

LEATHER GOODS MAKER

NSQF LEVEL - 3

TRADE THEORY

SECTOR: LEATHER

(As per revised syllabus July 2022 - 1200Hrs)



Directorate General of Training

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



**NATIONAL INSTRUCTIONAL
MEDIA INSTITUTE, CHENNAI**

Post Box No. 3142, CTI Campus, Guindy, Chennai - 600 032

Sector : Leather
Duration : 1 Year
Trade : Leather Goods Maker- Trade Theory - NSQF Level - 3 (Revised 2022)

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National Instructional Media Institute

Post Box No.3142

Guindy, Chennai - 600032

INDIA

Email: chennai-nimi@nic.in

Website: www.nimi.gov.in

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FOREWORD

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

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

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

Jai Hind

ATUL KUMAR TIWARI, I.A.S

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

August 2024
New Delhi - 110 001

PREFACE

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

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

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

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

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

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

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

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

Chennai - 600 032

EXECUTIVE DIRECTOR

ACKNOWLEDGEMENT

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

MEDIA DEVELOPMENT COMMITTEE MEMBERS

Shri. K.G. Venkatraman	-	Training officer, Translation Co - ordinator, DET - Tamil Nadu Govt.I.T.I, Chengalpattu - 32.
Shri. R.V.Janani, M.Tech (ECE) -		Lecturer, Thirumala Polytechnic college, Tiruvannamalai.

NIMI CO-ORDINATORS

Shri. Nirmalya Nath	-	Deputy Director of Training, NIMI, Chennai - 32.
Shri. V. Nirmal Kumar	-	Junior Training Assistant , NIMI, Chennai - 32.

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

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

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

INTRODUCTION

TRADE PRACTICAL

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

The manual is divided into Thirteen modules

Module 1	Safety
Module 2	Designing
Module 3	Cutting, Assembling & Sewing of cut edge articles
Module 4	Embossing of Leather Goods
Module 5	Making of Small Leather Goods
Module 6	Substitute Materials for Leather
Module 7	Economic Cutting and Costing
Module 8	Care & Maintenance of Tools and Machines
Module 9	Operation & Trouble Shooting of Hand Tools & Machines
Module 10	Leather Ornamental Materials and Prepare various Leather Goods
Module 11	Sequence of operations in Leather Goods Production
Module 12	Marketing and Selling Methods
Module 13	Perform Various Operating Process

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

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

TRADE THEORY

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

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

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

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

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LEARNING / ASSESSABLE OUTCOME

On completion of this book you shall be able to

S.No	Learning Outcome	Ref. Ex.No.
1	Select the appropriate leather and verify the characteristics of different fancy and finished leather following safety precautions. (MAPPED NOS: LSS/N0901)	1.1.01 - 10
2	Sketch and design various leather goods, identify hide and skin and make pattern, prepare pattern design and cutting. (MAPPED NOS: LSS/Q5201)	1.2.11 - 16
3	Apply sewing operation using appropriate techniques for assembling and manufacturing of cut edged articles coin purse, key case and gent's belt. (MAPPED NOS: LSS/N5501)	1.3.17 - 42
4	Apply proper process of embossing for finishing leather good (MAPPED NOS: LSS/N5503)	1.4.43 - 47
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10	Select appropriate leather and ornamental materials and prepare various leather goods by using electrical and hand operated machines observing quality parameters. (MAPPED NOS: LSS/N5501)	1.10.93 - 111
11	Apply sequence of operation in leather goods productions. (MAPPED NOS: LSS/Q5201)	1.11.112 - 123
12	Identify, operate, troubleshoot and maintain different tools, machines and equipments used for leather goods making. (MAPPED NOS: LSS/Q1801)	1.12.124 - 161
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SYLLABUS

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge
Professional Skill 60 Hrs. Professional Knowledge 18 Hrs	Select the appropriate leather and verify the characteristics of different fancy and finished leather following safety precautions.	1. Familiarization with the Institute. (5 hrs.) 2. To make the trainees familiar with the shop discipline, layout of the shop, layout of the machines, equipment, etc. installed in the shop. (05 hrs.) 3. Practice safe methods of handling tools. (05 hrs.) 4. Safety precautions including firefighting equipment, Accidents, First Aid practice and treatment. (10 hrs.) 5. Identification of safety sign for danger, warning, caution and personal safety message. (05 hrs.) 6. Check specification sign, symbols of fire extinguishers. (05 hrs.) 7. Various types of hides & skins and fancy leather skins. Their qualities. (07 hrs.) 8. Application, limitation and treatment. Oil dressed and axed leathers and their uses. (05 hrs.) 9. Effects of water, acids 1alkalis, friction and heat on leather and its substitutes. (05 hrs.) 10. Types of finished leather (CG, PG, Fur, Suede leather, Oil pull-up, NUBUCK, NAPPA, WAXY, etc.) (08 hrs.)	Introduction to the trade, Importance of the trade in the development of the industrial economy of the country. Knowledge of General Safety, Occupational health and hygiene. Safety precautions. Elementary First Aid and treatment. First Aid Box Identification. Hides and Skins-their structure and quality. Stretch in skins-its extent and direction. Tanning process; Pre-tanning and Post tanning. Tanning of hides and skins and their types and their essential characteristics for different uses. Identification & character of various leather materials, other substitutes, types & essential characteristics for different uses. Their identification and selection. Their parts and suitability for various purposes. (18 hrs.)
Professional Skill 48 Hrs. Professional Knowledge 12 Hrs	Sketch and design various leather goods, identify hide and skin and make pattern, prepare pattern design and cutting. (MAPPED NOS: LSS/Q5201)	11. Freehand sketching of basic designs of Leather goods. (08 hrs.) 12. Designing and the various edge treatment, folded edge, bagged edge, gimped edge & piping etc. (08 hrs.) 13. Pattern making and template making for different types products. (08 hrs.) 14. Preparation of pattern for upper and lining materials. (08 hrs.) 15. Manufacturing of cut edged articles, Turn edged articles, unstaffed articles, built up articles, molded articles. (08 hrs.) 16. Cutting, punching, Edges and their kinds. (08 hrs.)	Pattern and styles, their names and description. Drawing of different types of leather goods. (12 hrs.)

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
Professional Skill 60 Hrs. Professional Knowledge 18 Hrs	Apply sewing operation using appropriate techniques for assembling and manufacturing of cut edged articles coin purse, key case and gent's belt. (MAPPED NOS: LSS/N5501)	Coin Purse; 17. Selection of required material, accessories. (02 hrs.) 18. Prepare pattern components. (02 hrs.) 19. Cutting components according to pattern upper inner and gussets. (02 hrs.) 20. Make marks for pocket balance mark. (02 hrs.) 21. Creasing by creasing tool. (02 hrs.) 22. Gluing and assembling components. (02 hrs.) 23. Stitching. (02 hrs.) 24. Hole punching for fixing press buttons with press button punch. (02 hrs.) 25. Edge coloring and finishing. (02 hrs.) 26. Trimming and finishing. (02 hrs.)	Use of measuring tape, cutting knife, steel scale, silver pencil, hammer, folding hammer, scissor, awl, hole punch, press button punch, creaser, sewing machine flat bed and post bed. Work table. Gluing and assembling. Edge coloring and finishing. (06 hrs.)
		Key Case; 27. Selection of required material, accessories. (02 hrs.) 28. Cutting components according to pattern upper, inner, reinforcement. (04 hrs.) 29. Creasing of components by creasing tools. (04 hrs.) 30. Gluing and assembling components. (02 hrs.) 31. Stitching. (02 hrs.) 32. Use hole punch, riveting punch, press buttons punch for fixing key hook, press buttons. (02 hrs.) 33. Edge coloring and finishing. (02 hrs.) 34. Trimming and finishing. (02hrs.)	Use of measuring tape, cutting knife, steel scale, silver pencil, hammer, folding hammer, scissor, awl, hole punch, press button punch, creaser, swing machine flat bed and post bed. Creasing tool. Work table cutting table. Stitching, Trimming and finishing. (06 hrs.)
		Gents Belt; 35. Selection of required material, accessories. (02 hrs.) 36. Cut components according to (pattern) length and width. (02 hrs.) 37. Gluing and assembling components. (03 hrs.)	Use of measuring tape, cutting knife, steel scale, silver pencil, hammer, folding hammer, scissor, awl, hole punch, press button punch, creaser, swing machine flat bed and post bed. Creasing tool. Crew punch. Work table cutting table. Buckle, loops. (06 hrs.)

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
		38. Stitching. (04 hrs.) 39. Punching. (03 hrs.) 40. Attached buckle, loops. (02 hrs.) 41. Edge finishing and creasing. (02 hrs.) 42. Trimming and finishing. (02 hrs.)	
Professional Skill 30 Hrs. Professional Knowledge 06 Hrs	Apply proper process of embossing for finishing leather goods. (MAPPED NOS: LSS/ N5503)	43. Antique treatment. Embossing and finishing of leather products. (06 hrs.) 44. Cleaning and glossing of types of leather and their methods. (06 hrs.) 45. Marks and blemishes-their character and processes for removal. (08 hrs.) 46. Practice on artistic leather work, modeling, application of modeling, embossing, embossed leather goods. (05 hrs.) 47. Spirit colour used in leather work. (05 hrs.)	Finishing processes abrasion and their description. Waxes and inks used in finishing, their names and application. Knowledge of artistic leather work, modeling, types of modeling, embossing, embossed leather goods. Spirit colour used in leather work. (06 hrs.)
Professional Skill 70 Hrs. Professional Knowledge 18 Hrs	Select and perform various small leather measurements to produce different leather goods like wallet, ladies clutch purse and gents belt. (MAPPED NOS: LSS/N5503)	Wallet 48. Select required material and accessories for wallet. (02 hrs.) 49. Pattern making for required components. (02 hrs.) 50. Cut components according to patterns. (03 hrs.) 51. Skiving edge for folding components. (04 hrs.) 52. Prepare components. (03 hrs.) 53. Gluing and assembling components. (03 hrs.) 54. Stitching wallet. (03 hrs.) 55. Trimming and finishing. (03 hrs.)	Use of measuring tape, cutting knife, steel scale, silver pencil, hammer, folding hammer, scissor, awl, hole punch, press button punch, creaser, swing machine flat bed and post bed. Rampi, skiving machine Work table cutting table punch. Work table and cutting table (06 hrs.)
		Ladies clutch purse 56. Select required material and accessories for ladies' clutch purse. (02 hrs.) 57. Pattern making to required components. (02 hrs.) 58. Cutting components according to pattern. (02 hrs.)	Use of measuring tape, cutting knife, steel scale, silver pencil, hammer, folding hammer, scissor, awl, hole punch, press button punch, creaser, swing machine flat bed and post bed. Rampi, skiving machine Work table cutting table (06 hrs.)

Duration	Reference Learning	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
		59. Skiving edge for folding components. (03 hrs.) 60. Prepare components, making pockets, fixing zip. (03 hrs.) 61. Gloving and assembling components. (02 hrs.) 62. Stitching. (03 hrs.) 63. Hole punching and buttons fixing by press button punch. (03 hrs.) 64. Trimming and finishing. (03 hrs.)	
		Gent's belt 65. Select required material and accessories for gent's belt. (02 hrs.) 66. Pattern making to required components. (02 hrs.) 67. Cutting strips for required length and width (pattern). (03 hrs.) 68. Skiving edge for folding components. (03 hrs.) 69. Gloving and assembling strips with reinforcement. (05 hrs.) 70. Stitching belt. (04 hrs.) 71. Punching attach buckle and loops by rewet and rivet punch. (05 hrs.)	Use of measuring tape, cutting knife, steel scale, silver pencil, hammer, folding hammer, scissor, awl, hole punch, press button punch, creaser, sewing machine flat bed and post bed. Rampi, skiving machine Crew punch. Work table and cutting table (06 hrs.)
Professional Skill 48 Hrs. Professional Knowledge 12 Hrs	Identify various substitute materials of leather, method of applications and their uses. (MAPPED NOS: LSS/N5101)	72. Practice on use of various substitute materials of leather and method of application. (48 hrs.)	Familiarization of different substitute materials of leather -their identification, type, characteristics, method of application & their uses. (12 hrs.)
Professional Skill 70 Hrs. Professional Knowledge 24 Hrs	Apply method for economical cutting and calculate production cost observing quality control aspect. (MAPPED NOS: LSS/N5301, LSS/N5302)	73. Economical adjustment of cutting leather and lining for various products. (10 hrs.) 74. Preparation of cost sheet. (12 hrs.) 75. Calculation of consumption and wastage materials. (12 hrs.) 76. Quality control and inspection of leather products. (12 hrs.) 77. Practice on costs of finished products and their selling prices, Overhead costs and their distribution. (12 hrs.) 78. Require minimum any leather industry of a testing laboratory is specified. (12 hrs.)	Wastages, its proportions and limits. Waste cutting and their utilization. Different types of treatment for storage. Preservation and storing of raw materials. (12 hrs.) Packing and forwarding of finished products of leather goods items. (12 hrs.)

Duration	Reference Learning	Professional Skills (Trade Practical)	Professional Knowledge (Trade Theory)
Professional Skill 48 Hrs. Professional Knowledge 12 Hrs	Take care and Maintain tools and equipment of the section observing safety precautions. (MAPPED NOS: LSS/N8601)	79. Familiarization of practical training to be followed, maintenance and handling of tools and equipment of the section. (10 hrs.) 80. Familiar with different machines operation, care and use. (10 hrs.) 81. Identify tools and equipment as per desired specification for leather goods. (10 hrs.) 82. Carryout preventive maintenance of different machines. (08 hrs.) 83. Identify different parts, its function and operation of various types of tools and equipment. (10 hrs.)	Knowledge of Machine, Equipment and power operated machine required for the making of various leather goods products. Knowledge of electrically operated tools. (12 hrs.)
Professional Skill 100 Hrs. Professional Knowledge 24 Hrs	Identify, operate, troubleshoot and maintain different tools, machines and equipment used for leather goods making. (MAPPED NOS: LSS/Q1801)	84. Working Practice on different hand tools used in the shop. (15 hrs.) 85. Application of indenting process of tools from store. (12 hrs.) 86. Familiarization of operating procedure related to different m/cs & equipment. (12 hrs.) 87. Rectification of common machine faults. (12 hrs.) 88. Care and maintenance of hand tools and machines and equipment. (15 hrs.) 89. Safety precautions. Its importance, cleanliness of the shops. (17 hrs.) 90. Sharpening of tools, knives & other cutting tools, method and process of holding the tools. (17 hrs.)	Identification of hand tools used by a trainee in the section, their kinds, uses, names and function, process of holding. Machines and needles employed in general leather work, their nomenclature and description, operational principles and use. (12 hrs.) Special Tools used for leather making, their kinds, uses and materials from which they are made. Their names and functions. Specification of different tools used in leather goods manufacture- their nomenclature and description. (12 hrs.)
Professional Skill 60 Hrs. Professional Knowledge 18 Hrs	Select appropriate leather and ornamental materials and prepare various leather goods by using electrical and hand operated machines observing quality parameters. (MAPPED NOS: LSS/N5501)	91. Select tools for leather cutting. (03 hrs.) 92. Preparation and sharpening of tools. (03 hrs.) 93. Mark leather defects and avoid defects. (03 hrs.) 94. Check and prepare straps cutting machine. (03 hrs.) 95. Make Necessary adjustment in the machine for cutting straps to required width. (03 hrs.) 96. Cut straps and check the quality and prepare bundle. (03 hrs.)	Description of various types of machines used for different type of leather sewing. Description of various fittings such as locks, hurdles, caners, rollers, fasteners, hinges, buckles, rivets, etc. Identification of plating and evaluation of their quality and appropriate uses in the manufacture of leather goods. Various Ornamental materials and uses. (18 hrs.)

Duration	Reference Learning	Professional Skills (Trade Practical)	Professional Knowledge
		97. Check and prepare hydroid clicking press machine. (03 hrs.) 98. Mark the leather defects and rectify the defect. (03 hrs.) 99. Check cutting die. (03 hrs.) 100. Check quality of clicked components and bundle neatly. (03 hrs.) 101. Identify and Select different ornamental material (03 hrs.) Locks: - 102. Size, shapes and style. (03 hrs.) 103. Selection of leather products life language, molded leather goods, shot case looks, document case looks, camera case looks fancy looks for exclusive leather goods, zip looks, emanative snaps, clip looks. (03 hrs.) Frames: - 104. Prepare and practice of different types of frames. (01 hrs.) 105. Size, shape and style and metal like steel brass, silver, plastic. (01 hrs.) 106. Selection of leather products like ladies hand bag, purse, pouch, hand bags. (01 hrs.) Straps fitting: - 107. Practice different size, shapes and styles and metal for straps fitting. (03 hrs.) 108. Size, shapes and styles and metal like steel brass silver, plastic. (03 hrs.) 109. Selection of leather products. (06 hrs.) (a) Ring for fixing handle and shoulder straps. (b) Belt buckles use in Gents belt ladies belt pouch and begs. (c) Roller buckles use in bags school bags and ladies bags. 110. Select and perform different Hinges used in briefcase, cosmetics, jewelry box and wallet passport cover. (03 hrs.) 111. Identify different size and style fasteners rivet, rivet bottoms, eyelets, studs press bottoms, zip, well crow and cordless. (03 hrs.)	

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
Professional Skill 48 Hrs. Professional Knowledge 12 Hrs	Apply sequence of operation in leather goods productions. (MAPPED NOS: LSS/ Q5201)	112. Selection of proper tools for operation and precautions in operation. (03 hrs.) 113. Selection of different quality leather, grade, size, color and grain matching. (03 hrs.) 114. Draw and design of making product as per job. (03 hrs.) 115. Making and cutting pattern components upper, lining reinforcement. (05 hrs.) 116. Prepare and practice leather Cutting, lining, reinforcement according pattern. (04 hrs.) 117. Plan and prepare Skiving and splitting necessary component. (04 hrs.) 118. Quality checked. (03 hrs.) Assembling Stitching 119. Practice Adhesive application and assembling components on work bench, punching, riveting eyeletting button fixing lining and gusset making, handle making etc. (04hrs.) 120. Identify the different types of Stitching components by machine flat bed and post bed. (03 hrs.) 121. Plan and organize Cleaning stains and spots, creasing 122. Perform Thread trimming, burning and finishing. (05 hrs.) 122. Perform Thread trimming, burning and finishing. (05 hrs.) 123. Determine the measuring error Check quality and plan working compliance with packing. (05hrs.)	Thronging by hand, types of thronging, designing, methods of coloring, etc. Use of leather thongs in leather goods. (12 hrs.)
Professional Skill 150 Hrs. Professional Knowledge 54Hrs	Identify, operate, troubleshoot and maintain different tools, machines and equipments used for leather goods making. (MAPPED NOS: LSS/ Q1801)	124. General operation of various make machine working condition timely clean and lubricate the machine and covered after worked. (03 hrs.) 125. Study the construction and operation of various types Swing machine. (03 hrs.)	Chrome leather, suitcase leather, embossed leather, betting leather, Leather for industry Leather goods. General maintenance system of machines, equipments and tools. (06 hrs.)

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
		126. Identify and carry out maintenance and preventive maintenance of motor and machines. (04 hrs.) 127. Identify different parts its function and operation of tight clutch at the handle wheel and various types of adjust belt. (04 hrs.) 128. Practice of use different Needle thread breaks, Bobbin thread breaking and thread loops. (03 hrs.) 129. Check and fault find of machine and use correct pressure foot. (04 hrs.)	
		130. General repairs of different types of leather goods. (06 hrs.) 131. Identify various type repairing like zip and runner, cut size and shape and overlapping allowance. (04 hrs.) 132. Check manufacture defect on the size, shape, patch of machining suitable material according shape and overlapping allowance. (06 hrs.) 133. Plan and prepare the damage in gusset size of leather bag. (05 hrs.) 134. Carryout maintenance of damage in bottom of leather bag. (04 hrs.) 135. Check shoulder straps, D ring support and prepare according D ring size. (09 hrs.) 136. Check damage/manufacture defect handle of travel beg and prepare handle in suitable material according D ring and strips fitted handle by rivet and rivet punch. (06 hrs.)	Commercial calculations cost of finished products and their selling prices. Overhead cost and their distribution over production. Marketing of finished products. Selling methods. (12 hrs.)
		137. Cutting out and sewing hold alls, bedding rolls, valises. (04 hrs.) 138. Selection different types of material required. (04 hrs.) 139. Identify different materials and bag part lining zip runner fixing. (04 hrs.)	Selection of leather for various leather articles, types of leather used for different articles and their characteristics (24 hrs.)

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
		140. Plan and prepare fixing tape code on front and back part and marked centre point for balancing. (04hrs.) 141. Practice and prepare zip gusset and continuous gusset with lining. (04hrs.) 142. Identify and fixing D ring on both side of gusset with D ring support. (04hrs.) 143. Plan and prepare fixing gusset on back part and front part of back, machining mark centre balance point. (04hrs.) 144. Prepare solder strips and fixing on D ring adjustable buckle. (4 hrs.) 145. Make trimming. (03 hrs.) 146. Prepare for laptop lining with foam sheet welcrow strips belt and attached on back part. (03 hrs.) 147. Identify different Cutting required material according bedding role width, length, height. (04 hrs.) 148. Prepare back part with handle belt loops and belt with rolled buckle and I letting. (06 hrs.) 149. Prepare front part, with flap or zip in middle flap. (04 hrs.) 150. Attached gusset on Back part on marked centered balance notched. (04 hrs.) 151. Attached front on gusset. Cotton or Nylon belt will specification. (03 hrs.)	
		152. Carryout inspection during manufacturing. (03 hrs.) 153. Analysis for substandard, defect analysis and action about correcting any fault. (03 hrs.) 154. Handling and maintenance of machine properly. The mechanical operation in various stage of leather goods manufacturing (include clicking, splitting skewing, straps cutting and variety of machine used to impart certain desirable property). (03 hrs.)	Identification of plating and evaluation of their quality and appropriate uses in the manufacture of leather goods. (12 hrs.)

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
		155. Cut accurate reduce in correctly cut components and quality wise. (03 hrs.) 156. Assembling: - inspection and analysis of quality work and take action. (03 hrs.) 157. Used branded quality of fitting, lining and accessory which have long life, smooth working performance, specially fitting must be restart to fading and resting. (03 hrs.) 158. Stitching properly, used matching trades and trades numbers with considerable strength, stitch appearance and stretch length 159. Preparing trimming and finishing. (03 hrs.) 160. Checked quality regular starting process from the first operation to finished product the fault between the processes taken to rectify the defect. (03 hrs.) 161. Random checked and checked as per sampling. (03 hrs.)	
Professional Skill 48 Hrs. Professional Knowledge 12 Hrs	Identify and use different electrical equipments and perform various processes (hydraulic cutting and clicking, straps cutting, splitting, embossing, cementing, zigzag swing machine and flat bed, post bed stitching machines.) (MAPPED NOS: LSS/Q1801)	162. Identify different parts and section of clicking machine. (05 hrs.) 163. Operate hydraulic cutting and clicking machine to produce leather goods. (06 hrs.) 164. Identify different parts and operate strap cutting machine with proper sequence. (07 hrs.) 165. Identify different parts, function and operate splitting machine with proper sequence. (05 hrs.) 166. Identify different parts, function and operate Hydraulic embossing machine with proper sequence. (05 hrs.) 167. Identify different parts, function and operate cementing press machine with proper sequence. (07 hrs.) 168. Identify different parts, function and operate Zig Zag with proper sequence. (06 hrs.) 169. Identify different parts, function and operate bed & post bed stitching machine with proper sequence. (07 hrs.)	

Introduction to the trade & Importance of the trade in the economy of the country

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

- **knowing about industry.**
-

Introduction to leather goods manufacturers section

Leather is the key ingredient of our segment. Leather is a natural material. This natural leather is subjected to chemical modification by addition of various chemicals and then tanned (tanning process) and finished leather is transferred to tanning industries. Nowadays this method of tanning is highly modernized. The raw material is obtained from small animals such as leather, cow, buffalo (larger animals) and goat.

Various products are made with the finished leather thus obtained. They can generally be divided into three categories. They are leather goods, shoes and leather garments where specifically our division is doing leather goods.

Leather goods are sometimes made with non-leather materials. It is called synthetic material. But there is a huge difference between leather and synthetic materials.

Leather products are of great importance when viewed globally. So the western countries look to us to fulfil their needs, through this, our country gets good foreign exchange. The South has a major share in the income thus generated. Andhra Pradesh, Karnataka, Tamil Nadu and Kerala are major asian states producing and exporting leather goods. Apart from this, leather products are also produced from northern states like Agra, Kanpur, Mumbai, Kolkata & Punjab. Leather products are used in western countries due to climatic conditions.

A variety of highly modernized machines are now available in the market for making leather goods. Using these, leather goods, industries produce large quantities in a short period of time. However, the main operations in the production of leather goods have to be done by hand. So our role is very important.

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Describing about personal protective equipment's

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

- **know about personal protective equipment.**

Personal Protective Equipment (PPE)

PPE is used to protect workers in leather factories from accidents at work. Engineering methods are better than the use of personal protective equipment (PPE) to eliminate or limit the risk to personnel as the first step in any safety measure. Design change in engineering methods. Alternative protection methods include substitution, ventilation, automation, etc. In some situations where it is not possible to introduce an engineering method to control accidents, workers may use appropriate type of PPE.

As times are changing, workplaces, government and councils are modernizing, they are implementing more safety measures to suit all types of workplace environments.

The Factories Act 1948 and the Workers' Organizations Act 1996 have put in place measures to ensure the full use of appropriate PPE and the use of PPE is considered essential.

Ways to ensure workplace safety and use Personal Protective Equipment (PPE) effectively.

- Employees should be aware of day-to-day safety information through formalized systems and monitor and improve safety in the specific areas where they work.
- Read safety information materials available in the workplace to learn how to use PPE properly.
- Personal protective equipment (PPE) like goggles, gloves and body suits are only effective, if worn consistently and correctly during hazardous tasks or situations. Regular use of PPE-equipment helps to avoid common workplace accidents.
- Personal protective equipment alone is not always sufficient to protect against hazards in the workplace. Knowing the entire work process will help protect you from any health scares and accidents on the job.

- Thorough inspection of PPE is essential to ensure it is of good quality and continues to protect users.

PPE- (Categories of PPEs)

Depending on the nature of accidents, PPE can be divided into two broad categories.

Non-respiratory

These are protective against dyes that may occur in the external parts of the body. ie head, eye, face, hands and feet. They are used to protect the feet and other parts of the body.

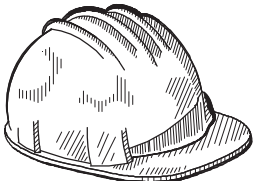
Respiratory

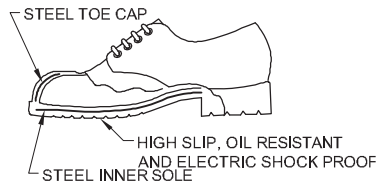
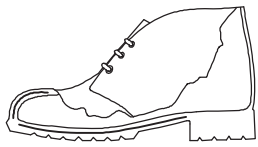
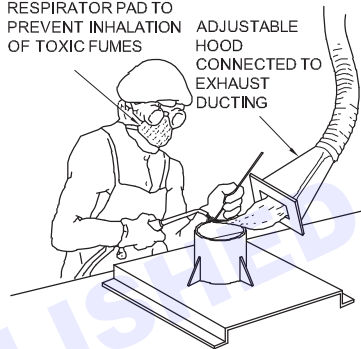
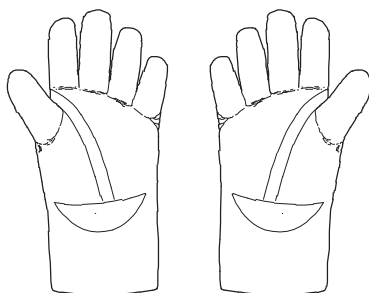
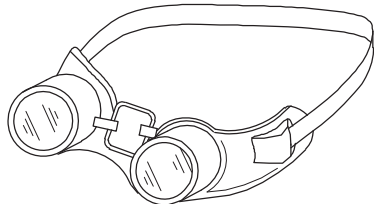
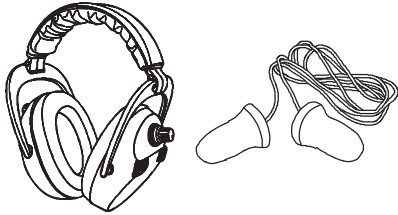
Used to protect against suffering from breathing and contaminated air.

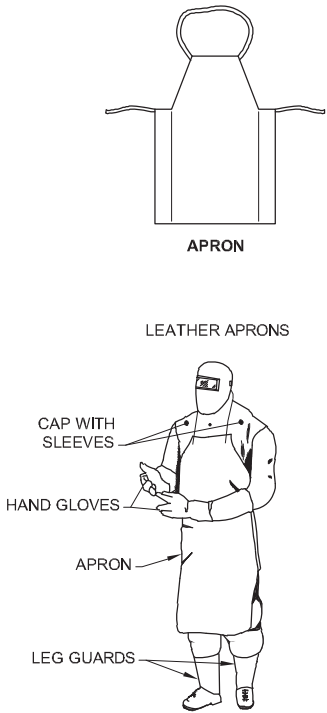
Guidance on Personal Protective Equipment (PPE) Table 1 is given below to assist management in maintaining status and best plan action to protect people from accidents. These cannot be measured or framed in engineering methods. A list of directions is given in Table 1.

Number	Headings
PPE 1	Helmet
PPE 2	Safety footwear
PPE 3	Respiratory protective equipment
PPE 4	Arms and hands protection
PPE 5	Eyes and face protection
PPE 6	Protective clothing and coverall
PPE 7	Ears protection
PPE 8	Safety belt and harnesses

Self-defense devices and their uses are given in Table 2

Security types	Hazards (Types of protection)	PPE to be used
Head protection materials	1 Objects falls down 2 Pressure on objects 3 Spatter	HELMET 

Foot protection	1 Hot spatter 2 Falling objects 3 Working in a wet area	 INDUSTRIAL SAFETY SHOE STOUT LEATHER PREVENTS INJURY TO THE ANCHILIES TENDON  INDUSTRIAL SAFETY BOOT
Nose Protection	1 Dust, particles 2 Fumes/gases/vapors	
Hand Protection	1 Burn injury caused by direct contact. 2 Heat generated by the sparks. 3 Electric shock.	 GLOVES
Eye Protection	1 Flying dust, particles	
Ear Protection	10 Too much noise	 EAR MUFFS EAR PLUG

Body Protection	1 Hot particles	 APRON LEATHER APRONS CAP WITH SLEEVES HAND GLOVES APRON LEG GUARDS
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PPE's must be very accurate and ensure complete security. Also PPEs should be designed for the type of accident they are intended to be used in and made of appropriate accident resistant materials.

Selection of PPE's requires certain conditions

- Nature of accident and its severity.
- PPE selection relies on air quality, contaminant concentration and contaminant type.
- The type of contamination is constantly determined by the specific area involved.
- When wearing PPE, workers should be able to perform tasks comfortably and without restriction.
- PPE should be selected based on operating characteristics and its scope.
- Should be easy to maintain and clean.
- Selection should be made on the basis of quality assurance of Indian and International Standards Organization and test certificate issued.

Proper use of PPE

Ensuring workers wear the appropriate PPE is vital, but compliance can be challenge. To overcome this, consider the following key factors.

- Workers can extend the time to understand the essential need to use PPE.
- Some of the normal work process norms can be relaxed a bit to allow employees to dress more easily and comfortably.
- Existing economic, social and disciplinary rules can be used to regulate the nature of workers.
- It should be mandatory for every employee to wear PPE.
- When issuing PPE to a group of workers for the first time, mandatory training and supervision are required to guarantee correct usage and wear.

Knowledge of general safety, occupational health and hygiene

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

- **know about general security**
- **know about occupational health and wellness.**

Introduction

Avoid delays during training and work to protect life, property and increase productivity. The rules to protect the machines are called "Safety precautions".

Safety regulations to be followed during training and working hours. [Safety precautions observed in the training]

Security regulations can generally be divided into four categories. They are

- 1 General safety precautions
- 2 Workshop safety rules
- 3 Tools safety rules
- 4 Machine Safety rules

General Safety Precautions

- Dress appropriately for the job. Also, wear shoes, gloves, headgear, safety glasses, etc. as required.
- Don't take wrong decision.
- Do not engage in any unknown work.
- Do not work unwillingly.
- Don't work with fear.
- Do not work with fatigue.
- Don't be overconfident.
- Don't be bitter.
- Don't be lazy.
- Handle machines, fired electricity with care and follow safety rules.

Safety

Safety means being protected from harm, danger or accidents, and having the freedom to live and work without fear of injury or damage.

Occupational health and safety

- Occupational health and safety is about ensuring the safety, health and protection of people at work or in the workplace.
- Its main purpose is to protect the working environment and prevent it from danger.
- Safety work practices benefits everyone: Workers, families, customers and the community.

- It has many related areas such as occupational medicine and occupational (industrial) health. Public Health and Safety Engineering, Chemistry and Biology
- Assists in necessary safeguards by communicating with etc.
- Need of occupational health and safety
- A company's success depends on the well being of its workers prioritizing their health and safety is crucial for a smooth and successful operation.
- A management integrated system is a final deciding factor for efficient functioning which ensures an accident-free factory environment.
- Good production can be obtained by monitoring their good safety and physical hygiene.
- Solidarity with workers.
- Also improves morale.
- Reduces absenteeism and increases productivity.
- Significantly reduces work-related injuries and illnesses.
- Increases the quality of products produced/dedication and labour.

Professional (factory) (Occupational (Industrial) Hygiene)

- Industrial safety is the process of anticipating, recognizing, assessing and controlling hazards (or) environmental hazards (or) stressors that may occur in the workplace.
- It can happen inside or outside the workplace.
- This may lead to emaciation, poor health or poor conditions and inefficiency among workers.

Anticipation (Identification)

Methods of identifying possible accidents/hazards and their health effects.

Recognition (Acceptance)

Accepting the worst consequences of detected accidents.

Evaluation (Measurement & Assessment)

Instruments used to measure or calculate accidents must be used to determine whether the measured or calculated accidents are greater or less than the permissible limit by comparing them with sample test standards.

Control of Workplace Hazards

Engineering and management roles require medical clearance and strict safety protocols including PPE. Exposure control, training and supervision.

Occupational Hazards

Workplace incidents can cause harm to people, property and the environment. Training these incidents helps monitor safety and environmental performance.

Types of occupational health hazards

- Physical Hazards
- Chemical Hazards
- Biological Hazards
- Physiological Hazards
- Mechanical Hazards
- Electrical Hazards
- Ergonomic Hazards

1 Physical Hazards

- Noise
- Heat and cold stress
- Vibration
- Radiation (Ionizing & Non-Ionizing)
- religion (illumination)

2 Chemical Hazards

- Inflammable
- Explosive
- Fumi (Toxic)
- Corrosive
- Radioactive

3 Biological Hazards

- Bacteria
- Virus
- Fungi
- Plant pest
- Infection

4 Physiological

- Old age
- Sex

- Ill health
- Sickness
- Fatigue

5 Psychological

- Wrong attitude
- Smoking
- Alcoholism
- Unskilled
- Poor discipline
- Absentism
- Disobedience
- Aggressive behaviours
- Accident proneness
- violence
- bullying
- Sexual harassment

6 Mechanical

- Unsafe machines
- Unemployment
- Lack of safety equipment
- Lack of shooting equipment

7 Electrical

- No proper earthing
- Short circuit
- Current leakage
- Wire disconnected
- Lack of fuse or circuit breaker etc

8 Ergonomics

- Technology practiced by the unskilled
- Placing machines in wrong places (layout).
- Wrong design
- Failure to maintain house and property properly
- Bad situation
- Wrong tools etc

Security Motto. It is the person who violates the safety rule who causes the accident.

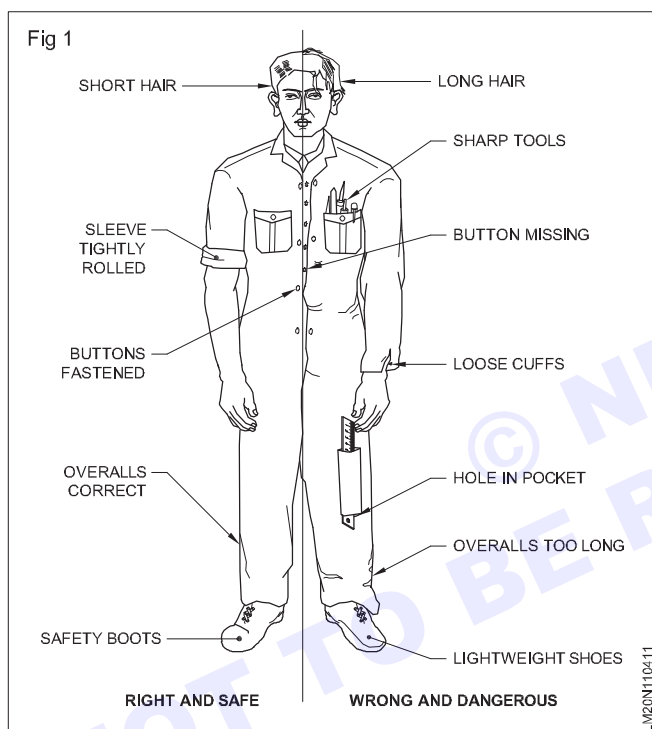
Safety precautions

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

- **safety procedures to be followed in the workshop.**

Introduction

Accidents are not accidents, they are preventable. Most are caused by human error and can be avoided. If a good worker is aware of various safety precautions, he can prevent himself and his co-workers from getting into accidents and prevent/protect equipment from any damage. To achieve this every individual must follow safety measures. (Fig 1)



Safety in workshops is broadly divided into 3 categories

- General Safety
- Personal Safety
- Machine Safety

General Safety

- Clean floors and walkways. Keep it clear and free of obstructions.
- Walk smoothly in the workshop. Don't run.
- Do not go anywhere else while the machine is running.
- Do not touch or manipulate a machine unless you are authorized to do so.
- Do not walk under a hanging weight.
- Do not show off while on duty.
- Use the right tools for the job.
- Place the tools in its proper place.
- Wipe up spilled oil immediately.

- Replace worn or damaged screws immediately.
- Never pour compressed juice directly onto yourself or your co-workers.
- Make sure there is adequate lighting in the workshop.
- Clean the machine only when it is not running.
- Remove the leather flaps.
- Know everything about a machine thoroughly before starting to operate it.

Personal safety

- 1 Put on a full bodysuit or a boiler suit.
- 2 Press all buttons
- 3 Do not use ties and scarves.
- 4 Keep the sleeves rolled up tightly above the elbow
- 5 Wear safety shoes or boots.
- 6 Cut the hair less short.
- 7 Watches no ring or chain should be worn.
- 8 Never lean on the machine.
- 9 Do not remove safety guards while the machine is running.
- 10 Never use cracked or chipped containers.
- 11 Do not start the engine until the following is correct.
 - The work piece must be firmly gripped
 - Feed machinery should be in neutral.
 - The work place should be clean.
- 12 Do not adjust clamps or holding devices while the machine is running.
- 13 Never touch electrical appliances with moisture.
- 14 Never use wrong (Fatality) electrical appliances.
- 15 All electrical connections are made by a licensed electrician only. Confirm that.
- 16 Have a calm attitude, in workplace.
- 17 Methodical process sequentially.
- 18 Do not engage in conversation with others while doing the task.
- 19 Don't let other people scatter incense.
- 20 Do not attempt to stop a running machine by hand.

Machine Safety

- Stop the machine immediately if anything goes wrong.
- Keep the machine clean.
- Replace worn or damaged parts immediately for safety.
- You should try to operate a machine only after knowing how to operate it.
- Do not adjust tools or work piece unless power is turned off.
- Stop the machine before changing gears.

Elementary first aid & treatment first aid box identification

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

- **what is first aid**
- **list the main objectives of first aid**
- **describe the basic of first aid (ABC)**
- **describe how to practice first aid to a victim.**

First aid

Save a life by giving emergency care to someone who is badly hurt or struggling to breathe this immediate attention is called first aid and helps prevent their condition from getting worse. It is to move the victim to a safe place and take every opportunity to make him as comfortable as possible and help him get to a good hospital. First aid is a life-saving procedure using every available opportunity.

Learning first aid in college is becoming increasingly important especially in the early day of working in factories, as it is now a required skill by law. Inculcating these types of habits at an early age helps people develop good healthy habits.

First aid operations. It contains basic life-saving simple tricks that an individual can impart, often through good training knowledge.

Basic concepts of first aid, Can be summarized in three main points

- **Preserve Life**

If the patient is breathing, the first aider should place the patient in a supine position. By doing so, from the throat (from the pharynx) gives the effect of making noise. By doing this, the unconscious patient can get any food stuck in the throat to enter the stomach, suffocate, and breathe life. A foreign object can get into the throat and block the airway, making it difficult to breathe. This is commonly called suffocation. This condition is treated with a combination of patting the patient's back and massaging the abdomen. Once the airway is open, the first aider should check that the patient/victim is breathing.

Prevent further harm

To prevent further deterioration of the patient's or victim's condition. This is the pressure to move the person away from the danger while bleeding. This is to prevent the situation from getting worse.

Promote recovery from risk

This (first aid) includes treatment such as starting the recovery from the harm or disease and sometimes applying small bandage plasters etc.

Training

Without acting through life experiences. We may be familiar with basic rules such as applying a gauze bandage

to a wound to staunch a bleed. But skilled first aiders need training and experience in life-saving techniques. This is especially important for cardiopulmonary resuscitation (CPR) treatment and first aid for life-threatening injuries. Training for this type of therapist is essential. In many countries, patients are given instructions over the phone as they are taken away in an ambulance. In order to obtain certification, it is necessary to obtain medical information for regular refresher training to keep up-to-date with process changes in changing circumstances.

