order and safety
- Formal safety regulations should be applied at all times such as workshops, offices, training rooms etc.
- Everyone should be aware and be prepared for any emergencies

Safety Procedures

To be effective, safety procedures should be communicated in written and verbal form and emphasized by showing the employee the procedure and then having them demonstrate to assure proper understanding of the procedure.

Common safety procedures may cover:

- How to report a hazard

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- Step-by-step examples of how to safely complete specific work tasks
- Basic safety rules
- Personal protective equipment
- Chemical usage
- Hazard communication
- Specific equipment use and safe operation
- Sharps use and disposal procedures
- Emergency plans

Sample Safety Rules

Here are examples of safety rules that are used by some businesses. Your rules need to be specific to your place of employment and the hazards associated with your job tasks.

1. Report to work alert, rested and in good physical condition.
2. Personal protective equipment (such as safety glasses, hearing protection, protective clothing, and footwear) must be worn when required for specific job tasks or work areas.
3. All accidents, incidents and injuries, regardless of how minor, shall be reported immediately to the supervisor in charge.
4. All work is to be performed in a safe manner according to our written policies and procedures. If you have a concern about the safety of a task, bring this to the attention of your immediate supervisor.
5. Understand your work assignments and perform only the job functions in which you are fully trained. Discuss any unfamiliar work assignments with your supervisor prior to beginning the task.
6. Possession of firearms or other weapons is prohibited on Company property, or while you are on Company business.
7. Horseplay or practical jokes are prohibited.
8. Use or being under the influence of, intoxicants or drugs while on the job is prohibited and shall be considered cause for dismissal.
9. No worker shall operate equipment unless trained and authorized for its use.

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10. A worker shall not operate a machine unless the guarding mechanisms are in place and functioning properly.
11. Always use the proper tool, equipment, or process for the job.
12. Ignoring safe work practices, policies, procedures, rules or other safety instruction could be cause for disciplinary action up to and including termination of employment.
13. All employees shall correct an unsafe condition or practice to the extent of their authority and/or report the hazard to their supervisor.
14. Ignoring safe work practices, policies, procedures, rules, or other safety instruction is cause for disciplinary action up to and including termination of employment.

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Self-Check -3	Written Test
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Name: _____

Date: _____

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

1. Write five Safety Rules and Regulations for Stitching Machine (5points)
2. What are the causes for Accidents in workshops? (3points)
3. Explain safe and healthful work environment According to author and safety professional Larry L. Hansen (3 point)
4. Define what safety means (2points)
5. List and explain the Personal protective equipment (PPE) (5points)

Note: Satisfactory rating - 18 points

Unsatisfactory - below 18 points

You can ask you teacher for the copy of the correct answers.

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Answer sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

1. _____

2. _____

3. _____

4. _____

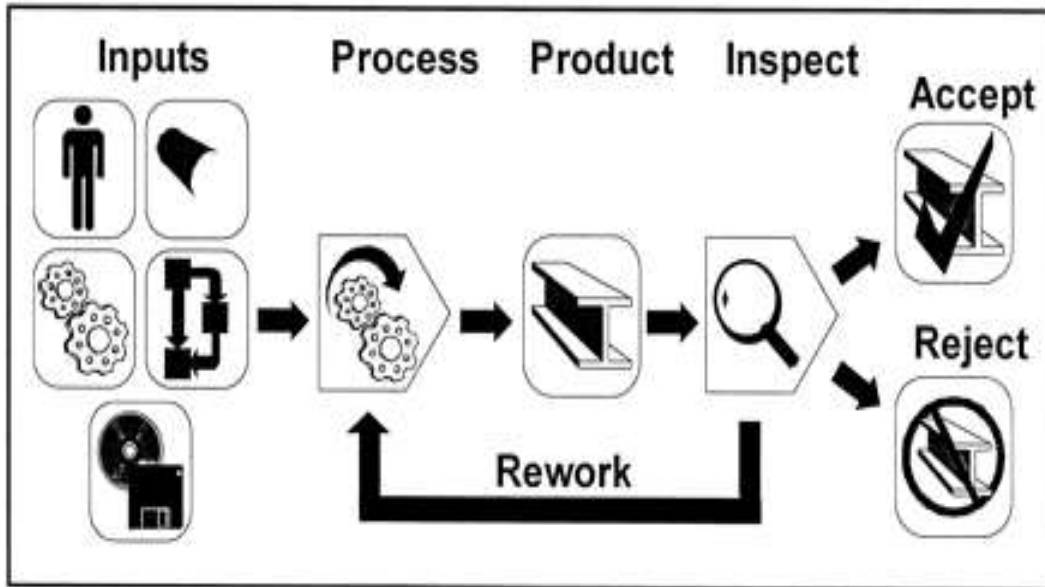
5. _____

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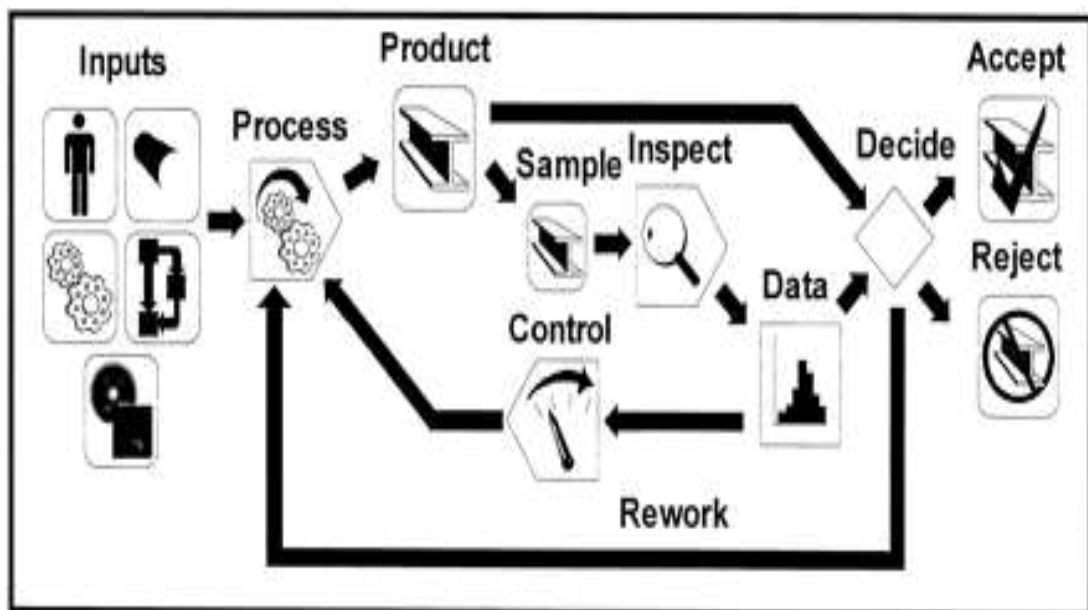
**Steps of obtaining safety requirements**

1. Identify quality parameters required for specific products
 - Performance
 - Reliability
 - Durability
 - Perception
 - Serviceability
 - Conformance
 - Aesthetics
 - Features
2. Inspect the products based on quality parameters identified
 - Sampling inspection
 - 100% inspection
3. Identify acceptance & rejection range
4. Back rejected items/ products for rework.

Judgment inspections are made after a process has transformed inputs into a product. The inputs to each process may include the man, materials, methods, information, and machines as illustrated clockwise at the left of the figure. Based on inspection, the product is accepted, rejected, or reworked. **See the following figure 1**



SQC inspections begin with a sample drawing, from products downstream of a process. Data from the inspected sample is collected and described statistically. Data are used to provide feedback control for the process and to decide whether the product or lot is accepted, rejected, or submitted for rework. **See the following figure 2.**



LAP Test	Practical Demonstration
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Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: based on the practice that you have made on how to hold your cutter/knife on the paper exercises

Task 1:- Identify quality parameters required for specific products

Task 2:- Inspect the products based on quality parameters identified

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Instruction Sheet

LO13: Select and use hand tools

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

- Selection Hand Tools and equipment.
- Checking for serviceability and safety of hand tools
- Reporting identified faults
- Using appropriate tool usage
- Using safe location and effective hand tools

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 –

- Hand tools and equipment are selected to carry out tasks.
- Hand tools are checked for serviceability and safety, and any faults are rectified or reported.
- Appropriate tool is used to perform the given task.
- Hand tools are used safely and effectively according to their intended use.
- Hand tools are safely located when not in immediate use.

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” in pages 13.
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. Read the information written in the “Information Sheets 2” and accomplish the “Self-check 2” in page 28.
6. 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 Instruction #5.

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7. Read the information written in the “Information Sheet 3” and accomplish the “Self-check 3” in page 32.
 8. 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 Learning Instruction #7.
 9. Read the information written in the “Information Sheet 4” and accomplish the “Self-check 3” in page 35.
 10. If you earned a satisfactory evaluation proceed to “information sheet 5”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Instruction #9.
 11. Read the information written in the “Information Sheet 5” and accomplish the “Self-check 3” in page 39.
 12. If you earned a satisfactory evaluation proceed to “Learning Guide#14”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Instruction #11.
 13. Submit your accomplished Self-check. This will form part of your training portfolio.
-

Information Sheet-1	Selection of hand tools and equipment
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Tools are expensive and manufactured with high quality materials, properly machined, nicely finished and fitted with comfortable handles. Hand tools offer high degree of control and precision. Using proper tools for the



proper jobs, a clean well-lighted working area, adequate instructions for performing jobs and safety precautions are the key factors for producing quality products. As tools play a vital role in the manufacturing of leather products, it is necessary to keep them in good working condition by storing them ready to hand as well as safe from damage.

Tools are classified into:

- Tools for pattern cutting
- Tools for leather goods fabricating
- Tools for leather crafting and
- Tools for dual performance

I.e. tools for leather goods fabricating and repairs and maintenance of equipment and machinery. Good tools and equipment help to give more professional finish to sewing. For leather garment making the basic sewing is divided into: marking, measuring and drafting, cutting, stitching and pressing. For each of these processes, there are essential tools and equipment to make the steps easier and the results superior.