ABC (ABC of first aid)

ABC stands for airway, breathing and circulation.

Airway

Gauze should be brought in first to ensure that the drainage is unobstructed. If it suffocates, it is life threatening.

Breathing

If breathing stops, the victim may die quickly. Therefore, supporting breathing through a variety of techniques is an important next step.

Circulation

Blood circulation is important to keep human alive. For first aiders, direct chest compressions CPR techniques are now being trained.

There are certain rules one should follow while giving first aid. There are some basic norms for students to practice and teach in the approach of to the victim.

Not to get panic

Aggravating the situation is panic tarp emotion. Panic causes people to make mistakes, and fear causes them to make mistakes without thinking. First aiders need to remain calm and approachable. Too many mistakes can happen if the first-aiders are in a tizzy and sloppy mood. This can make it difficult to help the victims. Emotional approach always leads to wrong actions and leads to wrongdoing. So, keep calm and observe the given situation. A quick and casual approach will limit the effect to the victim from dying.

Call Medical Emergencies

Call for medical help quickly if the situation warrants. The right approach can save lives.

Surroundings play vital role

Different environment requires different approach. Therefore the first aider must be aware of the situation carefully. In other words, the first aider must make sure that the environment is safe, knowing that no one will be injured and that there will be no one else to help.

Do not harm

In most cases over-enthusiastic first aid can further complicate the wound. For example, pouring water on a fainted person, wiping away the blood of wounded person, trying to repair broken affections (fractures). The former worsens the situation and most of the time patients die due to wrong first aid. Even if they hadn't, they would have survived. Do not move someone who is injured unless the situation is so dangerous or complex. If the patient has a rash on the back of the head or neck. Moving him around can result in increased risk, so sometimes it may be better to leave him lying where he is rather than taking him anywhere.

This doesn't mean you shouldn't do anything. Trained first-aiders should be instructed to ensure that they are acting safely. A first aider should not engage in that activity if he does not have the confidence that what he is doing is right. Therefore, it is always best to call for help when one tries to remove embedded material such as nasal like bandage which requires great skill in manipulating an unconscious person and can pose a serious risk (for example, increased bleeding).

Reassurance

Talk to the victim in a supportive manner and in still confidence in him/her.

Stop the bleeding

If the patient is bleeding, apply pressure to the affected area to stop the bleeding.

Golden hours

Medical clinics in India offer the best treatments for traumatic medical problems such as multiple traumas, heart attack, stroke, etc. But affected patients often do not receive appropriate medical treatment in a timely manner. The risk of death is high in the first 30 minutes. These 30 minutes are the golden time. If the affected person receives medical treatment within this time known as golden period, he will die within a critical time. Giving first aid is also simple and lifesaving. It is best to travel in a safe vehicle and go to the nearest hospital as soon as possible. If the person arrives at the clinic within a short period of time, the chances of getting good treatment are increased.

Maintaining the Hygiene

Most important is the first aider should clean his skin before administering first aid to the patient. It is important to keep the syringe dry or to wear gloves to avoid infection.

Cleaning and Dressing : Before applying the bandage, the wound should be thoroughly irrigated.

Not to use local medications on cuts or open wounds, instead of helping, they irritate the tissue. Simple dry clothes.

Or washing with water and applying some lash bandage will be beneficial.

Heart

CPR (Cardio-Pulmonary Resuscitation) can be life sustaining)

CPR can be used to save life. A trained person can start CPR if a person is CPR trained and a person is having difficulty breathing. However, unless a person is trained in CPR, the person should not attempt it as he/she may make the injury/situation worse. But some people do it as wrong. This treatment is difficult to perform in crowded places and CPR bystanders who do not know CPR should not perform any life-saving action on the victim. Rather it is like pressing the chest ordinarily and it is very difficult to do the right actions in the wrong places. But if CPR is performed by a skilled first responder, it will keep the victim's vital organs oxygenated until the medical team arrives.

Declaring Death

It is not correct to declare the victim dead at the scene of the accident. This should be done by well-qualified doctors.

How to report an emergency?

It may seem like a simple act to inform others at such a critical moment, but it is only when you really try to convey the message at such a time that you can see its difficulty and there is a sense of shock at the accident sites. A large crowd surrounds the victim and watches the accident happen. It is common in roadside accidents. Bystanders don't want to help, actually.

In some cases, it is very difficult to give first aid to an injured person. First aiders have to multitask to control the surrounding crowd. Reporting to the rescue team. Multiple tasks such as calling an ambulance have to be done at the same time. Mobile phones are very helpful in this kind of situation. There are some ways to approach this problem, as given below.

Assess the urgency of the situation, if you are reporting an emergency, make sure it is an emergency. Call for emergency help if a situation is life-threatening or extremely damaging.

A crime: If you are reporting a crime of this type, please also provide the body image/identifications of the same person involved in the crime.

A fire: If you are reporting an accident, describe the nature of the fire and the exact location of the accident. Also let them know if anyone has already in risk or if you don't see anyone there.

A life: Life-threatening medical emergency: In this case, explain how the event happened and what kind of symptoms that the patient is now exhibiting.

A car crash: In this case, where the accident did not occur, the things are of a dangerous nature. Please let

them know the details of the vehicle and its registration, how many people are stuck in it etc.

Call emergency service

Emergency numbers vary. For Police & Fire (Fire Station) call 100d (and) 101 and for Ambulance call 108.

Report your location

The dispatcher will first ask you about your location, so that emergency services can arrive as quickly as possible. Give perfect street address. If you are not sure of the exact number please give approximate details.

Give the dispatcher your phone number for emergency help, It is very important to give your phone number to the operator so that they can call you back if needed.

Describe the nature of the emergency

Say that you are calling the emergency dispatcher in a calm and clear voice. Give the most important details first. Then answer the dispatcher's questions as accurately as possible.

Do not hang up the phone

Do not hang up the phone unless they tell you to put it down and follow the instructions given to you by Setter.

How to give basic first aid?

Basic first aid is for choking, a heart attack, allergic reaction, or other emergency. Assessment is about a person and his need evaluating and expressing. Basic also includes determining the physical condition of the affected person and the appropriate type of treatment.

Important for first aiders

Important Guidelines for First Aiders

Evaluate the situation

Are there any mistakes that a first aider can make that could lead to embarrassing? buildings at risk of accidental collapse due to fire hazard or poisonous gas. First aiders in electrocution or similar situations must be very careful not to rush into it and run into it and die.

Remember A-B-C

The ABCs of First Aid are the three most important factors a first aider should consider.

Airway : Ensure that the affected person has unobstructed circulation

Breathing : Check that the affected person is breathing well.

Circulation: Check whether the affected person has a good pulse in the pulsating areas (wrist, carotid artery, groin). Avoid moving the victim when it is not necessary to move the victim. Avoid relocating the affected person when not in danger. Moving the victim back and forth is often dangerous, especially in cases of spinal cord injuries.

Call emergency service

Call for help or tell someone to arrange for help as soon as possible, if you are alone at the scene of the accident, make sure the victim is well-ventilated before calling for help and making arrangements. Do not leave the affected person alone or stay close to him.

Determine responsiveness

If a person faints, try to wake him up by shaking him and talking to him.

If the person is uncooperative and still unconscious, roll him into the recovery position, open his mouth and open the airway.

- Keep the head and neck straight
- They should be rolled very carefully on their backs holding their heads.
- Hold the pulse and open the airway. (Fig 1)



Look, listen and feel for signs of breathing

Breathing and watching the casualty's chest rise and fall. Make sure for any breathing.

If the person is unconscious or unable to respond, treat them as a victim of the accident. If the person is breathing but unconscious, roll the head and neck with the body. Sampling can help to prevent drooling and distension of mucus or vomiting to dislodge obstruction in the airway.

- Check the victim's circulation
- Observe the casualty's colour and check their pulse. The carotid artery is the best place to start CPR if the victim has no pulse.

Treat bleeding, shock and other problems as needed

After making sure the casualty is breathing well and the pulse is regular, the next priority is to control the bleeding. It is for the people with hair loss should be careful to avoid electric shock as it can cause further damage.

Stop Bleeding

Immediate control of bleeding is critical to saving head injury victims. The method of applying pressure to the site of bleeding should be done before trying any other methods.

Treat shock

Trauma can also cause loss of blood from the body. The mind should also be protected from being trampled. When a person is affected by shock, his skin becomes icy cold, mental strength is weakened, and the skin turns pale, and the face and lips may turn pale. A shock victim can be life-threatening if left untreated. It is because of the effects of trauma that someone finds themselves in a severe or life-threatening situation.

Choking victim

Airway obstruction can cause death or permanent brain damage within minutes.

Treat a burn

Rinse first and second degree burns with cool water, and make a wipe clean. Do not use serums, ointments or any other ointments. Also, do not peel off the skin (blisters) attached to the burn and cover any level of burn with a clean cloth. Remove dyed clothing and gold jewellery. But don't try to remove tight dressings from burns

Treat a concussion

Check the victim for signs of shock if they hit their head, common symptoms include amnesia, dizziness, paralysis, Sick emotion, laziness and spinal cord injury, Treat a spinal injury victim

If it is suspected that the dye on the spine is too bad, do not tilt the head or the hindquarters unless there is real danger. (Stay with the victim until help arrives) Remain calm with the casualty until helpers arrive.

Unconsciousness (COMA)

Coma is defined as unconsciousness.

This is a very dangerous situation. It means that the patient is completely unconscious lying on the bed and unable to make any calls and not even feel the external stimulus. But the basic heartbeat, breathing and blood flow may still be active or they may also be inactive. If no one gives any treatment to these patients, this may even lead to his death.

This condition is caused by disruption of normal brain function. There are many proofs on this,

- Shock (a shock to the heart)
- loss of energy due to nerve shock
- Headache (Concussion) Compression
- Asphyxia Obstruction to air passage
- Very high temperature in the body (arrest) in the heart, heart attack.
- Stroke is a nervous system accident
- Bleeding (loss) (Blood loss) Anaemia
- Dehydration (diarrhea and vomiting)

- Diabetes (low or high blood sugar)
- Blood pressure is too low or too high.
- Excessive consumption of alcohol and drugs
- Poisoning
- Epileptic fits
- Obsession (emotional seizure. Internal effect)

Symptoms of abscess, May appear after a patient is unconscious.

- Confusion
- Drowsiness
- Headache
- Allergic symptoms in slurred speech or motionless affections
- Lightheadedness
- Bowel or bladder
- Loss of control
- Palpitation
- Stupor
- First aid
- Call emergency and intubate the patient.

Breathing and pulse should be frequent. Resuscitative treatment includes breathing exercises and CPR if necessary

If someone with a spinal cord injury is lying on their back and having trouble breathing.

- 1 Gently roll them onto their left side, with their waist bent and knees straight up.
 - 2 Tilt their head back slowly to keep their airway open.
 - 3 If they stop breathing or their heart stops beating at any point, roll them onto their back and start CPR, immediately.
- If the person is affected by spinal cord injury, the actual condition needs to be assessed very carefully. Have the person roll over so that their entire body is on the same side at the same time as they pick up the duck. While rolling him in this way, his neck and back and his head. The body should also be oriented in the same direction.
 - Keep the casualty in warm conditions until medical help arrives
 - If you see the victim fainting, try to stop him from falling. Place him face down on the ground and hold him up above the road level.
 - If fainting is a sign of low blood sugar, give him some sweet snack to eat. Or give them something to drink if they regain consciousness.

Safety practice - Safety signs

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

- **acquire include employer and employee**
- **know the responsibilities, safety measures, and the four basic safety signs.**

Many accidents are preventable and occur due to negligence, such as using damaged tools, ignoring broken parts, and leaving clutter unattended. Taking care of these issues can help prevent accidents.

Neglecting safety measures or being careless in one's work can lead to accident that can harm or even kill colleagues. This accident can be avoided if he has deliberately thought and acted on it.

Those responsible for the accident are

Responsibilities

Safety also does not happen automatically. They should be organized like a formal planned work. In this case, the law says that the workman is also liable.

Employer's responsibilities

Management plans such projects. Efforts should also be made to implement integrated work. It also ensures workplace safety by inculcating among workers to perform efficient operations such as training workers, maintenance of equipment and workshop, and inspection and safekeeping of records.

It is also the employer's responsibility to provide the equipment, the condition of their work and to train them to know who is going to do the work.

Employee's responsibilities

How to apply safety measure? How to perform the task safely? The training provided to you will be helpful in this regard

Employee responsibilities include the use of lashings and general behavior related to food consumption.

Employers and employers take great pains to protect the life of an employee. However, you must remember that

you bear full responsibility for the consequences of your actions on others. You should not take this responsibility lightly.

Rules and procedure at work

The employer shall act in accordance with the laws enacted from time to time. Whether they are written rules or not, you should learn from your employees how to use some of the rules that an organization thinks and implements. How to protect? Complaint procedure in case of breakdown of machinery, emergency regulation, certain goods not to be transported to restricted area. There are other important laws that increase efficiency and safety.

Safety signs

Be familiar with the various signs and notices on the routes to the workplace. Some of them may be familiar to you. For example, "no smoking" and others may not be familiar to you before. You have to understand them yourself. They are warnings of impending danger. Don't ignore them out of desire. Security signs can be divided into four separate categories. These symbols can be identified by their strength and patterns. Sometimes they are simple symbols.

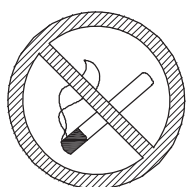
Some more symbols and letters, images are also included.

For example, specifications for maximum working load and maximum height etc. of a weight lifting machine are available.

The four basic categories of signs are as follows,

- Prohibition signs (Fig 1 & 5)
- Mandatory signs (Fig 2 & 6)
- Warning signs (Fig 3 & 7)
- Information signs (Fig 4)

Prohibition signs (Fig 1)



Form - circle

Colour - Crossed red circle with white back field and purple symbols

Describing- Indicates that the specified action should not be performed.

Example: No smoking

Mandatory signs (Fig 2)

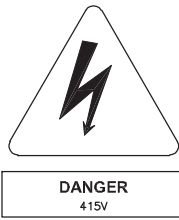


Form - Circle

Colour - White symbol on blue background

Indicates - what needs to be explained. An example is wearing gloves.

Warning signs (Fig 3)

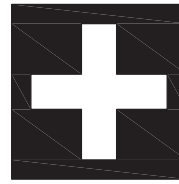


The shape is triangular

Ability is an icon on a yellow background with a black border

Describing is a warning about electric shock.

Information signs (Fig 4)



Form - Square (or) Oblong (Rectangle)

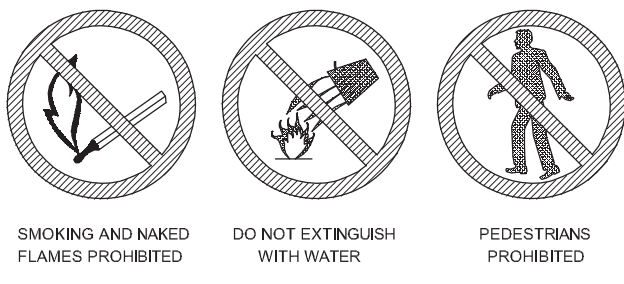
Ability - White symbols on a green background

Explanation - Provides information about security mechanisms

Example : First aid

Prohibition Signs (Fig 5)

Fig 5



Mandatory signs (Fig 6)

Fig 6



MANDATORY SIGNS

Warning signs (Fig 7)

Fig 7



Understanding the structure and quality of hides and skins, including the extend and direction of their sketch

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

- parts of leather the skin
- regenerative properties of kohl.

Definition of Leather

Leather is a material made from raw hides and skins that have been treated with chemicals (tanned) and then dyed and processed.

Leather products are made using leather. Coloured leather is called finished leather. It has different finishes, the one with more glazing is glazed leather and the one with less gloss is Dull finish.

Parts of the hides and skins

a Large type of skin (hide)

The raw hide obtained from a well-developed large animal is called hide.

Example: Cow, Calf, Buffalo

A hide (animal skin) typically covers an area of 12 - 25 square feet. It's cut in half along the spine from neck to tail, creating two "side". Each side is then cut into strips, making it ideal for tanning. The tanning process is enhanced by the natural enzymes in the papaya, allowing the skin to be split into two layers.

"Saucy top leather is stiff and lacks flexibility, Particularly in the abdominal area where the muscle fibres and sparse".

Larger skin tone is better and muscle fibres are stronger
Rewritten in next page.

b Small Skin

Raw skin obtained from small animals is called skin.

Example: Goat Sheep

• Goat skin

The area of the goat hide is 2 to 10 square feet. On the surface of it, the skin that is age-appropriate is well-smoothed. Aged skin is more prone to acne.

• Sheepskin

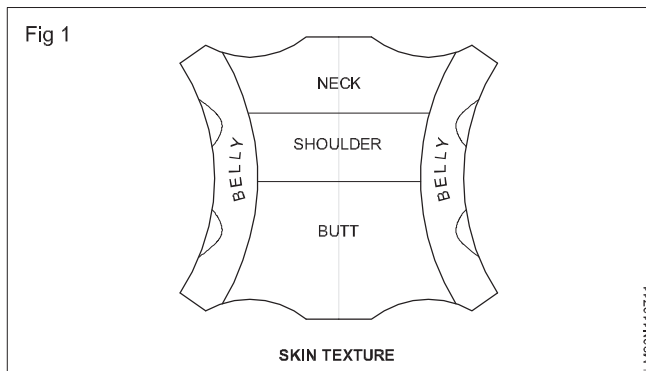
Its area varies from 3 sq.ft to 12 sq.ft and is not uniform. It has poor quality. Sheepskin is used for lining and for making leather.

Parts of hides (or) skin

The shape of the large and small lash taken from the animal is the same, but the size is different.

- **Neck :** The neck area is more refined than the rest. than other regions will be different. Here the growth marks are fantastic. (Fig 1)
- **Shoulder :** Sanam is the highest quality leather, found in the center of the hide, with quality decreasing towards the edges.

Fig 1



- **Middle :** The quality of the central part is good. The moment is found to be less than the buckling area.
- **Butt :** A full skin butt is best of all. The better the tone, the better the quality of the muscle fibers. In the proximal part of the spine, especially the stretchiness is reduced.
- **Belly:** Abdominal region has lower quality than other regions and the structure of ligaments is loose.
- **Shank :** Sanam is less but the quality is good.

Lines of tightness and stretch direction

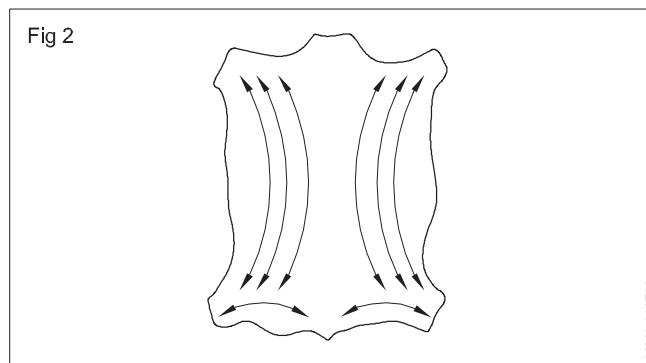
Leather is a naturally biodegradable material. They are made up of muscle fibres and the density and strength of muscle fibres are not uniform throughout the skin. Leather thickness and strength depend on how dense or loose the fibres are,

Skin traction is the direction in which the skin is stretched.

Stretchiness in the different parts of hide (Fig 2)

- **Buttock area :** The traction in the butt area is very less, and the direction of traction below the buttock is smoothed along the length of the skin

Fig 2



- **Shoulder** : The main structure is well polished with less traction and strength in this area.
- **Abdominal region** : Abdominal hypertrophy also results in less muscle fibre density. It is the least viscous region of all the regions.
- **Neck area** : The skins are graded from grade I to V grade , with A,B,C,D and E also being used. The grading is based on the number of defects with
 - Grade A: 1 - 3 defects
 - Grade B: 3 - 5 defects
 - Grade C: 5 - 7 defects
- **Centre piece** : The center has the lowest drag.

Skin quality

Skins with very few defects are often exported overseas due to the desire to have no hides that are usually free of even a single flaw in any animal's skin.

Hides with more defects are used for domestic purposes. Skins with major defects are rejected and used as veiling skins. (or) the main part of the skins is then patted to the point where the defects disappear in different designs and used for retail sale.

For example, Dolman skin from goats and sheep are graded, A to E with any lower quality rejected.

If you take the buffalo hide, its tan is divided into A, B, C, D, E. Skins of lower quality are rejected.

For instance. Parchment leather is graded from grade I to V. Skins that don't meet these standards are rejected.

The wider neck area reduce resistance and the pulling force acts along the length of the skin.

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Tanning process, pre- tanning and post tanning. Tanning of hides and skins types and their essential characteristics for different uses

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

- describe pre-tanning and post-tanning
- explain the types of tanning
- explain the characteristics and benefits of various tanning methods.

Pre-tanning

Pre-tanning restorer that combines all the ripening procedures that must be done before the skin is completely tanned. This method is used to tan the skin and improve its quality.

They are

- Flaying - Peeling off the skin.
- Curing and suiting.
- Soaking- Immersion in water.
- Liming.
- Hair removal Re-Liming - Wem and re-liming.
- Flesh removing/De-Liming - Removal of lime.
- Batting. Placing wax flowers.
- Pickling- Sour loading.

Each of these methods should be performed sequentially.

1 Flaying : Flaying is the process of extracting skin from animals. If it is a large animal (buffalo, cow) while peeling, its skin should be completely peeled and then divided into two parts. When dissecting, out along the spine from the base of the skull to the tailbone, dividing it into two parts. Each of these parts is called a side.

2 Curing and salting : To prevent the skins from rotting and to preserve them for a long time, naphthalene balls are placed on the five sides of the peeled skins. This process is called curing, and its a method of dry salting.

Naphthalene is expensive. So instead of this we can use normal salt which we use every day. This is called Salting. In this method, first the salt is placed on the ground and the poppy is placed on the skin side. Then another salted skin is placed on top of it so that the silk side does not fall on the upper part and is folded and layered like Meli and mane together. Then the five and the two are stacked together. This salting method is applied for 10 to 20 days so that the upper part of the skin is not affected due to alternating layering. When salting in this way, it should be changed three times a day (every 6 hours). This method is called wet salting.

3 Soaking : The original salted skin is covered with dirty bloodstains, salt, dung and dirt. While soaking

the hides in loud water, we also add a little bit of insecticide along with the hides. We cleanse the skin and soak it in water three times (12 hours or at least four hours) and this method is called soaking.

4 Liming: After soaking, the type of hide (Cow, buffalo or goat) is identified. Then, during the liming process, the appropriate amount of lime and sodium silicate (Na 2s) is added. The mixture varies depending on the hide type.

- **Buffalo hide:** 20% lime, 2% Na 2s, soaked for 18 days
- **Cow hide:** 10% lime, 1% Na 2s, soaked for 10 days
- **Goat hide:** soaked for 6 days

5 Hair removing/Re-Liming: After the liming, hair straightening takes place. For this, the underside of the palm kernel is polished. The hair is removed with a blunt hammer. In this way, while brushing the hair, it should be done with caution so that there damage to the skin. The removed skin should be put back into the sump tank and kept overnight. This method is called Re-Liming.

6 Flesh removing/De-Liming: After completion of re-liming membrane removal takes place. The skin has two parts namely grain side and flesh side. Only the upper part can be used. It is better to remove the membranous part of the skin with a fleshing machine than to remove it manually with tools like a hammer.

Ammonium sulphide is added to the membrane-stretched skin and circulated in a tank for one hour. After this one-hour cycle the lime scale is removed from the skin. The decalcified skin is taken out and the hair on the skin is removed with the help of salah sati.

7 Bating: After removing lime, the raw hides are treated to remove dirt and excess flesh. This process is called bating extracts and natural oils and sap from the skin, making it less elastic and flexible. It's like squeezing out the juices, leaving the hide clear and ready for further processing.

8 Pickling: After treating the hides with main flower, they are soaked in a solution called pickle, to remove excess fat and stickness. The pickle mixture contains acid (HCL or H_2SO_4) or salt (Na cl) to help break down the skin's natural oils and prepare it for tanning. This

steel is called pickling, and it help to create a clean and recaptive surface for the leather tanning process.

Our Mahals have known the business of tanning for thousands of years. The industry was at best a traditional industry. When the British East Indian company came to our country they came to know our tanning method. Among them, we used hides and exported them to abroad. Although our skilled craftsmen (Makhanas) processed it was the British who exported it other countries. As a result, this traditional leather tanning method is commonly known as the "East indian tanning method in foreign markets

There are four types of tanning.

- Vegetable tanning
- Chrome tanning
- Oil tanning
- Mineral tanning

Vegetable Tanning: Vegetable tanning is an oldest method that uses natural materials like bark and leaves to soften and preserve hides, preventing rot and delay. This ancient methods create strong, flexible leather, even for items like whips.

Mix all the above ingredients together with water. In this way the skins are placed in the essence after being filtered

with water. It should remain in the tank for 30 days. On the 30th day he takes the skin and cuts it crosswise.

If the skin is green when you see it, add a little more vegetable tanning material and hide it in the tank for ten days. Now the skin will be well penetrated and polished. this is called vegetable tanning.

- Chrome tanning

This method is called metal salt pickling method. Chrome powder is added to it and sodium format, sodium bicarbonate etc. are added to it and it is processed in two ways.

- a One bath process
- b Two bath process

a One bath process : It is a method of tanning leathers that are less tanned, such as cowhide and sheep.

b Two bath process : It is a tanning method to produce Glazed kid on goat skin.

Oil Tanning

Frankincense oil, olive oil etc. are used for tanning the skin. Thus the method of using oil is called Oil Tanning.

Mineral Tanning

Minerals such as alum are used to tan leather. The method of tanning with mineral materials is called Mineral Tanning.

Difference between Vegetable Tanning and chrome Tanning

Vegetable Tanning	Chrome Tanning
Tanning is done using tree bark.	It is tanned using chrome powder
Quick drying. This will change the colour.	Character does not change with climate. The colour does not change.
Absorbs water quickly	Does not absorb water quickly.
Can be transformed into any shape after soaking in water. Even after drying, the shape changes.	The shape does not change even after drying. It has a fixed shape.
Cut edges can be polished	Cut edges can't be polished
Heavy weight	Less weight
The hide is scaly	The hide is shiny and beautiful.
It is sold by weight and area.	It is sold by area.
Fat feeding can be done easily.	Fat feeding requires a complex procedure.
Its cut edge is yellowish brown in colour.	Its cut edge is yellowish brown in colour.
Its hair will soon become limp.	Its hair doesn't get loose anytime soon.
Chrome has more volume and surface area than leather.	Has less volume and surface area than vegetable skin.
It is used as bottom and top sole for shoes.	It is used as upper leather.

Post tanning

Tanned skins are durable, but need extra processing for a smooth finish. This involves chemicals and machines to enhance texture and appearance.

Draining

After tanning, the skins are removed from the tank using a drum and the process of washing off excess chemicals is called draining. The drained skins are then stacked in the workshop.

Samming

It reduces the moisture in the skin and keeps the skin hydrated. Also, the wrinkles in the skin are smoothed out. The skins that have been harvested are stored in the hooking shed where the leather is stored.

Splitting

Raw hides and tanned hides have higher volume. The volume of leather used to make material varies from material to material. Also, the weight of leather for making leather garments varies. Measure the leather weight needed for the garment first.

Then the required skin should be sorted. Then we can split the skin to the desired size by feeding the skin to the splitting machine.

Splitting is a reduction in the size of the entire papilla of the skin.

A splitting machine is used for this and after splitting the upper skin is called upper weather and the skin without the upper surface is called split leather.

Retaining

Chrome - tanned leather can be enhanced by adding vegetable tanning agents, a process called re-tanning. This process gives the leather new properties like fullness, softness and the ability to be embossed or buffed, which are not inherent in chrome - tanned leather alone.

Dyeing

Dyeing is done to change the retained skins into different coloured skins that we need. Various dyes are used. While dyeing, the entire length of the dyed skin should be checked for moles. And any ties or tags should be securely fixed to the skin.

Fat liquoring

Softness, suppleness, stretchiness, flexibility and extra strength are required for the skin. Fat liquoring is done to impart these properties to the skin. Marine oil (fish oil) that breaks down naturally on the skin, oil obtained from animals and oil obtained from wood chips and synthetic oil obtained from chemicals are filtered in a certain percentage and given to the skin. This leaves the skin smooth and supple with extra strength.

Oily hides are treated with formic acid for better pitching.

Check the water in the drum to see if the pitching is complete. If the water is just like water without any kind of salt or oil, it can be known that the fixing is done well, otherwise, if the water is like an oily glue with tie strength, then pitching should be done well using formic acid again.

Draining

After soaking (Pitching) the skin, remove excess liquid by draining it from the drum. Then, proceed to work the skin, such as stretching, cleaning or processing it further.

Setting

The treated leather should be fed into the setting machine. By doing this, the excess moisture and wrinkles in the

skin are removed. It also helps to keep the upper part of the skin well-set.

Drying

The hides in the hut chins set, made from Husina cow hides, are dyed and then dried as needed.

Staking

Drying skins is very fast. So, the staking is injected into the machine to smoothen the skin. This makes the skin smooth and this is called Melissa staking.

Buffing

The skins after staging are fed into the pubbing machine. If you pop the top, you will get a suede leather. Popping on that side will give you a sound field

Bobbed skins are ready for finishing

Finishing

Finishing is done to protect the surface of the leather from excess moisture and dust. Also finishing is the colour of the leathery mane. It becomes exalted. Peeling is not desirable when finishing the skin. Also, the leather finish is water repellent.

Various materials during finishing is used, They are

- Patterns (binder)
- Pigment
- Dye solution
- Wax
- Filler
- Ammonia

The finishing material are mixed with water to create a liquid solution, know as the 'season' which is then applied to the leather using a hand or automatic sprayer. A lacquer is then applied to fix the finish in place, complete the process.

Finishing is bifurcated.

- Resin finish
- Protein finish

Resin finish

Resin Binder is used in this process. Resin Binder is used for less leather. The covering quality of the skin is improved by using resin binder. Pigment is used brilliantly here. A resin finish can be applied to enhance the quality of the leather.

- | | | | |
|------------------------|-----------|--------|-------|
| • Resin binder - 300ml | • Pigment | -200ml | |
| • Dissolve | - 40ml | • Wax | -30ml |
| • Biller | - 25ml | • IPA | -10ml |
| • Ammonia | - 5 ml | | |
| • The rest is water | - 430ml | | |

This is called 1 litter season. The season is prepared in a specific manner as required and sprayed on the skin. It is called 1 liter season coat. Then these are sprayed on the foxing leather. This is called fixing coat. Then the necessary machinery operation is done.

Protein finish

This leather is made using only protein binders, which highlights the natural quality of the skin. To enhance its

appearance, a minimal amount of pigment is applied using a dissolution process.

Dissolution	- 150ml
Protein Binder	- 150ml
Pigment	- 75ml
Wax	- 50ml
Biller	- 50ml
Rest of the water	- 625ml

This is called 1 litter season. The season is prepared in a specific manner as required and sprayed on the skin. It is called season coat. For fixing these, formaldehyde (HCHO) is filtered and sprayed with water. Then necessary machinery operation is done.

Aniline finish

Only a protein enhancer is used to achieve this lash finish if the skin tone is high. Dye solution is used a lot to make the surface of the skin look better while doing this lash finish. The first-class finish is aniline finish.

Dye solution	- 100ml
Protein Binder	- 100ml
Wax	- 20ml
Ammonia	- 10ml
Filler	- 10ml
The rest is water	- 760ml

This is called 10 litter season. The season is prepared in a specific manner as required and sprayed on the skin. For firing these, formaldehyde (formal dehydrate) is filtered and sprayed with water.

Semi Aniline finish

where a small amount of resin binder is used along with protein binder. A lot of pitching and dissolution is used. It is used for medium quality leathers.

Dissolution	- 75ml
Protein Binder	- 75ml
Resin binder	- 40ml
Wax	- 30ml
Pigment	- 30ml
Biller	- 10ml
The rest is water	- 730ml

This is known as 1 litter of season. The season is prepared in a specific manner as per requirement and sprayed on the skin. Formaldehyde is used to fix these.

Burnish finish

Leather finished in this way is widely used in the production of sofas. Rubbing the finished leather will increase the shining. If this lash is to be finished, the quality of the skin should be good. Protein binder and dissolution are used here. Pitch mouth is used only a small amount.

Dissolution	- 105ml
Protein Binder	- 100ml
Varnish wax	- 50ml
Biller	- 50ml

Pigment	- 15ml
The rest is water	- 745ml

This is called 1 litter season. As per requirement, season is prepared in a specific manner and sprayed on the skin. Formaldehyde is used to fix these.

Glaze finish

Here only protein binder is used. It is first quality leather. The only expensive protein binder in leather is

Protein Binder	- 150ml
Dissolution	- 75ml
Pigment	- 25ml
Wax	- 20ml
Piller	- 20ml
Ammonia	- 10ml
Remaining water	- 690ml

The season is prepared in the above manner and the season spray is made. Formaldehyde is used for fixing these.

Nubuck finish

Nubuck leather is polished using a special process called nubuck, giving it a smooth finish. Since it's less dense than chamois leather, it doesn't crack during finishing, and color corrections are made with a dye solution.

Catalina dye solution -75ml

The rest is water-925ml

Characteristics and benefits of various tanning methods.

Vegetable tanning

- Belt buckles and saddlebags are finished with vegetable tanned leather.
- In general, the size of this tanned leather is excellent, so it can be used to make conductor patch suitcases.
- Saddle wallets and purses are made from this highly tanned leather.
- Tawab tanned leather is durable.
- Serialization is easy.

Chrome tanning

- Chrome-plated leather is lighter in weight.
- The mane looks shiny.
- Soft and flexible.
- It heats like water
- The colour penetrates well into the skin found.
- This type of leather can be used to make gloves and leather clothes.
- Car seated wall sofa is made in Asia.
- Used to make sports goods.

Oil Tanning

- Oil-tanned leather is durable, and stronger.
- The complexion is smooth and shiny.
- Psychical stitching is flexibility.
- Travel bags can be made with this leather.
- Oil fed boots, sandal belts etc

Identification and character of various leather materials, other substitutes types & essential characteristics for different uses, their identification & selection, their parts & suitability for various purpose

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

- **identify various leathers**
 - **their properties, the effects of water, acid, alkalinity, friction, heat on leather and their substitutes.**
-

By looking at the cross - section of leather, you can identify the type of tanning used in this production. This simple test reveals the leather's inner structure and tanning method.

Dyeing leathered type cannot be identified by examination. Because the dye penetrates the skin and the colour is invisible. Chrome tanning leather is greenish blue in colour. Undyed vegetable tanned leather has a yellowing - brown color, and its cross - section reveals the type of tanning used. By examining the color and cross section, you can determine the leathers tanning method.

Shrinkage Test

In this simple experiment, fill a vessel with water. A thermometer should be immersed in the water in the vessel. LPG gas should be used to heat the water in the vessel. Then heat the water. Chrome tanning, vegetable tanned leather piece, untreated leather piece should be hung in water so that the temperature of the water reaches 50°C to 60°C and the untreated leather piece shrinks. Vegetable tanned leather shrinks when the water temperature reaches 70°C to 80°C. Water temperature chrome tanned leather shrinks when temperatures reach 80°C to 100°C. Through this test, we can know where the leather has been tanned.

Ash Test

Place the pressed piece of leather in a pan and heat it. If it is a vegetable tanned leather piece, it becomes dark grey at low temperature and if it is a chrome tanned leather piece, it becomes dark green grey at high temperature.

Iron Test

In this experiment, the dissolution of Iron in a vessel (Ferrous sulphate) should be taken. Vegetable tanning leather piece should be put in it. Now the leather piece turns black. This can be known as vegetable tanning leather. Chrome tanning leather - The colour does not change when ironed.

Water, tannins and their substitutes the skin (leather) corrosion, friction and heat have an impact on the leathers durability and quality.

Effects of water on the skin

Water is used as a medium to bind chemicals to the skin. Generally water is divided into two.

- 1 Soft water

- 2 Hard waters

Sulphates fluorides of calcium and magnesium salts are called hard water if they are dissolved in water.

If hard water and leather processing are done, a chemical reaction occurs and the leather does not crack with the character we need.

For example, pickling – P we need is 2.8 to 3. P is not reduced easily when pickling is done using hard water.

Soft water should be used for all processes like dyeing, fat liquoring, finishing. Soft water is very important for modern tanning.

Finished leather absorbs a certain amount of water when exposed to water. Waxed leather of water does not absorb tears.

Effect of water on Leather Substitute

Rexine does not absorb water when it is wet. This has no effect on Rexene.

Effect of Acid on Leather

Acid can be divided into:

- 1 Dilute acid
- 2 Concentrated acids

Acid is essential for leather processing. Acids are used to lower the pH of hides when they are processed with many products. p^H is the density of hydrogen ion. Leather tanning processes use conc(H_2SO_4) P^H . In pickling we need p^H 2.8 to 3. If there is more than 3 p^H , the chrome powder we give next will not penetrate into the skin, so we have to use acid to reduce the amount of P. When using an acid drum for picking mix 1 part acid with 3 parts water. Add this solution in three stages, with 10 - minute intervals between each addition.

After completion of tanning, dyeing, fat liquoring, retaining, after completion of all asian processes, finally acid pressing and fixing should be done. Before finishing, acid wash is done to sharpen the grain side. If acid is applied to the finished leather, the surface of the leather will be scratched. Due to this, leather is likely to decrease.

Effects of acid on leather substitute

Acid cause Rexine to tear. Alkalis, which are alkaline substance, having a damaging effect on leather.

Example

Sodium hydroxide (NaOH)

Sodium Bicarbonate (Na_2CO_3)

The calcium carbonate (CaCO_3) tanning process involves several stages: liming, relining, deliming, basification, and neutralization. In each stage alkaline substance are used to trigger specific chemical reactions ultimately giving leather its desired properties.

Alkalis are used to raise the pH of the leather process. Alkali polish is used for polishing on finished upper leather. These make the leather shine and have a good shine. This improves the quality of leather.

Effects of Alkalis on Leather Substitute

Alkalis in Rexine will tear Rexine.

Effects of Friction on Leather

Dragging or rubbing leather on rough surfaces can wear away the outer layer, damaging the leather and reducing its quality.

The quality of the skin will decrease. Similarly, after making leather products, we should use them carefully.

Effects of heat on Leather

Generally, heat is used in leather tanning.

The moisture in the skin is dried by the heat from the sun.

The leather is heated and dried using modern machines.

During pickling in leather process, if we pour too much acid into the drum at one time, the maximum heat will be generated inside the drum and the surface of the leather will be blistered. This is what we call as "Acid swell". So the acid should be diluted with water and applied in instalments. Vacuum dryer, plating machine etc. are used to dry skins in modern way. Design printing, embossing etc. are done by creating the required temperature in the plating machine.

Heat is used in ironing and flex machines to give leather a shing finish. However, if the temperature exceeds the recommended level, the leather can burn, leading to a decrease in its quality.

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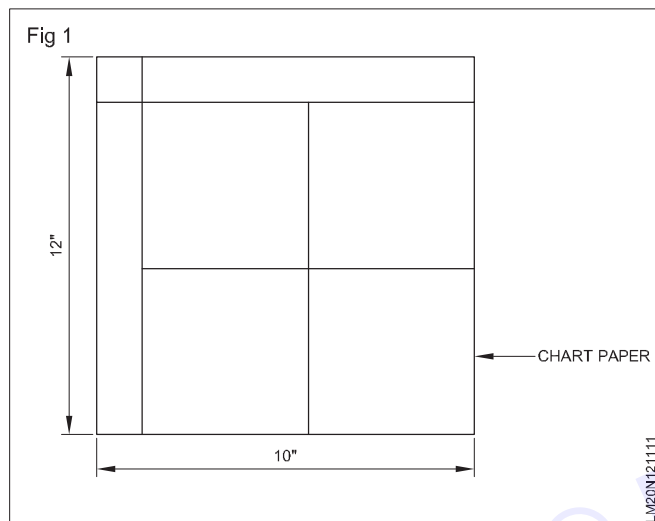
Drawing of different types of leather goods

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

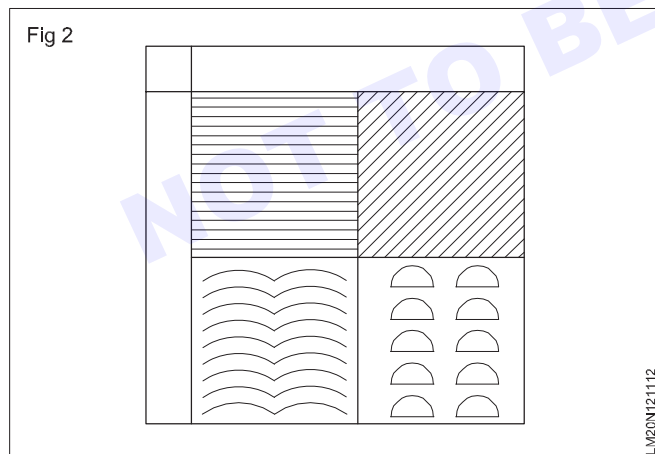
- know the basic shapes of leather materials.

Designs of leather goods are basic

Take a sheet of 12 × 10-inch chart paper, take a steel scale and a pencil and draw a margin line as shown in Fig 1 in length and width. Then divide the chart paper into four parts.



Draw the different structures in Fig 2 and Fig 3 in pencil on the chart paper divided into four sections. To design leather goods, one must know several basic designs.

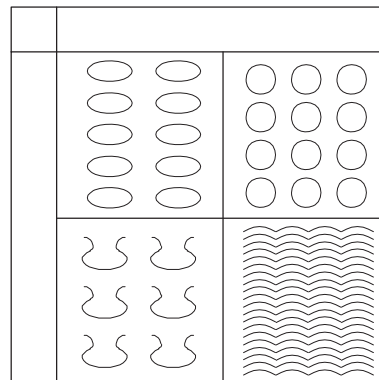


Practice horizontal and vertical lines as shown in Fig 4 and Fig 5.

Vertical lines over horizontal lines

Draw a right angle in Fig 6. Also draw pictures in various shapes from Fig 7 to Fig 16.

Fig 3



Vertical

Right Angle

Fig 4

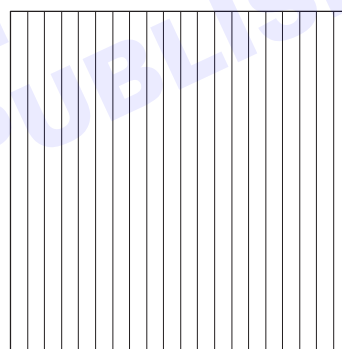


Fig 5

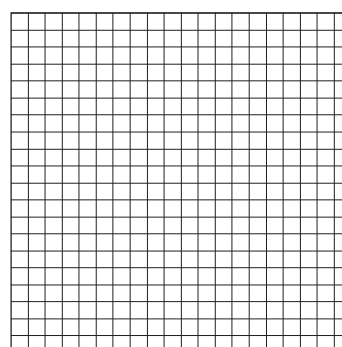
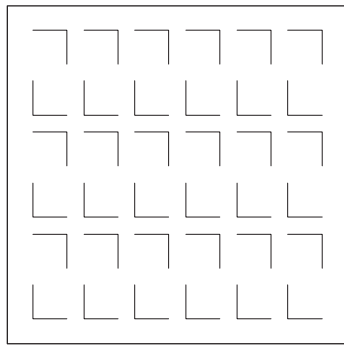


Fig 6

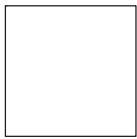


RIGHT ANGLES

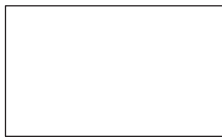
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Square, Rectangle and Triangle

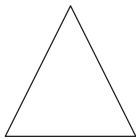
Fig 7



SQUARE



RECTANGLE

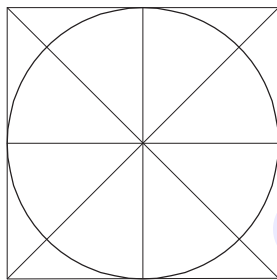


TRIANGLE

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Circle

Fig 8

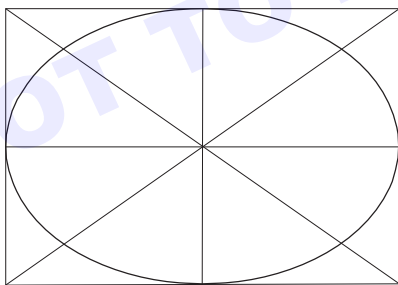


CIRCLE

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Ellipse

Fig 9

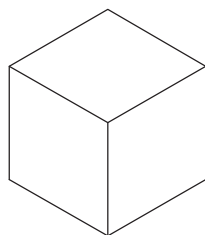


ELLIPSE

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Cube

Fig 10

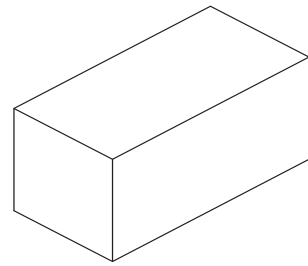


CUBE

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Cuboid

Fig 11

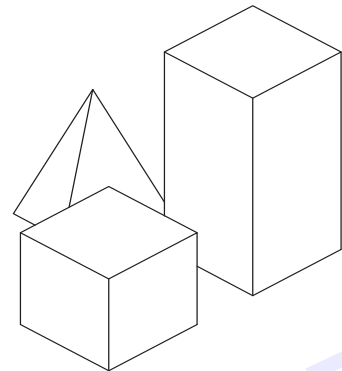


CUBOID

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Combination of different shapes

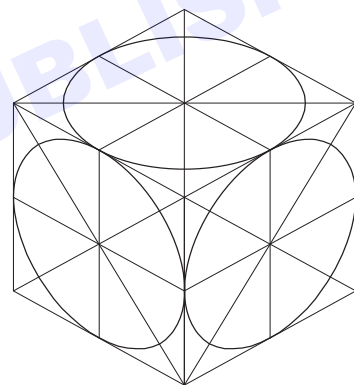
Fig 12



COMBINATION OF DIFFERENT SHAPES

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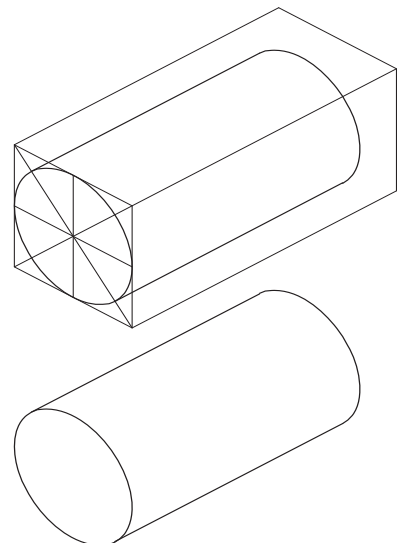
Fig 13



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Cylinder drawn horizontally

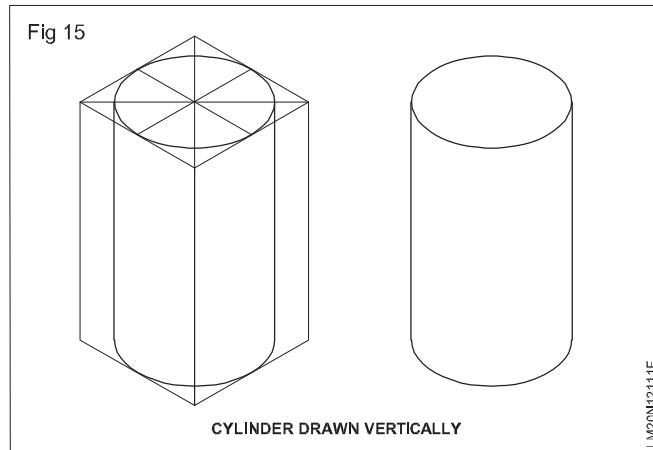
Fig 14



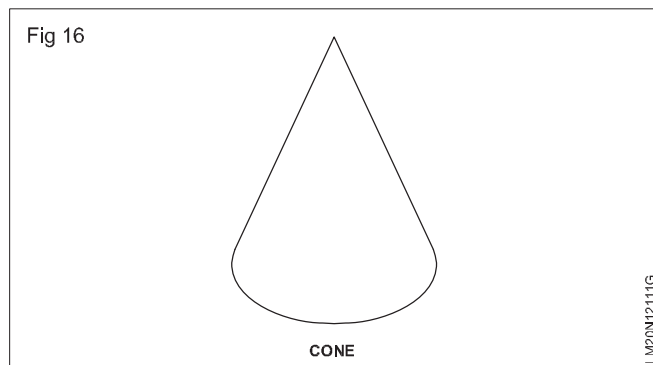
CYLINDER DRAWN HORIZONTALLY

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Cylinder drawn vertically

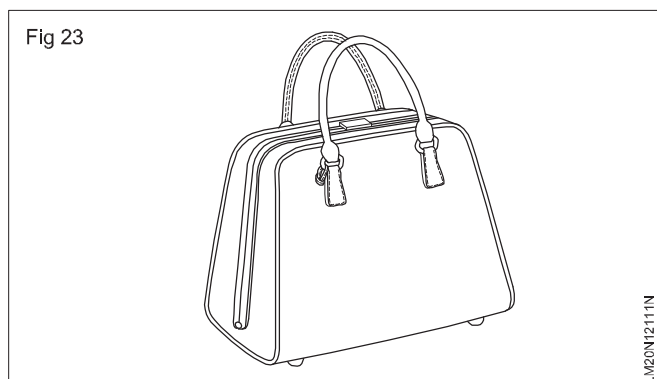
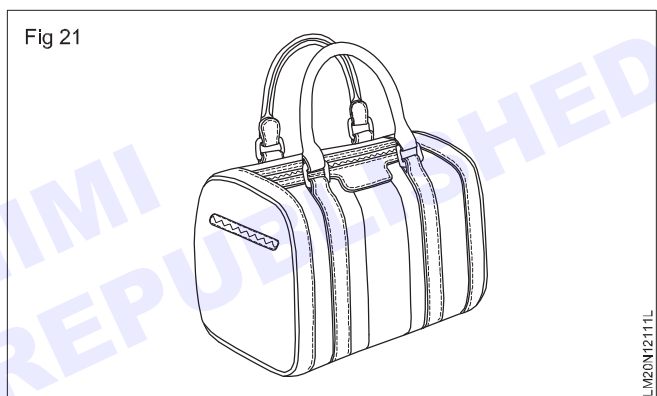
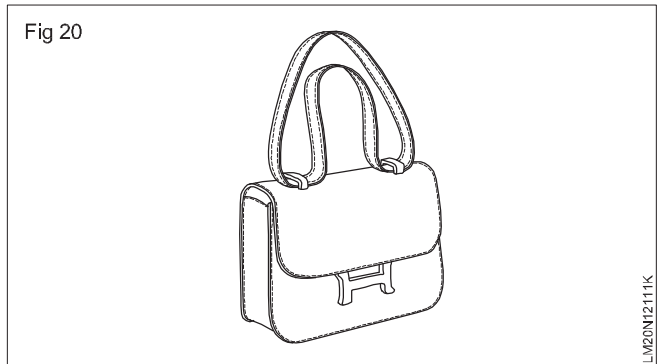


Cone shapes



Draw pictures of various types of leather products in Fig 17 to Fig 23.

Front view of a bag



Pattern and styles, their names and description

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

- about the pattern and how to carry the pattern
- know about style
- know about edge treatment
- know about template making
- know about manufacturing of different types of products
- know about cutting, clicking and punching
- know about edge types of products.

About pattern, also know about the method of carrying the pattern

We have to determine the size of the leather products. Then we have to make and cut the size on the chart paper. While cutting, the nett pattern should be cut first. nett pattern is the size of the part visible to our eye when looking at a specimen with chalk. If the same size is cut into a pattern, it is a nett pattern.

This nett pattern varies from material to material. When creating items like valet trays, credit card holders, ATM card holders, item pouches and passport cases the sizes listed are the exact sizes (net sizes) of the finished products. If it is a patch type, then the net size is the amount we take along with the seam allowance, nett pattern / Working Pattern.

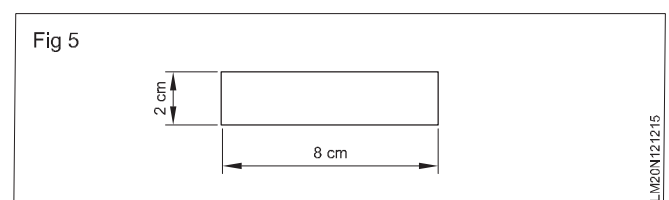
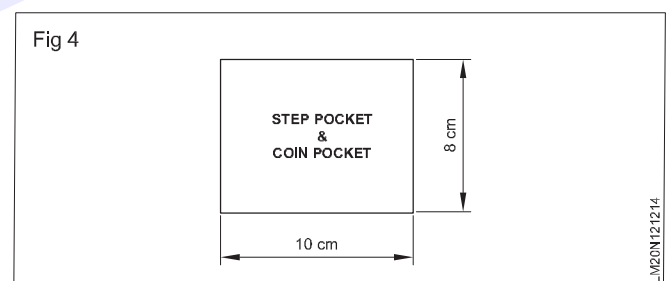
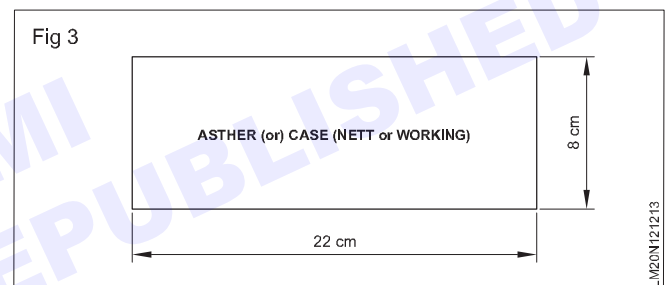
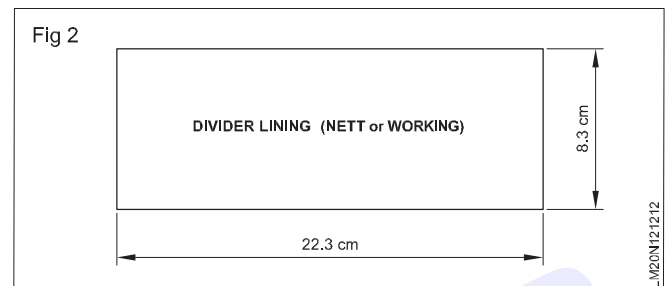
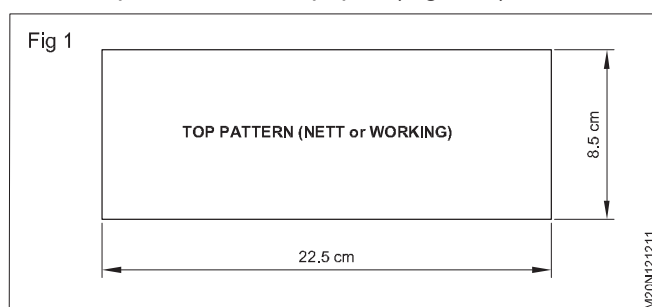
After creating a pattern with the exact size, we add a small margin called putting, this allows stitching adding 5 - 6 mm to the pattern to account for the 5 - 8 mm stitching width.

While taking the pattern for any object, the allowance pattern or the small pattern should be taken after taking the net pattern. Let's take a gent's valet for example.

The standard size of a gent's valet is as follows

Top	= 22.5 x 8.5
Divider	= 22.3 x 8.3
Asther (or) Case	= 22 x 8
Step Pocket, Coin Pocket	= 10 x 8
Centre Patti	= 8 x 2 cm

All above sizes are net size. These drills should first be taken as pattern on chart paper. (Figs 1-5).



After creating a precise pattern add extra material (Polling allowance) where stitching will happen, like seams and edges. Use a separate stitching pattern to guide you and ensure accurate stitching.

Direct cutting out a nett pattern can lead to mistakes in the angles. Which can ruin the materials composition so, we need to make some adjustments to the pattern before cutting it out.

When cutting out a pattern, follow these steps.

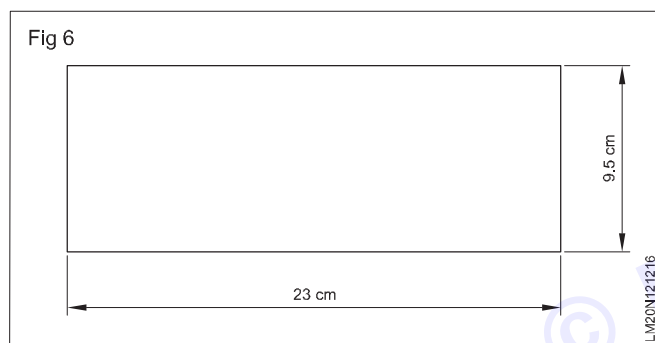
- 1 Roughly cut the length to the desired size, leaving a 1 cm margin on both sides.

- 2 Fold the chart paper in half length wise.
- 3 Use a hammer to mark the edge of a part, creating a crease.
- 4 Open the folded pattern and use a knife and steel roller to cut along the marked line creating two identical parts.
- 5 Cut straight along the edge of one part.
- 6 Fold the pattern in half again & square it up to ensure accuracy.

With the help of the knife mark the width of the pattern piece, striking gently along the entire length of the marked line. After marking, open the batten again and cut with the help of hammer by placing the steel shale to connect the two-mark points.

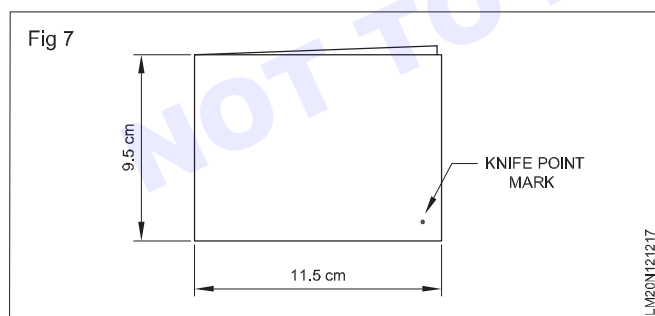
Now we have a pattern that is exactly the right size and angles (90").

For example, if we want to take a pattern of 22 x 85 cm, we need to add approximately 1cm on every side. (Fig 6).

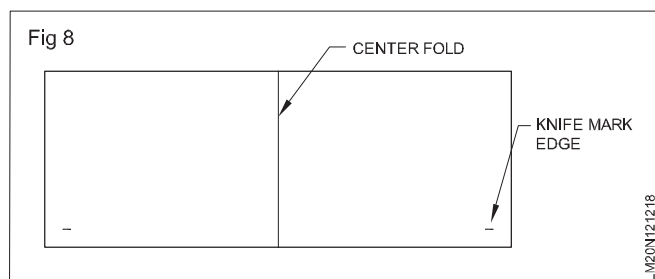


1 Roughly cut pattern

Fold the pattern in half lengthwise, then fold one half in half again (Fig 7). Use a hammer to mark a crease along the folded edge.

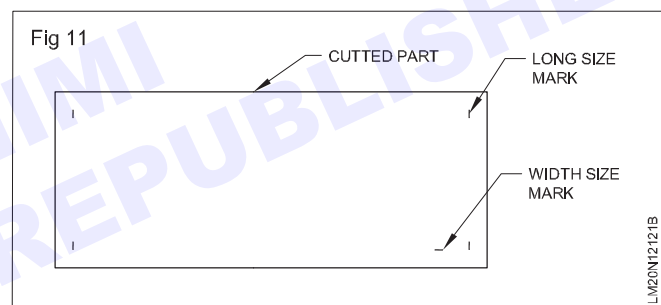
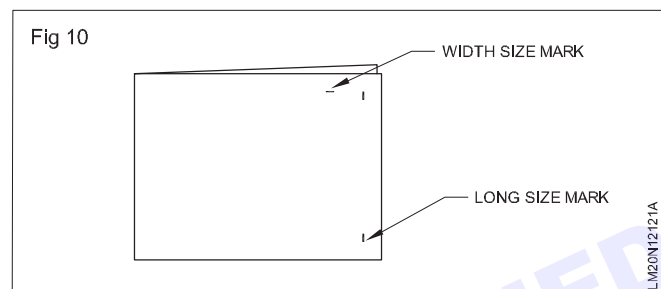
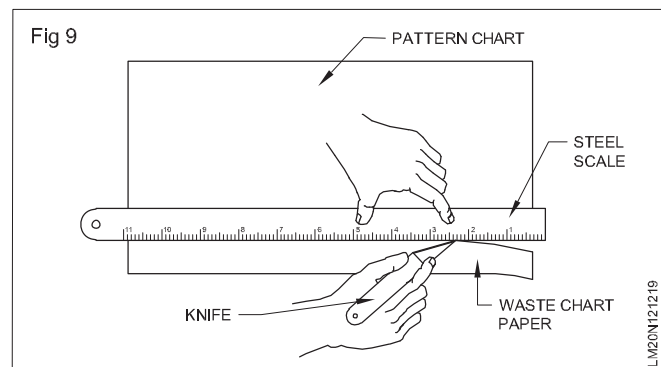


Make up the marked pattern. As in (Fig 8).



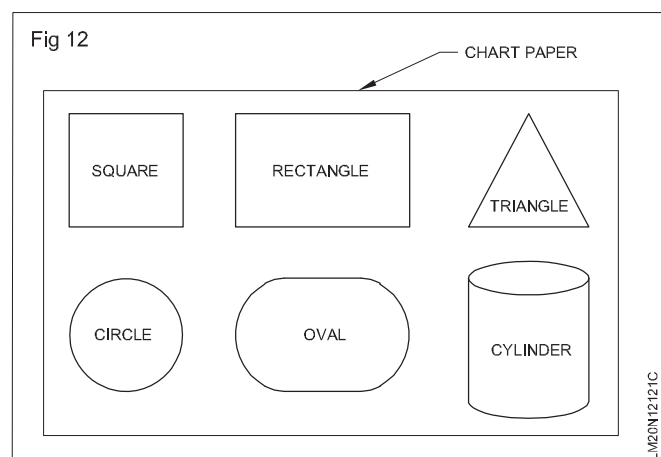
The opened pattern should be cut with the help of knife as shown in (Fig 9) connecting the mark points with steel

scale. After that fold as shown in (Fig 10) and march the length and width with the tip of the knife. After marking, the pattern should be opened again and cut out as per (Fig 11) with the help of steel shale and saw.



With the help of a steel chisel and a knife, the length march and the width march should be cut separately with a chisel.

The top pattern is available as in (Fig 12). The dimensions and angles on this pattern are perfect from any angle. At the same time, the structure is also to be corrected.



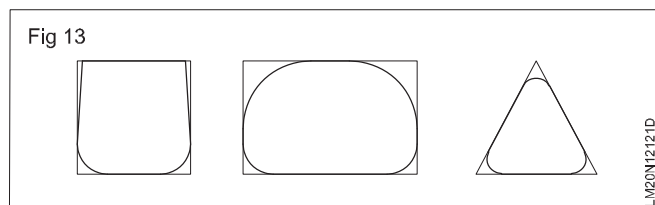
By following the same method, the pattern can be accurately taken for any object. This is the method of pattern cutting.

2 Knowing about style

Style in general varies from day to day according to the time just like the fashion which suits one's mind. Style is fashioned with precision in mind and beautified to add extra beauty. Style is never seen the same.

Steel scale, pencil, rubber and chart paper should be taken to draw the basic structures (styles) required for leather goods as shown in (Fig 12). Then draw the following structures one by one on the chart paper.

Different shapes should be drawn as shown in (Fig 13) in the sketched settings.



3 Knowing about edge treatment

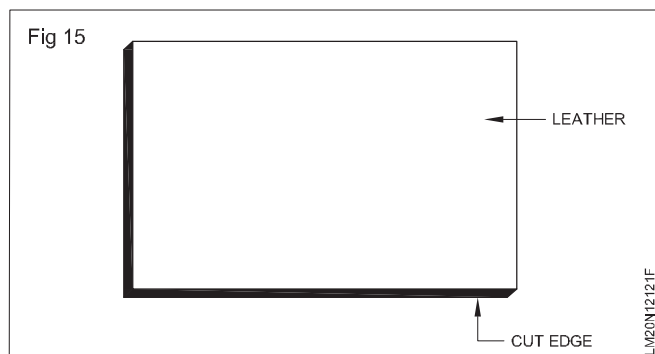
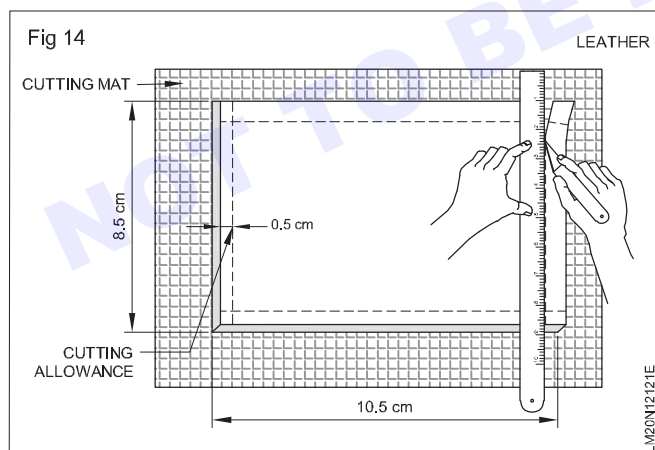
Edge treatment refers to the methods by which the edges of leather goods are finished. (Example Raw Edge, or Cut Edge, Bolted Edge, Baked Edge, Gimped Edge, Piping Edge etc.)

i Raw edge or cut edge

Raw edge or cut edge is the name given to the method of creating material by keeping the leather in the cut edge position. Example gents belt sea case, sea holder, knife wall etc.)

For making raw edge or cut edge

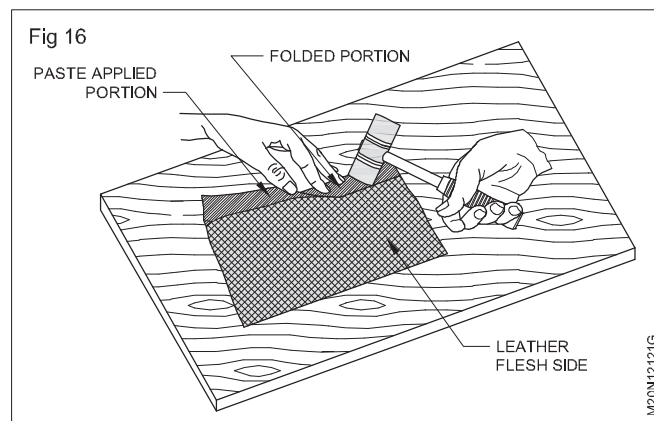
As shown in (Fig 14) 10.5 x 85 cm inner leather piece should be cut with a steel scale and knife and as shown in (Fig 15) 10 x 8 cm size should be cut.



ii Bolted Edge

Bolted edge is a method where you gave one side of the leather, fold it over to make a knot, and then securing it in place.

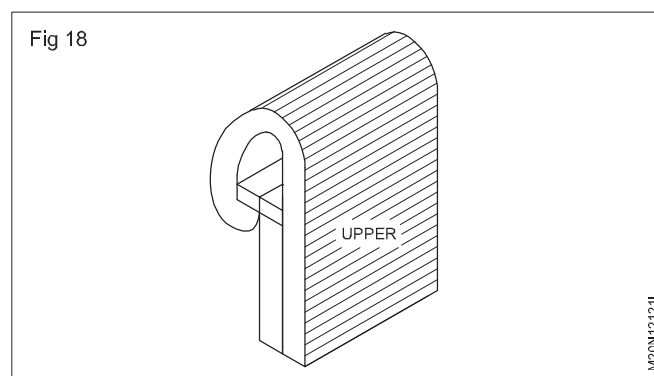
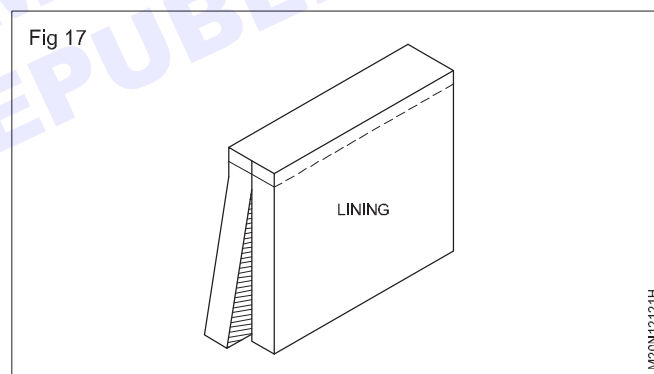
Cut, shave, glue and fold the leather to create a strong bolted edge. Use a hammer and kadapa stone to secure it. (Fig 16)



iii Baked Edge

A baked edge is where two pieces are stitched together and turned. That is, a top piece and a lining piece are sewn together.

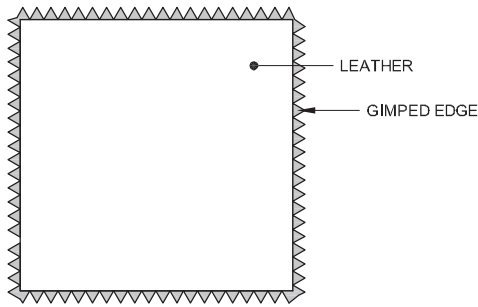
It is the return of material and completion. This is done as shown in Fig 17&18.



iv Gimped edge

Gimped Edge is the work of trimming the edges of the material with gimping scissors (or) Mick Zak scissors (or) toothpicks to beautify the material. This work consists of cutting the edges of the components with gimping scissors as shown in (Fig 19) and forming the material.

Fig 19

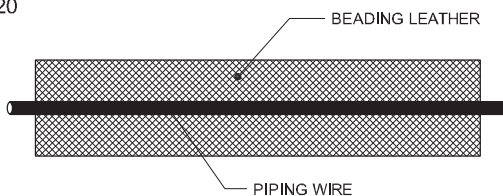


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v Piping edge

Piping edge is the finishing work done by placing piping wire on the edges of the leather goods. Apply glue to the beading leather which has been reduced in size as shown in (Fig 20) and let it dry.

Fig 20



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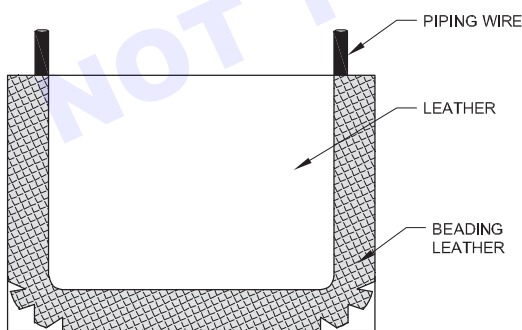
This method is to fold and glue it as shown in Fig 21 and then place it on the edges of the leather goods as shown in Fig 22 and sew it to finish.

Fig 21



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Fig 22



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4 Template Making

Template making is about creating a accurate pattern on paper, including the three important parameters: how long, wide or thick it is?

The addition is to ensure long working hours.

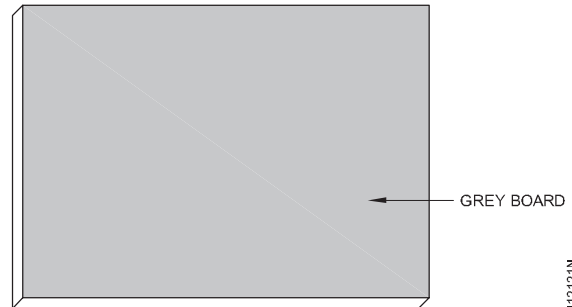
When we produce products in large numbers, mass production is not possible by placing pattern on chart paper.

Card board, grey board, zinc plate, iron plate, aluminum plate etc. Template making is a method of creating long-lasting colours using any of these to stabilize pattern.

By confirming the pattern in this way, we can use it until the order is completed. Or we can use pattern if we get orders of the same model continuously. Accurate template reduce waste, simplify our work, and increase productivity. This lead to a more efficient and successful workflow.

Preparing the greyboard for the template (Fig 23)

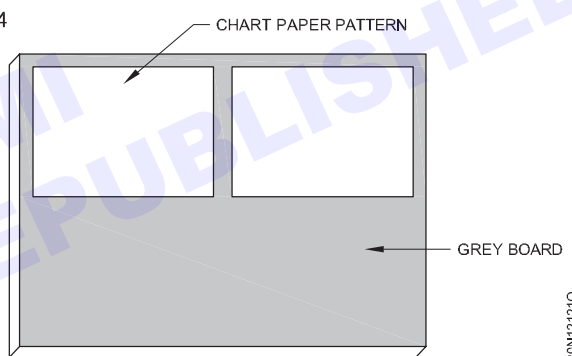
Fig 23



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Attaching chart paper pattern to grey board (Fig 24)

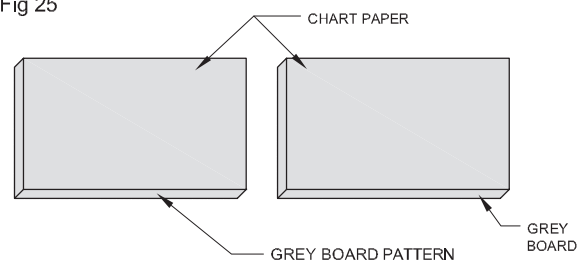
Fig 24



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Cut out the pattern from the grey board (Fig 25)

Fig 25



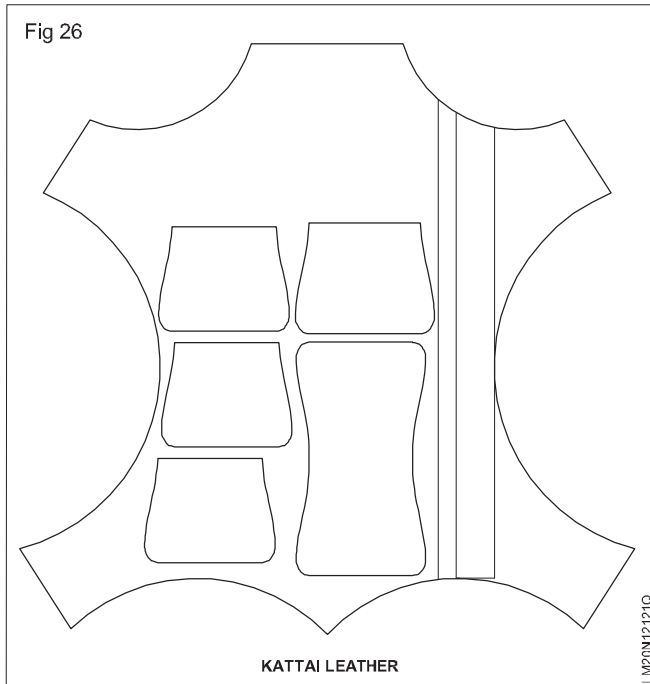
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5 Learning about different types of materials

i Cut Edge Article (Conductor Bag)

We're going to create a cut edge article by cutting out parts and keeping them in place at the edge. Think of it like making conductor bag where we cut and assemble the piece precisely.

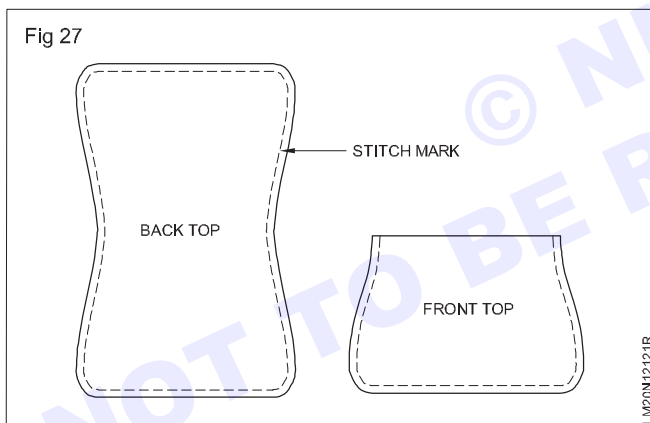
Next, arrange all the components of the conductor bag in order of their size (from smallest to largest) on the kattai leather, and then assemble them according to the matching pattern. (Fig 26).



Marking and cutting out compounds in forced leather

Marking connector

The components should be cut separately as shown in (Fig 27). As it is leather, it is difficult for us to make a hole and stitch it with a needle.



Therefore, mark should be done with the help of hammer with stitch marker.

Making stitch marks on cut components

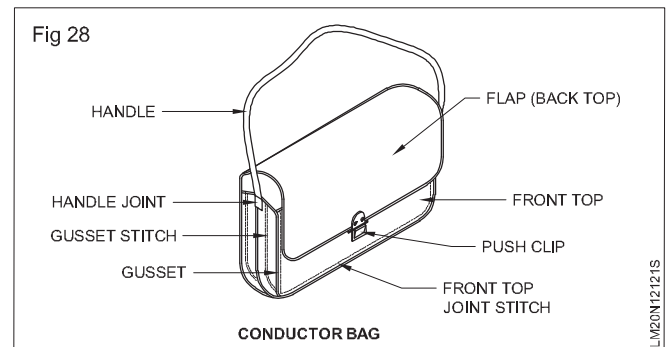
Stitch the leather pieces together by hand, following the markings, next add the base and top layers and stitch them securest.

Finally, the handle should be attached with the synthetically and then push clip is attached to the front of the top as shown in (Fig 28).

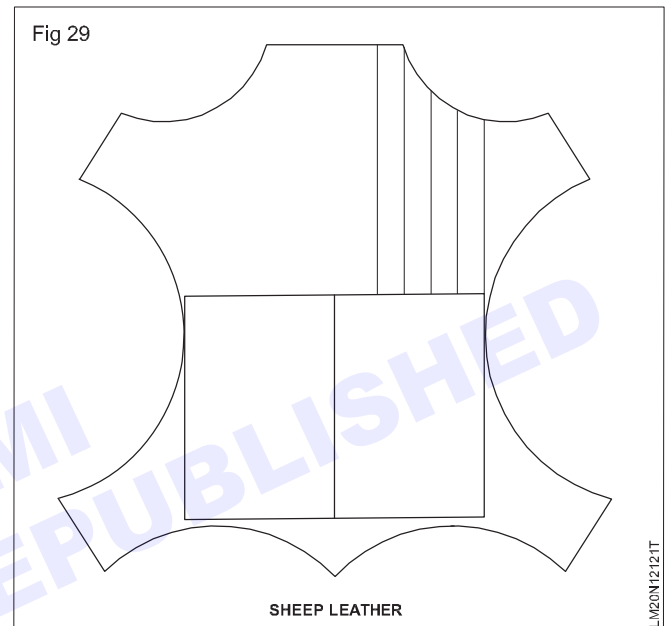
Construction of conductor bag in full form

ii **Turned Edge Article (Ladies Sling bag):** A serrated edge article is a type of turned edge article where the materials end are folded inward and then outward creating a serrated effect. A great example of this is our ladies 'sling bag' which features this unique edge treatment.

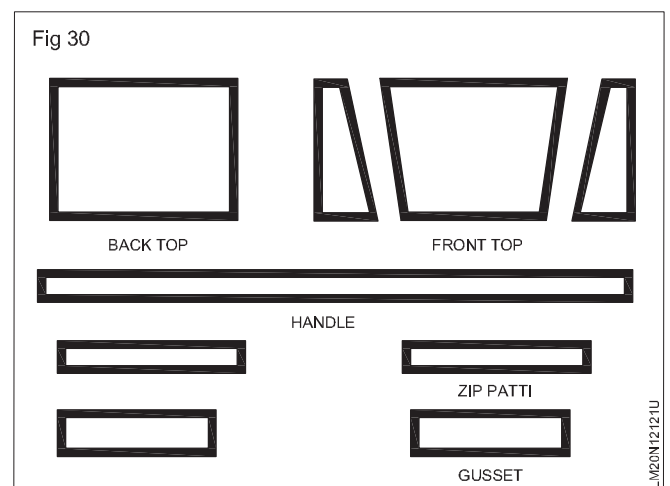
1 Choose the right sheep leather.



2 Create and place pattern on the leather (Fig 29).



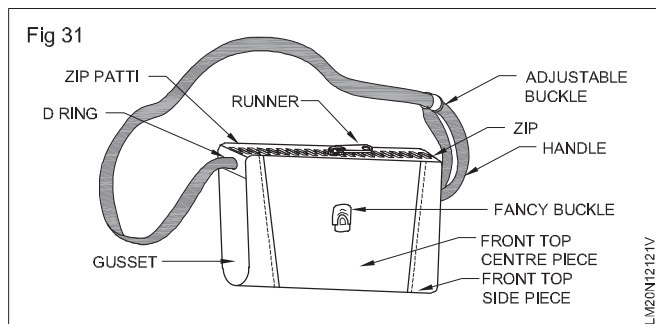
3 Cut out components (Fig 30)



4 Shave leather where needed.

5 Sew zip, runner and lining together.

6 Finish by stitching according to the final design (Fig 31)

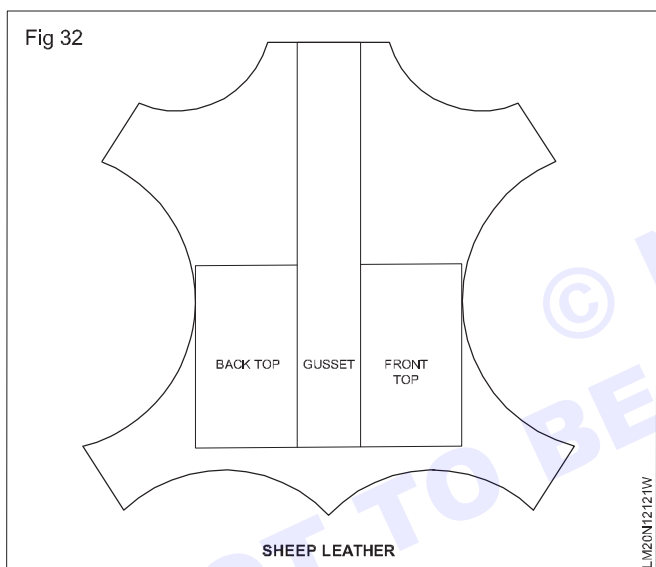


Marking and cutting out the shopping bag components

Skiving of cut components

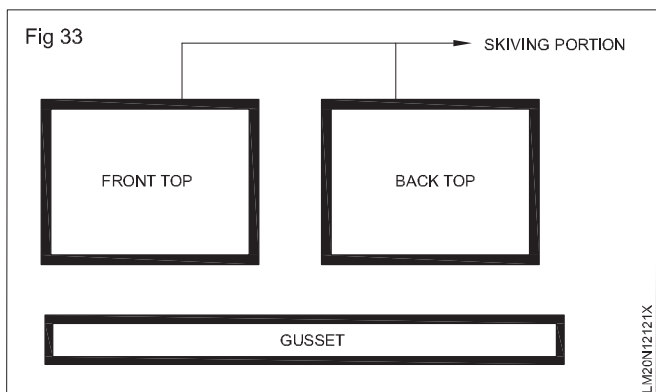
Bolting, assembling, stitching and finishing skived components

iii Unstripped Article (Shopping Bag): Unstripped article is a soft, non-rigid material that is easily portable and hence we have taken the name unstripped article, shopping bag. For this you need to take soft leather. Place the shopping bag pattern on the leather and mark them as shown in (Fig 32). Cut out with the help of hammer and scale.