Hand Tools used in leather garment and Leather Goods

A. Measuring and drafting tools:

Body and pattern measurements both require measuring and drafting tools. To ensure a good fit, accurate measurements with the best tools are essential.

i. See-through ruler: See-through ruler lets to see the measure or mark. It is flexible plastic of size 12” or 18” long. It is useful to check grain line, mark buttonholes, tucks and pleats and as a guide for tracing wheel.

ii. Tape measure: Tape measure is essential for taking body measurements. It is a flexible synthetic or Fiber glass, which will not tear or stretch, a 60” (150 cm) long tape with metal tips and measurements on both sides is used to take body measurements for correct fitting.

iii. Stainless-steel rulers:

Stainless-steel scale of sizes 12”, 24” and 1 meter are used for taking measurements. Stainless steel meter scale is used to measure longer lengths such as pants and coats. They are also used as cutting aids for cutting patterns and components.

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iv. Seam gauge: Seam gauge helps to make quick and accurate measurements for hems, buttonholes, scallops and pleats. It is a small 6" (15 cm) metal or plastic ruler with a sliding marker.

V.T-Square: T-square is used to locate cross grain, alter patterns and square off straight edges.

vi. L-Square ruler: L-square ruler is used for drawing straight lines and obtaining other desired angles.

vii. Set squares: A setsquares is used to draw straight lines while drafting patterns on the paper.

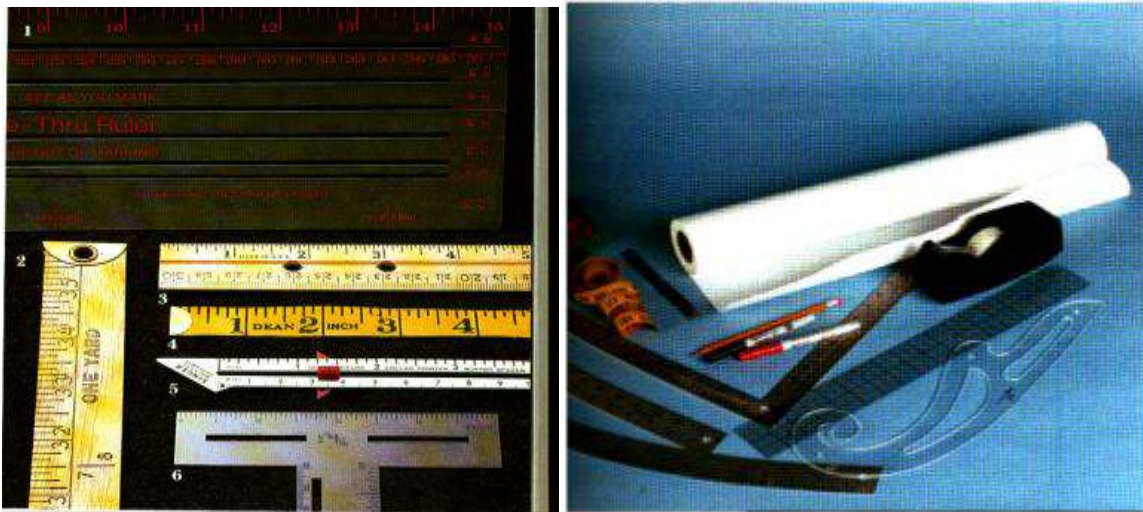


Fig. 1: Measuring and drafting tools

viii. French and sleigh curves:

French curve is used for re-drawing construction lines on patterns, especially in curved areas such as armholes, necklines and other design problems.

Shallower curve is used for drawing necklines, armholes and other details such as front hems and pockets.

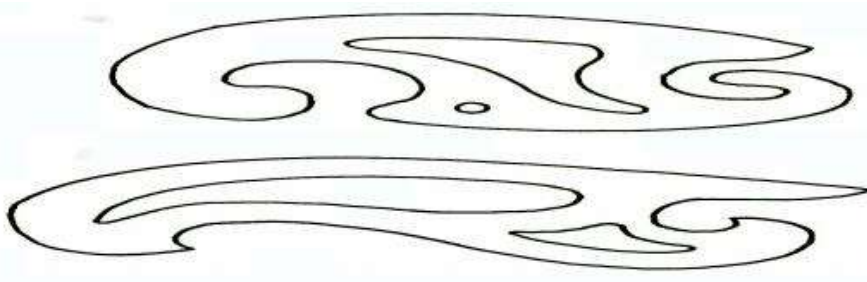


Fig.2: French and sleigh curves Future Study Areas



This study attempts to access the challenges of LGGMSMEs and recommended the solution for challenges. Based on this study the following detail study will be done;

ix. Hem gauge: Hem gauge is used for marking straight or curved hems. It is useful for adjusting pattern lengths.

x. Skirt marker: Skirt marker is an accurate tool for marking hems. It can be adjustable for all fashion lengths.

xi. Notch marker: Notch marker is used in pattern making to mark various points such as necklines, waistlines side seams, etc.

xii. Drafting paper: Drafting paper is crisp, translucent and comes 36" in wide on a tube. It is good for drafting, copying and adjusting patterns.

B. Punching tools

i. Lightweight Plastic Hammer/Hand stamper:

Lightweight plastic hammer/hand stamper is used for light works during assembling process. It is used mainly for folding glued edges of the components.

ii. Button fitting tools:

It is a set of tool and used for fixing various sizes of buttons in the garments.

iii. Notch punching tool:

Notch punching tool is used to make centre marks ('v') for assembling components accurately without any deformity in the shape.

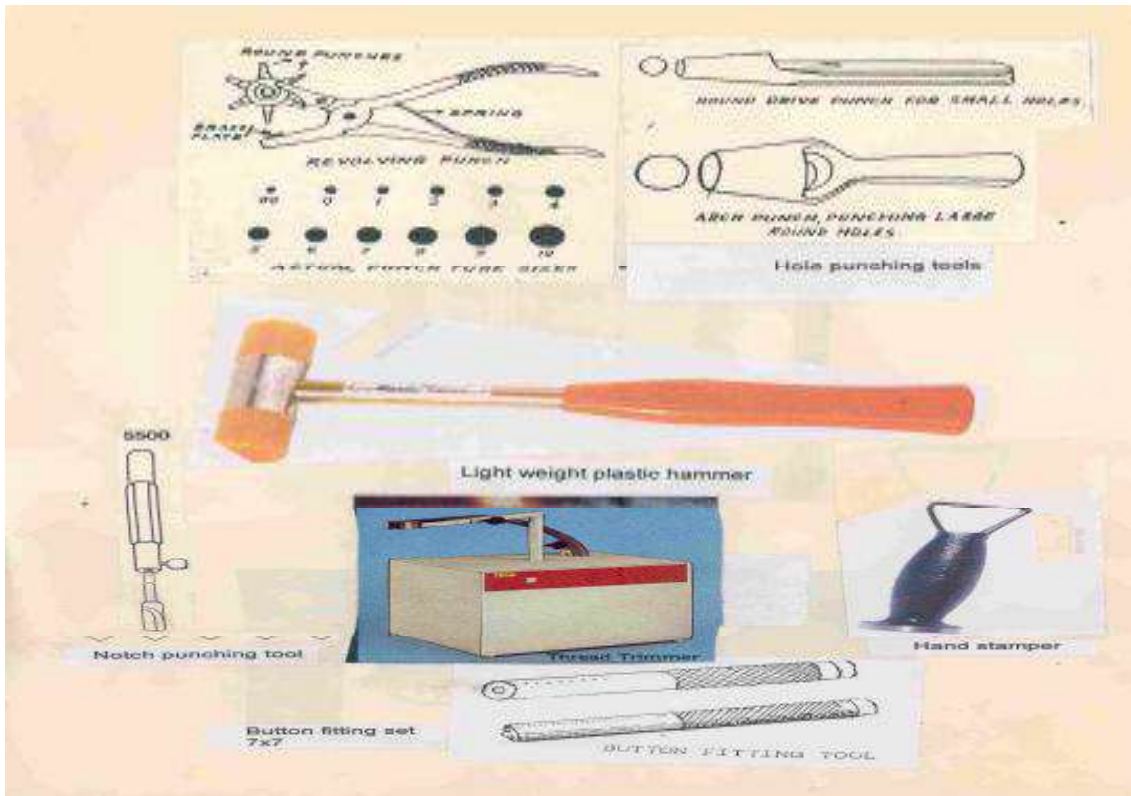


Fig.3: Punching tools

C. Cutting tools:

i. **Clicking knife:** Clicking knife is made of high-speed steel hacksaw blade and is used to cut paper and board patterns. It is also used to cut leather and lining components.



Fig. 4: Clicking and utility knives

ii. **Scissors and shears** Scissors have both handles the same size but shears have one handle larger than the other. Scissors and shears are hot-forged, high-grade steel, honed to a fine cutting edge. The blades are joined with an adjustable screw to ensure even pressure along the length of the blade. Sharp shears make clean cuts and well-defined notches.



iii. Bent-handled shears:

Bent-handled shears are best for pattern cutting because the angle of the lower blade lets leather/lining lie flat on the cutting surface. 7” or 8” (18 or 20.5 cm) are most popular but 12” (30 cm) shears are also used. Chrome-plated shears are used for heavy-duty cutting. The lighter models with stainless steel blades and plastic handles are used for lightweight linings while a serrated-edge shears are used for synthetic linings.

iv. Pinking shears or scalloping shears: Pinking scissor or scalloping shear is used for zigzag or scalloped cutting at the edges of the components. Zigzag fold edges give more elegance than plain fold edges. It cuts a ravel-resistant edge.

v. Lingerie shears:

It cuts sheerest fabric and trims close to stitching line. Serrated blades prevent slipping or stretching.

vi. Tailoring scissors:

It has sturdy blades for cutting heavy fabrics or leathers.

vii. Sewing scissors:

Sewing scissors have one pointed and one rounded tip for trimming and clipping seams and facings. 6” (15 cm) sewing scissor is most practical.

viii. Electric scissors:

It cuts quickly through light or heavy fabric or leather to make job easier and less tiring.

ix. Seam ripper:

Seam ripper has sharp curved edge for cutting seams open and a point for picking out threads. It can also be used for slashing machine-worked buttonholes. It must be used carefully to avoid accidental cutting of fabric.



x. Rotary cutter: Rotary cutter works like a pizza cutter. The sharp wheel cuts easily through multiple layers of fabric. It must always be used with a protective cutting mat under the fabric. This is very useful for slippery fabrics, fine sheers and suedes.