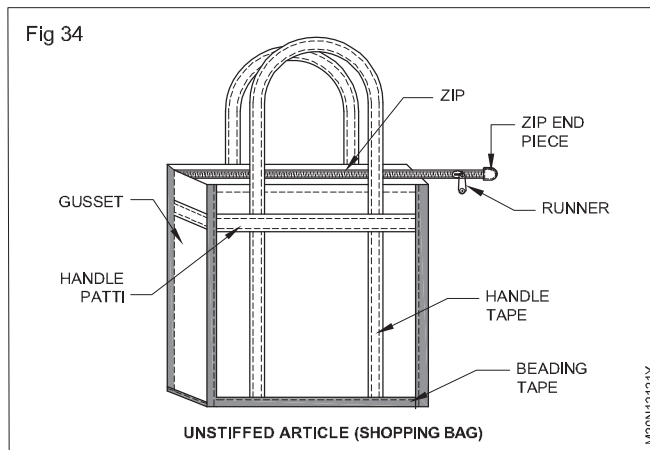
Marking and cutting out shopping bag components pattern in leather

The cut samples should be sieved as shown in (Fig 33)



Skiving of cut components

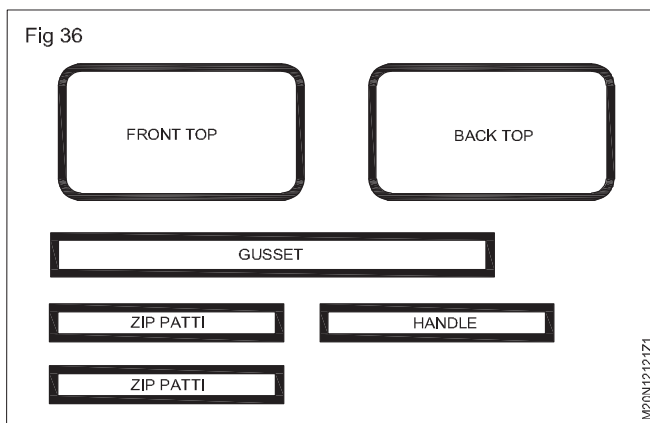
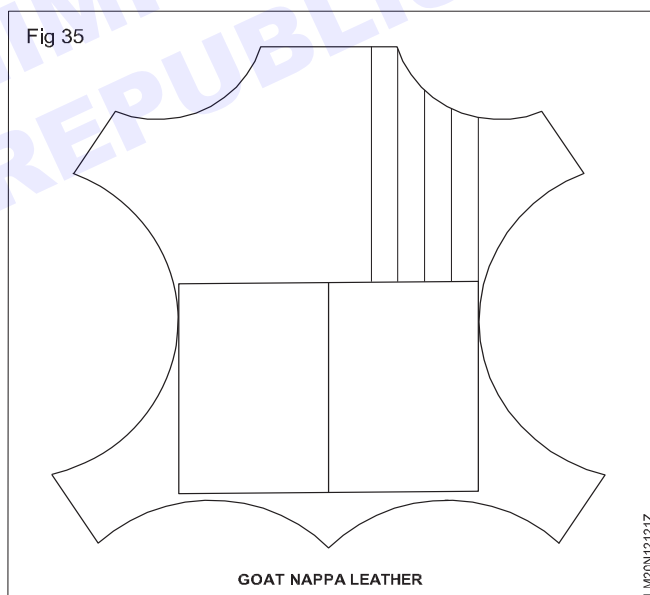
Assemble the skiving components as shown in (Fig 34). Then attach the zip and sew, attach the runner to the zip and finish with the zip end piece.



Assembling stitching and finishing skived components

iv Build-up Article (Gent's Bag): Build-up article is the name given to an item prepared in such a way as to increase its quantity when required. The material we have taken for this is the gent's bag. Svede nap leather should be taken for this. Place gents patch patterns on it and mark it as shown in (Fig 35) and then cut out the components with the help of a ruler and straightedge. Then the cut components (Fig 36) should be shaved.

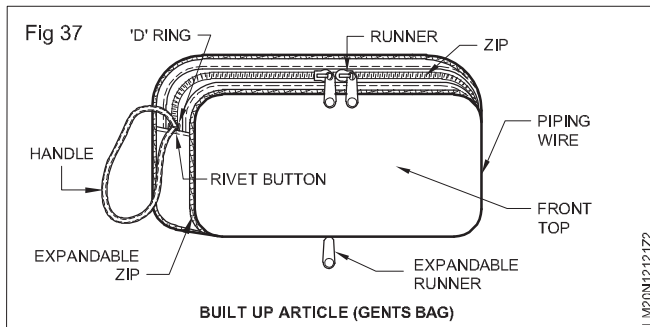
Be it manual or machine shaving, the skin should be carefully shaved without tearing.



After skiving, connect the required components for lining, then stitch the zip and runner with the help of sewing machine. Then stitch the zip around the gussets. After this merge and stitch the two tops. Now done finishing, open the inside runner of the zip in the gusset as show in Fig 37. This process is called build up article.

Skiving and assembling the cut components (Fig 36)

Build up article (Gents bag) (Fig 37)



6 Cutting and clicking

Cutting and clicking is considered to be the primary and most important job in the textile manufacturing industry. Clicking is done first to create any leather product. Then successive works are carried out and completed completely. So, the person engaged in this kind of work should have a lot of experience and skills.

- **Qualification of a clicker** : Upper clicking is a very important task. Only a long-term dispatcher can do this job well. Such a person must have the following qualifications for clicking in an excellent manner.
- **Rehabilitation and responsibility** : The clicker should have the ability to work with commitment and responsibility in working hours. The upper leather used in his work is a very expensive material. By cutting the upper component loosely with a slight lack of sawing, he creates the possibility of factory losses.

It is easy if the part is done correctly. Through experience, clicking can be done without such defects.

- **Sound knowledge about the material** : A skilled clicker should be able to recognize the distinct sounds the machine makes when cutting different types of upper and lining materials. They should also be able to identify defects in the skin and avoid them, selecting the best part for cutting various types of upper and linings.
- **Knowledge about principles of cutting** : The elasticity of goat, cow and ox hides that we use to make leather goods. variation etc. are different from each other. Clicker must be known for cutting based on this, various hides.
- **Judgment and accuracy** : Every clicker should have a sharp knowledge so that he can decide whether the method of cutting with patterns on the skin is correct.
- **Quality requirement** : Not all leathers we use break down to the same extent and at the same rate. Every

skin is different. So, every clicker should know how to properly cut all the components based on the quality of the skin given to him.

- **Knowledge about the subsequent operation** : Protect areas with many cut outs and light materials, know the entire process form start to finish to ensure quality work.

For example, some defects may occur when two pieces are joined together. If one of the two is non-stretchable and the other is stretchable, then the worker should stitch them together so that they are straight with great care.

- **Knowledge about the leather trade** : A clicker must know how to buy the leather skin. Select and buy the right leather for materials the right job. Also need to know about all leather, materials.

Points to be noted while clicking

- 1 Always keep the tip of the knife sharp.
- 2 The tip of the knife should be selected according to the thickness of the skins to be cut.
- 3 Clicking place should be light, It should not be opaque or reflective on the skin. This makes it difficult to cut the skin properly
- 4 Defects should be marked on the skin first.
- 5 Check the hides quality, choose the best area, and extract the leather.
- 6 Pattern should be kept close for cutting without gap.
- 7 Large patterns can be changed to smaller patterns if there are defects in the skin to be cut.
- 8 Patterns should be cut lengthwise in the belt area.
- 9 Parts cut from the same skin should match in color and look.
- 10 Cut the skin in a steady, continuous motion don't skip around.
- 11 Cut corners of the skin without excessive waste.

Punching

Punching is considered as the main operation in the manufacture of leather goods. Many leather products cannot be finished without punching. Holes are made depending on devices like Rivet, Rivet button, Press button, locks etc. in leather goods. Thus, punching is called hole punch and design punch. These punches are manufactured in different sizes to make holes. Also available in sizes 000, 00, 0, 1, 2, 3, 4, 16 and more. All of these can cause holes of varying sizes. Sizes of holes vary depending on the numbers higher the numbers the larger the sizes of the holes. So, we have to choose punching according to the fitting. The size of the hole we put should not be bigger than the size of the fitting. Thus, if the holes are too large, the fitting will not fit firmly into the leather. They will eventually become unstable. A lower numbered punch is used for leather items such as belts and a higher numbered punch is used for attaching radio walls and zips.

A variety of leather goods are put on to suit the model. In some leather goods these holes are also placed for cosmetic purposes. Design punches are used to punch holes in various shapes. Also, number punch sets are used for some jobs. It has a punch-hole numbered from 0 to 9. In this case, punch-holes only make number impressions on the skin and do not create holes.

Heavy and strong Sole pieces, wooden pieces and Nylon board are used for punching. Punching holes on these will prevent the punch-tip from breaking quickly. Also do not use heavy hammers for punching. Punching should be done with the help of small hammers or mallets with light weight. Punching machine is used for making holes in modern industries.

Edges and their kinds

The edge of the leather goods after they are completely finished edges depending on the variations. They are

- 1 Cut edge (raw edge)

- 2 Finished edges (Tuned edge)

1 Cut edge : Visible edges on leather goods like belt and key cases are called cut edges even if the rest of the product is fully finished.

2 Finished Edge : Leather goods with edges that are finished in ways other than cutting like stitching are also significant.

- 3 The edges of some leather goods are finished by folding.

Edges of some leather goods: Stitched with beading. (beading edge)

Some leather goods is finished with internal stitching and turning. (turn over edges)

The edges of some leather goods have pipe beading. (pipe beading edge)

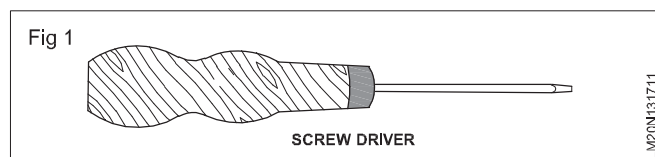
Use of screw driver, eyelet punch, measuring tape, hollow punch, cutting plier, pincer, cutting knife, stitching awl, scissors & hammer

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

- use screw driver eyelet punch measuring tape, hollow punch cutting pliers, pincer, cutting knife, stitching awl, scissors and hammers.

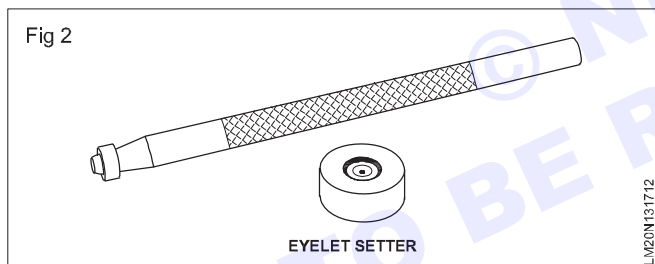
Screw driver

It is used to fix screw type buckle. It is made of mild steel. The handle is made of plastic. Its sizes are widely used to check the fault in the sewing machine and to replace the needle in the machine. (Figs 1 & 2)



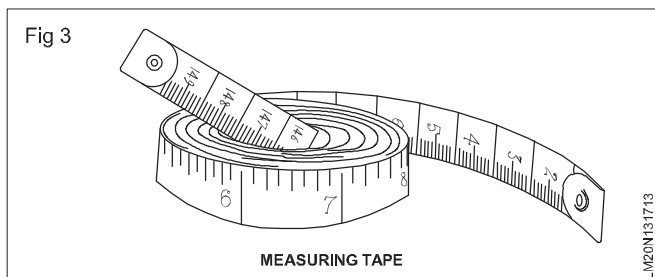
Eyelet setter (Fig 2)

Another name for eyelet setter tool is star punch. One end is polished with a star-like structure. An eyelet made of iron is used to fix the fitting material. It is used to fit the eyelet in the production of belts and some bags. Comes in different sizes.



Measuring Tape (Fig 3)

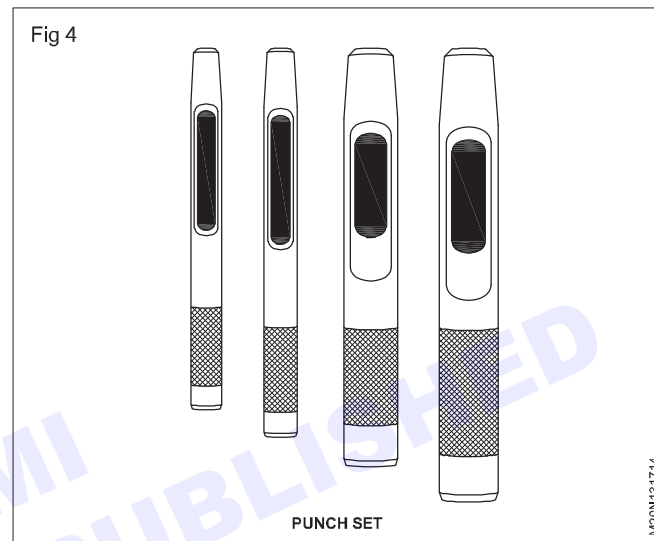
This measuring tape is used to measure lengths and widths. It measures 1, 1 1/2, 2 meters. It is made of plastic. It is often used in leather manufacturing to measure areas that cannot be measured by a steel rule. One side it is marked with centimetres and on the other side it is marked with inches.



Punch set (Fig 4)

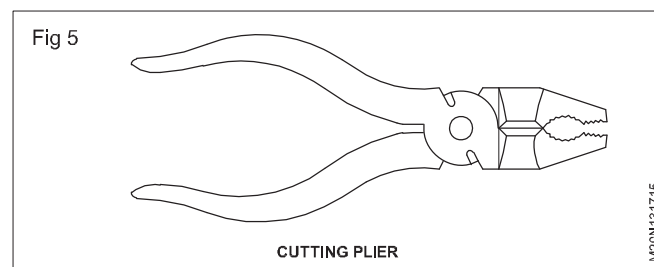
This tool is made of iron. It is used for drilling while fitting etc. It breaks down to different degrees. According to their size, the drilling diameter is 2mm to 10mm and is used

in the production of belts. After completing the drilling, the resin should be removed and cleaned.



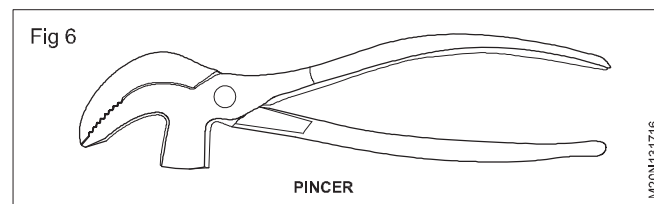
Cutting plier (Fig 5)

cutting pliers are made of iron and have a plastic cover on the handle, used to cut nails etc. In some works, it is used to cut the head of the nail. This tool is also widely used in shoe manufacturing.



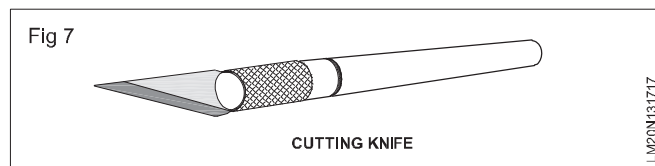
Pincer (Fig 6)

This hand tool is made of solid iron and is used for light stretching of medium strength leather. In the production of leather goods, it is widely used for making suit case, briefcase, leather trunks etc. Used for hammering small nails.



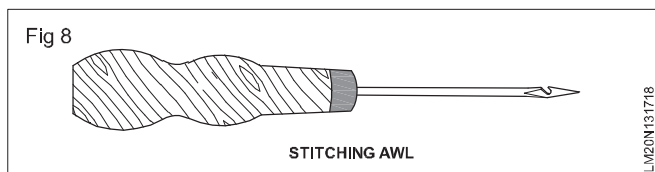
Cutting knife (Fig 7)

This cutting knife is used for cutting upper leather and lining leather in the clicking department. A separate blade should be sharpened and fixed to its handle. Sharpness should be applied when used for cutting. It should be handled with caution, and kept in safe and proper place.



Stitching awl (Fig 8)

This tool is used where manual work is required. Sometimes used for drilling. Its needle is made of metal and is attached to the wooden handle.

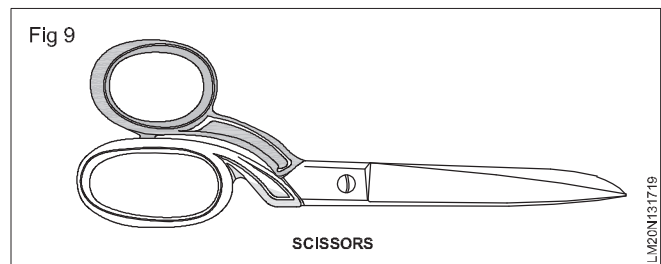


Scissors (Fig 9)

Scissors with solid iron rods and finger grips are used in leather goods production for:

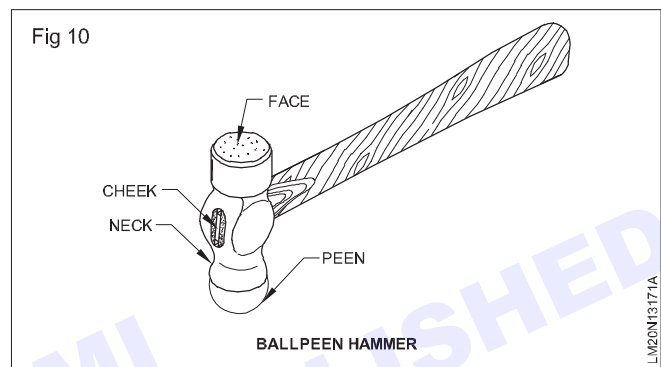
- Cutting leather with minimal tension
- Accurately cutting lining fabric, which is offer made of satirical cloth.

- Pattern making.



Hammer (Fig 10)

The hammer is made of high carbon steel. It consists of two parts called the head part and a wooden handle fitted in a hole in the head part. Hammering is used in the production of leather goods. Hammer is used more in work like press button, rivet button, buckle.



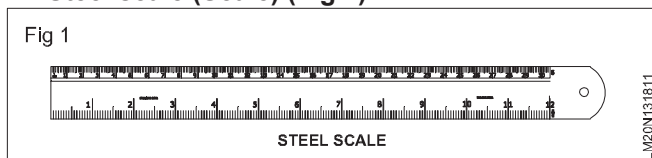
Use of steel scale, silver pencil, wooden block, set square, compass & divider

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

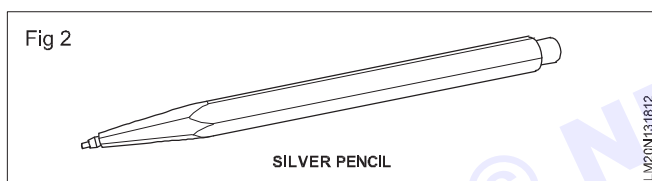
- know the applications of steel scale, silver pencil, piece of wood, set square, compass & divider.

One of the most important hand tools is the steel scale. This measuring instrument in leather material are used to measure the lengths and widths of the affections. It is made of stainless steel. It has a dual scale, with metric measurement (Millimeters and centimeters) on one side and imperial measurements (inches) on the other side. 1 foot to 2½ feet. In back side is marked with an inch to millimetre subversion table. It's made up of silver, so its rust proof.

- **Steel scale (Scale) (Fig 1)**



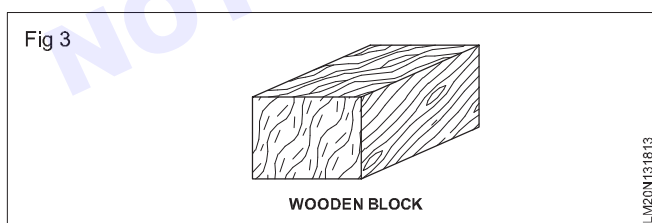
- **Silver pencil (Fig 2)**



It is called silver pencil because it looks like silver and the ink filled in it is like silver. It is used for marking on the skin.

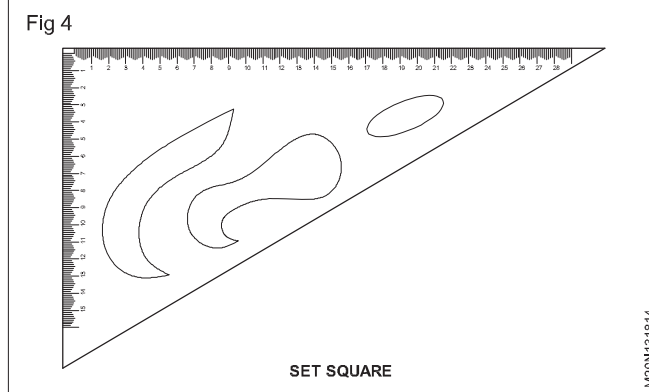
- **Wooden block (Fig 3)**

It is a piece of wood. It is made to be 30cmx10cmx10cm in size. These are used for punching. Also used for needlework. After finishing the work, clean the sticky and keep it in its proper place.



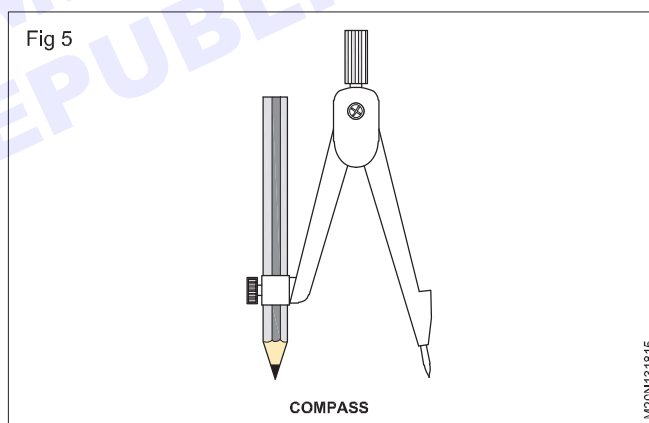
- **Set square (Fig 4)**

This instrument is a triangulated serve. It is seen as a vertical triangle (angle 90") This instrument is used more in the field of designing to measure the corner level (90°) and to make a pattern. After the work, it should be kept safely in its box. Because it is fragile.



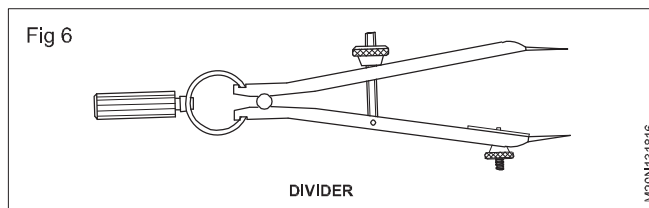
- **Compass (Fig 5)**

It is made of solid iron. One of its legs is sharp and the other is designed to hold a pencil or pen. Used in the field of designing to draw curved lines and circles. It is widely used in making pattern. After completing the work, the pencil should be rotated and placed in the appropriate box.



- **Divider (Fig 6)**

This tool is used to accurately measure radius of the pattern making and for drilling holes in leather materials such as belts. It helps in marking. After completion of the work, the divider should be placed in the storage box.



Use of folding hammer, press button punch, creaser, nail puller, French curves set, cutting mat, leather thickness measuring gauge & cutting table

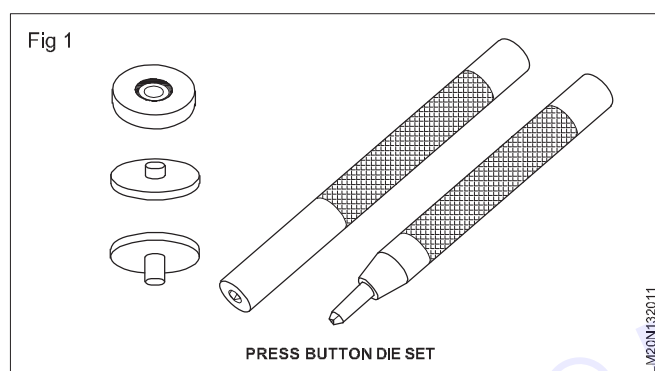
Objectives : At the end of this lesson you shall be able to

- know the tools like folding hammer, press button punch, greaser, nail puller, French serve set, cutting mat, leather thickness measuring instrument, knowing the uses of cutting table etc.

Hand tools and their uses

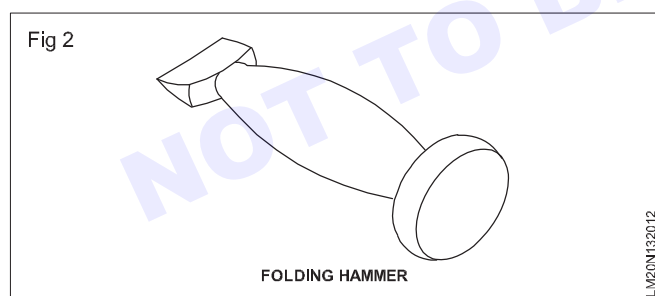
• Press button die set (Fig 1)

Press button die sets are used for pressing buttons while making leather goods. There are two numbers in a set. One is used for top grafting and other for insert grafting. Press buttons are available in different metals. (Iron, Nickel, Antique and Brass)



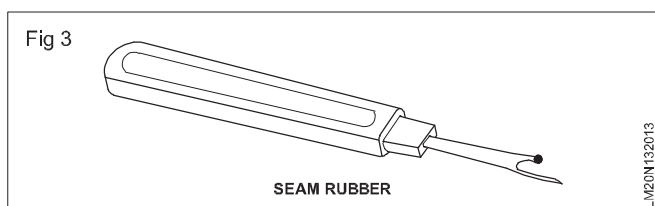
• Folding hammer (Fig 2)

A folding hammer is used to shape, form and crease leather, particularly when creating sharp folds, like wallets, belts or hand bags. It is made up of iron.



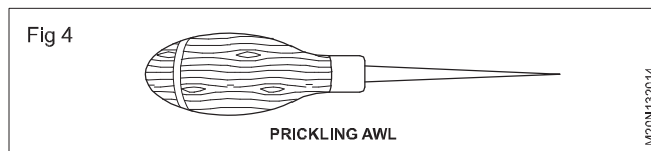
• Seam rubber (Fig 3)

It is a small tool that can be used to separate stitches. Be careful when using a seam rubber, as it can easily cut or damage the fabric if not used properly.



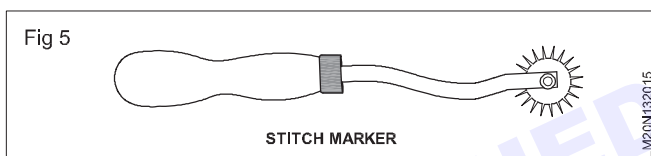
• Acupuncture (Fig 4)

Get comfortable with hand sewing. This tool is used to make holes in fabrics. It is mainly used for marking work.



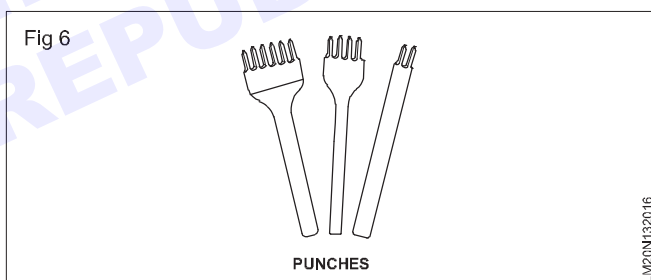
• Stitch marker (Fig 5)

Easy to sew decorative stitches. It is used to mark the position of stitches on leather.



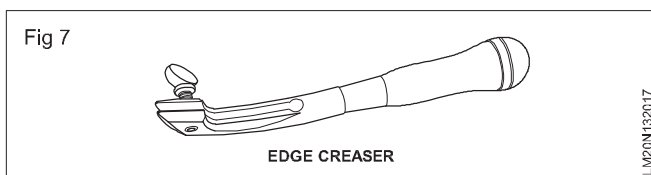
• Drilling chisels (Fig 6)

This scalpel is used to make an extra hole in the leather to facilitate suture.



• Edge grease (Fig 7)

This needle is used to mark the symbols to facilitate the sewing of decorative stitches. This double-tipped tool helps create even lines.



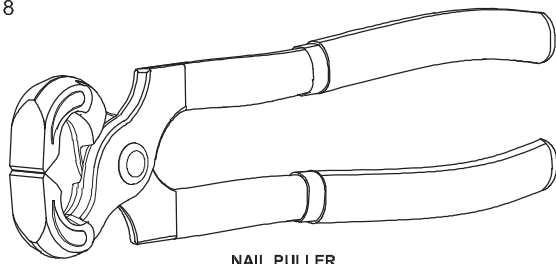
• Nail puller (Fig 8)

It is used in shoe lasting. It is used to pull Lasting nails. Used to remove nails during suitcase making in leather goods manufacturing.

• French curves set (Fig 9)

French curve set is valuable tool used to create smooth, curved cuts and shape in leather. Available in different types of design.

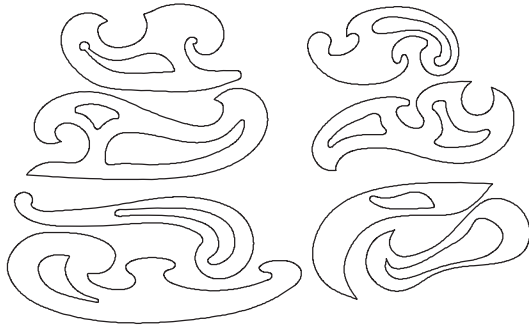
Fig 8



NAIL PULLER

LM20N132018

Fig 9



FRENCH CURVES SET

LM20N132019

- **Cutting mat (A4 size) (Fig 10)**

Cutting mat is usually made of rubber. It is used when cutting chart paper leather etc. The sharpness of the knife can be easily sharpened while cutting.

The edge of the material to be cut in accurate without burrs.

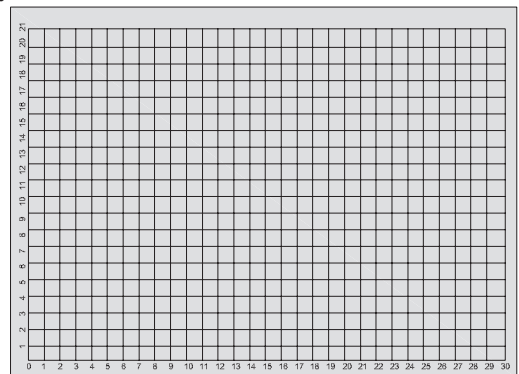
Equipment

- **Leather thickness measuring gauge (Fig 11)**

Leather thickness measuring gauge is used to measure the thickness of leather. Generally, it is used to measure the

different areas of the leather skin and select it according to our needs.

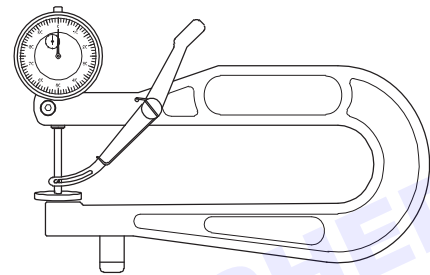
Fig 10



CUTTING MAT

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Fig 11



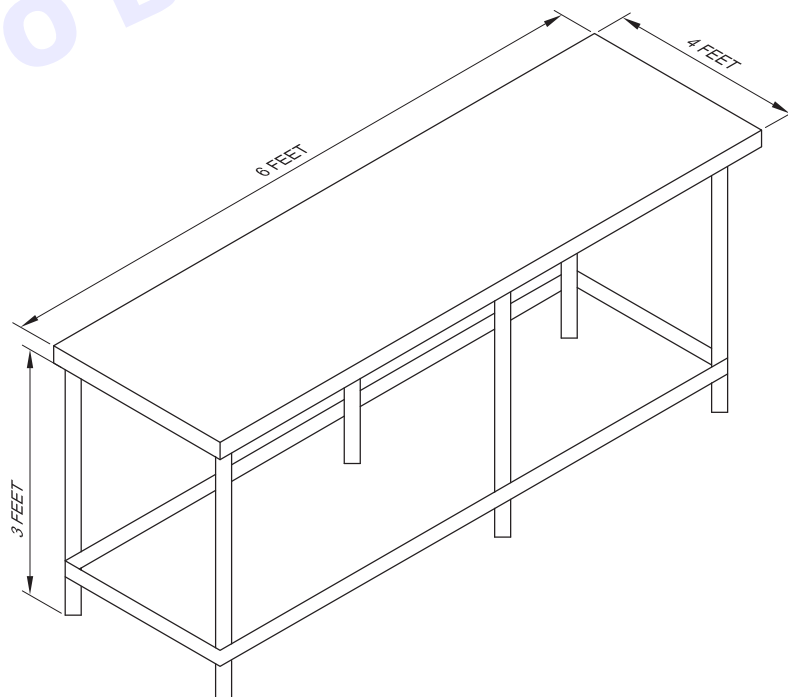
LEATHER THICKNESS MEASURING GAUGE

LM20N13201B

- **Cutting table (Fig 12)**

A cutting table with an aluminium or zinc sheet surface is used for designing and creating patterns, as well as cutting leather components and pattern boards.

Fig 12



CUTTING TABLE

LM20N13201C

Cutting, assembling & sewing of cut edged articles

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

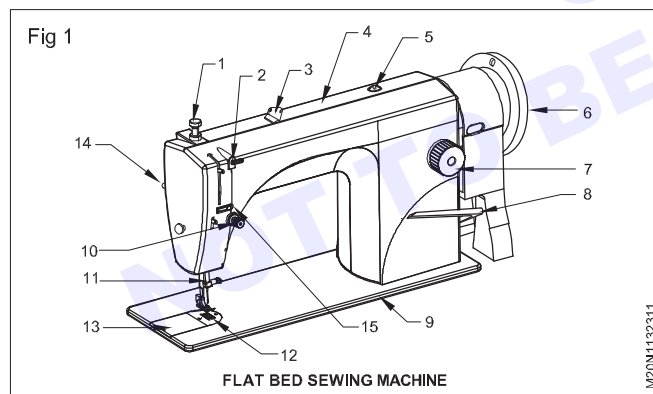
- know the structure and uses of flatbed sewing machine
- know the structure and uses of post bed sewing machine.

Names of various machines used in leather manufacture

Machinery plays a major role in producing large quantities of leather in a short time. Also, there are various departments in the leather manufacturing industry. Each department has some machines specially. Names of their main engines as follows:

- Hydraulic clicking machine
- Splitting machine
- Skiving machine
- Flat Bed sewing machine
- Cylinder Bed sewing machine
- Post Bed sewing machine
- Zig Zag sewing machine
- Punching and Eyeletting machine
- Stamping machine

Structure of Flatbed sewing machine (Fig 1)



Straight stitching can be done with flatbed sewing machine. It ranges from 3mm to 6mm.

Stitching Leather of thickness can be done in flat bed sewing machine - 500 to 800 stitching per minute.

- 1 Pressure Bar Regulating Screw
- 2 Thread Guide
- 3 Pre tensioner
- 4 Head
- 5 Oil Check Window
- 6 Balance Wheel
- 7 Stitch Length Adjuster

8 Back Tacking

9 Bed

10 Thread Tensioner

11 Needle Bar

12 Pressure Foot

13 Slide Plate

14 Pressure Foot Lifter

15 Hooks

- In this the stitching part is flat. It is called Flat Bed sewing Machine.
- A pillar-like structure is seen on the right side of the bed and an arm-like part is seen on the left side of it.
- Arm & needle bar, pressure bar is seen.
- Equipped with machine balance wheel.
- A feed dog is fitted to move the material while stitching.
- Bobbin winder is attached to a pillar like structure.
- Needle bar, pressure bar is on the left side of face plate.
- A stitch length adjuster is a column like mechanism that allows you to adjust the length of stitches.
- The thread adjuster at the top allows you to control thread tension, with features like pre-tension, tensioner, hooks and threads take - up lever making it easy to get the perfect thread tension.

Job operation

Pretensioner: Thread the machine by passing the thread through the tensioner's three holes in an S- pattern, then use the hooks to guide, it through the take - up lever into the needle.

Bottom thread

- Insert a threaded bobbin into the bobbin case to use with the bobbin winder.
- Pull out sore thread, insert the bobbin into the case, pull it right, and listen for the click that tells you its securely in place.
- Then we have to hold the upper thread and rotate the balance wheel towards the direction we are sitting.

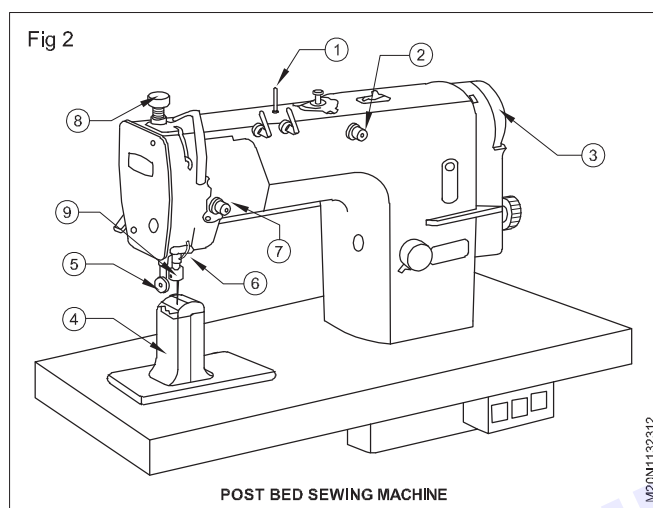
Uses

- Flatbed sewing machine can do straight stitching.
- Machine leather, Rexine can be stitched.
- Used for sewing leather.
- Flatbed heavy is used fav duty sewing.

Flatbed Heavy duty sewing machine

- With this machine we can sew leathers of high density.
- When we choose Needle, we have to choose it carefully.

Structure and Uses of Post Bed Sewing Machine: (Fig 2)



It is called a post bed sewing machine because the sewing part is post-like. Post bed sewing machine is used for curved stitching. It is used for sewing leathers with thickness of 3mm to 10mm. This 1500 to 1800 stitching per minute with the help of machine.

- 1 Pre tensioner
- 2 Stitch Length Adjuster
- 3 Balance Wheel
- 4 Post Bed
- 5 Pressure Roller

- 6 Hooks
- 7 Tension Spring
- 8 Pressure Bar
- 9 Needle Bar

Description

- A bed is seen at the bottom of the flat.
- Next to the bed, there are two structure: A vertical pillar on the right and a post on the left.
- The needle bar and pressure bar are located above the arm.
- Machine is equipped with Balance wheel.
- Bobbin winder is attached to the pillar like structure.
- Needle bar, pressure bar and face plate are closed.
- Stitch length- The stitch length adjuster is attached to the pillar-like structure.
- A feed dog is attached to move the material while stitching.
- Tension spring, thread take up lever, pretensioner etc. are attached.

Job operation

Thread the pre-tensioner by passing the thread through the three holes, then through the tension spring and into the needle using the hook.

Bottom thread

Before starting to stitch, pull out some thread, attach the bobbin and rotate the balance wheel to tighten the thread. When the bottom thread comes up, your ready to start stitching.

Uses of Post bed sewing machine

- Curved stitch is used for sewing.
- Used for stitching inner leathers of thickness 8mm to 10mm.
- Used for sewing leather.
- This machine is designed to sew items that are difficult or impossible to sew on a flat bed sewing machine.
- 1500 to 1800 stitching per minute increases productivity.

Differences between flat bed sewing machine and Post bed sewing machine

S.No	Flat Bed Sewing Machine	Post Bed Sewing Machine
1	Stitching area is seen as Flat	The sewing area is seen as Post.
2	Pressure Foot is shaped like a foot	In the form of Pressure Foot Roller.
3	Bobbin Case is found temporarily	Bobbin Case is permanently attached.
4	Needle - size 16 to 21 is used up to 21	Needle size no. 21 to 26 are used
5	Needle shank portion is seen in flat	Needle shank portion is found, in the form of post
6	It is used for stitching leathers of thickness 3 mm to 6 mm	It is used for sewing leathers with thickness from 3mm to 10mm.
7	Straight stitching can be done easily	Straight and curved stitching can be done easily.
8	Decolumn table is also fully seen as flat.	Decolumn table looks flat.
9	Can be powered by human power and electricity	Powered by electricity only.
10	Used for sewing 500 to 800 stitching per minute.	Used for sewing 1500 to 1800 stitching per minute.
11	Feed dog is seen as flat	Feed dog is located in round shape.
12	Adjust from 1mm to 4mm using stitch length adjuster.	Adjustable from 1mm to 7mm.

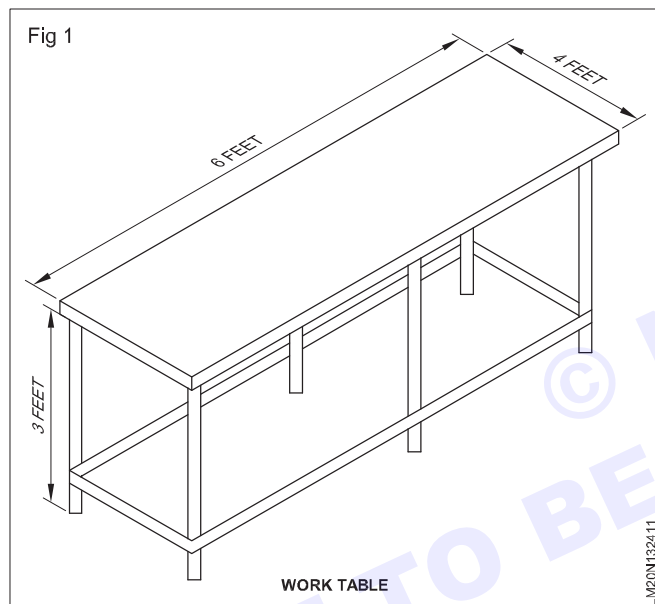
Work table, gluing and assembling

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

- know about glue
- learning about assembling
- know about the work table.