xi. Thread trimmer: Thread trimmer is used to trim excess thread after stitching. The trimmer with spring action blade is more convenient than shears and is safer than a seam ripper

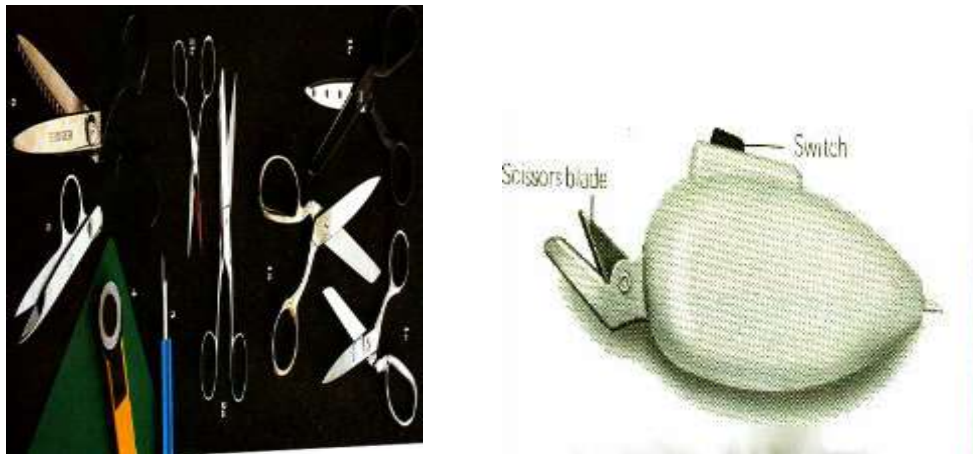


Fig. 5 Scissors and shears

D. Marking tools:

The symbols on pattern piece are the guides for the accurate construction of the garment. Transferring these symbols from pattern to leather or lining is essential to fitting and sewing. Therefore, it is necessary to have a variety of marking tools

i. Tracing wheels:

Tracing wheels are used to transfer pattern markings to garment leathers. Tracing wheels come in two types. They are serrated and smooth edge. The serrated edge-tracing wheel makes a dotted line marking but may pierce delicate ones. The smooth-edge tracing wheel protects delicate, smooth linings. It makes a solid line marking.

ii. Tailor's chalk/Silver marking pencil:

Silver-marking pencil is used to mark on leathers and linings with patterns for cutting components. It marks quickly and easily, directly on leathers and linings.



iii. Awl:

An awl or stiletto is a small sharp instrument, used to make marks in the patterns for fixing fittings.

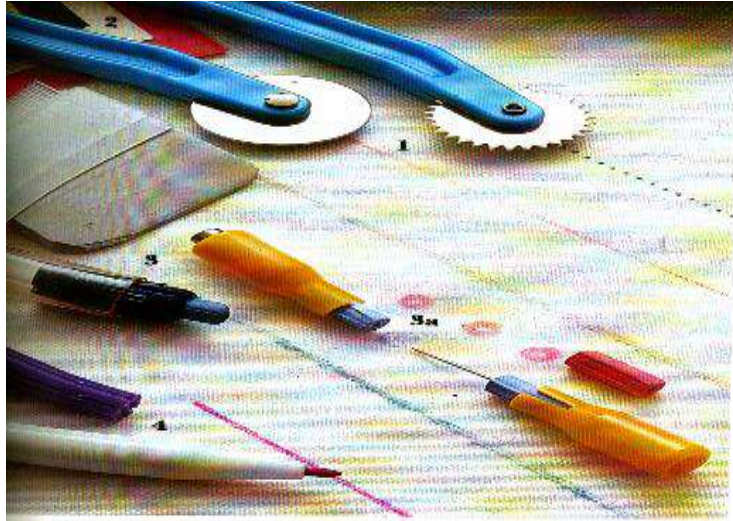


Fig. 6: Marking tools

E. Preparation and Finishing tools and equipment

1. Try Squares

Squares are simple tools that consist of a handle and calibrated blade set at 90 degrees to each other. Try squares are used to draw lines at right angles to surfaces. When adjacent surfaces form a 90-degree or right angle, they are said to be square to each other. This is very important to the artisan as most components are assembled square to each other. Try squares of 30cm x 15cm and 45cm x 25 cm and 60cm x 30cm are used to measure, place and guide cutting of straight lines, mark and set up patterns and projects.



Fig: 7 Try square



2. Divider

A divider is used for making parallel lines and circles in pattern making process

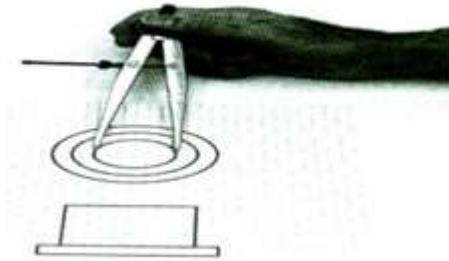


Fig.8 Divider

3. Measuring tape: A flexible measuring steel tape is available in different lengths. A 3'x3/4" (decimal/fractional) is a reasonable choice. The hook at the end of the tape should slide back and forth a distance equal to the thickness for accurate inside or outside measurements. Measuring tape is used to take measurements of the parts of the sample leather products, given for fabrication.

4. Utility knife: Utility knife is a precise cutting tool fitted with a retracting blade. It is used in pattern cutting process.



Fig: 9 Utility knives

5. Stainless steel scale/ ruler:

Stainless steel scale/ruler is used in pattern making process. The parts of the leather product are drawn first on a drawing paper with accurate measurements, using a ruler and then the measured parts are cut, using ruler and knife as paper patterns. It is also used as a cutting guide for cutting leather and lining components for making leather goods. 12" and 24" stainless steel scales are normally used.



6. Bevelled M.S. flat/stainless steel scale ruler: 4'x1/4" mild steel bevelled flat or a stainless steel meter scale is used to level leather hides or sides before cutting them into straps. These straps are used as belt straps, shoulder bag straps and piping straps.

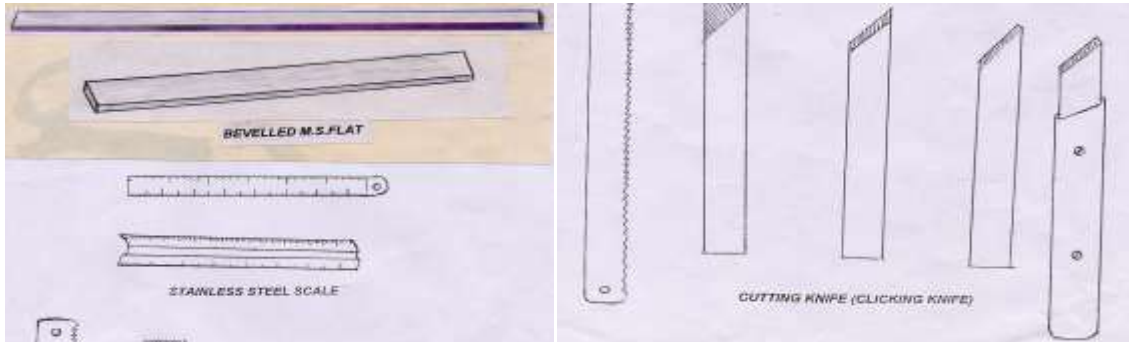


Fig. 10 M.S. flat, stainless steel scale and cutting knife

7. Cutting/clicking knife: Cutting knife/clicking knife consists of a steel blade mounted in a handle to improve grip and control while cutting. It is made of 1'x1/2" H.S.S power hacksaw blade.

8. Paring/skiving knife:

Paring knife/skiving knife is made of H.S.S power hacksaw blade of size 1'x1". The teeth of the blade are removed first in the grinding machine. The blade is then cut into two equal parts.

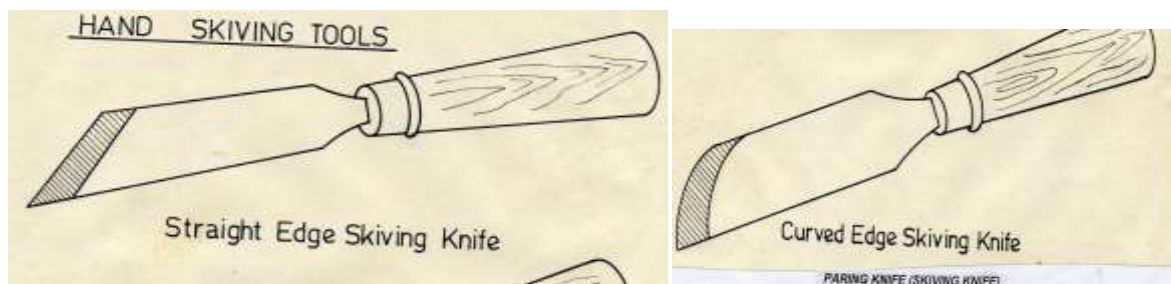


Fig.11 Hand skiving

9. Hammer.

The hammer will do all the pounding, pulling, tapping, knocking, etc. Since hammer is no less extension of the arm than any other tool, it is important to have one that is suited to size and is comfortable to use. Steel hammer is used in assembling process for making leather goods.



Light weight hammers 100gms and 200gms are used for light works and hammers of weight 300gms and 500gms are used for medium and heavy works. Hammers are used for punching holes, setting rivets and snapsools

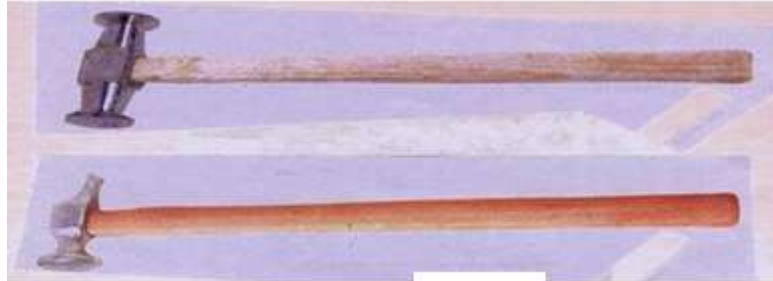


Fig.12 Hammer

10. Hand stamper: Hand stamper is used in bench work operations. It is very convenient to use when compared to hammers. Hand stamper is used for punching holes, setting rivets and snaps and edge folding of glued components during assembling process.