The work tables

Work table is an important material as far as the leather goods manufacturing industry is concerned. All works are done on this work table. This means applying glue, lining, gluing, trimming, zip gluing, zipper button joining, press button joining etc. This work table is a custom - built, mathematically designed structure with dimensions of 6 × 4 × 3 feet. (Fig 1)



The adhesives we use are two types,

- 1 Light Purpose Adhesives
- 2 Heavy Purpose Adhesives

Light Purpose Adhesives

- Starch Paste
- Glue
- dust off
- Rubber Solution
- Latex

Heavy Purpose Adhesive

- Neoprene cement
- Nitro Cellulose
- Dendrite etc,

Starch paste

These are prepared in flour. They are cheap and can be used for all jobs. These plasters should be used in wet conditions as they are affected by moisture and heat conditions.

Glue

Made from fish waste, fat and bones. These are widely used in the manufacture of leather goods as they are cheap and at the same time of good quality. This part is affected by moisture and heat conditions after bonding.

Rubber Solution

Grape Naphthalene is made by mixing either Benzene or Petrol. These tend to slide easily in the juice. This dries instantly when used in wet conditions. After applying this to the sticky area, it should be attached only when the area is dry. It is not affected by humidity and temperature. They are more expensive than water paste and glue.

Latex

It is made from the rubber sap obtained from the rubber tree. Ammonium liquid is added to it so that it does not rot. It is very sticky. Considered ideal for skin-to-skin adhesion.

Heavy Purpose Adhesive**Neoprene cement**

This materials is made from synthetic neoprene, which is elastic and highly sticky. It creates a strong bond with high pressure, ensuring a secure hold.

It is not affected by moisture and heat conditions.

Nitro cellulose

Nitro Cellulose is synthetically produced. It is an adhesive that is often used in western countries to glue the bottom part of shoes.

Dendrite

It is once a sticky cell known as a dendrite

It is hard to separate when glued, and that strength comes at a higher price.

Important properties of glue

- Tenacity Stickiness or clinginess
- Mobility

- Flexibility
- Penetration

Assembling

Assembling is the act of joining the spare parts of an individual product to form a complete product. The material we choose is a coin purse.

Our coin purse medal consists of two top pieces and a guest piece. To assemble, follow these steps:

- 1 Attach the zip and runner to the guest.
- 2 Make a center cut "V" shape on the top piece, creating two small holes.
- 3 Sew the chute to create a shooting hole, then join the pieces with a sewing machine.
- 4 Avoid cutting a "V" shape in the zip
- 5 Attach the other top piece to the assembly and finish sewing.
- 6 Turn the coin purse right side out, and the shape will come together.
- 7 Finally, complete the finishing touches.

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Edge colouring & Finishing

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

- **learning about edge colouring**
 - **knowing about trimming**
 - **knowing about finishing.**
-

Edge colouring

Edge sharpening improves the look of the cutting edge, making the texture and color sharper, without changing the material itself. The colour of its cutting edge is also different. This may reduce the quality of the product. In order to address this by desire, the pigment or dye of the colour in the mane of the subject is precisely applied without getting it elsewhere, and the colour of the mane and the colour of the cut edge are the same colour.

Trimming

Trimming is the process of cutting off excess skin with trimming scissors and a knife after the material is finished. Trimming, be it coin purse, welt or talk-back, after finishing the final stitch, the skin should be cut away leaving 25mm of skin from the stitch. While cutting in this way, if it is a trimming scissor, it should be carefully done by sticking to the seam and not cutting the seam. Trimming should be done without musing while trimming. Trimming should be done with moderate pressure and not in excessive pressure. Be careful when trimming, as too much pressure can damage the leather and waste all your hard work. This can also lower the quality of the final product.

Finishing

- The final work done after the completion of an item is called finishing work. That is, after finishing the material, finishing includes the work of cutting the thread, cleaning the glue, hammering, edge salting, edge greasing and polishing.
- After finishing the material, the thread left in it should be cut. If necessary, burn the thread by burning the thread. During the burn, the stitches should not be damaged and should be massaged.
- Next, if the glue sticks to the trimmed areas, gently rub it off with a rubber eraser.

- Uncleaned glue for grape rubber should be soaked in petrol or kerosene on a cotton ball and applied to the affected area and rubbed off after soaking. A large needle can be placed in a few places and the surrounding glue can be cleaned.
- Cleaning the adhesive will cause the trimmed area to shift out of place. So to fix it, place the material on a clean chaff and tap the cleaned material with the help of a hammer at moderate speed. While hammering in this way the nose of the hammer should also be clean. If the hammer is not clean there is a chance of dirt and rust deposits on the material. Similarly, while hammering, hammering should be done by keeping the hammer in balanced. If hammering is done so that only the edge of the hammer falls on the material, there is a possibility that the material will be damaged by the hammer's tip. Hammering should be done very carefully.
- Color the trimmed edge with a dye that matches the skins main area. Be careful not to get it on other areas, and clean up any mistakes right away with a satin cloth.
- Heat the EDM surging tool and use it to remove excess moisture from the skin's edge. This will create a rough texture that will help the edge hold well and lock securely.
- Next is applying the polish and brushing. Then open the polish can and apply the polish on the main parts of the product by lightly touching the polish with the polish brush. Apply it and let it dry for a while, then use the brush and move the brush as smoothly. Rub it back and forth on the skin. By doing this, the material will get a good shine. After that the product should be packed and sent for sale.

Describing of key case making with creasing tool

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

- know about the selection of raw materials and additives
- know about cutting of top and inner components as per pattern
- know about enforcement and creasing tool
- learn about applying glue to components and joining
- learn about stitching
- learning about connecting the 'key' hook and press button
- learning about edge colouring.

Selection of raw materials and accessories

First we need to choose the material to mark with. Then we'll determine the quantity to produce and the raw material acquired. Finally we'll select the raw material to use.

In that context, the subject we have now taken up is the 'key' case. A 'key' case is a material that protects the keys we use. There are many types of keys. There are numerous keys such as cycle key, bag key, house key, wardrobe key, office key etc. All these cannot be combined into one key.

So, we have to do it separately for each key in different sizes. But let's assume that we make a chassis on a general scale. Its dimensions are as follows.

Q 7 x 4 (1 No - Nett Size) 8 x 5" - (1No-Allowance Size)

4 - 4x2 (2 Nos. - Nett Size)

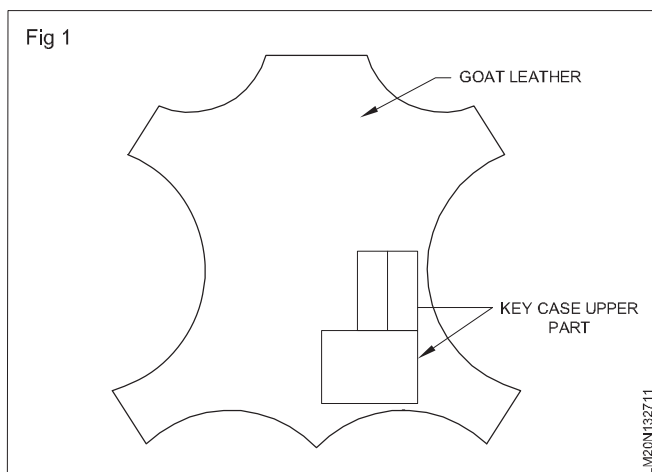
4% x 2% (2 Nos. -Allowance size)

Side pocket top lining: 7 x 4 Inch (1 No) Hooch bar & side pocket: 4 x 2 Inch (2 Nos)

Accordingly, the raw material we have chosen is goat skin. For lining, choose materials like tapeta cloth glue, nylon thread, '3' hook and zipper button, grape rubber, pigment polish and polish brush.

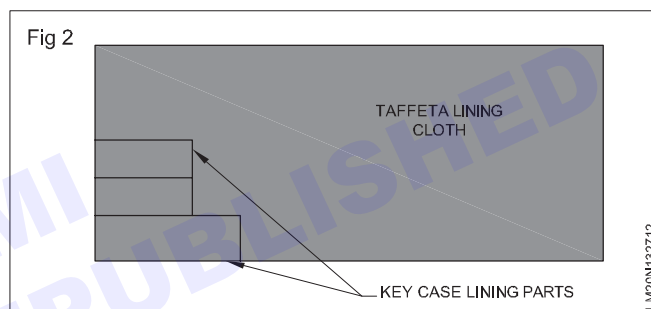
Cut the top skin and inner skin according to pattern

Excision of superficial skin parts



Cutting internal parts

- While cutting the outer leather parts of the case, the quality of the leather parts should be known and according to the allowance pattern, the stretchable area and the non-stretchable area should be cut so as not to waste too much leather. (Fig 2)



- Similarly, to cut the inner lining parts of the 'key' case, take our chosen tapeta lining slat. Keep the lining pattern and cut it out.

Enforcement and greasing tool

Re-enforcement is the use of additives to strengthen the bonds of the raw material, increase its volume and beauty in the product. A job is given to adapt to raw materials, adapt to climate change and adapt to the nature of products.

Uses

- Re-enforcement is clicked to reinforce a specific location on an object or the entire object.
- Re-enforcement is given to increase the calcium level in the spare parts of the products. Due to this, the mass of the material increases and the ability to work for a long time.
- Re-enforcement clicks give a good look to products made from very supple and supple leather.
- Re-enforcement is given to leathers of low density and low quality to increase their density.
- Re-enforcement is provided to protect fittings, handles, suitcases and caster wheels.

Upper leather
Reinforcement material
Lining leather

Reinforcement material used

- 1 Plywood (light weight)
- 2 Fibre Board
- 3 Leather Board
- 4 Nylon tape (Self Adhesive)
- 5 Mica
- 6 Leather Split
- 7 Canvas (Buckram)
- 8 Cotton wool
- 9 Straw Board

Plywood

It is widely used to make travel goods with light weight. Mainly used to make suitcase. These give good shape and form to the material.

Fiber board

It is used to bind available fibres from plants under high pressure. It is used to make leather products. Leather products made from this are very durable and look good.

Leather board

These are slightly softer than fibre board. These are suitable for medium purpose.

Nylon tape

These are used firmly in place of folding. Make sure the stitches don't come apart. This tape is also applied to strengthen the stitch. Sometimes this tape is run over the skin instead of glue.

Cotton wool

Foam is used to make leather goods supple and visually appealing. These are available in a minimum thickness of 3mm to 20mm.

Straw board

These are lower in quality than fibre board and leather board. These are easy to cut. It also has a mild field size. These are used for low quality leather goods. For this key case, the internal side pocket and hook bar have limited strength, so strengthening these parts is very necessary. It must be reimbursed. Use the right materials to reinforce the key case, and it will keep the hook bar and side pocket working well for a long time.

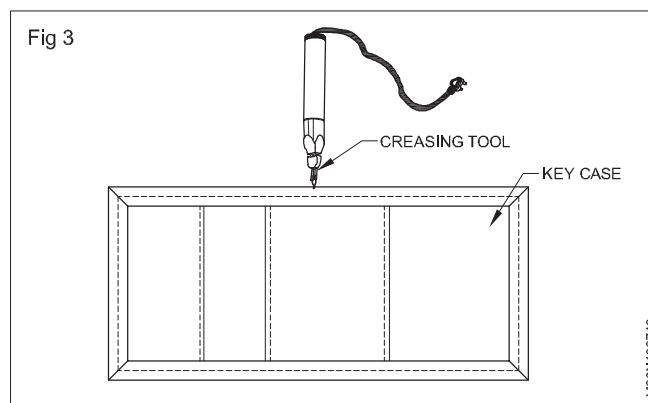
Grease tool

A creasing tool is used for beautifying the edge of the material in leather goods manufacturing.

A screw surging tool is used to create a line-like texture for better grip and burn leather.

This greasing tool is used in two ways

- 1 Single line creasing tool
- 2 Double line creasing tool. (Fig 3)



Greasing tool system

- In this single line seriation tool is used for edge serrations work.

Surging is done on the edge of the trimmed skin on the edge of the chassis-like material. Edge serrations remove skin folds in the trimmed area. Also, the skin adheres well without separating and looks beautiful with a line like texture. The bottom of this edge creasing tool has a single line-like structure, this area is heated by electricity.

- A double line creasing tool, it has two lines at the bottom. This area is heated with electrical energy to create a line-like texture on the leather material along the edges of the mane. It consists of two lines; one line is used to create a sail and the other line is used to create a line in the leather material. This tool helps create a decorative edge on the valet's pocket and can also be used to add a linear texture to other items.
- Learn about applying glue to components and bonding
To attach the components of the key case with glue, take the hook bar piece and the side pocket piece and place them on the side of the chutney. The patch should be applied lightly with the index finger or a brush where the paste is to be applied. After the glue is dry, it should be folded and pasted at the places where the paneling is to be done.

When folding and pasting, it should be done carefully without damaging the skin.

Stitching

Sew the folded hook bar and side pocket pieces on a flatbed sewing machine. Before that the sewing machine should be thoroughly cleaned and prepared for sewing. After that it should be stitched. While stitching, stitch should be done on both sides of the hooch bar and on one side of the side pocket. For this, the gap should be 25 mm. Stitch length should be 8 stitches per 1 inch.

Next we will complete the final attachment and folding, followed by the final stitching. Then we will trim the excess thread and tidy up the seams.

Combination of key hook and press button

After trimming the chasis, attach the with using the following tools:

- Iron last hammer.
- Hollow punch no.3
- VT sole leather piece.

Place the part to the drilled on the drilled on the leather piece and carefully drill holes for the press button. Be cautions not to drill too deeply, as this can cause unwanted holes in adjacent areas (Like the side pocket of the key case)

After drilling, assemble the parts in this order.

- 1 Insert the hooked bar into the iron part.
- 2 Insert the zipper button into the hole.
- 3 Attach the hook to the zipper button.
- 4 Place the female button on top of the male button and gently tap with a hammer to secure.

Be careful not to damage the logs. Then, use the press button setter to connect the press button. If it's not fitted correctly, the button may be damaged (Wasted edge coloring).

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Trimming and finishing

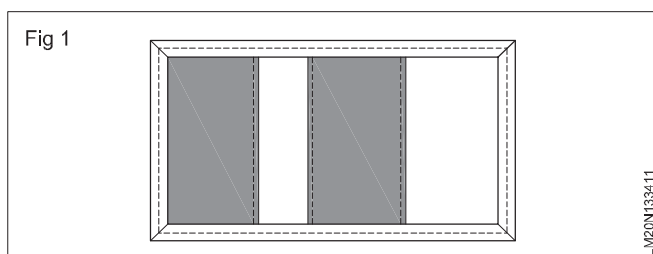
Objectives : At the end of this lesson you shall be able to

- know how to trim the 'key' case
- know how to finish the 'key' case.

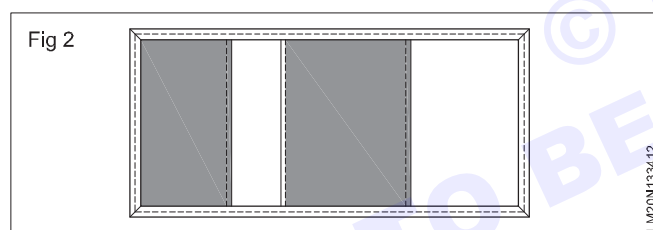
'key' case-trimming

After completing the final stitching, take the "Chasis". Then take the sati required for trimming it. Place the "C" chasis on the Kadapa stone, sharpen the hammer on the Kadapa stone and leaving "3" from one of the inner corners of the case, leaving a space of 2.5 mm outside the final stitch of the sati and more. The skin should be cut. The hammer should be applied with moderate pressure and the leather at the bottom should be cut.

Before case trimming (Fig 1)



After trimming the 'key' case (Fig 2)

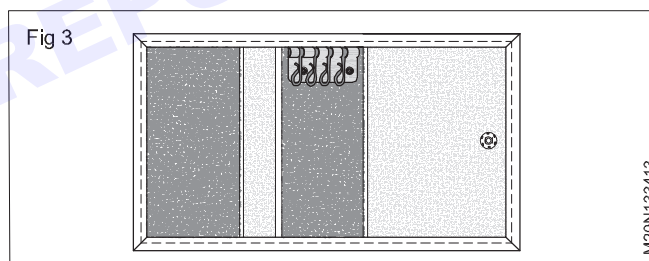


'Key' Case - Finishing

Trimmed "key" case should be taken. Pigment or dye should be applied to the edge of the trimmed skin first. While applying the dye, it should be applied in other areas without getting stuck. The "key" should then be hammered around the edges of the case. Punching is required to connect the edges of the press button and "key" hooch. Tools like punching pad, hollow punch, hammer etc. should be used for this. A VI on the inside of the "key" case while punching the top on the inside pocket area. The sole must be punched with a piece of leather otherwise the inside pocket will be perforated.

Next connect the 'C' hook and the press button. While connecting the "C" hook, use an iron last and hammer to connect the rivet button. While connecting the press button, connect it with the help of the corresponding press button setter. Then "key" apply polish to the main part of the case with a polishing brush. These are the finishing touches that can be polished with gentle brushing.

Structure of "key" case after finishing (Fig 3)



Describing of gents belt making and application of crew punch raw edge

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

- know the methods of selecting raw material and accessories for gents belt
- learn about cutting components for a belt
- learn about gluing and joining components
- learn about stitching
- know about punching.

Selection of raw material and accessories for gents' belt

Let's assume that we plan to make the gent's belt in a set-edge manner. Leather must be selected for making a belt at set edge. Place the selected leather on the cutting table and use a steel ruler and a knife to cut the leather to the desired size. Let's say we want to cut it to 1 ½ inches

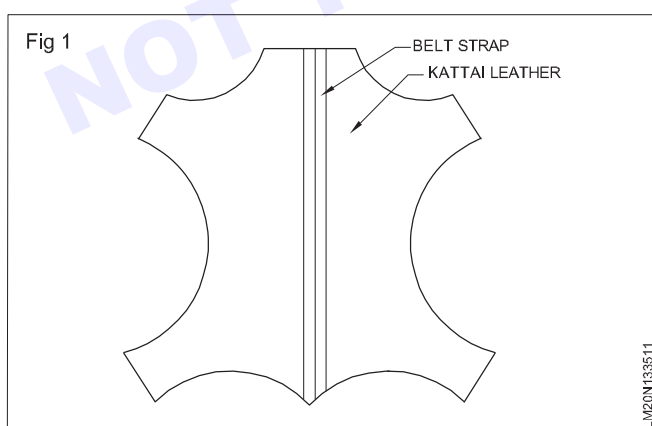
Belt accessories such as belt buckle, zipper button or press button and belt end slip should be selected according to its size. Length of object. The buckle and end slip should be selected according to the original. It is also available in many sizes, models, colours and materials.

Cut out belt parts from we leader skin, making first if needed. Cut plastic parts straight and smooth using a steel scale and hammer for accuracy.

If the cysts have come or become crooked, it should be corrected first. Similarly, the length of the belt should be cut to the required length.

Usually, the gents belt varies in length depending on age and body weight. Children in that sense. Students. Young and old. Obese people should make belts in different sizes for each person. We should act accordingly.

Component cutting (Fig 1)



The width of the leather that we cut, assuming the original of the belt buckle is 1 inch. It should be 1/8 inch less than the inner dimension of the box. Because the inner dimension of the pixel is exactly 1 inch. If we cut the skin to the same size, inserting it into the buckle. Because of that, it is said to reduce the raw size of the skin and cut it. But generally, the size of the belt is determined by the size of the buckle.

Joining components by applying glue

If a men's belt strap breaks, it can be used as a single strap if it's still in one piece. However, if broken into two pieces, cut each piece at a 60 degree angle in opposite directions, to create a new strap. After cutting and skiving like this, glue should be applied on the skiving area and allowed to dry for some time. The two pieces should be glued together after drying to a point where it does not stick to the finger. After gluing, put the Kadapa in a mortar and hammer. After that, the belt loop piece should be scissored to the opposite side and glued together.

Stitching

Our men's belt has a sludge edge and doesn't need much stitching. But stitching can be added for looks or to keep things in place.

If you want to sew, prepare a heavy-duty post bed sewing machine and set it to 2.5 mm gauge, sew with 40-gauge nylon thread. If you are sewing on a similar loop, you can sew before gluing.

Punching

Take the stitched gent's belt and punch it

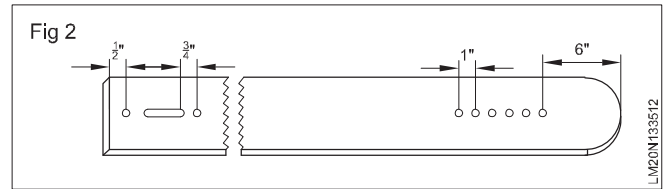
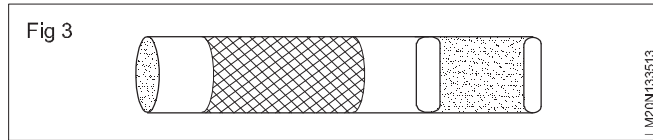
March the required area. 6 to 8 inches from the end of the common belt and then we need to select a hole punch of size (No. 3, 4, 5) and drill 5 to 6 holes at ½, 1-inch intervals, with a size (No. 3, 4, 5) hollow punch to easily enter the back of the belt. Next, make a hole ½ inch from the buckle of the belt to fit a zipper button or press button in the area where the buckle is to be attached. A hole should also be made at a distance of 2 inches from it.

Belt accessories such as belt buckle, zipper button or press button and belt end slip should be selected according to its size. The buckle and end slip should be selected according to the length of the material. This is also available in multiple sizes. Available in many models, colours and materials.

Crew Punch

A screw punch is an oblong circular punch that is used to punch holes in belts, in the buckle fitting area, at the back of the buckle (pin) for easy movement back and forth. It is used to make long holes in materials such as belts.

Curve punch system (Figs 2 & 3)



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Buckles and loops

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

- know about buckles
- know about loops.

Buckles (Figs 1-5)

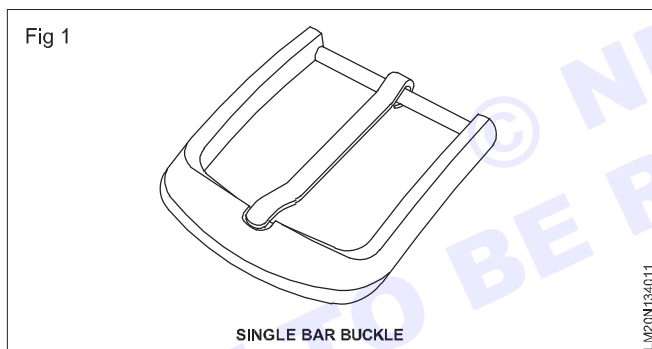
Patches are a material used as a fitting device in leather manufacturing to perfect the material.

This is Erbach closure. It's used to secure closed open flaps on leather items like belt, conveyor bags, school bags and women's hand bags. The beaches (Likely meant "Buckles" or "Fasteners") are adjusted to fit the specific item.

Buckles fitted to belts and belt buckles for engraving. Buckles used for beauty are called fancy buckles, buckles for watches are called watch buckles and buckles used for all other articles are called ordinary buckles.

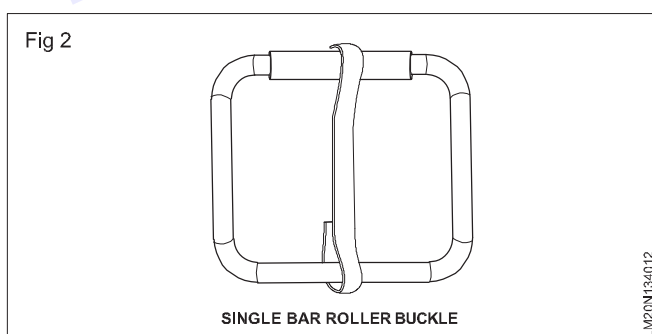
It breaks in many colours and in many textures and iron. Available in silver, brass and antique materials.

Single bar buck (Fig 1)

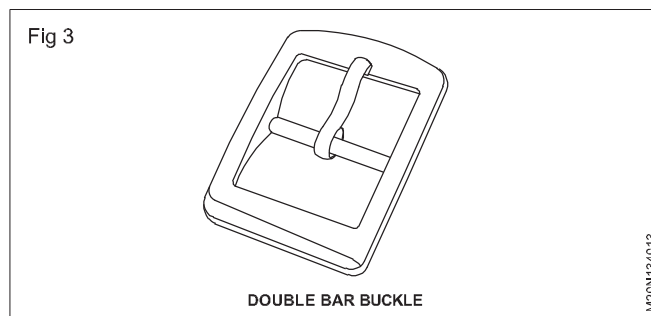


And it breaks down on many levels. That is ½ inch to 2-inch cracks. Similarly, the quality also falls at the price.

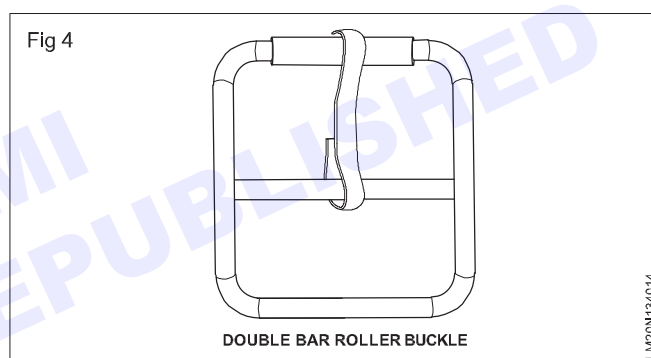
Single bar roller buck (Fig 2)



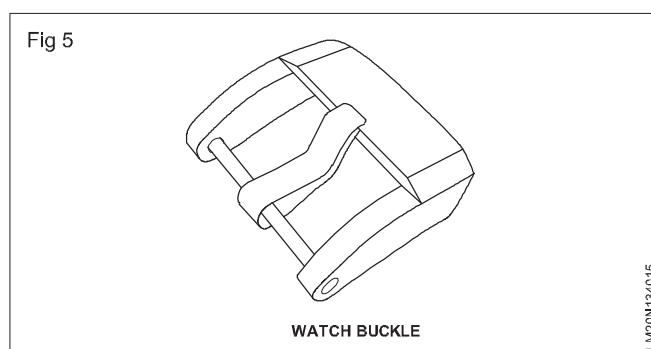
Double bar buck (Fig 3)



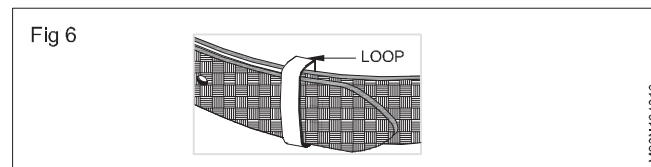
Double Bar Roller Buck (Fig 4)



Watch Buckle (Fig 5)



Loop (Fig 6): A loop is a material that is used in leather goods to hang on items such as belt handles, watch straps, etc. The loop size varies according to the size of the object that is uniform in the system. It is made of materials like rubber, plastic, metal, leather etc.



Leather Goods Maker - Embossing of Leather Goods

Finishing process, abrasion and their describing

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

- learn the finishing processes
- learn the friction and its interpretation.

Finishing processes

Finishing is important in leather goods manufacturing. After finishing the product, there will be various defects in it. These defects are caused by friction during manufacturing. If these defects are not removed, the quality of the product will decrease. Thus, fixing the defects is called finishing. They will also finish the skins used for the production of leather goods. By doing this, we give the leather the desired properties. This is called finishing of leather. Finishing (makeup) in the production of leather goods has to be done at several stages. Colouring is done with pigment on the edges of the clicked upper piece. If this is not done, the raw edge of the upper pieces will be visible outside. Also, at the top of the upper colour and edge colour are different, the beauty of the object will diminish.

We perform various operations while making leather products. Example: Friction during hammering creates scratches on the upper leather. It should be coloured with pigment. Then the stitched thread will be seen as lumps in some places. These should be burned. After all this is done, the glue, dirt, etc. deposited on the material should be cleaned. Then the item is polished to enhance its beauty. It gives lustre to the material.

Finishing of Leather

Finishing is an important part of leather production. Tanned Leather requires proper finishing. Make-up completes the leather's properties like colour and suppleness. Various chemicals are used in makeup. Various machinery operations are also performed.

Chemicals

- Pigment
- Dye solution
- Wax

Chemical Products	Uses
Pigment, Dye solution	Giving colour
Binder	Fox binding
Wax	Softness
Filler	Used to fill the leather-loose areas
Lacquer	Fixing the season

- Binder
- IPA (ISO Propyl Alcohol)
- Ammonia
- Plating
- Finiflex
- Centilux
- Glazing

Friction and its interpretation

Frictional properties play a very important role in leather material production. Rubbing makes the skin shiny. And the material can be stitched only if there is friction in the sewing machine while sewing. When this friction is increased, skin irritations and surface damage are likely.

The lustre of the leather is enhanced by friction in the glazing machine. If the skin is subjected to friction under certain pressure, it will cause no damage, if any.

But too much frictional pressure is likely to damage the skin.

Nap is formed by removing the top layer of skin by bubbling the skin with a bubbling machine.

Waxes and Inks used in finishing their names and application

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

- **know about waxes and inks used in finishing, their names and uses.**
-

Finishing Various waxes and inks are used in tanning. These waxes make the skin supple. Also helps the skin glow. It makes the skin waterproof. It is available in liquid and solid form.

Inks are widely used in the manufacture of leather goods. It gives colour to the skin.

Finishing Process

Finishing is important in leather goods manufacturing. After finishing the product, there will be many defects in it. These defects are caused by friction during manufacturing. If these defects are not removed, the quality of the product will decrease. Thus, correcting defects is called finishing.

Finishing of Leather Goods:

Finishing Make-up must be done at several stages. Colouring should be done with Pigment on the edges of the clicked upper pieces. Otherwise, the Raw Edge will be visible, and the colour on the top of the Upper and the colour on the Edge will be different, detracting from the beauty of the object.

When processing leather, we do several steps. we fix scratches with pigment, smooth out stitching and remove excess threads by burning.

After everything is done, the glue, dirt, etc. deposited on the material should be cleaned. Then polish the item to enhance its beauty. It gives lustre to the material.

Polish

Polish is available in two colours. They are

- 1 Solid Polish
- 2 Liquid Polish

1 Solid Polish

Solid Polish is divided into three types. They are

- A Acid Polish
- B Alkali Polish
- C Neutral Polish

A Acid Polish

Two types of polish are used in leather manufacturing. Acid polish (Negative charge) and fri polish (Positive charge)

B Alkali Polish

Alkali polish (With a positive charge) is used to polish leather goods made from leather with a negative charge.

C Neutral Polish

There is no charge in this. It is used on all types of Leather.

2 Liquid Polish

Sole polish is used to color and polish leather goods especially in areas with scratches and cuts. It's an important step in leather goods manufacturing.

Waxes

Waxes play an important role in finishing. A small amount of wax should be added to add extra softness and shine to the leather.

After finishing the leather, if you spray wax on the leather, the leather will get water proof. After finishing the leather items, wax spray is done. This process enhances the shine.

Inks (or) Dyes (or) Dye Solution

Inks are pigment that are added to leather during the dyeing process.

Gives the desired colour. It is available as Dye Powder or Solution. It can be seen as multiple lashes.

- 1 Acid Dye
- 2 Basic Dye

Dye solution is used in cosmetics. It is seen in two strokes. They are

- 1 The dials
- 2 Cataline

Cataline dye solution is highly diluted.

Pigment

Pigment is a concentrated pigment. This pigment is removed during the season and sprayed on the top of the leather. It is used for skin with great imperfections. Cost is cheaper than dye solution. Used for colouring the edge after clicking the Leather Material.

Knowledge of artistic leather work, modelling, types of modelling, embossing, embossed leather goods, spirit colour used in leather work

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

- know about pictorial skin
- describe the use of embossed spirit colour on leather
- explain modelling and its types.

Illustrated leather: Artistic leather work is the method of painting with pictorial works on leather goods. For artistic leather work, thin, tanned leathers are selected. painting on leather requires specialized tools. The Leather to be done Artistic Leather Work should be spread on the Table. Then mix a tablespoon of Acetic Acid with water and brush it on the face. By using Acetic Acid, the wrinkles on the skin will disappear, then we need to draw the desired image on the skin. Then the tooling should be applied to the surface of the skin. This is what we call "Tooling" or "Carving". After making pictorial works with a sharp tool, we have to apply the desired colour with a brush. This is what we call "Point Dye and Finishing tough work".

Ornamentation Work : It will be styled in a modern way. Upper Components- The method of beautification is called "Ornamentation Work". Synthetic materials can be used to make these designs. These are generally used while making fancy Goods. Ornamentation material is more expensive. Create designs on the computer and apply them to the upper parts.

Adds beauty to the item. This is called Ornamentation work.

Cut Out Work : The method of drawing our desired design on thin leather and cutting it out is called "Cut Out Work". First, we have to select the design. Then we have to draw the design on thin leather with the help of knife and then cut the design without mixing. Cut, then rub the design with the emery sheet, then paste the design on the upper part.

Embossed Spirit Colour : Many designs are used for artistic leather work in leather goods production. First, we need to select the design. Then it should be made into a dye. The die thus made should be fitted in the embossing M/C. Then we have to mix the desired colour with spirit and apply it on the dye. The Leather to be Art should be spread on the M/C and the Machine should be run. Then dye - pressing on the upper part of the skin records the design we need. This is what we call "Embossing Spirit Colour". Artistic Leather work in Screen Printing uses thin fibres. We have to record the design we need on this fabric.

Then Spirit Colour should be applied over it. Then print it on Upper Component. This is how Spirit Solar is applied in the picture.

Fig 1



Tooling and Carving : The name of tooling and carving is the method of beautifying with tools set up for work. In today's situation, most people like to buy tooling and carving products. These easily attract people's attention. Vegetable tanned leathers are widely used for these works. See Fig 2 for this way of carving.

Fig 2



Modelling : Modelling is a pattern with countless designs. We cut out this pattern and make designs in the small things we need and beautify it. The work done in this way is called modelling.

Types of Modelling : Modelling is done according to the material with various types of pattern-spinning. Some of the products that are made in this way are:

- Car Pass Case
- Driving Licence Cover
- Key Case
- Diary Cover
- Book Cover
- Passport Case
- Cheque Book Cover etc.

Describing of skiving machine and ramp

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

- describe of skiving machine and ramp.

Skiving and its importance

- Skiving lashes
- Structure and Uses of Skiving Machine
- Differences between Skiving and Splitting

Skiving and its importance

Shaving is the term used to reduce the volume of a certain part of the upper parts.

Benefits of Skiving Folding is easy to do

- Used to reduce the required volume on the side of the upper parts.
- Adds beauty to the finished product.
- It is done without causing any discomfort while using the material.
- Used to reduce bulk of material.

Types of Skiving

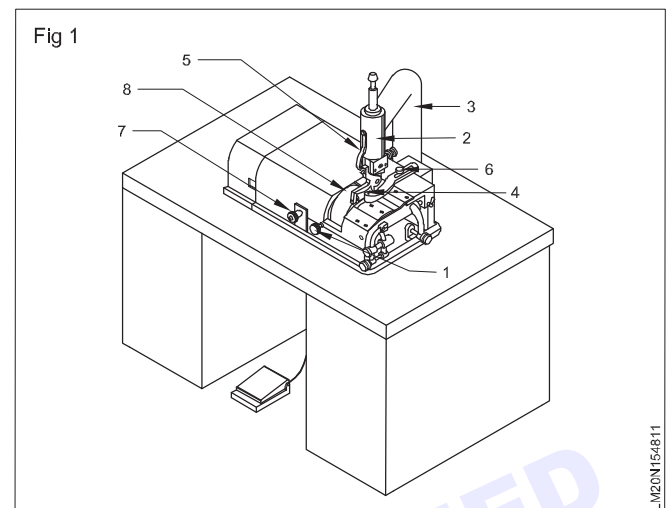
There are three types of skiving. They are,

- Raw edge Skive
 - Folded edge Skive
 - Under lay skive
- Raw edge Skive :** Raw edge skive is done on the flesh side. This is done on the edge of the stitching. It also helps to remove the loose fibre on the edge. The stitching is done on the edge of the components. Skiving allowance is 1.5 mm to 2.0 mm.
 - Folded edge Skive :** It is used to halve the thickness of the folded area. Components-folding should be about 5 cm in size. Skiving allowance should be half of the weight of the material.
 - Under lay Skive :** Two components are placed on top of each other at the point where they are stitched (flesh side). This is done to equalize the volume of the components. This makes sewing easier. Thus, after making the material, the volume of the components is not known.

Structure and Uses of Skiving Machine

Skiving machine (Fig 1)

Skiving a specific edge area of upper components can be done using skiving machine.



Skiving machine parts

Knife roller adjusting knob : Used to move the bell knife back and forth

Bell knife : Skin is used for skiving.

Pressure Foot : Skiving helps to hold the skin tight.

Thickness adjuster : It helps to adjust and reduce the amount of skin needed for skiving.

Material releasing lever : Helps to tighten and release the skin.

Machine arm : With stands pressure foot and machine affections.

Parts

- 1 Knife feed adjuster knob
- 2 Bell knife
- 3 Pressure foot
- 4 Thickness adjuster
- 5 Material releasing lever
- 6 Machine arm
- 7 Grinding feed adjuster knob
- 8 Belt guard

Grinding wheel adjusting screw : Grinding stone - Bell knife- sharp is used

Pressure foot adjusting screw

Pressure foot skiving is used to adjust the fit.

Feed roller adjusting screw : Feed roller is used to adjust the required skiving.

Gauge : It helps to adjust the required level of Skiving.

Pedal : Helps drive the machine.

Describing of the System : Skiving machine is made of solid steel with an inverted "L" shaped arm in the middle.

A head screw is found in the head. This head screw is used to adjust continuously and narrowly according to the size of the upper. A pressure foot is found on the lower side of the head screw to apply pressure to the materials. Two screws are ground to adjust this pressure foot. Feed roller of bell knife is found below pressure foot. A screw is found on the front of the machine to adjust the bell knife.

Job operation

First the gauge should be adjusted as required. Then put the leather under the pressure foot. Then turn on the machine. When the pedal is pressed with the foot, leather-knife goes between leather and leather comes out. Thus, leather can be skived with a skiving machine.

Uses

With this machine, the size of leather (part) can be reduced very easily.

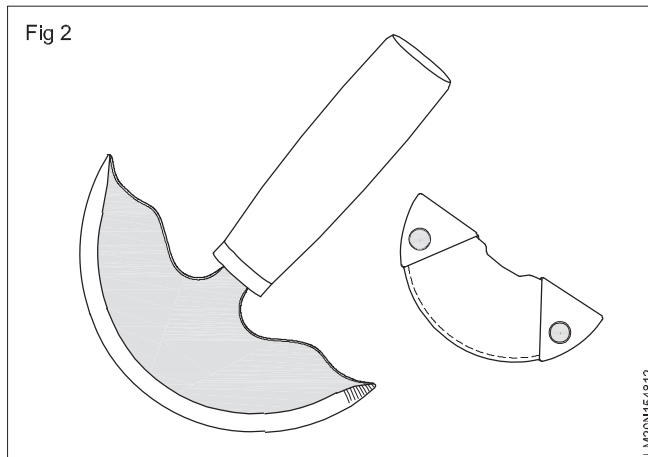
Skiving areas can be skived quickly with accurate measurements.

Ramp

The cyler in Fig 2 is Rampi. It is a knife made in a semi-circular shape. Its front is sharp.

There is a handle on the back. So, it helps to catch the psyllium. The part to be shaved is placed on a chisel or wooden block and a ramp is used to reduce the volume at the side at the required angle.

Fig 2



In this way, when skiing with a ramp, the ramp should be sharpened with a grinding wheel. It is best to use a few drops of lubricating oil while grinding.

This circular hammer is made of alloy steel (Alloy made with steel). Even thick skin can be cut with its help. And what about skiing with hands.

Skiving is done in two ways

- 1 By hand
- 2 By machine

Due to the high cost of skiving machines, small scale leather goods manufacturers are ramped up by hand.

Describing of ladies clutch purse making

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

- know about the selection of necessary raw materials and accessories
- know about pattern cutting
- know about cutting components
- know about skiving components
- know about preparing components
- learn about combining components
- learn about stitching
- learn about punching and button fixing
- know of trimming and finishing.

Selection of raw materials and accessories : First of all you have to decide what material to make the ladies clutch purse. That is to decide which leather to make and select the suitable leather for making this purse, for example, cow leather, buff leather, coat, sheep, nappa etc.

While selecting the raw material should be considering its quality, price, softness etc. After that you have to select the lining material required for it. While choosing the lining, we need to know whether the lining leather or the lining cloth is suitable for the skin we have chosen. As far as sizes are concerned, we have to consider the sizes of the pattern we have. Measure leather in square feet, and cloth in decimeters or meters, depending on the amount.

After that select the necessary accessories for this item. Considering the composition and production method of this product

For this we need to select the appropriate one from zip, runner press button or mechanical lock, hinge, fancy button etc. At the same time, it should be beautiful to look at and durable.

Knowing about pattern cutting : To make a ladies cloth purse, follow these steps

- 1 Select the right size from the chart paper
- 2 Mark the chosen size on the paper
- 3 Cut out the basic pattern or net pattern
- 4 Cut out the shooting pattern (The actual leather & lining piece)

Note: The shooting pattern consists of two parts: The leather piece & the lining piece.

Net pattern and then shooting pattern should be cut. Shooting pattern is made up of leather and lining pattern.

Thus, when the object is created by taking the baton for each object, the structure of the object will be perfectly accurate in size and texture. This will increase the quality of the product. This will also increase sales.

Knowing about cutting components : According to the nature of the affections in the leather we selected the cut patterns, the elasticity, the thickness of the leather, Salary, etc., the top pattern should be cut in good quality parts and the hidden purse parts should be cut in low quality parts.

Thus, while cutting skin affections, do not cut loose parts. And the defects are not visible and the defects are very small and the defects are not cut for leather products. Parts like gussets should be cut from the unstretched areas. Cutting into stretchable parts may increase in size and may result in loss of strength and quality. Therefore, cutting parts such as cassettes and handles should be avoided in joints that can be stretched.

Learn about making components Skiving : Skiving is required for each cut leather component, with different thickness for bolting: 1 cubic meter (e.g: 5mm, but shave to 7 - 8mm) Attaching lining: 1 cubic meter final attachment & stitching: 1 cubic meter the exact thickness may vary depending on the materials & specific requirements. If 5 mm of shaving is done for pouting, apply a glue to it and attach the lining and then while pouting, the amount of life in the pouting area will increase. This may cause the appearance of the item to vary.

When skiving by hand, remove 2 - 3 millimeters of leather, as needed to achieve the desired result.

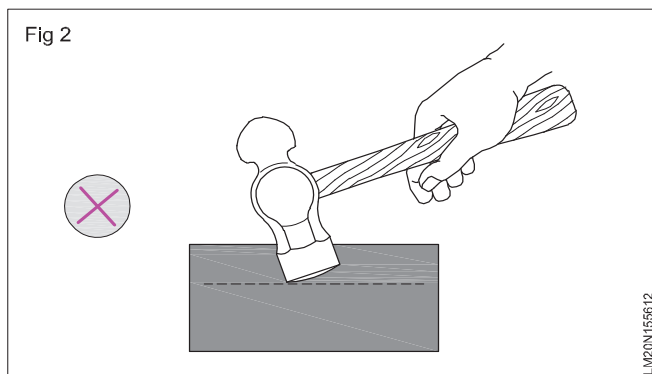
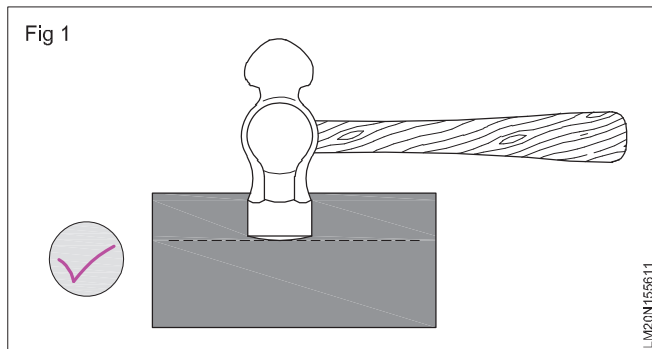
Knowing about preparing the components

After the glue is applied and the glue dries, the lining should be attached and hammered. While hammering in such a way, hammering should be done with the help of firing pin and hammer. While hammering, if hammering is done by placing the hammer in a straight line instead of level, the tip of the hammer will cause injuries to the lining and leather parts and cause damage. Due to the desire to waste material, one should perform hammering carefully. Then sew the zip and runner together in the areas where the zip is to be attached. Apply sparingly when attaching the zip. Only then the cleaning work will be reduced and the product will be of good quality.

Correct hammering method (Fig 1)

Improper hammering method (Fig 2)

Learn about connecting components : The components of the ready-made ladies clutch purse must be joined together step by step to make it complete. Apply very little amount of glue only to the edges of the clutch purse that need to be attached to the cassette.



Why should we apply in less quantity? As far as leather goods production is concerned, all the work is done by using glue, joining and then sewing, so the glue we apply stays with the grip until sewing. It is sufficient if applied to the extent. Apply the paste on the inside edge of the top just like you applied the paste on the cassette and let it dry for some time. A little, time is the time it takes for the bark glue to dry to the point where it doesn't stick to our hands when we touch it.

After the plaster dries, the chest should be attached to the top. On the other hand, there is a chance that the plaster will not stick if it is not rubbed for too long. As desired, the plaster should be applied to the correct size of the foot. Similarly, when taking the paste from the tin, after taking it, its lid should be closed tightly so that even air does not enter. Failure to do so will dry out all the bark glue in the tin and render the Cetacea unusable.

Glued and dried top and cassette should be glued together with the help of a metal nail and a hammer.

Learning about stitching : After joining the top and the gusset it should be stitched with the help of sewing machine. Before doing such sewing, the sewing machine should be thoroughly cleaned, its parts adjusted and the thread drawn. Then connect the power and turn on the machine. Then we need to take a piece of leather and stitch it and fix the stitch, make sure that the stitch is correct and then we need to stitch the material to be stitched. Begin sewing by locking the first stitch in place. Do this by sewing over the first two or three stitches to create a secure start. This stitch lock prevents the stitch from coming apart. If this seam is not locked, the seam is prone to splitting. So, it is necessary to lock the seam. Similarly, the stitching should be latched after finishing.

Learning about punching and button fixing

Take the finished ladies clutch purse and mark the centre point by placing half the original size of the flap and 1

or 1.5 cm from the front edge of the flap in the middle of the flap.

Punch holes in the leather using the following tools in the order

- 1 Punching pad
- 2 Hammer
- 3 Iron last (A tool used to shape leather)
- 4 Forced leather (A tool used to punch holes)

Use the number 2 punch to create holes at the marked locations. Similarly, a hole should be drilled in the front of the ladies clutch purse about the centre point.

After drilling, place the female button of 3/3 size press button in the flap area and fit it with the help of button pitcher tool and hammer. When it is hit with a male punch, its tip expands and holds the female button without coming off. Similarly, in the hole placed in the front pocket of the purse, prepare a small washer like a waste leather and put it at the bottom of the male button, and with the help of an iron last and a hammer, the upper button should be slightly beaten with the help of a female punch. This way the button will hold better when hit. Then connect male and female button and patch. When combining in this way, if it is combined with some kind of sound i.e. the sound of dub, then it can be said that we have matched it correctly. Maybe if the sound doesn't come out it means we didn't match it properly.

If you don't hear this noise by desire, close the purse with the button and hit the upper part of the male button twice with a hammer and then open and close it again, now it will definitely close with a thud sound. Now the button can be assumed to fit properly.

Learn about trimming and finishing

Trimming is the process of cutting out excess leather from the side of the finished product.

In that case, the excess skin on the edges of the final stitching on this lady clutch purse should be cut off with the help of a knife. For this, the skin above the suture should be cut away leaving a gap of two millimetres. This is the trimming job.

Next finishing is packing when all work is done

It is the work before doing. This includes cleaning, applying pitch, polishing etc. For this lady clutch purse, if the trimmed leather edge and the top surface of the purse are different from each other, the pigment on the top surface of the leather should be applied to the trimmed leather edge. When applying pigment, it should be applied so that it does not fall on other areas. Apply and let it dry for some time.

After that, if there is glue in the material, it should be cleaned by rubbing it moderately with a grape rubber, and if there is thread glue, it should be burned with a burning tool. While making the pan, it should be burnt gently so that it does not stick to the seam. After that apply the polish and leave it to dry for some time and brush it quickly with a polish brush.

Describing of gents belt

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

- **know about the selection of necessary raw materials and accessories**
 - **know about pattern cutting**
 - **know how to cut the required strips**
 - **learn about skiving components**
 - **learn about connecting media**
 - **learn how to sew a belt**
 - **know about piercing, pinning in buck.**
-

Knowledge of selection of required raw materials and accessories

First, we need to decide what kind of belt we are going to make. That means we have to decide whether it is 'raw' edge material or finished edge material and then select the raw material.

After determining the type of material, you need to choose the appropriate raw material. The upper leather is the right choice for the finished edge material we have chosen and we have to take the appropriate looking 'Cow' upper leather.

After that you need to choose accessories to complete the belt. That means we have to choose according to the condition of the product we want to make such as buckle, zipper button, reinforcement, eyelet button, loop, thread etc. For the buckle, there is a difference between the width of the belt leather and the inside gap of the buckle, because if the inside size of the buckle has a gap of 2", then the width of the belt leather should be 17/6". If the belt holes are the same size, it's easier to buckle, but the belt may

- Not stay in place (drag and drop).
- Show signs of wear on both sides, leading to discoloration and white, workout appearance.

It is best to reduce the width of the belt by 1/8 of the inner size of the belt buckle due to desire.

Knowing about pattern cutting

After selecting the raw materials and accessories, the pattern should be taken to cut the raw material. Before that we have to decide on what scale we are going to make the material. Accordingly, let's assume that we are making a belt of 1½" size. For this, the pattern that we can cut when we cut the pattern should be measured and cut correctly to get 13/8 size after folding and pasting the leather. For a 1½" size belt, we should cut the pattern to 24 in size. In terms of length, it is enough to keep a fixed size and cut the pattern or we can cut the pattern in length and width according to the belt requirement.

Next is the loop pattern, the loop on the belt is used to compress the exposed skin after the belt is worn around the waist. This loop varies in size depending on the original of the belt. That means a 1½" belt at the waist

Looks like a second round after patch when worn. Therefore, the loop should be placed to cover the second round of leather after the patch. If we make the loop 35 6/8" long for a 15" belt. We will get the correct size when we assemble and give the loop together.

Knowing how to cut the required strips

To cut the pattern step strips first we need to take the 'cow' leather of our choice. After looking at its main area, its quality, size, stretch ability and solar matching etc., we have to place the pattern on the leather of our choice and make a straight and correct cut with the help of hammer, scale and shooting mat or shooting table. Perhaps if the length of the skin is short, two pieces should be cut from the same skin and joined together. If connecting in such a way, the length should be increased and cut to the extent of the connection. Similarly, when joining two pieces, cut the skin crosswise in the opposite direction to each other, skiving on the membrane side of one skin, and on the mane of the other skin, apply glue and join neatly.

Knowing how to make components is skiving

As for the gent's belt, there is no chance of more components. So, a gent's belt has only two or three components which can be sheared on two sides with the help of a shearing machine if required. Similarly, since the loop needs to be connected to one another, it can be skived by hand with the help of a thread and machine skived for folding and pasting, if you don't have a scissor machine, you can use a sail satin skiving method to machine skive the bottom piece of the belt. But manual skiving takes more time. At the same time there is a possibility of skin damage. So, it is best to machine shave whenever possible.

Learn about connecting interactive content

Insole Material placed between the upper leather and the lining leather for stability is called inforcement.

This insert is given to add bulk to the material for durability, durability, good looks and good quality.

Gray board, leather board, card board, satin tape, nylon tape, slat types, rechain types of skins are used for this material. So, for a gent's belt, let's take lining leather as an intermediate material. Then take the upper leather that has been cut and apply the paste uniformly on the

entire surface in its centre. Similarly, the paste should be applied evenly on a part of the inner material leather and allowed to dry for some time. After the patch is dry, the leather should be glued to the centre of the belt leather. While gluing it should be driven perfectly straight and carefully hammered with the help of a mallet and hammer to avoid dyes.

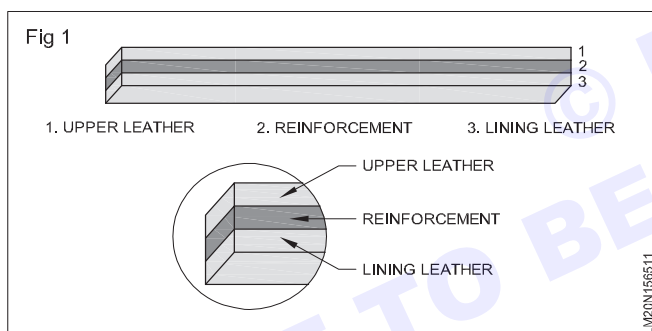
After that, the patch should be applied all over the membrane on the belt leather to which the insert has been attached and allowed to dry for some time. After the plaster is dry, it should be folded and pasted with the help of hammer and chisel. While gluing, hammering should be done so that the tip of the hammer is flush with the skin. If the tip of the hammer accidentally hits the skin at that point

There is a possibility of dyeing and wastage of material. So, hammering should be done carefully.

Composition of additives in leather products

- 1 Upper Leather
- 2 Intermediate
- 3 Lining leather

After attaching the insert, apply the adhesive evenly to the back of the bolted belt. Similarly, on the lining leather to be glued on the bottom, the paste should be applied evenly and allowed to dry for some time. (Fig 1)



After the patch dries, the back of the gent's belt should be properly patched with no creases in the centre of the patched leather. Hammering should be done after gluing. After that hold the head of the hammer and rub the hammer level on the hammered area. Even if it doesn't stick properly now, rubbing will make it stick well.

Learning how to sew a belt

Take a leather gent's belt that has been stitched together and stitched. Before starting to sew it, prepare the sewing

machine and take a waste piece of leather and sew it to make sure the stitching is smooth.

Then start stitching from the starting point of the gent's belt. While sewing in this way, set a 2.5mm thread on the sewing machine

Similarly, the stitch length should be set at eight stitches per inch. While sewing in this way, according to the structure of the belt end, curve, square, cone shape etc. should be stitched properly. When sewing, it is best to sew as carefully as possible so that the seam does not come across the joint. Similarly, when sewing a gent's belt on a sewing machine, uniform, regular, correct stitching without knots, tight stitches, loose stitches, loop stitches, jumping stitches will help to improve the quality of the product. Proper stitching on the material adds to its look and beauty.

Learning about drilling and buckling

Gents belt should be taken after sewing. In the middle of the part where the buck can fit, one-hole $\frac{1}{2}$ " from the edge and another $\frac{1}{2}$ " apart, then a hole punched at the next half-inch interval and two round holes at half-inch intervals. Similarly, after 5" or 6" distance from the other end, a circular hole should be drilled and five or six holes should be drilled at the rate of one hole every inch. All these holes should be at the level of easy entry of the pin and the number of punches should be selected accordingly. Before that, we have to insert the loop that we have prepared before so that it comes inside the joint. Next, insert the pin of the buckle into the slot and prepare the end of the belt for the zipper button.

After that a zipper button should be attached first so that the button does not come out.

Tools like iron last. Hammer should be used. Also fit the zipper button in the other holes. This is the method of fitting the bag.

If there is any adhesive on the gent's belt after attaching the buckle, it should be cleaned with a syrup rubber. Then the excess skin should be trimmed with the help of a hammer. Trimming should be done gently.

There is a possibility of damage to the folded area while trimming. Trimming should be done to prevent this from happening.

Apply pigment after trimming have to do. Apply pigment Apply polish after drying. Apply the polish and let it dry for some time and then brush it with a polish brush. Prepare the gents belt in the above methods.

Leather Goods Maker - Substitute Materials for Leather**Familiarization of different substitute materials of leather, their identification, type, characteristics, method of application & their uses**

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

- introduction to the various leather substitutes, their identification, their types, their properties, methods of application and their uses.

Leather Substitutes

Leather substitutes are products that are artificially made to look like leather and used in place of leather at a lower price so that people of all walks of life can buy and use it because the price of leather is high

Skin substitutes include

- Rexin
- Plastic
- Canvas,
- Nylon mats

i Rexin

Rexin is plastic on the top and thread on the bottom which is woven and glued like fabric. It is very useful for the present life of Nassar's. It is also used for various purposes in many fields. By using these, the production cost of the product is greatly reduced. At the same time, it is beautiful to look at. It is also cheaper than leather material. It has many types. They are

- Banyan Rexin
- Foam Rexin
- Metallic Rexine
- Beading rexin.

ii Plastic

It is also a synthetic product. It is heat soluble. Now they are using plastic machine parts instead of iron. Similarly, this plastic is widely used as a substitute for cloth and leather all over the world. The products made by this will be very beautiful and beautiful. Materials made with this cannot be turned without the aid of heat after sewing. It is very suitable for making suitcases, travel bags etc. They are made in many colours, with beautiful pictorial work, like fine cloth and like tanned leather. It is available thin or spiky as per our requirement. It is sold in metre.

iii Canvas

Canvas is a material woven from sturdy yarn. It does not transmit water. It has fabric on the upper and lower parts and rubber in the middle, and there is also a sense which is woven only with yarn without rubber. These are mostly used to make school bags for school children. Rubberized canvas is often used to make travel bags and cash bags.

iv Nylon Mats

Currently nylon materials are manufactured under the name Nylon Mats and used to make quality products. This too is now available at a decent price. The upper part is made of nylon thread and the lower part is coated

with a mixture of rubber and plastic. The product thus made is found to be of quality, firm and long-lasting depending on the nature of the raw material.

Identification of skin substitutes

Skin substitutes are skin-like, manipulative, and membranous. This is the best sign. Similarly skin substitutes cannot be skived. A few substitutes are now being made to resemble real leather. But there is no membranous part at the bottom. This can be used to identify substitutes. You can tell right away that it is a leather substitute when you look at everything except the leather. Resin can also be recognized by sight before it is made into a material. It is difficult to know only after it has been materialized

Currently, they make and sell Rexin, which looks like leather on the first layer and lining leather on the bottom, just like the original leather. When purchasing leather or leather products, inspect them carefully before buying.

- A few substitutes are stretchable.
- Other alternatives are non-initiative.
- Other than canvases
- Mild in heat.
- Doesn't last long on skin.
- Eventually the top layer of the resin crumbles and falls off.
- The plastic and rubber coating on the bottom of things like nylon mats tends to crumble and fall off over time.
- As for canvas, the rubber in rubber canvas will eventually crumble and fall off. The thread will also tear.
- Easy to fold.
- Some skin substitutes do not absorb the juice because they lack pores.

Methods and applications of substitutes

Leather substitutes, synthetic raw materials, can be used in the same condition as we buy. We can cut and use as per our requirement. There is no need to do skiving and splitting like leather. And like leather you don't need to use glue for every job.

Synthetic leather substitutes are used for daily human needs. It is used to make products such as wallets, office bags, lunch bags, ladies' bags, school bags and travel bags, suitcases, briefcases, etc. which we use on a daily basis. Not only this, these leather substitutes are used to make the seat walls of all vehicles such as bicycles, mopeds, trucks, buses, etc. They are also widely used in military and sports fields.

Wastages it's proportions & limits, wastage cutting and their utilisation

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

- **know about wastage**
 - **know about the rate of wastage limit**
 - **know about the use of wastage.**
-

Wastages: Wastages are small pieces left over after cutting to the required size while manufacturing the products.

Proportion and limits of wastage : Excavated waste leather can be used to create small products in a number of ways, depending on the area, seasonality and situation. However, there is no rule that this kind of scrap leather should be done permanently. So, waste leather can be ground in many shapes and angles. With these, we can make many products that are suitable for the skin. In respect of manufacture of leather goods, the rate of wastage has been fixed at a maximum of 20%.

Waste cutting and their utilization : Generally, many modern small products are made from waste scrap leather depending on its surface. They are as follows.

- Ladies purse
- Watch strap
- Pen cover
- Key case
- Key holder
- Belt loop
- Knife cover
- Optical cover
- Money purse
- Micrometer cover
- Comb case
- Scissors case
- Dairy cover
- Passport cover
- Calendar cover
- Book binding pieces
- Tool kit case
- Dog belt
- Foot ball cover
- Cap
- Dynamo cover
- Washers

- Tumbler cover
- Toilet kit
- Leather mat
- Radio cover

All the above products are made to suit the surface of waste leather. Nothing can be left out as waste in the production of leather products. Because many products can be made from waste leather. Therefore, for this industry, the leather piece should not be dismissed as unnecessary. So "we must act as if it helps a gnashing tooth.

Pen covers : Pen cover can be made from leather cutting waste. This helps keep the pen from breaking and smudging.

Watch strap : Watch strap can be made from scrap pieces. Doing these will result in good looks, lasting performance and profitability. And since watch wearers prefer leather strap, leather wastage is not wasted, which makes it a sale.

Key case : A key case is essential to keep the keys that we use every day from getting lost. These are made from waste leather in many colours and designs.

Optical case : Glasses need a cover to keep the chalk on the face from breaking. An optical case is made by using a small area of leather to cover the glass and giving it a sponge-like lining.

Tam (Washer) : Washer is a material used to keep the motors involved in electrical machines. Also installed in essential vehicles like motor, lorry, bus etc. This type of washer can be made from VT leather.

Micrometre cover : The glass in the micrometre is used to prevent the glass from breaking and the readings on it from fading. This cover can be made from waste leather.

Wastage and its percentage Waste cutting and its utilization: Leather is the primary and most expensive product in the production of leather goods. Therefore, leather wastage in production, if there is too much production without demand, the costing will increase too much.

Wastage : In the leather goods manufacturing industry, leather and lining components are clicked.

The remaining small pieces after clicking are called wastage.

Wastage should be minimized as much as possible otherwise we will incur losses.

But wastage is unavoidable. The amount of wastage varies depending on the model of the product we manufacture.

The more bends in the leather material components the more cutting. Accordingly, the amount of wastage will also increase.

Waste its proportions and quantity

We need to make a sample piece before taking the model of a leather product into production.

Then the amount of wastage should be calculated first.

Through this we can know the percentage of wastage.

According to this, we can calculate the total amount of leather needed for the total number of leather products that we are taking for production and how much is its wastage. Then we have to take care of that wastage while producing.

We have to take steps to avoid wastage

While marking on the skin, the right component curve should be placed in a suitable place for its characteristics and marked. Leather should be nested properly.

It should be marked carefully without causing good leather wastage.

Cutting leather in clicking machine will reduce wastage much more than hand cutting.

Also, there is a possibility of wastage in other materials used during the production of leather goods.

The reason for this wastage is the use of substandard materials and poor workmanship.

So, we should use only quality materials for production.

Due to this, the wastage is likely to decrease significantly.

A few more ways to reduce wastage, accurate marking and cutting by interlocking method while clicking reduces wastage greatly.

Proper planning should be done before starting the production.

While making leather material, it should be handled very carefully until it reaches the finishing frame, otherwise there is a risk of rejection and total wastage.

Wastage cutting and their utilization

Leather scrap is a wastage in the manufacture of leather goods and can be sold in bulk by weight. And the people who buy such scrap leather are small businessmen. They will separate the scrap leather pieces according to size and colour wise. Then they make various small items with it.

Different types of treatment for storage, preservation & storing of raw materials

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

- know about conservation of raw materials
 - know about storage of raw materials.
-

Preservation

We must protect our products. If not protected, they may lose quality and be destroyed by cockroaches, bookworms and rats. Products should be kept in a clean and safe place to protect them from spoilage. After that the products should be washed with fragrant camphor and some chemical products to protect them from damage without losing their quality. Thus, any method that takes products to work for a long time is called preservation.

Storage of raw materials

It is essential to have all the materials required for production in the warehouse. Storing is the buying of all the raw materials required for production in advance. During production, the store should be a place where we can purchase the goods in advance and keep them ready for production without the hassle.

All raw materials required for production must be well preserved. The store should be well ventilated, well-lit and clean. Protecting raw materials in the warehouse should be done according to their nature. If the raw material we are protecting is leather, we should set up a separate stand for it and keep it in polythene covers to protect it. Other raw materials required for the production of leather goods should be kept in their respective small boxes. Note down their name in each one.

Weighing machine and weight scale must be kept in store. The items in the warehouse should be known from time to time. Thus, the raw materials are made into goods and carried for sale

Thus, all the raw materials and production materials required for the finished product should be stored in the warehouse.

Packing and forwarding the finished products of leather goods items

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

- **know about packing the finished goods**
 - **know about sending packaged goods for sale.**
-

Learn about packing of finished leather goods

Batching is the work done to send the leather goods for sale with all the work done.

First, after all the work is done, the leather goods should be placed separately on the polythene wall. A silica gel patch must be placed inside each wall.

Silica gel foam will absorb the moisture in the soap and protect the material from Mold and Odor caused by moisture. The wall should not be too tight or too loose while placing it. Because if the wall is too tight the structure of the material will change. Thus, the material loses its quality when the composition changes. The price is likely to drop in sales due to desire. So, patching should be done using polythene washers of proper size.

At the same time, if it is a large polythene bag, it will be necessary to fold the cloth and pack it in order to pack the product in the right order. The silicone gel coating absorbs the moisture in the sawdust and makes the material resistant to insects. Prevents Odor caused by moisture.

Apart from that, a large wall would have to be bought at a higher price. Or if the price is the same, the number will be less. So, it costs us more either way. Maybe if we are exporting the product the weight is extra. Due to this, the cost is also high. Not using a wall of the right size can

cost us in two ways. It's best to use walls that fit perfectly to avoid problem and get the desired result

After packing the product in polythene wall of proper size and not sending it for sale, it should be stacked properly inside the carton without changing the composition of the product. Don't overstuff the carton thinking that it will reduce the number of boxes. For example, it is wrong to stack 25 pieces or 30 pieces in a box when only 20 items can be stacked in it. Doing so may change the texture of the material and lose its quality. So, the best course of action is to keep the items in polythene bags of proper size and pack the items according to the capacity of the cartons.

Properly packed bundles of goods should be safely loaded on goods vehicles and dispatched to the sales premises. Before that the shipping address in the cardboard boxes should be received

Address, Number of items in box, Name of items, Model no. Stickers containing information such as order number must be affixed. Exporting to foreign countries takes place in two ways which are (1) Air (shipping by air) and (2) Sea (shipping).

Products can be sent by air or sea, using an indirect route to reach their destination. The finished product should be packaged and inspected as per government guidelines.

Knowledge of electrically operated tools

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

- know about electrical equipment.

Knowledge of electrical equipment

There are various types of sawdust used in the manufacture of leather goods. Different tools are used for each job. For example, designing tools, shooting tools, shaving tools, carving tools, stitching tools, punching tools, punching tools, trimming tools and many more types of tools are used. It uses very little power tools.

It consists of (1) greasing tool and (2) burning tool.

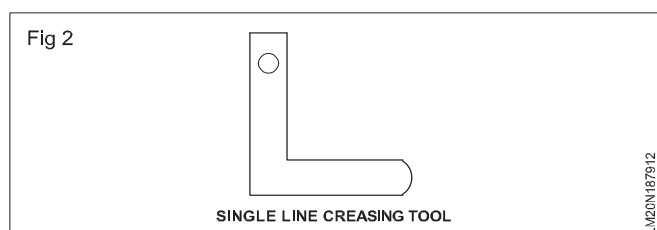
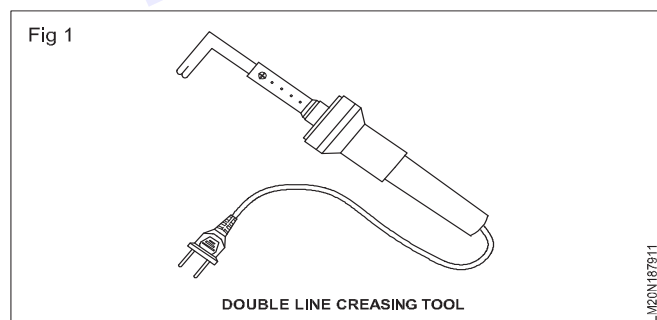
1 Greasing tool

Greasing tool is commonly used in making wallets, passport case, ATM pouch, credit card pouch, multiple card pouch. Generally, the job of this tool is to create a line like pattern on the top edge of the pocket while making the above items. Creates a line-like texture that makes it visually appealing and at the same time adheres well to the lining. By doing this the Polding does not break easily and works for a long time. And this tool looks like a soldering iron tool. But at the end it has a structure similar to the presser foot of a sewing machine. It has two settings. (1) Two line system (2) One line system.

A two-line texture is a tool used to create a line-like texture on the folding edge. In this case one line will act like a sage and the other will create a line like structure.

A line tool is a tool used to create a line pattern on the edge of a trimmed edge after final pleating and stitching it. This edge greasing will burn the edges of the trimmed leather. And the trimming edge also holds up well. There will also be a line or a strive on the side. Both of these are purely electric powered.

Setting of greasing tools (Fig 1 & 2)



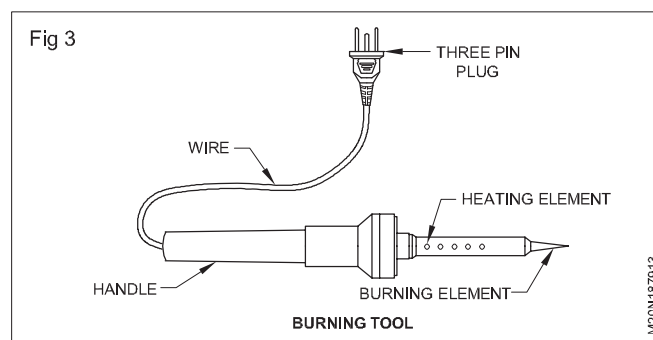
2 Burning tool

A burning tool is a tool used to burn away the thread that may be left behind when sewing leather goods. It is completely electric powered. It also looks like a soldering iron. At the end of this, the part where the thread can be burned is formed with a thin wire in a cone-like shape. Once the tool is powered on, the bulb at the end of the tool will heat up and turn brown. Now if we put the tip of the tool slightly on the place where we want to burn the thread, the thread will be burnt and it will come out separately. The tool should be handled carefully while burning fuel. Because it is powered by electricity and its tip is like fire, if it accidentally touches any part of the body, the place will cause fire. Also, when the thread is burnt in the material, if the thread is carelessly or mistakenly left in the next stitch, then that stitch will also be burnt. There will be no stitches in that area. Then there will be a need to re-stitch. Because of that we will waste time.

Be gentle and careful when handling. At the same time, this tool can finish jobs quickly while burning smoothly. A large number of peas can be burnt at the same time, to save the time.

There is a possibility of dusting the material while burning the thread in other ways to do this job. Clean it up. For example, when the yarn is burnt with a blowtorch, ashes, scraps etc. will fall on the material. Also, since the diameter of the blower is higher than the tip of the burning tool, there is a greater chance of burning through the next seam. It is best to burn the thread with a burning tool by desire.

Structure of Burning Tool (Fig 3)



Knowledge of machine equipment power operated machines, required for various leather goods products

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

- know about of splitting machine and its working.

Splitting

Splitting is the process of cutting skins or cut parts over their entire surface to reduce their thickness/size as per our requirement. By splitting the passions, a balanced sound is achieved. Can only be done by splitting machine.

Band Knife Splitting Machine

Leather is used to make cutting boards

Benefits of Splitting

- It is used to reduce the volume of leather to the required extent over the entire surface.
- Splitting keeps the grain of the leather uniform throughout.
- Cow, buff leather with high density can be made by splitting leather material.
- Splitting makes the components flexible.

Parts of the machine

Pressure roller

Helps to apply pressure to materials.

Feed roller

Material-machine - feeding

Gauge

It helps to fix the required volume.

ON / OFF Switch

Enables turning the machine ON/OFF.

Pedal

Used to run the machine.

Band Knife

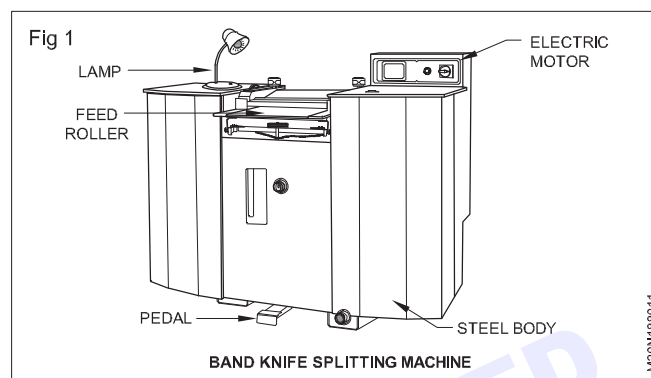
Helps in Splitting Leather.

Band Knife Splitting Machine (Fig 1)

- 1 Lamp
- 2 Feed roller
- 3 Electric motor

4 Pedal

5 Steel body



System Describing : This machine is used to reduce the volume of leather. This machine is widely used in leather goods and footwear manufacturing. With this machine we can split the size of upper and lining leather according to our requirement.

This machine has 400 mm width. This machine is used to grind and sharper the pressure roller, feed roller and knife roller. Gauge is used to determine the hardness of leather. Exhaust motor is found in this machine.

The roller is equipped with a large band knife. A grinding wheel is fitted to sharpen the knife. The feed roller is equipped with a mechanical pedal. It can run on three phase motor.

Functions

First, we need to adjust the required amount of lime in Gauge.

Turn on the motor and drop the leather-knife roller between the size of the feed roller to reduce the thickness. Now the leather is split and available in the size we need.

Uses of Splitting Machine

It is used for splitting the hard leather to the required size.

Differences between skiving machine and splitting machine

S.No	Skiving Machine	Splitting Machine
1	Skiving machine is small in shape	Splitting machine is big in shape.
2	Blade is circular in shape.	Blade is circular in shape.
3	Leather-thickness is not a specific measurement	There is a certain measurement to reduce the thickness of leather
4	Its price is low	It is expensive.

Differences between Skiving and Splitting

S.No	Skiving Machine	Splitting Machine
1	Skiving is the term used to reduce the volume on the side of the skin	The reduction of volume over the entire surface area of the skin is called splitting.
2	Can also be done by Skiving Machine.	Can only be done by splitting machine.

Leather

Related Theory for Exercise 1.8.81 & 83

Leather Goods Maker - Care & Maintenance of Tools and Machines

Different tools equipment's used in leather goods manufacturing

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

- describe the various tools and equipment used in leather goods production.

For various tools and equipment's used in leather goods production, refer to lesson numbers 1.3.17 to 1.3.22.

Preventive maintenance of different machines

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

- **describe preventive maintenance of machines.**
-

As sewing machines are fitted with various mechanical parts, they need to be serviced at regular intervals. Worn parts should be replaced.

- The entire engine should be disassembled and oiled and cleaned
- While doing this cleaning every part should be checked for correctness.
- Parts should be replaced if worn or broken.
- Engine oil needs to be changed.
- When the machine is running, this oil automatically provides lubrication to all parts.
- When the machine is running continuously, sometimes the oil level is likely to decrease and at that time the oil should be filled.
- Run the engine at moderate speed.
- Do not run the machine when the voltage is low.
- If any unusual noise occurs in the engine during operation, it should be stopped immediately and checked.

Only sew heavy material suitable for the nature of the respective sewing machine.

Service and preventive maintenance of machines like cutting, clicking, splitting, skiving & strapping.

- All machinery should be thoroughly swept and kept clean.

- Lubricating oil should be applied wherever necessary.
- Machines should be operated carefully and safely.
- Must wear shawl while driving.
- Weekly maintenance, monthly maintenance and annual maintenance should be done as appropriate for the machine.
- Annual maintenance contract is necessary for large machinery like hydraulic clutching machine.
- After running the machine every day, it should be cleaned well and covered with its cover after leaving lubricating oil.
- In case of damage to the machine, the operation should be stopped immediately and reported. To the supervisor
- Do not run the machine at high speed.
- Machines should be operated with adequate ventilation.
- Machine should be started only after they have been properly cycled.
- If there is a power cut while the machine is running, immediately press the OFF button to stop the machine.

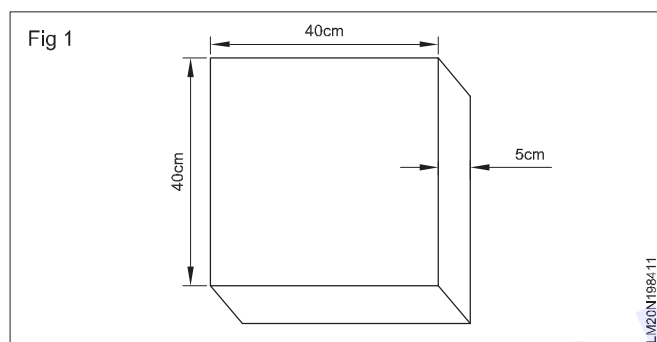
Identification of tools used by trainee in their section understand their name's function and process of holding

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

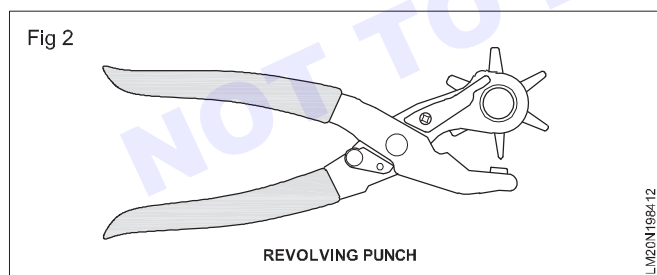
- identify the name and use of various instruments used in the trade.

Describing, specification of general care and maintenance of common hand tools

Marble stone (Fig 1) : It is made from lava rock. Its measurement is found to be 40cm×40cm×5cm on average. The surface of the marble stone is semi polished. It is used for applying glue, press button, rivet button fitting and hammering. After finishing the daily work, the glue and dirt stuck on the marble stone should be cleaned. Clean with kerosene once a week.

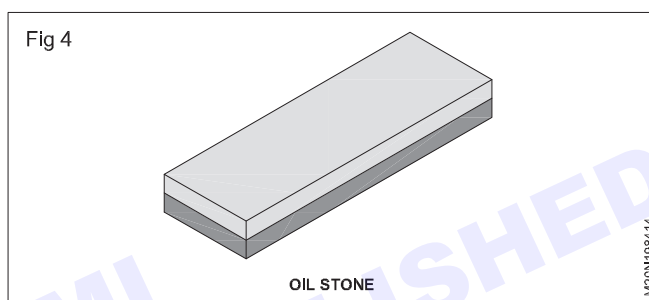
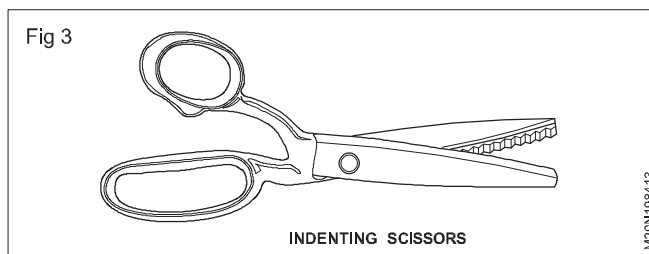


Revolving Punch (Fig 2) : This tool is used for making holes. Used for punching press buttons and rivet buttons on leather and rex materials. Punch nipples of various sizes are fitted on the wheel and we need to stop and drill the nipple with the diameter as we need. Then the nipple should be cleaned.

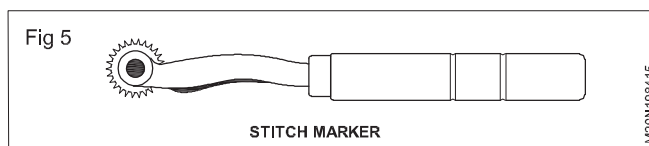


Indenting scissors (Fig 3) : Unlike ordinary scissors, its looks different. It is widely used for fancy shading. It is used to make decorative leather goods such as money purses and bags for women. It is used for decorative work on the edges of leather goods. In shoe manufacturing it is used to make decorative shoes for children and women. The device is fragile and should be handled safely.

Oil Stone (Fig 4) : Oil Stone is used to sharpen cutting tools in leather goods manufacturing. For example, cutting hammer, skiving knife, punches etc. are sharpened with its help. A few drops of oil should be applied to the chisel before grinding. After the work is done, the straw should be kept in its proper box without getting dirty.

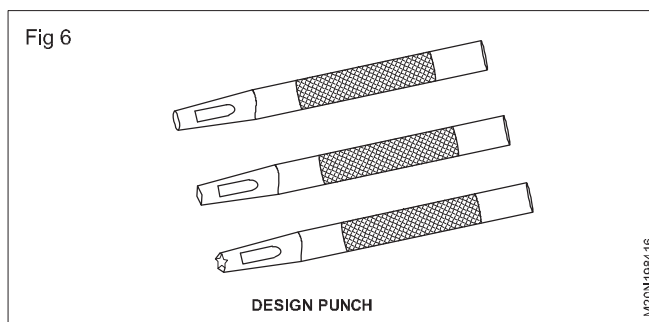


Stitch marker (Fig 5): Made of metal with a toothed wheel-like structure at the tip. The rest is mounted in a wooden handle. Hold the handle and press it against the skin. Stitching should be done using the marks of the cog wheel that occurs while rotating. The number of teeth determines the width of the stitch.



Design Punch (Fig 6)

It is made of iron and is used for drilling in various designs. They have different designs on the tips. The above figure has a rectangle, an oblong circle and a star shape. Apart from this, this type of punch is also available in many other designs. Design Punch is used for various graphic works and fancy articles.

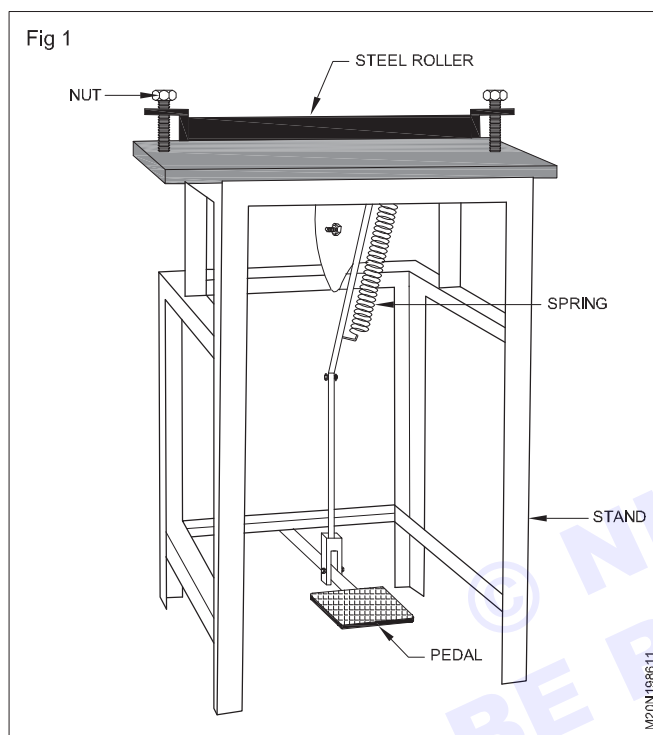


Machines, needles employed in general leather work understanding its manufacture, operational, principles and applications

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

- know the functional describing and uses of edge poling machine
- know the parts and use of needle.