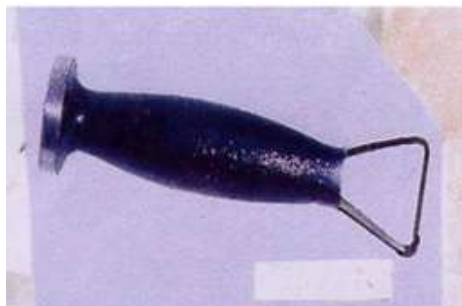


Fig. 13 Hand stamping tool

11. Creasing tool: Creasing tool is used to crease edges of the leather components by heating. It is used for making distinct lines in cut-edged articles and crafted articles. viz. coin purses, wallets, keycases, belts, etc.

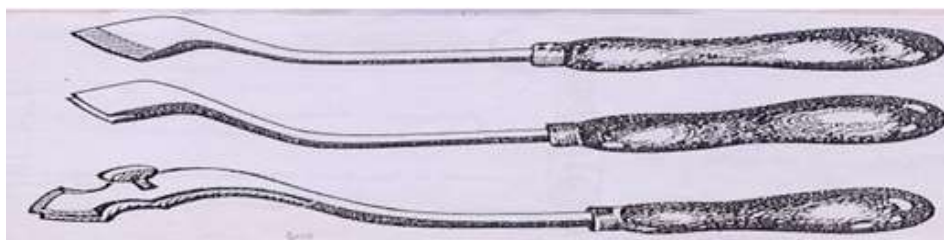




Fig. 14 creasing tools

12. Revolving punch: The revolving punch or rotary wheel punch with four or six different size tubes is used for punching holes for lacing, riveting, eyeleting and snap setting in leather components.

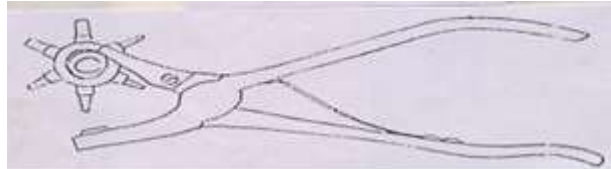


Fig: 15 revolving punch

13. Thread trimmer: Thread trimmer is used to trim excess thread after stitching of the components or products in the sewing machine. It is also used in final finishing of the products to trim excess thread, left un-noticed.

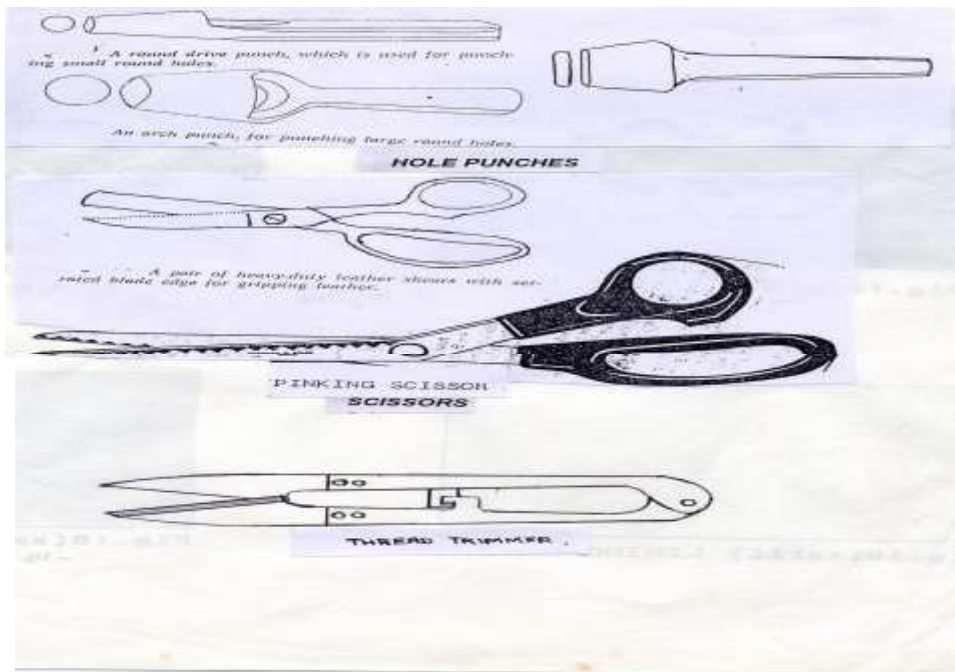


Fig : 16 Hole-punches, ordinary scissor, pinking scissor and thread trimmer

14. Framing tools: Framing tools are used for making framed purses and framed handbags

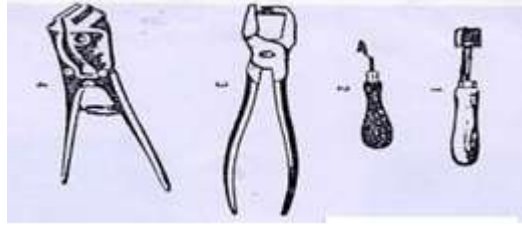


Fig: 17 Framing tools

15. Button fitting/snap setting tool: Button fitting/snap setting tool is a set of cylindrical knurling tool. One tool has a provision for fixing cap spring into the cap and the other has a provision for fixing snap rivet into the snap stud. This tool is extensively used for buttoning in leather products for various functions. 3/2 and 3/3 button fitting tools are generally used in light and a medium leather products while 7/7 button fitting tool is used in heavier leather products.



Fig. 18 Button fitting tool

16. Eyeleting tool: Eyeleting tool is a cylindrical knurling tool. One end of the tool has conical with sharp teeth and the other end has flat smooth surface. It is used to rivet eyelets in key cases, belts, stretch bags, etc. Grommet eyelet setter can also be used to set eyelets.



Fig.19 Eyeleting tool

17. Riveting tool: Riveting tool is a cylindrical knurling rod. One end of the rod has slightly concaved smooth surface and the other end has flat smooth surface. It is used for riveting rivet buttons in leather products.

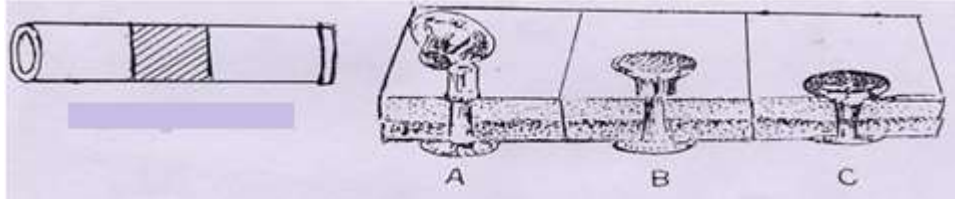


Fig: 20 Riveting tool

18. Smooth rolling wheel: Smooth rolling wheel is used to remove lumps and air bubbles while joining the components with adhesive. It is also used for flattening laced edges in leather-crafted goods.



Fig. 21 Circular slicker:

19. Circular slicker: is a circular tool with a smooth groove at the centre. It is used to burnish the edges of the leather strap by rubbing vigorously with the groove Smooth rolling wheel.



Fig. 22 Circular slicker and bone folders

20. Bone folder: Bone folder is made of buffalo horns. One end of the folder is filed off to a pointed edge and the other end is rounded off to a smooth edge. It is also made from plastic. It is an inexpensive folder and edge crasser. It is used for folding, lining, piping and creasing during assembling process. American folding tool is also used for folding the glued components.

21. Dauber: Dauber is made of a cotton or sponge ball with an iron wire handle. The absorbent ball helps to spread the dye at the cut edges of the leather components.



22. Awl: Awl is a tempered sharp steel needle with a wooden handle. It helps to make marks during pattern cutting process and also during assembling process where leather components are marked and fitted with fittings.

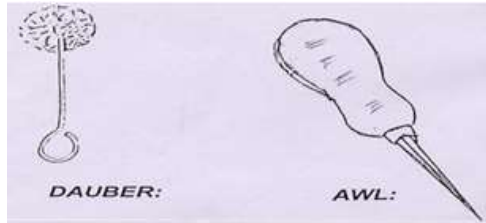


Fig. 23 Dauber and Awl

23. Loop turner: Loop turner is specially designed with a hatch hook device at one end to grasp bias tubing or cording and turn it to the right side. It is quickest and easier than attaching a safety pin to one end and working the pin through. Since loop turner's wire is so fine, it can be used for very narrow tubing and button loops.

24. Bodkin: Bodkin threads ribbon, elastic or cord through a casing without twisting. Some bodkins have an eye through which ribbon or elastic is threaded. Other tweezers grab the elastic. The bodkin has a ring, which slides to tighten the prongs of the pincer.

25. Point turner: Point turner is a flat wooden or plastic tool with a pointed end for pushing out tailored points in collars, lapels and pockets without risking a tear.

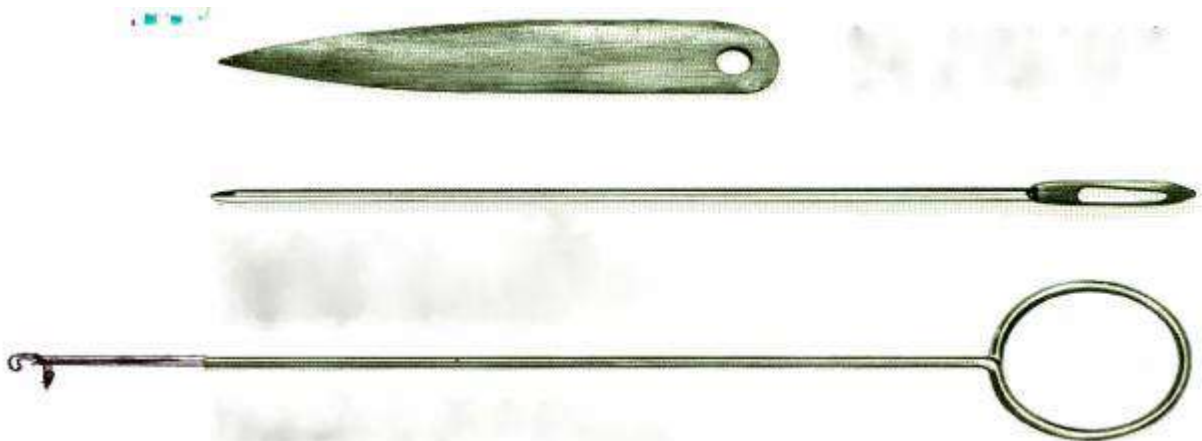


Fig.24: Point turner, bodkin and loop turner

26. Thread burning tool:

Different types of thread burning tool/equipment are used in garment industries.



Soldering tool is used in small industries while electronic thread burning tool is used in medium and big industries, Thread burning tool is used to fuse excess thread after stitching. It is very useful in finishing area to fuse excess thread.

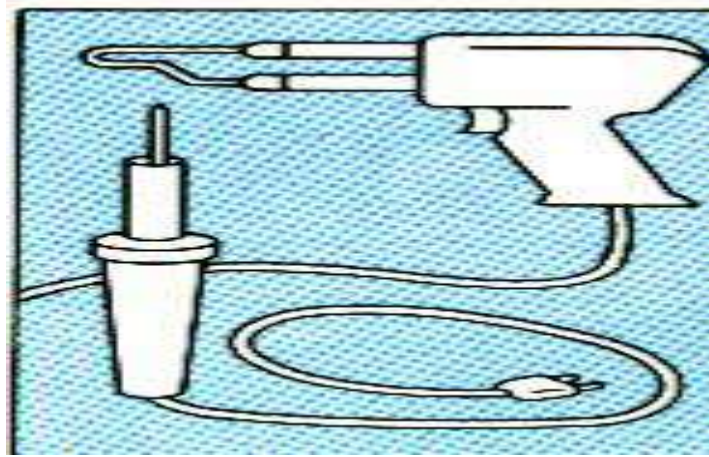


Fig. 25: Soldering tool for fusing synthetic threads

Equipment for leather Garment and leather Goods:

1. Pressing equipment:

Pressing is important at all stages of sewing to shape and set stitched lines. Using the right pressing equipment with correct pressing techniques is essential to shaping the stitched garment to fit body contours smoothly.

i. Steam/spray iron:

Steam/spray iron should have a wide temperature range to accommodate all fabrics. An iron that steams and sprays at any setting is helpful for synthetic fabrics. A large heavy sole plate is necessary for fusing interfacings. An iron with surge of steam button provides optimum steaming and eliminates the need for a dampened press cloth with a dry iron.

ii. Hand steamer: It is lightweight steam iron, providing a concentrated area of steam at a low temperature setting. No press cloth is needed, even when pressing on the right side of the fabric. It heats to a steam temperature in less than two minutes and is useful for darts, seams, pleats and hems.

iii. Tailor's ham:

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Tailor's ham is used to press shaped areas such as curved seams, darts, and collars or sleeve caps. The ham is a firmly packed cushion with rounded curves. One side is cotton and the other side is covered with wool. Wool covering on one side holds steam and the cotton covering side enables for pressing at high temperatures.

iv. Pressing mitt:

The mitt is similar to the ham but is especially handy for small, hard-to-reach areas especially shoulders and set-in sleeves. It fits over the hand or sleeve board.

v. Press cloth:

Press cloth helps to prevent iron shine and is used when applying fusing interfacing. The transparent variety allows seeing if the fabric is smooth and the interfacing properly aligned. Cheesecloth is used for pressing lightweight garments and cotton or linen cloth for pressing heavyweight garments.

vi. Sleeve board:

Sleeve board is two small ironing boards attached one on top of the other. It is used to press seams and details of small or narrow areas such as sleeves, pant legs or necklines.

vii. Seam roll:

Seam roll is firmly packed cylindrical cushion for pressing seams. The bulk of the fabric falls to the sides and never touches the iron, preventing the seam from making imprint on the right side of the fabric.

viii. Point presser/clapper:

Point presser/clapper is made of hard wood and used for pressing seams open in corners and points. The clapper flattens seams by holding seam and heat in the fabric. It is used to achieve a flat finish and sharp edges on hard surfaces.

ix. Iron sole plate cover:

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It attaches to the bottom of any iron to prevent scorching and shine on fabrics. It may be used in place of a press cloth for safe pressing on delicate and napped fabrics.

x. Needle board:

It has a flexible bed of steel needles, which are angled so the pile of a fabric falls between needles for pressing. Use a needle board to prevent crushing or matting velvets and plush fabric textures.



Fig.2. 1 Pressing equipment

xi. Tabletop Ironing board:

Tabletop ironing board is portable and saves space. It is used for pressing detail. A soft cotton cover absorbs excess moisture and helps prevent iron shine on shine on garment fabrics.

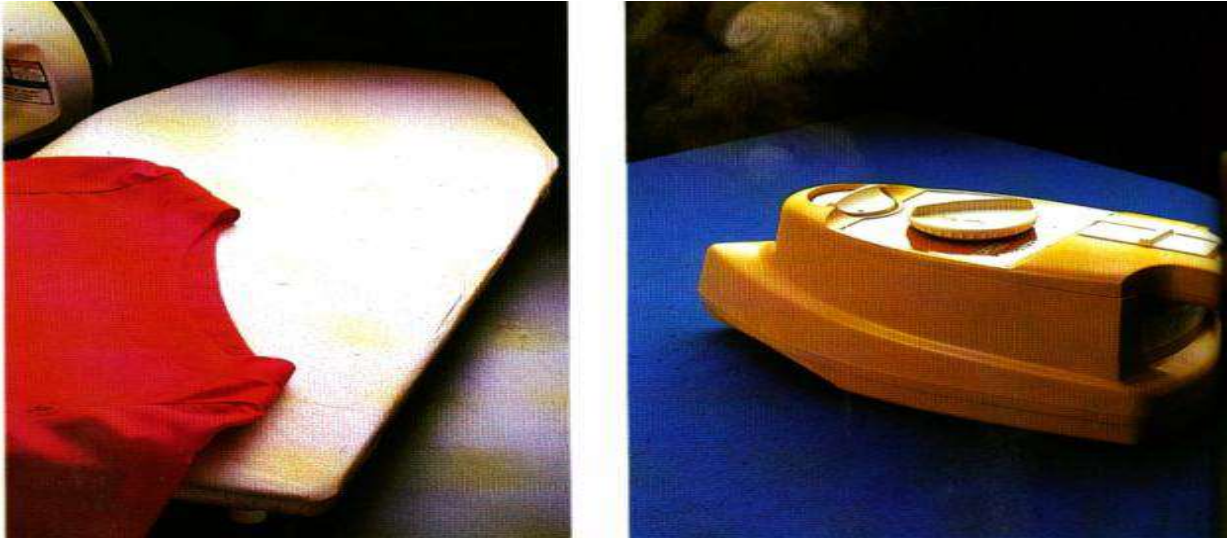


Fig.2.2 Table top ironing board

xii. Fusible ironing press:

It is used to fuse several small garment sections such as collar, cuff, etc. quickly because pressing surface is considerably large than sole plate of an iron.

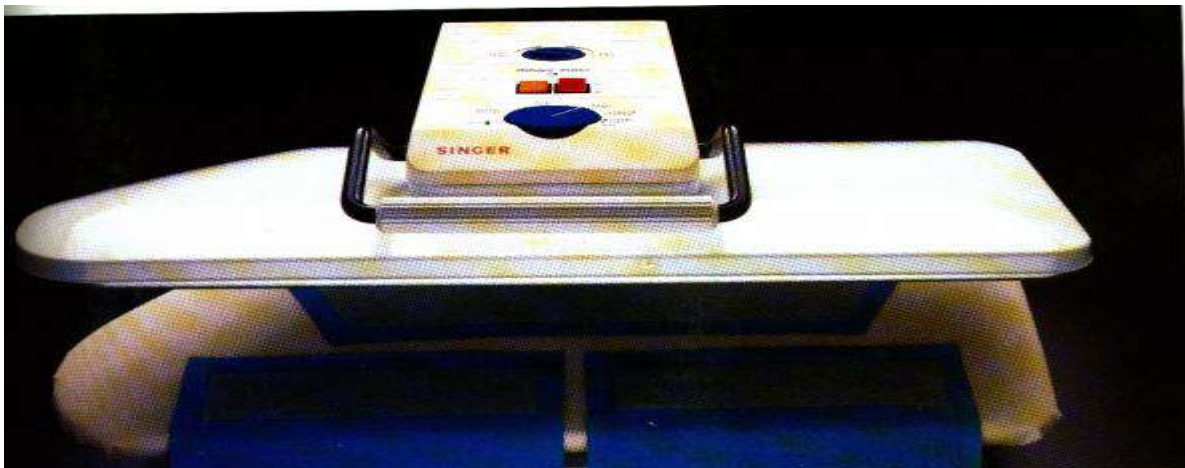


Fig.2.3 Fusible ironing press

2. Dirt, spot and thread trimming equipment:

i. Dirt and spot Eliminating and Cleaning vacuum Unit:

This equipment is used to remove dirt and spots in the garments. These defects occur due to frequent handling of the components during assembling process. It is fitted with cleaning spray gun and vacuum unit.



ii. Brush: Brush is used for brushing garments and for pounding delicate areas.

iii. Thread Trimming System:

Thread trimming equipment is used to clean threads from the finished garments either on hangers or on finishing table. It is fitted with two trimming heads that are connected to a vacuum system by long hoses. When head is pressed over the garments, loose threads are drawn into the trimming mouth by suction and then neatly cut, leaving a clean and presentable garment



Fig.2.4 Dirt cleaning and thread trimming

3. Tagging and labeling equipment.

i. Tagging Gun:

Tagging gun is used to attach tag in the garment, which indicates the name of the garment, design code and price.

ii. Labeling Gun: Labeling gun is used to print labels for garments. It can be able to hand print up to 100 labels per minute boldly and legibly.

iii. Labeling Press:

It is used to press up to three labels in the garment in a single operation. It can fuse bold intricate designed labels in many coloured and colour combinations, which will be crisp and clear to the smallest print. It can also fuse labels, motifs, fibre contents, size codes, badges, brands etc in the garments.



Fig.2.5 tagging gun, labeling gun and labeling press

Self-Check 1	Written Test
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Name: _____

Date: _____



Instructions: Write all your answers in the provided answer sheet given in next page.