Edge Folding Machine (Fig 1)



- 1 Rubber
- 2 Steel Roller
- 3 Nut
- 4 Stand
- 5 Spring
- 6 Pedal

With the help of this machine, the edges of the strap pieces can be folded easily. Able to quickly fold fantastic pieces mass production company- used a lot. It can be powered by electricity and human power.

Structure

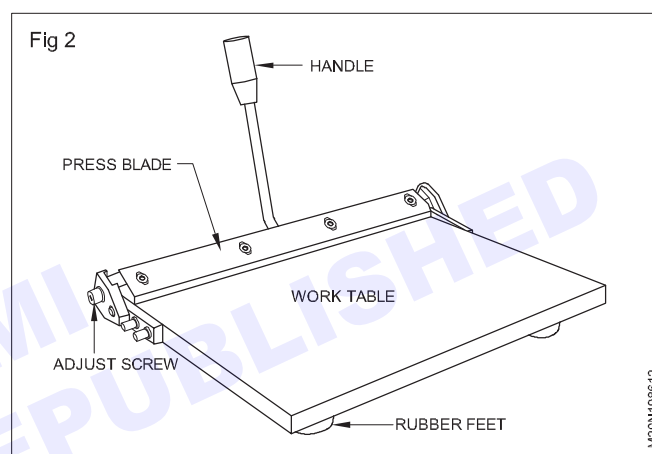
A wooden plate is found on the top of this human-powered machine. At the front of the machine is a $\frac{1}{2}$ foot long steel plate. It has a long thin plate that can be easily moved back and forth. Rubber is glued under this plate. A pedal is found to operate this plate. This plate is connected by connecting rod with pedal.

Function

First apply glue to the strap pieces to be folded and let them dry for some time. Then the part to be folded should

be placed under the steel plate. Then adjust the thin plate for folding to the required width. Then press the pedal. The pedal applies pressure to the area to be folded and folds. With the help of this machine, 3 (or) 4 pieces per minute can be easily and quickly folded.

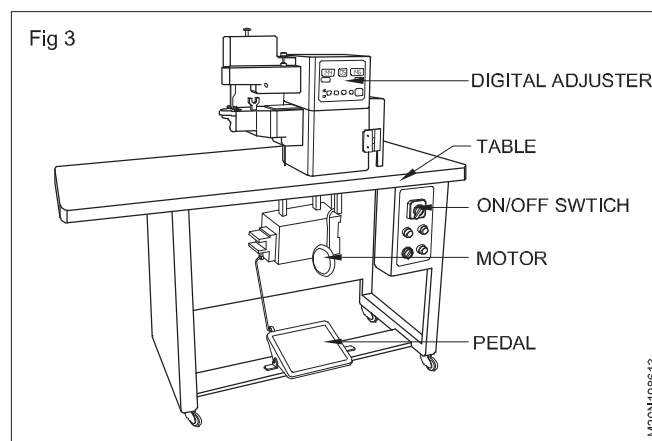
Hand edge folding machine (Fig 2)



A hand edge folding machine is used to do axial folding by hand. In this folding is done by placing the parts to be folded on the folding table. It has rubber feet at the bottom. This rubber feet helps to keep the machine from moving during normal folding. We can use the adjust screw on the left side to change the folding angle of some affections as per our willing.

For folding parts, the press blade rotates and folds when the handle is operated. Not only leather parts but also linings and interlinings pattern can be folded with this machine and the cost is low.

Edge folding Machine (Electrical) (Fig 3)

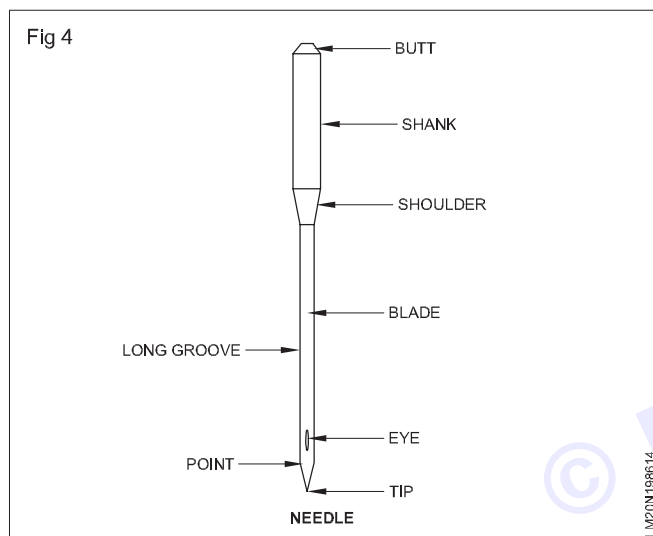


Tread with low pressure. Then the parts will be folded in a uniform manner. After finishing the work, the machine should be switched off and cleaned. Annual contractual maintenance will keep the machine running smoothly. This machine is used to make to do the required original folding, first set the dimensions on the digital adjuster, then turn on the machine and do the folding carefully.

Shoes should be worn while operating the machine. When you step on the pedal tread with low pressure. then the parts will be folded in a uniform manner. After finishing the work, the machine should be switched off and cleaned. Annual contractual maintenance will keep the engine running smoothly.

Parts of a needle

Needle (Fig 4)



Needle has eight segments.

Butt

The upper part of the needle is called the butt portion. It looks flat. It is used to fix the needle on the needle bar.

Shank

The part next to Butt is called Shank. Provide a secure grip for the machine or hand, allowing for smooth stitching.

Shoulder

This part gives the needle its stability. It is seen gradually decreasing from the Shank to some distance.

Blade

It helps in drilling the material. Two grooves are found on the opposite side. They are Long Groove, Short Groove.

Long Groove

Long Groove is seen continuously starting from Shoulder to Eye. It serves two purposes.

Thread - Needle - Eye helps to move.

It is used to take out the thread after completion of stitching.

Short Groove

This causes a loop to occur. When we install it in the machine, we need to install it so that it is right side.

Needle Eye

The last part of Needle is called Eye. It is used by entering the upper thread.

Needle Point

The area below the needle is called needle point. It is used to drill material.

Tip

The last part of the needle. This is called a tip.

Different sizes and use of the needle

A leather point needle is used for making leather goods. Needle size is divided into Asian numbers 70, 80, 90, 100, 110, 120. The needle should be selected according to the thickness and nature of the leather.

It is important to choose the right thread for the size of the needle and the material to be stitched. There is cotton thread, nylon thread, waxed linen thread etc. These are categorized as thread number: 50, 60, 70, 80.

Machine faults & their rectification

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

- know about mechanical faults and their repair, in the machines.

Various machines are used in the leather goods manufacturing sector. Among them sewing machines play an important role. In general, sewing machines work like clockwork, so they need to be maintained with care. Also, periodic servicing should be done properly. It is possible to have many problems like stitching not coming properly, loop stitching, thread cutting etc.

The sewing machine should be repaired by investigating what sewing defects have occurred and making appropriate remedies. Sometimes, if there is a mechanical problem with the machine, call a sewing machine mechanic and fix it.

S.No	Sewing defects	Reason	Reliefs
1	Thread cutting	Burns in thread path, needle tip and hook tip.	Remove (fine) burrs with emery sheet.
		Needle thread tension too high	Adjust the needle thread tension
		The bobbin case opening lever provides excess clearance in the bobbin case.	Adjust the clearance between the bobbin case opening lever and the edge of the bobbin case.
		Hook set not properly lubricated.	Increase the oil circulation rate.
		The thread is not twisted	Thread requisition should be properly adjusted.
2	Skip stitching	Clearance between needle and hook end is too much.	Adjust hook timing and clearance.
		Presser foot pressure is insufficient.	Presser foot, Check the regulator level
		Synthetic thread or fine thread bobbin thread does not go into the end of the tension spring on the forked bobbin case.	Wrap the thread around the needle and place the thread correctly in the bobbin case.
3	Loose stitch	The bobbin does not spin smoothly	Replace the bobbin
		Less thread tension	Adjust the bobbin thread tension
		Thread balance is very tight	Adjust the device tension on the bobbin winder assembly.
4	Fold shrinkage	More thread tension	High thread tension and Bobbin tension should be kept as low as possible.
		Improper thread balance	Improper thread balance Proper thread balance between top and thread should be ensured.
		Wrong tension for sewing thread	Maintain tension guides properly.

5	Random stitching	Wrong tension for sewing thread.	Setting the exact tension for the thread.
		Invalid thread path used.	Using a precise thread path.
		Lack of proper adjustment for needle thread path.	Using the correct thread path.
		If the sewing thread is not lubricated.	Applying a thread lubricant or, conditioner.
6	A wobbly stitch	Due to needle deflection.	The injection volume should be increased
		Due to incorrect needle tip.	The injection size should be changed
		Improper adjustment of needle and thread size.	Needle size and thread size should be adjusted.
		Due to defective feed dog motion	Feed dog motion should be adjusted
		If the fabrics are not properly controlled in the feed mechanism.	A precise pressure adjustment should be made on the pressure foot
7	Bobbin or looper threading	The threads on the bobbin are not properly wound	The threads should be properly wound on the bobbin
		Excessive tension for bobbin threads	Bobbin thread tension should be adjusted.
		If the edges of the bobbin case are much more sharp than the looper.	Edges should be sharp
		Improper fitting of bobbin case.	Experiment with bob sizes and types.
8	Thread Fusing Standing Sewing Machine	Old sewing thread	Good quality thread should be used
		A poorly finished and densely woven fabric	Should be an improved fabric finish
		A damaged needle after cutting the sewing thread.	The needle should have been replaced

Leather Related Theory for Exercise 1.9.88

Leather Goods Maker - Operation & Trouble Shooting of Hand Tools & Machines

Special tools used for leather goods making their uses and materials from which they are made their names and functions

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

- know about maintenance of special tools used for leather goods manufacturing.

Refer to Chapter 1.8.82 for maintenance of specialized equipment used in leather goods preparation

Cleanliness of the work shops and safety

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

- **know about cleanliness of the workshops and safety.**
-

I Workshop maintenance

- The work area should always be ventilated and have natural light.
- The workplace should be adequate for the job.
- Care should be taken to ensure that oil, series, balls etc. are not on the floor in the workshop.
- A proper drainage system should be established in the workshop so that rain water does not stagnate during rainy season.
- The workshop should be properly wired so that there are no hanging electrical cables.
- When the machine is not running in the workshop, its electrical connection should be switched off.

II Workshop safety rules

- We have to keep the factory clean.
- Dust, gas and fumes must be evacuated in the factory.
- Clothes should be worn tight to the body.
- Wear shoes on feet and gloves when handling hot objects.
- Avoid running, washing, crowding, using tobacco and smoking inside the factory.
- Adequate warning signs should be placed in places where hot items and electricity are present.

- Sharp the weapons and tools.
- Metal pieces etc. should be kept in their proper place.
- Do not store or scatter excess raw materials.
- Oil, grease, slippery adhesives etc. on the floor immediately
- Securing flammable materials in isolated places during an emergency
- Alarm bells should ring during emergency.
- All firefighting equipment should be kept ready and properly handled.

III Tools safety rules

- When using a hammer etc., oil should be removed from the affected part.
- Use only appropriate tools.
- Hand tools should be protected in a wooden case.
- Proper handling of vessels according to their power.
- Use sharp instruments with caution.
- After completion of the work, the screws should be kept safely in a safe place.

Specification of different tools and their sharpening which are used in leather goods manufacture their nomenclature & describing

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

- know about tools used for cutting leather
- know about sharpening tools used for cutting leather.

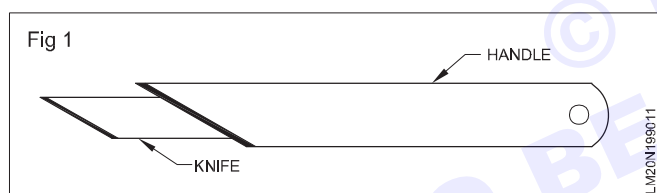
Knowledge of tools used to cut leather

A variety of sharp knives are used to cut leather in the manufacture of leather goods. They are suitable for every skin type. Hammers with separate settings are used for cutting fine leather.

The hammer used to cut small skins is called marking hammer. This hammer breaks 4 inches wide. It also comes in ready-made. If it is not available, we can take the hacksaw blade that we use, rub the teeth on its tooth area and make a hammer-like structure at a 45° angle on one part of it and sharpen it and use it as a hammer.

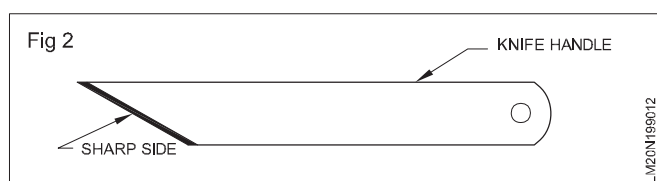
These can be used for marking and shooting on leather. Since this blade cannot be held directly in the hand, a pocket can be prepared and used inside it. The handle can be made of iron plate, zinc plate, brass plate, aluminum plate etc.

Structure of Marking Knife (Fig 1)



This blade is used for marking the skin and cutting the skin. When the skin is cut with this sword which is, able to cut accurately and without slips. The same can be done with a power hacksaw blade. This tool can be used to prepare a hammer using both broken or worn blades and new blades. It involves taking a 7" long blade and forming a hammer-like structure at one end. It is then sharpened on a lathe and used as a hammer. This is also used to cut leather.

Structure of cutting blade (Fig 2)

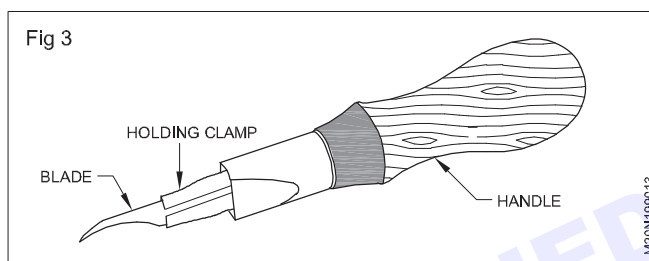


This hammer is used for skinning and skiving.

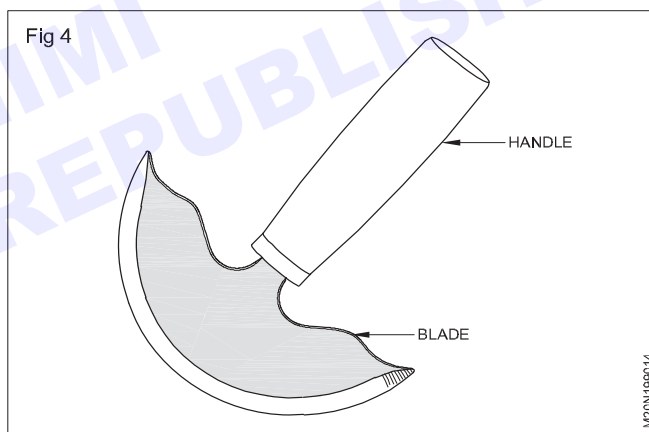
Next, the clicking force is used to cut off the excess skin. Its tip is slightly curved so that heavy skin can be cut easily.

Structure of Clicking Knife (Fig 3)

The design of this hammer is palm-shaped with a wooden handle and a clamp that holds the blade, which is the skin-cutting part. The blade hold clamp is found with an adjustment screw rod and nut in the way of the handle.



Structure of a semi-circular blade (Fig 4)



Next is the semicircular hammer. This is in semi-circular in shape. This makes it easy to cut heavy skin, easy to cut curves and easy to skive. This knife is equipped with a machete handle and a blade at the front of the handle for easy grip and cutting.

Know about sharpening tools used for cutting skins with the help of bench grinder. So, to remove those stains, the knife should be sharpened with Oil Stone. This cutting technique is widely used in many sectors of leather goods manufacturing.

In designing and pattern making section, chart paper is used to cut the pattern.

When cutting with a knife, we should hold it well with our hands and cut towards ourselves. Also while cutting should be done with steel rule or heavy card board. For straight cuts and curved parts, the smaller the hammer is, the better it can be. Hold the cut edge with the left hand while cutting.

Harder leather requires more than one cut to cut. The tip of the knife should penetrate through the full weight. Step by step proper sanding is required.

Cutting heavy leather requires the tip of the hammer to penetrate the entire grain of the cut more than once. Regular sanding is often required.

Because the tip becomes blunt. When cutting the curved part, first cut lightly once and then cut with good pressure several times. At first a slight cutting line is formed and then the sand penetrates and cuts well along the path of its track. We should handle the chisel with caution while cutting. Take only good quality leather for cutting. Avoid cutting poor quality or torn skin.

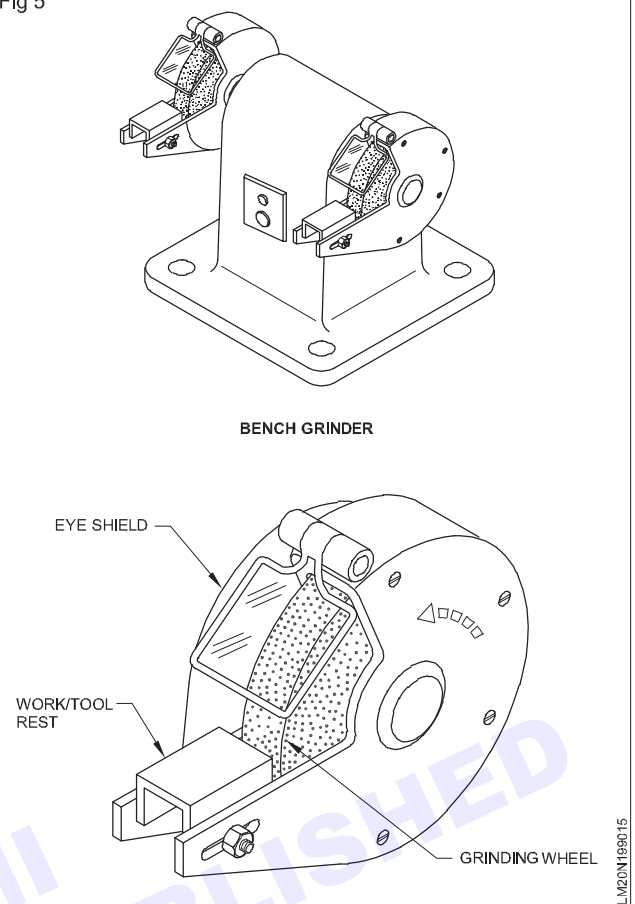
Scissors Sharpening: When cutting with scissors, both blades are blunted. Then separate the blade and grind each blade in a bench grinder. Blade should be grinded smoothly without getting sticky.

Bench grinder (Fig 5)

Bench grinder is used for light grinding work. It is usually mounted on the bench. Bench grinder can be used to grind the Saathiya needle.

It is powered by an electric motor. Both sides are equipped with grinding wheels. Equipped with wheel guard for safe working. An eye shield is used to protect the eyes.

Fig 5



Leather

Related Theory for Exercise 1.10.91 & 92

Leather Goods Maker - Leather Ornamental Materials and Prepare various Leather Goods

Describing of cutting tools for leather and their sharpening

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

- know about cutting tools
- know about sharpening cutting tools.

Refer Exercise No :1.09.90 to learn about cutting tools and sharpening of cutting tools.

Leather

Related Theory for Exercise 1.10.93

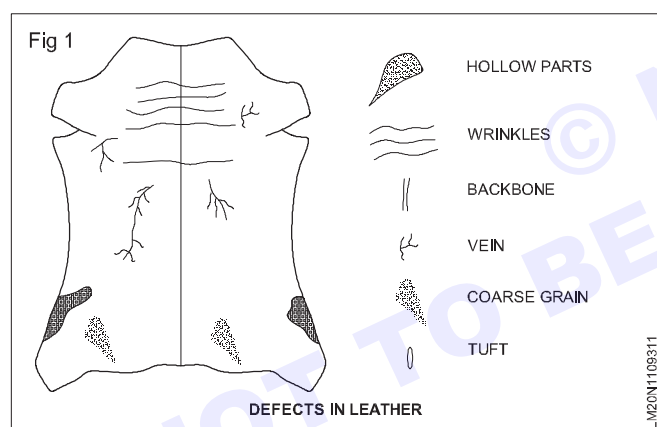
Leather Goods Maker - Leather Ornamental Materials and Prepare various Leather Goods

Marking the leather defects to avoid them

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

- explain how to mark skin imperfections and correct them.

Common Defect that occurs on hides and skins (Fig 1)



Raw hides and skins are perishable. Also, various defects occur in the skin of animals during life and after death. These defects can be divided into two categories. They are

- 1 Natural Defects
- 2 Manmade Defects

1 Natural Defects

Many natural imperfections occur in the skin. They are

- 1 Thorn mark
- 2 Rub mark
- 3 Tick Mark
- 4 Scabies
- 5 Cockle
- 6 Bursitis and Danas
- 7 Poor substance

- 8 Warble holes
- 9 Horn scratches
- 10 Pox mark

1 Thorn mark

As cattle graze among the brambles, the skin is scratched by the sharp thorns. It is seen that these scars do not disappear when the animals run fast and get deep scratches.

2 Rub mark

This friction scar is found on the upper part of the legs. Caused by cattle scraping on decaying material. It is usually caused by the animal being dragged over rough terrain after death.

3 Tick Mark

A tick is a blood-sucking insect. They live on livestock. Infested areas have thinner skin. A tick mark reduces the smoothness of the skin. It will reduce the flexibility and thus the beauty of the skin will be greatly affected.

4 Scabies

It is a type of skin disease. Affected animals will rub their skin due to its itchiness. The surface of the skin gets damaged and microorganisms like bacteria penetrate the area. Colour finishing & uneven absorption of dye.

5 Cockle

Saxil is a disease of sheep. Due to digestive disorders and malnutrition, this occurs and after tanning it becomes patchy like a stain.

6 Bursitis and Danas

A small rash like scabies occurs on the goat's skin. Along with this disease, digestive disorders also occur. Danas is the beginning of the rainy season and borates is the middle of the rainy season. This is caused by eating a certain type of weed. This affects the surface of the skin.

7 Poor substance

Livestock without proper fodder have reduced skin tone. Due to aging and disease, the quality of the skin deteriorates significantly. Thinner skin has less muscle fibre density. We consider this type of skin has unhealthy.

8 Warble holes

A warble fly makes small holes in the skin of a large animal near the dorsal shaft. These flies lay their eggs in cow's milk broths. The worms then break out of them and move to other parts of the animal and enter through hair follicles in the skin. Then they develop and make holes for breathing. These are called root holes. These imperfections are visible after tanning and make-up. Due to this, the quality of the skin is greatly reduced.

9 Horn scratches

When cattle skin is itchy, rubbing it with a horn can cause irritation and injury, a phenomenon known as "Cattle horn hissing". Additionally horns can also produce a loud, shrieking sound when animals are fighting.

10 Pox mark

Different types of measles attack animals. The first symptom is small blisters on the inside of the legs and abdomen. Then these are all over the skin.

2 Manmade Defects

Many are caused by humans. They are defects in the skin

- 1 Goad mark
- 2 Yoke mark
- 3 Flay cuts
- 4 Barbed Wire Mark
- 5 Heating (Brand mark)

1 Goad mark

Takeuchi scar is commonly found in Indian fauna. A long stick has a sharp wire or nail attached to the end. When

cows are ploughed, the buttocks are pierced with this stick. This affects the buttock area which is the best part of the skin. So, this part becomes useless.

2 Yoke mark

When oxen are used for ploughing, and when they are used for pulling carts, a yoke is placed around the neck. Due to this, there is more friction in the skin and eventually the skin is affected. The skin on the affected area becomes thickened and patchy. Scars are common in cow skin.

3 Flay cuts

After the animal is dead, its skin should be carefully cut off.

Sometimes the skin is affected due to lack of sleep. This lash defect mostly occurs in cowhide. Not found in goatskin. This defect is due to the lack of experience of the skinner.

4 Barbed Wire Mark

Man-made fences made of Smurfs cause defects in the hides of cattle. These samba fences cause deep scratches when animals run wildly. Even after the wound heals, the scars do not disappear. This defect will disappear after finishing tanning. Due to this, the quality of the skin is greatly affected.

5 Heating (Brand mark)

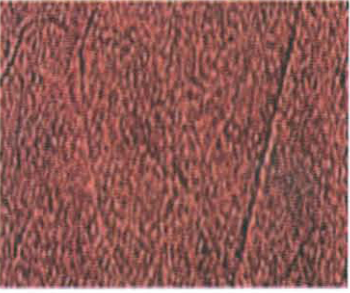
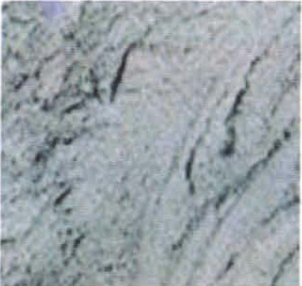
The rump of the animal is warmed with brewed sampi. Its purpose is to put it by its owner for identification. It is usually found in the back area and the butt portion is affected a lot. Because of this make-up reduces the quality of the skin.

Due to the aforementioned leather defects, their damage is likely to be visible on the surface even after finishing. Leather with such defects degrades the quality of leather products. These are identified and marked. Leather products are made by shooting on other good surfaces leaving the marked area. Due to this, leather is wasted in large quantities. Due to this the price of leather goods is likely to be high. So various finishings are done and those defects are rectified.

Generally, if the nature of the defects is very large, they are deflected and shotted while shooting. Small defects on the mania surface are fixed by spraying with dye solution. Pitchmen if slightly extra.

Repairing defects in leather

Deficiency	Quality problem	Making relief
	Surface unevenness Source: Injury to the animal.	Correcting the defect by spraying a colour pigment coating.

	Surface evidence due to scratch marks: Injuries to the animal during improper handling or fighting.	Spraying a resin coat on the defect area.
	Growth marks source: Rubbing against fences or natural veins.	Pigment spraying with more fillers.
	Colour mismatch source: Improper sorting and storage	Spraying of die solution
	Brand marks evidence: Improper handling	Resin finishing with pigment coating brand mark, If too deep remove from cutting.
	Surface defect: Flay Cut Source: Skinning or improper knife use while flaying or cutting the skin.	If the flare cut is excessive, remove it from the cutting
	Whore hole evidence: The leather is seen as a small pinhole or a small scar.	This is difficult to fix so avoid when cutting.

	Source of vein mark: Inadequate bleeding can cause vein mark.	If the vein mark is light, apply pigment spray and if it is too much, remove it from the cutting.
 புள்ளிகள்	Source of surface defect: Improper handling	Spray the dye solution

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Describing of various types of machines used for different type of leather sewing

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

- describing of different types of leather sewing machines.

Different machines employed in leather goods production

Names of various machines used in leather manufacturer.

Machinery plays a major role in producing large quantities of leather material in a short time. Also, there are various departments in the leather goods manufacturing factory. Each department has some dedicated machines. Their main machine names are as follows:

- Hydraulic clicking machine
- Splitting machine
- Skiving machine
- Flat bed sewing machine
- Cylinder bed sewing machine
- Post bed sewing machine
- Zig Zag sewing machine
- Punching and Eyeleting machine
- Stamping machine

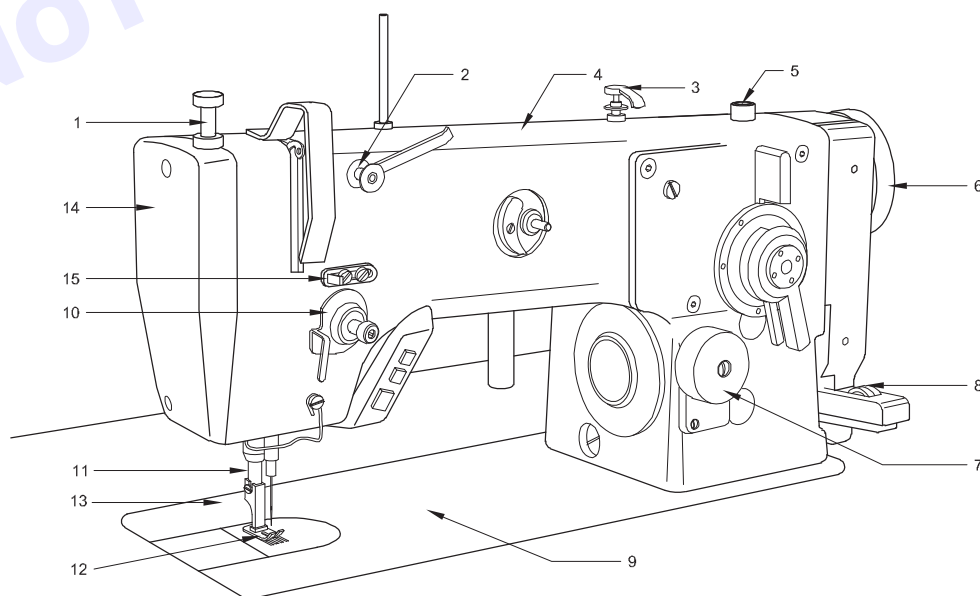
done on leather with a thickness of 3 mm to 6 mm. Flatbed sewing machine can do up to 300 stitching per minute.

- 1 Pressure bar regulating screw
- 2 Thread guide
- 3 Pretensioner
- 4 Head
- 5 Oil check window
- 6 Balance wheel
- 7 Stitch length adjuster
- 8 Back tacking
- 9 Bed
- 10 Thread tensioner
- 11 Needle bar
- 12 Pressure foot
- 13 Slide plate
- 14 Pressure foot lifter
- 15 Hooks

Structure and uses of flatbed sewing machine

Flatbed sewing machine (Fig 1): Straight stitching can be done with flatbed sewing machine. Stitching can be

Fig 1



FLAT BED SEWING MACHINE

LM20N109411

System Describing

- In this the stitching part is flat. It is called flatbed sewing machine.
- A pillar-like structure is seen on the right side of the bed and an arm-like part is seen on the left side of it. It is a single Mold.
- Arm & needle bar, pressure bar equipped.
- Machine - Balance wheel is installed.
- Stitching has a feed dog to move it.
- Bobbin winder is attached to a pillar-like structure.
- Needle bar, pressure bar- Face plate is seen on the left.
- The stitch length adjuster is found on the top with a pillar-like structure for adjusting the stitch length. Pretensioner, Tensioner, Hooks, thread take up lever is seen.

Job operation

Pretensioner - The thread should be inserted through the three holes in the tensioner in an "S" shape. Then insert the thread into the take up lever and insert it into the needle through the hooks.

Bottom thread

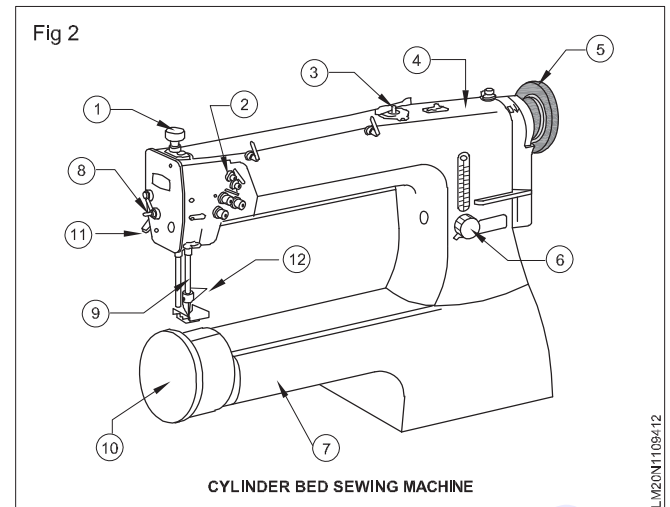
- Use a bobbin winder to fill the bobbin with thread. Bobbin filled with thread should be fitted in Bobbin case.
- Then it should be attached to the hook point which can be attached to the bobbin case. 4cm to 5cm of thread should be taken out before fitting in the bobbin case and pulled and fitted. You can know that it is properly fitted if you hear a sound (Tick) while fitting.
- Then hold the upper thread without slack and rotate the balance wheel towards the direction where we are sitting. By doing this, the bobbin thread will come up. Now it can be known that the machine is in sewing mode.

Uses

- Flatbed sewing machine can do straight stitching.
- Leather, Rexine products can be stitched with this machine.
- Used for sewing leather garments.
- Flatbed is a heavy duty sewing machine
- With this machine we can sew leathers of high quality
- While selecting the needle, select it carefully.
- Stitching per minute is less when compared to other machines.
- Straight Stitching can be done using this sewing machine.
- Motor is used to run this sewing machine.

- Structure and uses of cylinder bed sewing machine.
- Structure and uses of post bed sewing machine
- Differences between flat bed, cylinder bed and post bed sewing machines.

Structure and uses of cylinder bed sewing machine (Fig 2)



The sewing machine has a cylindrical shape, which is why it's called a cylinder bed sewing machine. Cylinder curved stitching can be done. 3mm to 8mm thickness material can be stitched. With the help of this machine you can sew 800 to 1200 stitching per minute. Cylinder bed sewing machine- Decolumn table "1" is left.

- 1 Pressure bar regulating screw
- 2 Thread guide
- 3 Pretensioner
- 4 Head
- 5 Balance wheel
- 6 Stitch length adjuster
- 7 Cylinder arm
- 8 Thread tensioner
- 9 Needle bar
- 10 Slide plate
- 11 Pressure foot lifter
- 12 Hooks

Description

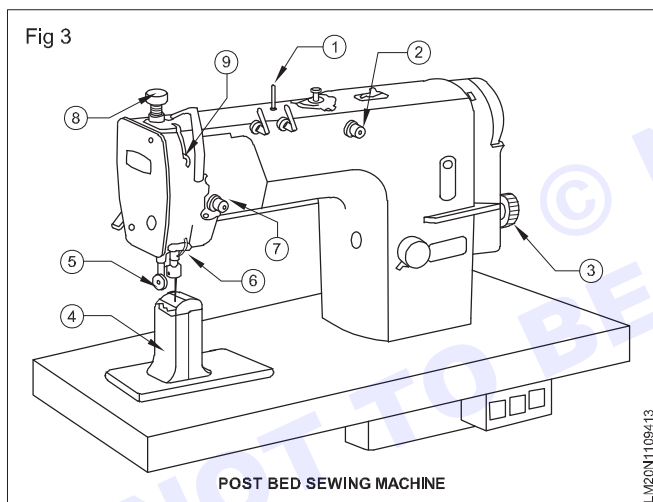
- A bed is found at the bottom as flat.
- To the right of the bed is a vertical, pillar-like structure. A cylinder-shaped arm is also seen from it.
- Needle bar and pressure bar are found in the above arm-like structure.
- Machine - Balance wheel is found.
- Bobbin winder is attached to a pillar like structure.
- Needle bar, pressure bar- Face plate is seen on the left.

- A feed dog is used to move the material while stitching.
- Stitch length - The stitch length adjuster is attached to the column. with the system
- A motor is connected to drive this system.

Job operation

- Bobbin should be attached to the end of the arm like part. Before attaching the bobbin, the thread should be pulled out by 4cm, then hold the upper thread and rotate the balance wheel towards the direction where we are sitting. Then the bobbin thread comes up. Now it can be known that it is suitable for machine stitching.
- Uses of cylinder bed sewing machine
- Used for Curved Stitching.
- It is used for leather stitching with thickness from 3mm to 8mm.
- Sewing is used to make shoes.
- Used for easy stitching of finishing materials.
- 800 to 1200 stitching per minute is used.

Structure and uses of GUL (Post bed) sewing machine (Fig 3)



Post bed sewing machine as the sewing part is like post-. Post bed sewing machine is used for curved stitching. It is used for sewing leathers with thickness from 3mm to 10mm. With the help of this machine, 1500 to 1800 stitching per minute can be stitched.

- 1 Pretensioner
- 2 Stitch length adjuster
- 3 Balance wheel
- 4 Bed
- 5 Pressure roller

- 6 Hooks
- 7 Tension Spring
- 8 Pressure Bar
- 9 Needle Bar

Describing

- The bed has a flat bottom.
- A pillar-like structure is seen vertically on the right side of the Bed and a post-like structure is seen on the left side of it.
- Needle bar, pressure bar can be seen in the system like above post.
- A balance wheel is found in a machine.
- Bobbin winder is attached to a pillar like structure.
- Needle bar, pressure bar is seen to the left of Face Plate.
- Stitch length stitch length adjuster is attached to the pillar-like structure.
- A feed dog is found to move the material-g while stitching.
- Tension spring, thread take up lever, pretensioner etc. are attached.

Job Operation

Pre-tensioner - thread - should be inserted into tensioner. Insert through the three holes in an "S" shape. Then the same thread should be inserted into the thread take up lever through the tension spring and inserted into the needle through the hook.

Bottom thread

Bobbin should be fixed in post like area. Before attaching the bobbin, the thread should be pulled out by 4 cm. Then hold the upper thread and rotate the balance wheel towards the direction we are sitting then the bottom thread will come up. Now it can be known that it is suitable for machine stitching.

Uses of Post bed sewing machine

- Curved stitch is used for sewing.
- It is used for sewing leathers with thickness of 8mm to 10mm.
- Used for sewing leather garments.
- This machine is used to sew what cannot be sewn in flatbed sewing machine.
- 1500 to 1800 stitching per minute increases productivity.

Differences of flatbed, cylinder bed and post bed sewing machines

S.No	Flat Bed Sewing Machine	Cylinder Bed Sewing Machine	Post Bed Sewing Machine
1	The sewing area is seen as Flat.	The sewing part is cylinder (Cylinder).	The stitching part is found in the Post system.
2	Pressure foot is in the form of Foot.	It is in the form of Pressure Foot Roller	It is in the form of Pressure Foot Roller
3	Bobbin case - found temporarily.	Bobbin case is permanently fixed.	Bobbin case is permanently fixed.
4	Needle - Size 16 to 21 is used.	Needle - G& Size No:21 (Used up to 26).	Needle - G& Size No:21 (Used up to 26).
5	Needle shank portion is found to be flat.	Needle Shank portion is cylindrical in shape.	Needle Shank portion is cylindrical in shape.
6	Used for stitching leathers of 3mm to 6mm thickness	Used for stitching leathers of thickness 3mm to 8mm	Used for stitching leathers of thickness 3mm to 10mm
7	Straight Stitching can be done easily.	Straight, curved, zigzag stitching can be done easily	Straight, curved, zigzag stitching can be done
8	Decolumn table is flat, fully visible.	Decolumn table is flat and spaced in "p" shape.	Decolumn table looks flat
9	Can be operated by human power or electricity	Powered by electricity alone	Powered by electricity only
10	Used for sewing 500 to 800 stitching per minute.	Used for 800 to 1200 Stitching per minute is used.	Used for sewing 1500 to 1800 Stitching per minute.
11	Feed dog flat is found.	Feed dog curved shape - situated.	Feed dog round shape - located.
12	Adjust from 1mm to 3mm using stitch length adjuster.	Adjustable from 1mm to 5mm.	Adjustable from 1mm to 5mm.

Clicking its types parts function of hydraulic clicking machine

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

- describe the types of clicking, parts and functions of a hydraulic machine.
-

Types of clicking & its purpose

- Silting and its types
- Advantages of Hand Clicking
- Advantages of Machine Slicing
- Hydraulic Clicking machine

Clicking and its types

Clicking is important in the production of leather goods. Marking for design size or pattern size and cutting leather is called clicking. Clicking is done in two ways

They are

- 1 Hand Clicking
- 2 Machine Clicking

Hand clicking

The method of cutting leather by hand is called hand clicking. Spread the skins on the board with the flesh side facing up. After spreading, put the pattern paper on the leather and make a mark. After marking, press the leather with the fingers of the left hand and cut with the right hand. The hammer should be pulled towards our body with pressure to cut across the material. Make a single cut. Otherwise, there is a chance of getting caught. The blade should be cut at a 45-degree angle. Use the scale curve to cut a straight line, then press the square button to cut the material into multiple layers at once.

Cutting the curved part

Free hand cutting should be done while cutting the curved part. The knife should be held at an angle of 60° and cut with the fingers. To cut the rounded part, the material should be turned and cut in several directions with the knife.

Machine clicking

The method of cutting leather by machine is called Machine clicking.

Pattern Cutting

Before we take the pattern, we need to decide the shape and affections of the object. Then they should be drawn on the paper Board. Cut the comers with the help of Sets Square. Curved parts should be drawn with the help of Composes. Then cutting should be done with the help of Scissor (or) Knife. Then they should be glued temporarily.

Cutting of leather

Leather must be inspected before clicking. Quality and smoothness of Leather should be uniform Splitting

(or) Skiving should be done if Leather is smooth. After inspection, the skins should be placed on the pattern paper leather on the cutting board so that the flesh side is on top and marking should be done. When clicking is great, cut with the help of knife. Steel scale to cut in a straight line by applying pressure to the leather with the fingers of the left hand should be used. Free hand cutting should be done to cut the curved part. Knife should be cut at a 60° angle with finger pressure. To cut a rounded part, the hammer must rotate the material in several directions and cut it.

Cutting of Lining Material

When cutting the Lining Material, the pattern should be cut. If we are going to sew the Lining, we should cut a bit more than the pattern.

Cutting of Reinforcement

When cutting the insert, cut it slightly less than the pattern size. Care should be taken not to touch the material while stitching.

Advantages of hand clicking

- Hand slitting does not require a machine so no capital investment is required.
- Ideal for small entrepreneurs.
- No electricity is required
- Hand clicking is primarily used for pattern design.