Short Answer Questions

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

1. List and explain leather garment marking tools(3 points)
2. List leather garment measuring and drafting tools(2points)
3. List leather garment cutting tools(5points)
4. List and explain leather goods making tools(5points)
5. List and explain Tagging and labeling equipment for leather products (5points)
6. What is the uses of thread trimming equipment(5points)
7. Define and list the Pressing equipment(5points)

Note: Satisfactory rating – 30 points

Unsatisfactory - below 30 points

You can ask you teacher for the copy of the correct answers

Answersheet

Score = _____

Rating: _____

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Name: _____

Date: _____

Short Answer Questions

1. _____

2. _____

3. _____

4. _____

5. _____



6. _____

7. _____



Information Sheet-2

Checking for serviceability and safety of hand tools

Serviceability is an expression of the ease with which a component, device or system can be maintained and repaired. Early detection of potential problems is critical in this respect. Some systems have the ability to correct problems automatically before serious trouble occurs; examples include built-in features of operation system such as Microsoft Windows XP and auto-protect-enabled anti-virus software and spyware detection and removal programs. Ideally, maintenance and repair operations should cause as little downtime or disruption as possible.

1. Identify weather tools and equipment are maintainable or not.
2. If it is maintainable read the manual
3. Identify and know the components and sphere parts

Hand Tool Safety

Hammers, wrenches, chisels, pliers, screwdrivers, and other hand tools are often underrated as sources of potential danger. Hand tools may look harmless, but they are the cause of many injuries. In fact, an estimated 8 percent of all workplace compensable injuries are caused by incidents associated with hand tools. These injuries can be serious, including loss of fingers or eyesight.



Self-Check 2	Written Test
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Name: _____

Date: _____

Instructions: Write all your answers in the provided answer sheet given in the next page.

Short Answer Questions

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

1. What is Serviceability? Define (5points)



Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers

Answersheet

Score = _____
Rating: _____

Name: _____

Date: _____

1. _____
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Information Sheet-3

Reporting identified faults

Hand tools can cause many types of injuries:

- **Cuts, abrasions, amputations, and punctures;** If hand tools are designed to cut or move metal and wood, remember what a single slip can do to fragile human flesh.
- **Repetitive motion injuries;** using the same tool in the same way all day long, day after day, can stress human muscles and ligaments. Carpal tunnel syndrome (inflammation of the nerve sheath in the wrist) and injuries to muscles, joints and ligaments are increasingly common if the wrong tool is used, or the right tool is used improperly. Injury from continuous vibration can also cause numbness or poor circulation in hands and arms.
- **Eye injuries;** flying chips of wood or metal is a common hazard, often causing needless and permanent blindness.
- **Broken bones and bruises;** Tools can slip, fall from heights, or even be thrown by careless employees, causing severe injuries. A hammer that falls from a ladder is a lethal weapon.

To avoid such injuries, remember the following safety procedures:

- Use the right tool for the job. Don't use your wrench as a hammer. Don't use a screwdriver as a chisel, etc. Go back to the tool house and get the right tool in the right size for the job.
- Don't use broken or damaged tools, dull cutting tools, or screwdrivers with worn tips.
- Cut in a direction away from your body.
- Make sure your grip and footing are secure when using large tools.
- Carry tools securely in a tool belt or box. Don't carry tools up ladders. Use a hoist or rope.
- Keep close track of tools when working at heights. A falling tool can kill a co-worker.
- Pass a tool to another person by the handle; never toss it to them.



- Use the right personal protective equipment (PPE) for the job. Follow company instructions for selecting and using safety eyewear, steel toed shoes, gloves, hard hats, etc.
- Never carry sharp or pointed tools such as a screwdriver in your pocket.
- Select ergonomic tools for your work task when movements are repetitive and forceful.
- Be on the lookout for signs of repetitive stress. Early detection might prevent a serious injury.
- Always keep your tools in top condition. A dull blade or blunt point can lead to injury.
- Store tools properly when you stop work.



Self-Check 3	Written Test
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Name: _____

Date: _____

Instructions: Write all your answers in the provided answer sheet on pages 36

Short Answer Questions

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

1. List safety procedure to avoid injuries.(5point)
2. For what types of injures can hand tools cause? Explain (5points)

Note: Satisfactory rating – 10 points

Unsatisfactory - below 10 points

You can ask you teacher for the copy of the correct answers.

Answersheet

Score = _____
Rating: _____

Name: _____

Date: _____



Information Sheet-4

Using appropriate tool usage

How to select Leather-Working Tools

Instructions

1. Make sure that you have a flat, stable surface on which to work. A rubber mat placed under your work will prevent the surface from being scarred and will also protect the blades of your cutting tools.
1. Measure out lines and curves onto leather with items such as a sturdy ruler and a French curve. Choose metal measuring tools, as these can also be used as straightedges against which leather can be cut. Mark lines along the leather's surface with pencils and felt-tip pens.
2. Use items like leather bleach and leather deglazer to clean dirt, oil and residue from the surface of the leather before any work is begun.
3. Color your leather with leather dyes and paints. These items can be found at any leather-craft store, as can paint and dye applicators such as wool daubers and paintbrushes.
4. Cut out leather pieces with a razor knife and use paring tools such as edge bevellers and skives to remove thin layers from a piece of leather. Leather shears can be used to cut thinner pieces of leather.
5. Tool a piece of leather with a swivel knife, wood or rawhide mallet, and a variety of leather stamps. Decorative cuts are made with swivel knife and then the mallet and stamps are used to create textures and depressed surfaces around those cuts. Stamps come in a variety of patterns.
6. Make perforations in your leather with an awl, a stitching awl (for holes that will be stitched through) and/or leather whole punches of various sizes. Use a rotary whole punch for easy, even whole placement.
7. Sew leather with leather-craft sewing needles, waxed linen thread and artificial sinew. Use the waxed linen thread on softer, thinner pieces of leather and use the artificial sinew on harder pieces. The artificial sinew does not stretch and may cut into the stitching holes in soft pieces of leather.

Self-Check 4

Written Test

Name: _____

Date: _____

Instructions: Write all your answers in the provided answer sheet on pages 36



Short Answer Questions

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

8. How working tools can be selected? (5points)

Note: Satisfactory rating - 5 points

Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answer sheet

Score = _____

Rating: _____

Name: _____

Date: _____



Information Sheet-5

Using safe location and effective hand tools

Keep your tools in a dry place. It seems obvious, but garages and basements and other enclosed spaces can have humidity issues, especially if they are not heated or air-conditioned. If you keep your tools in a location like this, especially if you keep them out on shelves or pegboards, consider investing in a dehumidifier to keep the dampness down. They're not terribly expensive, especially compared to your investment in your tools, and most let you set a humidity level so the dehumidifier turns on only when it needs to.

Basic Safety Rules for Hand Tools

- Always wear eye protection.
- Wear the right safety equipment for the job.
- Use tools that are the right size & right type for your job.
- Follow the correct procedure for using every tool.
- Keep your cutting tools sharp and in good condition.
- Don't work with oily or greasy hands.
- Handle sharp edged and pointed tools with care.
- Always carry pointed tools by your side with the points and heavy ends down.
- Secure all small work & short work with a vise or clamp.
- Never carry tools in your pockets.
- Don't use tools which are loose or cracked.
- Keep your punches & chisels in good condition. Mushroomed heads can chip & cause injuries.
- Don't use a file without a handle.
- Don't pry or hammer with a file. It may shatter.
- Don't use screwdrivers as chisels or pry bars.
- Don't try to increase your leverage by using a "cheater" with a wrench.
- Reaches are designed at the right strength for their size and length.
- After using a tool clean it and return it to its proper storage place.
- If anything breaks or malfunctions - report it to your instructor at once.
- Use the right type of tool for the job.
- Never place tools & materials where they hang on the edge of a bench.
- Don't use tools for things they weren't meant for.
- Store tools and materials vertically, with the points and heavy end down.
- Cut away from yourself when you use chisels and other edged tools.
- Don't force screws; make sure that the correct screw for the job is being used.





Self-Check 5	Written Test
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Name: _____

Date: _____

Short Answer Questions

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

2. Write basic safety rules for hand tools and equipment? (5points)

Note: Satisfactory rating - 5 points Unsatisfactory - below 5 points

You can ask you teacher for the copy of the correct answers.

Answersheet

Score = _____
Rating: _____

Name: _____

Date: _____



Instruction Sheet 1	LG14- CLEAN UP
----------------------------	-----------------------

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

- Following workplace standard and procedures
- Work area cleaning
- Cleaning hand tools and equipment
- Maintaining Poor hand tools and equipment

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

- Clean Work area following workplace standard procedures.
- Clean Hand tools and equipment.
- Maintained and stored Poor hand tools and equipment in a safe position

Learning Instructions:

14. Read the specific objectives of this Learning Guide.

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15. Follow the instructions described in number 3 to 19.
16. Read the information written in the “Information Sheets 1”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
17. Accomplish the “Self-check 1” in page 10.
18. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).
19. 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 Instruction #3.
20. Read the information written in the “Information Sheet 2”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
21. Accomplish the “Self-check 2” in page 14.
22. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 2).
23. If you earned a satisfactory evaluation, that will be the completion of this particular competency. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Instruction #8.
24. Read the information written in the “Information Sheet 3”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
25. Accomplish the “Self-check 3” in page 18.
26. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 3).
27. If you earned a satisfactory evaluation, that will be the completion of this particular competency. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Instruction #11.
28. Read the information written in the “Information Sheet 4”. Try to understand what are being discussed. Ask you teacher for assistance if you have hard time understanding them.
29. Accomplish the “Self-check 4” in page 27.
30. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 4).



31. If you earned a satisfactory evaluation, that will be the completion of this particular competency. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning guide 15.
32. Submit your accomplished Self-check. This will form part of your training portfolio.

Information Sheet-1	Following workplace standard and procedures
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Work station is defined as an area, in an office, outfitted with equipment and furnishings for one or more workers. Normally leather goods are operated in a work shop therefore the work station for a leather goods worker would be the work shop. It is necessary for a worker to prepare his work station and the pieces to be done but before doing so a worker should be well aware of the safety rules and regulations.

Accordingly, some aspects workplace is become:

- Adequacy of layout and spacing between production facilities and walk ways (availability of space);
- Storage and handling practices (size and layout of storage areas, use of trolleys for transfer of material);
- Adequacy of ventilation to control temperature and humidity in the work areas (use of natural and artificial ventilation, insulation);
- Adequacy of lighting in the work areas (adequate light intensity, proper use of natural and artificial illumination arrangements, avoidance of glare).

Housekeeping

Good housekeeping involves every phase of industrial operations and should apply throughout the entire premises, indoors and out. It is more than mere cleanliness. It requires orderly conditions, the avoidance of congestion, and attention to such details as an orderly layout of the whole workplace, the marking of aisles, adequate storage arrangements, and suitable provision for cleaning and maintenance.



Efficient production and a good working environment are complementary. The elimination of inefficiencies and accident hazards caused by unfavorable conditions in and about the workplace is essential in getting the job done properly and safely. The attention to these important details—which may be overlooked when management’s attention is concentrated upon such amenities as good cloakrooms, canteens, rest rooms, recreational facilities, etc.—is widely referred to as “good housekeeping.

A clean, well-ordered, attractive work environment sets the tone of your establishment. It encourages tidy work habits in employees. It helps reduce fatigue. It promotes good worker-management relations. It also gives a lift to morale, which is reflected in the quality of production and overall efficiency. Good housekeeping is also a good advertisement for your company. Customers and clients have more confidence in an organization when they see work being carried out efficiently in clean, pleasant, well ordered surroundings. There’s an even more important reason why good housekeeping matters — it makes the undertaking a safer place to work in.

Keep Aisles Clear: Aisle space should be reserved for the movement of personnel, products and materials. It should be kept clean and clear and should never be used for “bottleneck” or “overflow” storage. This also applies to passageways and emergency exits. Blind corners should be eliminated or be adequately protected by warning signs.

Aisle boundary markings should be drawn to show clearly the space which has been reserved for traffic. Markings should be sufficiently wide (say a minimum of 30 mm) and of a color to make them clearly visible. Paint or durable plastic strips can be used.

Improve Storage Facilities: Tidiness and order are essential in overcoming storage problems, both in storerooms and in the yard. Good storage utilizes air space instead of floor space, and also saves time-wasting delays. It’s important to prevent stores and scraps accumulating on the floor and around machines. Never keep more stores and materials than necessary near machines and provide proper facilities (such as bins, shelves, boxes, racks, etc.) in which to store them.

Keep Floors Clean: Every year thousands of work injuries are caused by people falling. Floor conditions are responsible for many of these accidents. When floors are given the right treatment they are much easier to keep clean and hygienic. Spilt oil and other liquids should be cleaned up at once. Chips, shavings, dust, and similar wastes should never be allowed to accumulate. They should be removed frequently, or better still, be suitably trapped before they reach the floor

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Paint the Walls: Paint is one of the cheapest means of renovating walls, and a fresh coat of paint can give a boost to morale. Light-colored walls reflect light. Dirty or dark-colored walls absorb light. Dirty walls have a depressing effect and encourage dirty habits and sloppy attitudes. Choose suitable colors to paint walls, ceilings and working surfaces. See that the paintwork is cleaned down periodically. Color can be harnessed to assist with safety. For example it can be used to warn of physical hazards and to mark obstructions such as pillars. Painting handrails, machine guards and other safety equipment renders them distinctive and also prevents rust. Color can be used to highlight the hazardous parts of machinery but it can never substitute for a needed guard.

Maintain Light Fittings: Attention to light fittings should be an integral part of any good housekeeping program. Dirty lamps and shades, and lamps whose output has deteriorated with use, deprive employees of essential light. It's been found that lighting efficiency may be improved by 20 to 30 percent simply by cleaning the lamps and reflectors.

Clean the Windows: Clean windows let in light; dirty ones keep it out. Insufficient light causes eye strain and leads to accidents because employees are unable to see properly. Ensure that windows are not blocked by stacked

Dispose of Scrap and Prevent Spillage: It's a common practice to let the floor catch all the waste and then spend time and energy cleaning it up. It is obviously better to provide convenient containers for scrap and waste and educate employees to use them. Safety will benefit, expense will be saved, and the factory will be a better place in which to work. Oily floors are a common accident and fire hazard. Splash guards and drip pans should be installed wherever oil spills or drips may occur. Prevent accidents by keeping oil and grease off the floor.

Get Rid of Dust and Dirt: In some jobs, dust, dirt, chips, etc., are unavoidable. If they can't be collected as part of the process (e.g. by enclosure and exhaust methods) you need a way to clean them up. Vacuum cleaners are suitable for removing light dust and dirt. Industrial models have special fittings for cleaning walls, ceilings, ledges, machinery, and other hard-to-reach places where dust and dirt collect. If light dust is removed by sweeping, floors should be dampened first rather than swept dry. Oiling floors occasionally with light oil helps to lay the dust but take care that slipping hazards do not occur. Remember, it is not only floors that need sweeping. Dust and grime also collect on ledges, shelves, piping, conduits, lamps, reflectors, windows, cupboards, lockers, and so on and all these places need attention.

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Maintain a High Standard in Meal Rooms, Rest Rooms, etc.: No housekeeping program should ignore the facilities provided for meals, rest and sanitation, where cleanliness is essential for walls, floors, and fixtures. A light-colored paint can work wonders in these places and set a standard to which employees will try to conform. Soap and towels should be renewed regularly and wash basins properly cleaned.

Keep Tools Tidy: Tool housekeeping is very important, whether in the tool room, on the rack, out in the yard, or on the bench. Suitable fixtures for tools are required to provide orderly arrangement, both in the tool room and near the work bench, and a regular system of inspecting, cleaning, and repairing is an essential part of any program.

Look after Your First Aid Gear: First aid facilities and equipment should be kept under spotlessly clean conditions and fully stocked so that they are always ready in the event of accidents or illness.

Inspect Fire-Control Equipment: It is essential to ensure that all fire-fighting equipment such as extinguishers and fire hoses is regularly inspected and kept in good working order. Fire protection facilities - fire doors and exits, automatic alarms, etc. - should be in good working order. Doors and exits should always be kept clear of obstructions.

Attend Regularly To Maintenance: Perhaps the most important element of good housekeeping is the attention paid to maintenance of buildings and equipment. If something gets broken or damaged it should be replaced or fixed as quickly as possible (e.g., defective ladders, broken handrails, steps, etc.). Apart from the possibility of causing accidents, a workplace can take on a very neglected appearance if broken windows, damaged doors, defective plumbing, leaking gutters, broken floor surfaces and the like are allowed to remain in that condition. Employees may take the hint in a neglectful attitude to their jobs. A good maintenance programmer will make provision for the inspection, lubrication, upkeep and repair of tools, equipment, machines and processes.

Assign Responsibility for Cleaning: Where practicable, the cleaning of the workplace should be the responsibility of a special cleaning staff and not an additional job for employees engaged in production. Where

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this is not possible, adequate time during working hours should be allowed for cleaning up to be done. Responsibility should be clearly assigned as to who is to do the cleaning and what area is to be cleaned. If this is not done, out-of-the way places such as shelves, yards, small buildings, sheds, cellars, basements, and boiler rooms are overlooked until they get into a deplorable state.

Self-Check 1	Written Test
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Name: _____

Date: _____

Instructions: Write all your answers in the provided answer sheet given in next page.

Short Answer Questions

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

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- (1) Define work station (5 points)
- (2) What is good housekeeping? (5 points)
- (3) Why good housekeeping matters? (3points)

Note: Satisfactory rating – 13 points

Unsatisfactory - below 13 points

You can ask you teacher for the copy of the correct answers.

Answer sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions

8. _____

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9.

10.

Information Sheet-2	Work area cleaning
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Good work area is a vital factor in preventing accidents. The great majority of all work accidents are caused during the handling of goods or materials, and by people falling, being hit by falling objects, or striking against objects in the workplace. All these causes can be reduced by good work area practices in fact; good work area is the only cure for hundreds of accidents that occur. Here are some kinds of accidents commonly caused by *bad* work area:

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- Tripping over loose objects on floors, stairs and platforms
- Articles dropping from above
- Slipping on greasy, wet or dirty surfaces
- Striking against projecting, poorly stacked, or misplaced material
- Tearing the hands or other parts of the body on projecting nails, wire, steel strapping on bales or crates, etc.

Typical examples of poor work area that lead to these accidents are:

- Excessive material, waste or chips in the working area
- oiled aisles
- Tools left on machines
- Waste containers overflowing
- Lockers and workrooms in disorder
- Acids in open containers
- Broken glass
- Electric leads or air lines across aisles
- Dirty light fittings, windows and skylights

Where work area is bad, fire is a constant hazard. It can be caused by many work area problems such as oil-soaked rags and clothing igniting from spontaneous combustion; dust collectors not being properly or frequently cleaned; or piles of paper and other packing materials being allowed to accumulate. Poor work area can also lead to infestation by pests such as rodents and cockroaches and create serious health risks.

Elements of a Good work area

The following are the basic elements of a good work area:

- **Aisles:** Wide enough for traffic movements, marked off by floor lines from work positions and storage areas.
- **Space:** Insuring sufficient room for the individual to work.
- **Storage:** Adequate and convenient space for materials and tools.
- **Materials Handling:** Layout planned for materials flow, with efficient methods and equipment.

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- **Ventilation:** Good general ventilation plus local exhaust ventilation to remove air contaminants at the source.
- **Floors and Walls:** They need to be constructed with materials that are easy to clean and if needed easy to repair.
- **Lighting:** Well-distributed artificial light and effective use of available daylight.
- **Amenities:** Clean, up-to-date washrooms and lockers for clothing, and clean and inviting lunch room for employees to eat their meals.
- **Waste Removal:** Adequate facilities to prevent congestion and disorder.

Self-Check 2	Written Test
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Name: _____

Date: _____



Instructions: Write all your answers in the provided answer sheet given in next page.

Short Answer Questions

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

1. What are the elements of good work area? (4points)
2. Write at least five examples of poor work area (3points)
3. Give 5 accidents and their causes as a result of bad work area. (5points)

Note: Satisfactory rating – 12 points

Unsatisfactory - below 12 points

You can ask you teacher for the copy of the correct answers.

Answer sheet

Score = _____
Rating: _____

Name: _____

Date: _____

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Short Answer Questions

1. _____

2. _____

3. _____



Information Sheet-3	Cleaning hand tools and equipment
----------------------------	--

Good tools can be quite an investment, but if you take good care of them, they'll return the favor. Keeping tools properly stored, cleaned, and maintained will save time and money and make your DIY endeavors that much more rewarding.

A selection of quality tools can be quite a good investment and if you take care of and store them properly, they will last a lifetime. Not only will regularly maintaining and cleaning your tools and equipment keep them in good nick, but it will also save you time and money.

In this article, we are talking mostly about hand tools. If you prioritize keeping your tools clean, well-maintained, and stored properly, you won't have to worry about declining quality or faulty tools. So, here's how your tools should be cleaned and maintained.

One of the easiest ways to clean hand tools is by simply giving them a wipe down with a rag at the end of a job. If they are really dirty, don't be afraid to give them a good wash with some soapy water to clean away that grime. Just be sure to dry them thoroughly afterwards to avoid rusting or corrosion.

An effective method for maintaining the wooden handles on your hand tools is to wipe them thoroughly with a rag that has been dampened in a little bit of linseed oil. This will keep the handle clean and sturdy for years to come.

Consistent cleaning of tools helps maintain them properly, keeping them clean and reducing the likelihood of complications or malfunctions.

we understand that the last thing you want to do after a long day of work is wipe down the tools you used that day, but it is one of the most important steps in caring for them and it only takes a few minutes! Consistent cleaning is one of the best ways to prevent dirt and grime build up over time.

Regularly cleaning and maintaining your tools and equipment gives you the opportunity to carry out regular inspections and ensure your tools are all functioning properly and safely. If you notice they're not, you can make the necessary adjustments straight away.



Cleaning and maintaining your tools after a busy day of work is extremely important. The tips in this article should help you get all your tools in order and help you maintain your tools and equipment.





Self-Check 3	Written Test
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Name: _____

Date: _____

Instructions: Write all your answers in the provided answer sheet given in next page.

Short Answer Questions

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

1. Explain briefly the benefit of properly and regularly cleaning of leather hand tools and equipment? (10 point)



Note: Satisfactory rating – 10 points

Unsatisfactory - below 10 points

You can ask your teacher for the copy of the correct answers.

Answer sheet

Score = _____
Rating: _____

Name: _____

Date: _____

Short Answer Questions

1. _____



Information Sheet-4	Maintaining Poor hand tools and equipment
----------------------------	--

Inspect (and Repair) Tools and equipment Every Time You Use Them

We're going to assume you use your tools safely. You wear goggles and gloves when you should and you follow the safety protocols recommended for your power tools. But taking the time to inspect your tools every time you use them is one of the most important things you can do to ensure not only your safety while using them, but the longevity of your tools as well.

Take the time to look for the following:



- **Loose, cracked, or splintered handles.** If a wooden handle is damaged, it is prone to breaking during use, which can cause injury to you or others. If a handle is not splintered too badly, you can probably sand it down just fine. Sand against the grain first if the handle is really rough and then sand with the grain until it's smooth enough you can run your hand along it without feeling any chips or splinters. Finish off with a coating of linseed oil. However, if the handle is cracked or heavily splintered, you'll need to replace it.
- **Mushroomed heads on tools like chisels and wedges.** If you use a tool in this condition, the head can shatter on impact. Fortunately, you can solve this problem by [keeping your tools sharpened](#). Sharpen them whenever you notice a problem, but also plan to sharpen them every six months or as just as a habit.
- **Corrosion and rust.** Depending on the level of corrosion or rust, the tool may be unsafe to use. Try removing the rust yourself or just replacing the tool. [Removing rust from tools](#) is actually pretty easy if the damage isn't too great.
- **Power tools that don't start easily.** If your tool needs a couple of tries to get going or a little "push" to get the blade spinning, don't use it. Take the time to clean and lubricate it and if that doesn't solve the problem, get it repaired. There are some fixes you can take on yourself, such as replacing a belt on a sander or maybe fitting in a new switch or power cord. But if you're not 100% sure you're up to the repair, take it to a pro.
- **Frayed insulation or exposed wires.** Obviously, these are electrical hazards. While some electrical tape might take care of a small problem temporarily, it's best to have the tool repaired before using it.

Preventive maintenance is the systematic care and protection of tools, equipment and machines in order to keep them in a safe, usable condition, limit downtime and extend productivity.

Periodic scheduled repair (planned preventive maintenance)

This planned preventive maintenance can be divided into three main parts depending on the volume of work and the duration between repairs

- Minor maintenance
- Medium maintenance
- Major overhaul.

Lists of work during different types of maintenance.

1. Routine servicing

Routine servicing always is considered as preventive.

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- The work is done by the operator and the maintenance workers (fitters, oilers, electricians)

The duty of a fitter

- Check that the moving parts of every machine are running smoothly and noiselessly
- Friction clutches engage readily.
- Make sure that there is no slackness (loose-fittings)
- No excessive heating of bearings
- Loosened fattening, worn or broken is replaced.
- Check the conditions of power transmission parts (v-belts, chains, etc)

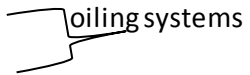
The duty of the oiler

- Keep very close watch on the condition of lubricating system, Gear box, open gear drives, bearing housings etc.
- Give lubricants according to the instruction

When to perform routine servicing?

- During machine stoppage for new setup, meal breaks or between shifts.
- Not during normal production time periodic prophylactic work is done along with the above mentioned

This include: -

1. Cleaning parts subjected to intensive war, un avoidable dust and dirt
2. Replacing of oil in units with
 - Centralized  oiling systems
 - Splash
3. Checking the accuracy of precision machine parts.
4. Inspecting equipment's between planned
5. Performance of scheduled maintenances.
6. Testing of electrical equipment's.

* Inspection: -

- All units operating under load such as gear boxes are opened and checked
- Inaccessible to inspection parts are checked by sound
- Results must be recorded in the logbook.



Maintaining Cleanliness of Stitching Machine

Tools needed (operator tool – kit):

- Screwdriver or special tool for needle fixing
- Screwdriver for needle plate
- Screwdriver for bobbin case
- Dusting brush
- Dusting scrap
- Oil can
- Scissors

Beginning of an operation after idle time

- Remove dust and oil
- Check oil of the machine
- Oil the sewing hook or shuttle and wipe away excess oil
- Prepare the sewing sample and sew for a number of seconds at low speed, then steadily accelerate the machine to its maximum speed

Daily Routine – Cleaning and Maintenance

- Oil if machine is subject to very much dust and run at high speed and without automatic hook lubrication
- A drop of oil should be poured into the hook raceway when the bobbin is changed
- Oil frequently but sparingly wipe away excess oil
- Depending on the amount of dust the hook or shuttle should be cleaned with a brush once or several times daily, e.g. after resting periods
- The piece of scrap should be put under the pressfoot of sewing machine any time when machine is stopped
- Ensure that the tools are complete and right condition
- The head of sewing machine should be covered after work
- Weekly Cleaning and Maintenance of Machine
- Dust removal
- From motor fan sieve
- Remove the throat plate and clean the space below the throat plate and between the feed dog bridges
- From the space around the hook
- From the space between the bobbin case and included brace spring. Lift slightly the spring for instance by needle and blow out
- The feeding, hook or shuttle should be cleaned by kerosene brush and shallow can are needed.

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- Wipe away excess kerosene.
- All components should be dry
- Oil all spots which are needed see lubrication manual and wipe excess oil

Prepare Check List: A sound method to ensure that housekeeping is done is for management to prepare a check list to suit the requirements of the workplace. The following can serve as a guide for nearly all industries.

Sample Checklist:

Buildings

- (1) Walls clean.
- (2) Windows clean.
- (3) Walls free of unnecessary hangings.
- (4) Proper light provided.
- (5) Platforms in good condition.
- (6) Stairs clean and well lit. Handrails and steps of sound construction and well maintained.

Floors

- (1) Good floor surface.
- (2) Kept clean and free of loose material. Clean in corners, behind radiators, along walls, and around pillars or columns.
- (3) Free of oil, grease, etc.
- (4) Operating floors, or work positions free of loose scrap, metal or other materials.
- (5) Free of unnecessary articles.
- (6) Bins provided for refuse.

Aisles

- (1) Free of obstructions.
- (2) Safe and free passage to fire-fighting equipment and fire exits.
- (3) Safe and free access to work positions.
- (4) Clearly defined.

The good housekeeping checklist Check off your housekeeping programme against this checklist. Better still; make a more comprehensive list of your own.

Machinery and Equipment

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- (1) Clean and remove unnecessary material.
- (2) Wipe/remove unnecessary dripping of oil or grease.
- (3) Area around machines clean and free of rags, paper, etc.
- (4) Lockers and cupboards needs to be clean and free from unnecessary material.
- (5) Benches and seats should be in good condition and should be cleaned regularly.
- (6) Drinking fountains should be cleaned regularly.
- (7) Toilet facilities should be clean and well ventilated.
- (8) Proper guards should be provided.
- (9) First-aid facilities and equipment should be stocked in adequate quantity.

Stock and Material

- (1) Properly piled and arranged
- (2) Kept in storage areas.

Tools

- (1) Properly arranged in place.
- (2) Free from oil and grease.
- (3) Inspected and maintained in good order.
- (4) Tool rooms and racks in clean and orderly condition.

Grounds

- (1) Yard and building surrounds free of refuse such as fruit peelings, scrap, wood, iron, etc.
- (2) Grounds kept free of weeds and overgrown vegetation.
- (3) Wastes and refuse removed frequently.

Good housekeeping helps to create:

➤ Better working conditions

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- Safer workplaces
- Greater efficiency.

Self-Check 4	Written Test
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Directions: Answer the following questions.

Instructions: Write all your answers in the provided answer sheet given in next

Page.

- (1) Define preventive maintenance. (4 point)
- (2) Explain list of work during different types of maintenance. (6 point)

Reference

- [http:// www.saif.com](http://www.saif.com)
- <http://www.ohiobwc.com>
- <http://www.ir.wendys.com>, en.wikipedia.org/wiki/Leather
- <https://www.gluu.biz>