Advantages of machine clicking

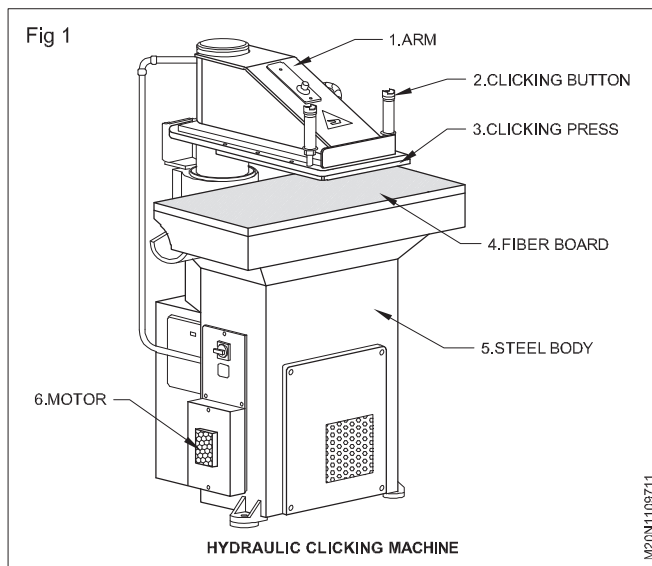
- Machine clicking method can produce large quantity in short time.
- Clicking parts are perfectly sized without messing up.
- Machine slitting is used to reduce wastage.
- Optimized for high productivity in short time.
- Prick mark is marked on sewing piece while cutting.

Hydraulic clicking machine (Fig 1)

It is used for clicking components from upper leathers.

Structure

At the top of the machine is a solid steel frame. This is called clicking press. Steel board is found at the bottom of the machine. Fiber board is seen on it. A 3-phase motor is installed to run this machine.



Parts of the machine

- 1 Arm
- 2 Clicking Button
- 3 Clicking Press
- 4 Fibre Board
- 5 Steel Body
- 6 Motor

Arm

The arm is located on the top of machine.

Clicking Button

Two buttons are found at the top of the arm area. These buttons enable Clicking press. Both these buttons should be used at the same time.

Clicking Press

Clicking Press applies pressure to the steel dye placed on the leather. This press helps in clicking the leather.

Steel Body

The entire machine is made of steel.

ON/OFF Switch

Used to drive the machine.

Function

The components for the machine should be made as steel dyes first. Then spread the leather on the fiber board. After spreading the steel dye should be placed on the leather. Then Clicking press should be applied on it. In this way, the assistant of this machine can quickly click the components.

Uses of Hydraulic Clicking Machine

- Components are cut quickly by this machine.
- Used more in mass production companies.
- Machine-components a cutting so that the dimensions are correct.
- Wastage can be reduced.

Leather

Leather Goods Maker - Leather Ornamental Materials and Prepare various Leather Goods

Related Theory for Exercise 1.10.98

Defects in leather & their rectification

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

- describe skin defects and their correction.

For skin defects and their correction Refer Ex.No.1.10.93

Leather

Leather Goods Maker - Leather Ornamental Materials and Prepare various Leather Goods

Various ornamental materials and their uses

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

- acquire is to know about various jewellery materials and their uses.

Knowledge of various jewellery items

Various types of decorative materials are used in the manufacture of leather goods. Leather is the primary material used for jewelry making, and it comes in various types, including suede, pu leather, full grain leather, split leather and embossed leather, all of which are made from animal skins.

Similarly, leather materials are also widely used in leather materials. Jewellery combining these two materials (leather and patchwork) is considered complete. Thus, the ornaments made using leather and connecting materials are more and more popular in foreign countries. So, it is very popular in foreign countries and can earn good profit in sales. (Figs 1 -5)

Fig 1

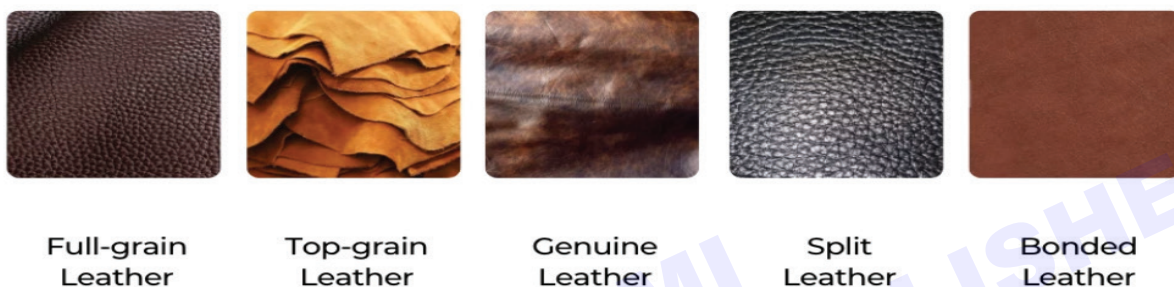


Fig 2



It manufactures jewellery separately for men, women and general items. They are

I Men's Jewellery

II Women's ornaments

III Common items.

I **Men's accessories :**

Bracelet, Arm Jewellery, Leather Valet Wrist Band, Watch Strap, Leather Belt.

II **Women's Jewellery (Figs 6 - 9):** Various Leather Loop Air Rings, Leather Lace Air Rings, Leather Belts, Leather Chart Jewellery, Rings. Leather wristbands, bracelets, watch straps.

III General materials (Fig 10)

Chains, leather bags, leather wallets Christmas items. Butch Corners.

Decorative materials used in leather goods (Figs 11 -21)

As far as leather products are concerned, various things are used to decorate the products. Products are not complete without using these.

By using it, its appearance is beautiful and eye-catching. This also increases the quality of the product. This leads to increased sales and increased profits. Below are the names of some of the materials used and their settings.

Fig 3

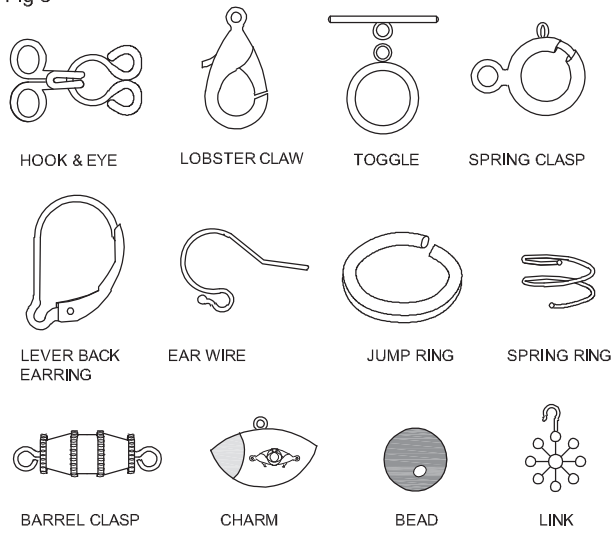


Fig 6



Fig 4



Fig 5



Fig 7



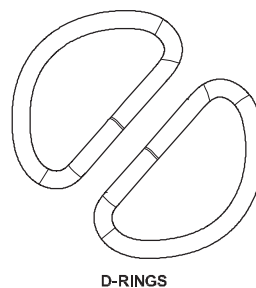
Fig 9



Fig 10

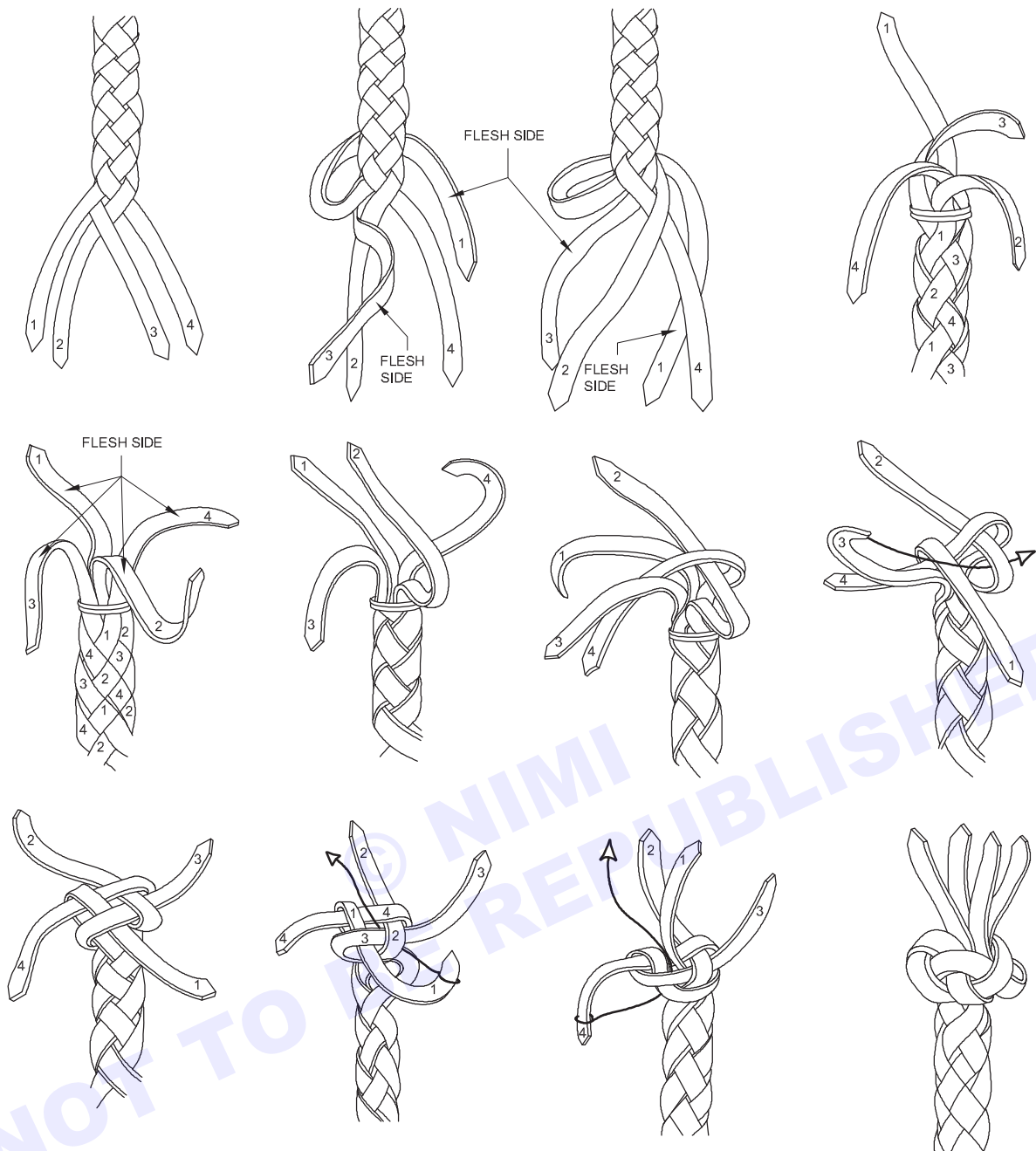


Fig 12



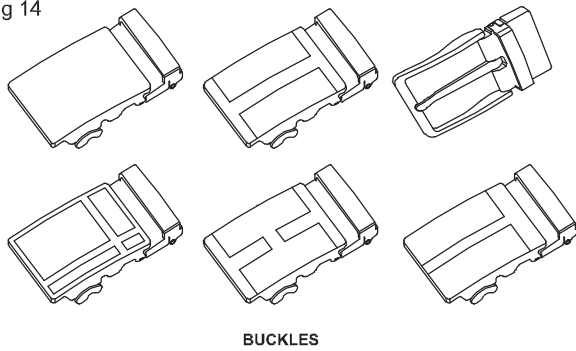
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Fig 8



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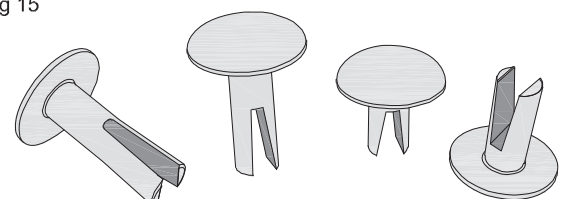
Fig 14



BUCKLES

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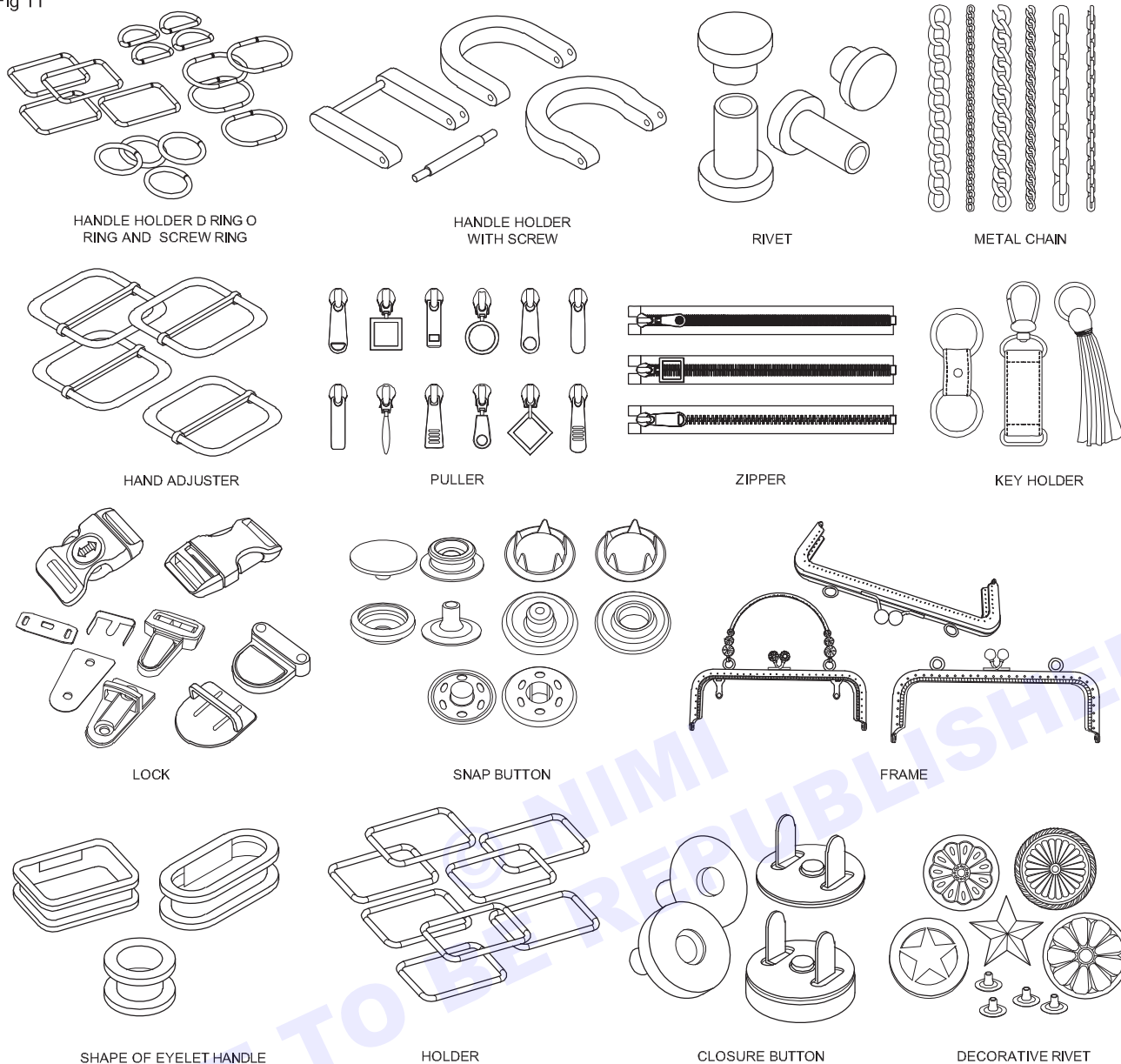
Fig 15



SPLIT RIVET

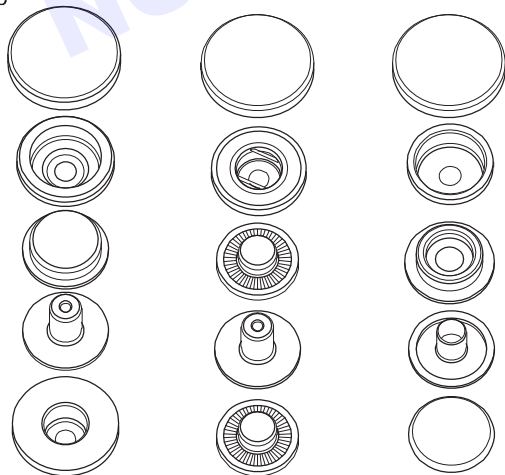
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Fig 11



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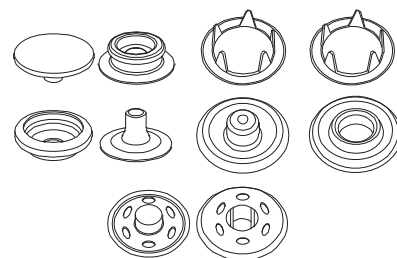
Fig 13



PRESS BUTTON

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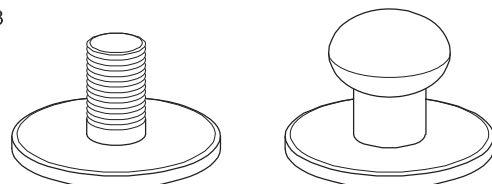
Fig 16



STUD BUTTON

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Fig 18



FANCY BUTTON

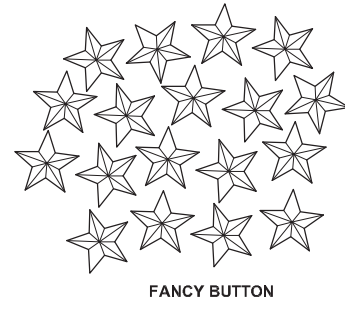
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Fig 17



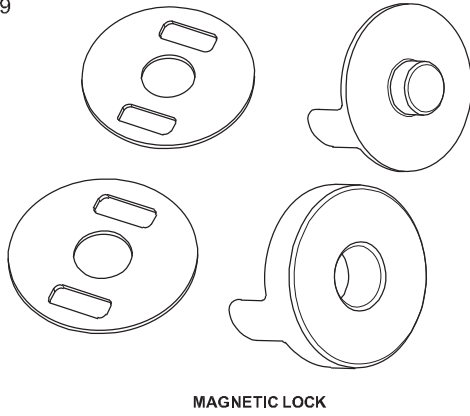
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Fig 20



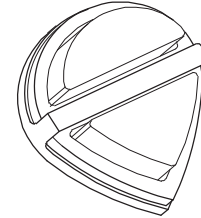
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Fig 19



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Fig 21



LM20NF101011L

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Identification of plating and evaluation of their quality appropriate uses in the manufacture of leather goods

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

- **identify plating's and evaluate their quality and appropriate applications in the manufacture of leather products.**
-

Identifying plating and knowing its quality : Various bonding devices and surgical materials are used in the manufacture of leather goods. Each of them is made of different metal. Currently, both plastic and piper Asia (Likely a type of material or substance) are being prepared or processed together. All metal connectors are definitely available with some kind of silver plating. For example, it is plated in metals like solder and silver. Thus, plated connectors are visually attractive. It is also eye-catching. A few of these items are also finished in antiques.

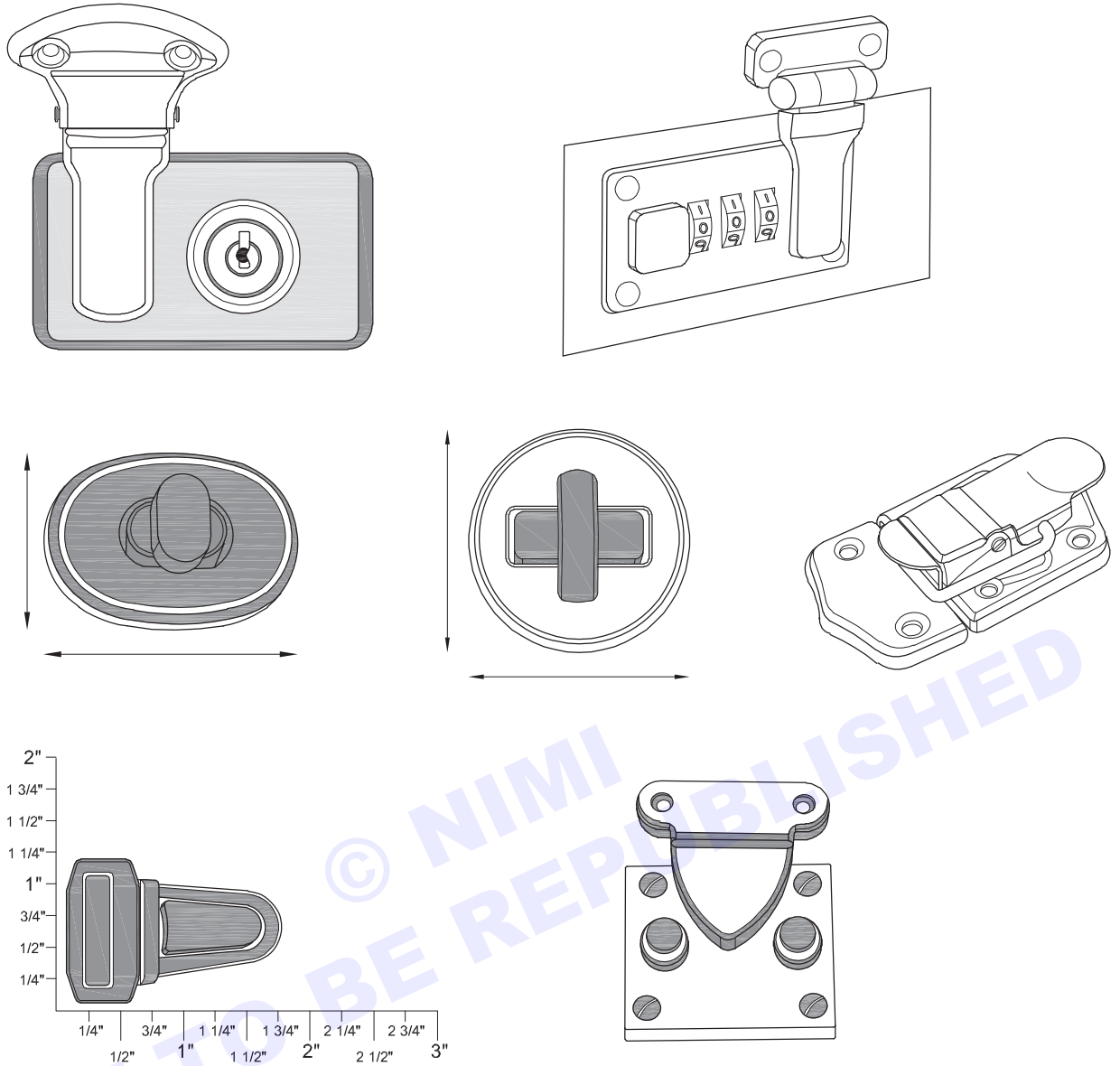
The coating on these products should be of good quality. If not, the coating may discolour over a short period of time or the coating may peel off. As a result, the quality of the product combined will decrease. The presence of mule coated on attachment and grindery material due to desire can be determined by its appearance. And the mule applied on their surface should be uniform.

If it isn't uneven, or if it's spotty, or slippery, and if it's speckled instead of shiny, you know it's not plated properly. Using such materials will affect the quality of the product being manufactured. So, instead of using defective products, use good quality products.

Locks : Varying amounts of locks are used in the manufacture of leather goods. These locks protect the contents inside the leather material from falling out. These locks are also available in various configurations. There are different varieties in different sizes, colours and raw materials. It is also available at an affordable price. Below are some of the systems of locks that break like this.

All the following locks are used as locks for different types of products. For example, Suitcase, Brief Case, Office Bag, Executive Bag, Lunch Bag. Votes are used for bag types like school bag, sling bag, pansy bag, shopping bag. (Fig 1)

Fig 1



LM20N11010211

Describing of various fittings frames

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

- know about different fitting devices like frames
 - know about size structure and style of frames, know about metals
 - know about the materials made using frames.
-

Knowledge of various fitting devices such as frames

A variety of lashing devices are used in the manufacture of leather goods. Our current focus on mounting devices is frames.

Frames

Frames are usually made of metal and plastic. Frames are mostly used for making items like handbags, purses and bags for women. It breaks down in inches. It comes in sizes ranging from about 5 inches to 12 inches. It is mostly available in gold and silver colours.

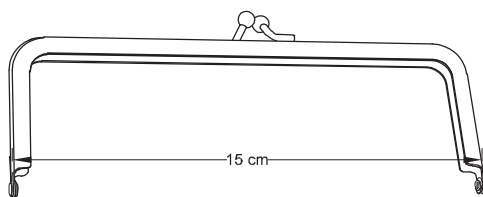
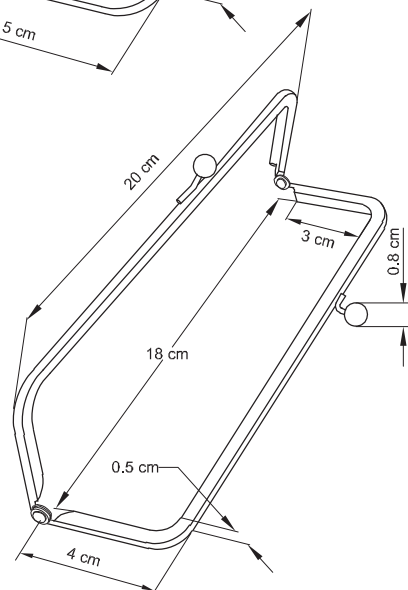
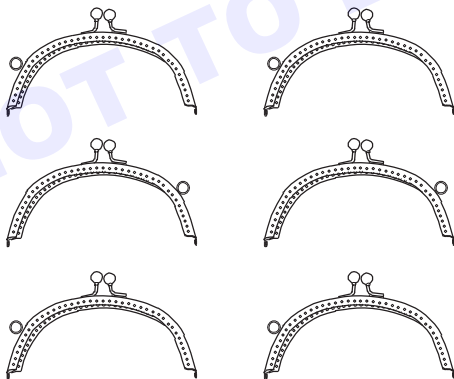
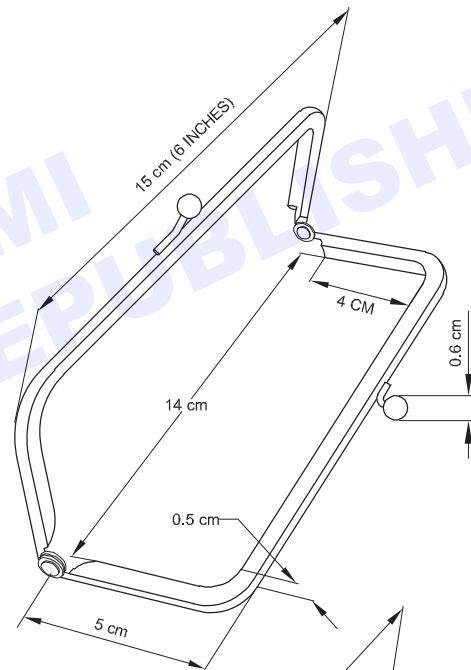
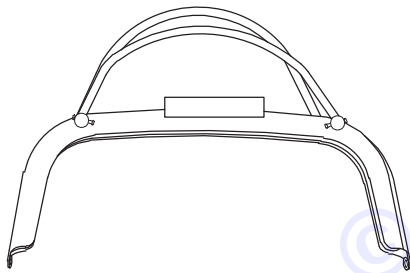
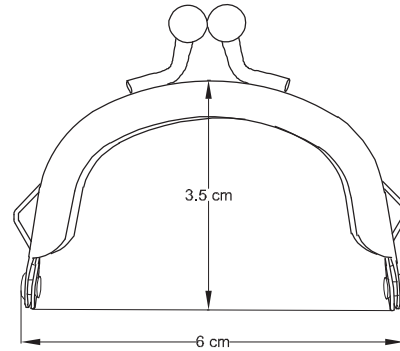
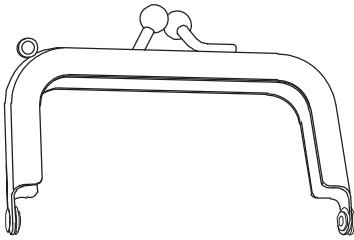
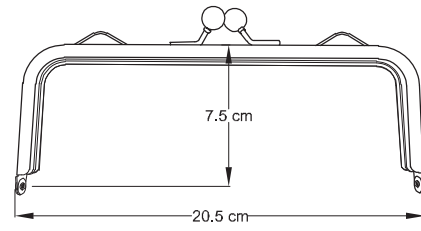
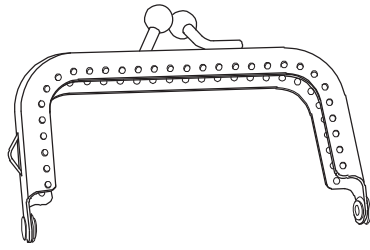
This structure is rectangular, square and arched and has two iron shells attached to its upper part, these two iron shells act as a lock. Each of these is mounted in the opposite direction. It is set to latch the lid on a single press and unlock on a second press. It's beautiful to look at and has good security. It will also be impossible

to open very easily. Anything that opens too easily will open automatically and the contents will fall out. So, we will suffer material loss. Thus, set by desire.

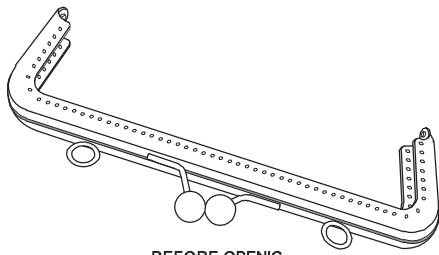
This system also features a handle made of a metal chain. The frame is designed to match the color of the metal and is available in various models, some of which come with a solder handle attachment. Additionally, materials like solder paste are produced during the manufacturing process.

These frames come in a range of sizes and are available in various models, materials and metals. Additionally they are also made in plastic. These are manufactured and marketed according to the needs and preferences of the consumers and are manufactured in rectangular, square and arched shapes and in various styles.

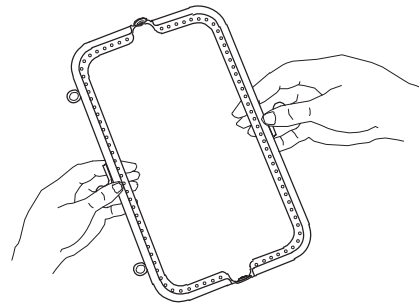
Below you will find sample settings and style tips for different sizes of the frames.



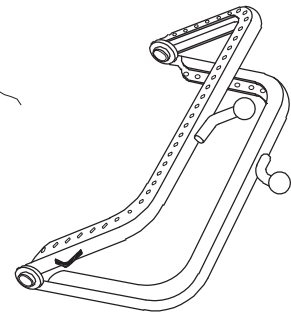
FRAMES



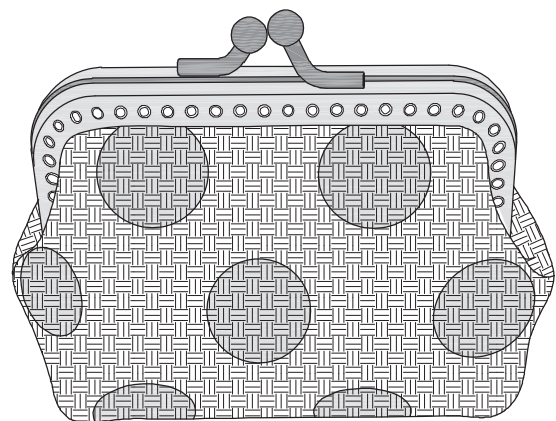
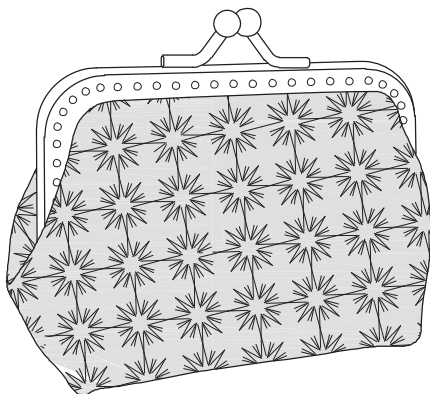
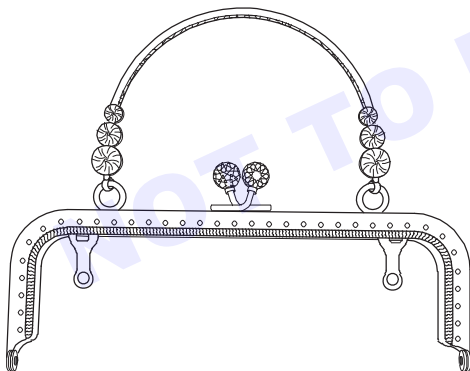
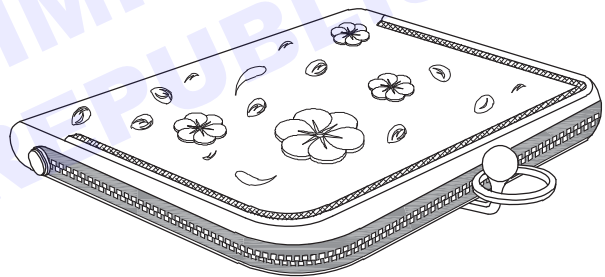
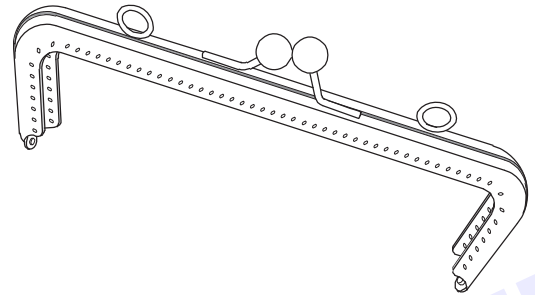
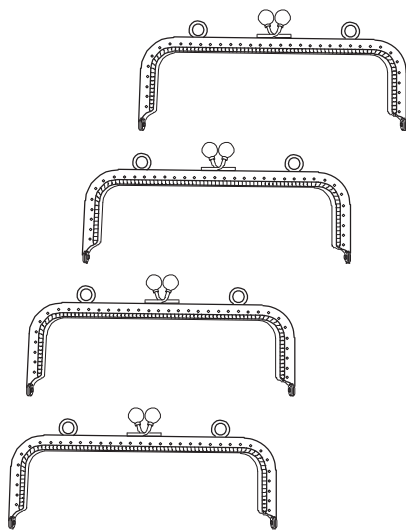
BEFORE OPENING



HOW TO OPEN



AFTER OPENING



FRAMES

LM20N110104T2

Describing of various fittings (Straps fittings)

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

- know about different fitting devices such as strap fitting
- knowing about sizes, shapes, styles in metals
- connecting the handle, coupling on belt buckle, learn about coupling on roller buckle
- know the applications of different types of hinges
- learn about different sizes of zipper, zipper button, eyelets, zip and velcro.

To learn about different fitting devices such as strap fitting

A number of flexible fitting devices are used in the manufacture of leather goods. It has a unique attachment material that can be attached to the straps. Attachments are used to attach items such as bag handles, belt straps, etc.

They are 1. 'D' Rings, 2 Adjustable Ring 3. Touch Hook, 4 Solder Strap, 5. Roller Buckle, 6. Zipper Button. 7. Press button, 8. Eyelet button, 9. Round ring, 10. Push clips etc.

Leather strap fittings come in many sizes, shapes, styles, and metals. Each of these is selected and used according to the quantities of the material. For example, if a strap fitting is attached to a small lady's purse, i.e., a tack hook is attached to its solder handle, then a 3/4" tack hook should be selected. Similarly, according to the size of each item.

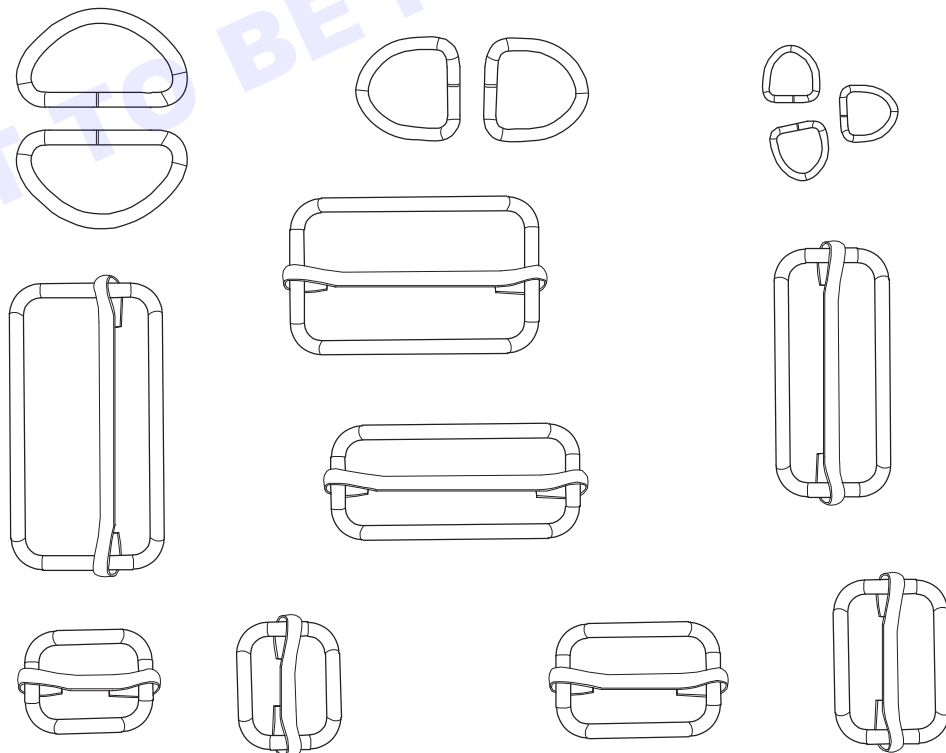
Attachments must be selected and used.

Next, its systems are manufactured in different forms with respect to the shapes of the connecting materials. We also have to select and use patterns suitable for the model, size and designs of the product we are making.

In terms of leather goods production, all the accessories are adapted to the changing times and are produced in new models to reflect the mood of the people. Style is a matter of personal preference.

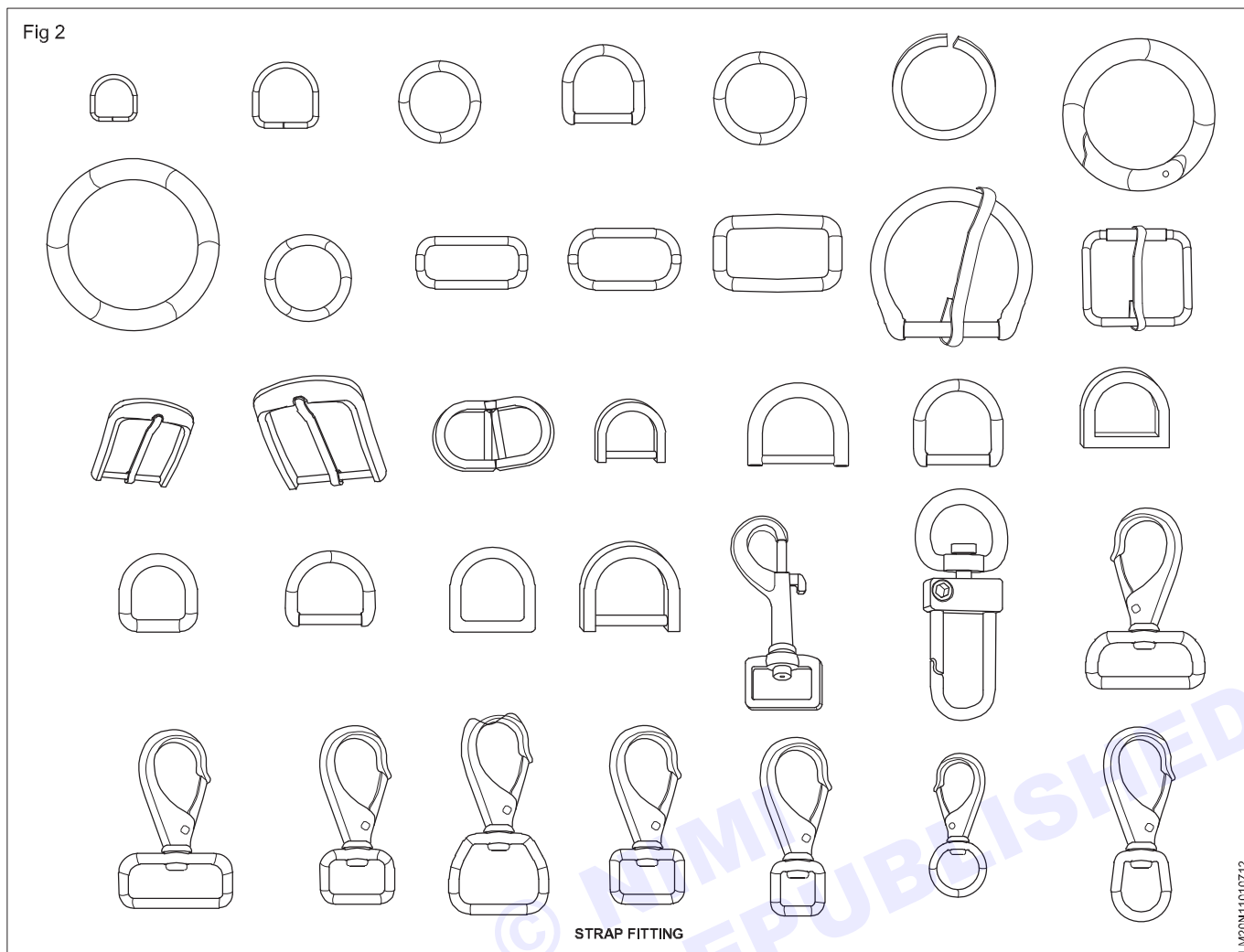
The raw materials used to make the connecting materials are sourced next for strap fitting iron is the primary material and its available in various finishes: silver, brass, gold & antique colours. Apart from this, strap fittings are also manufactured in plastic, rubber, and fibre materials. Each product is available at different prices according to its quality. We can use what we need by desire. (Fig 1 & 2)

Fig 1



STRAP FITTING

Fig 2



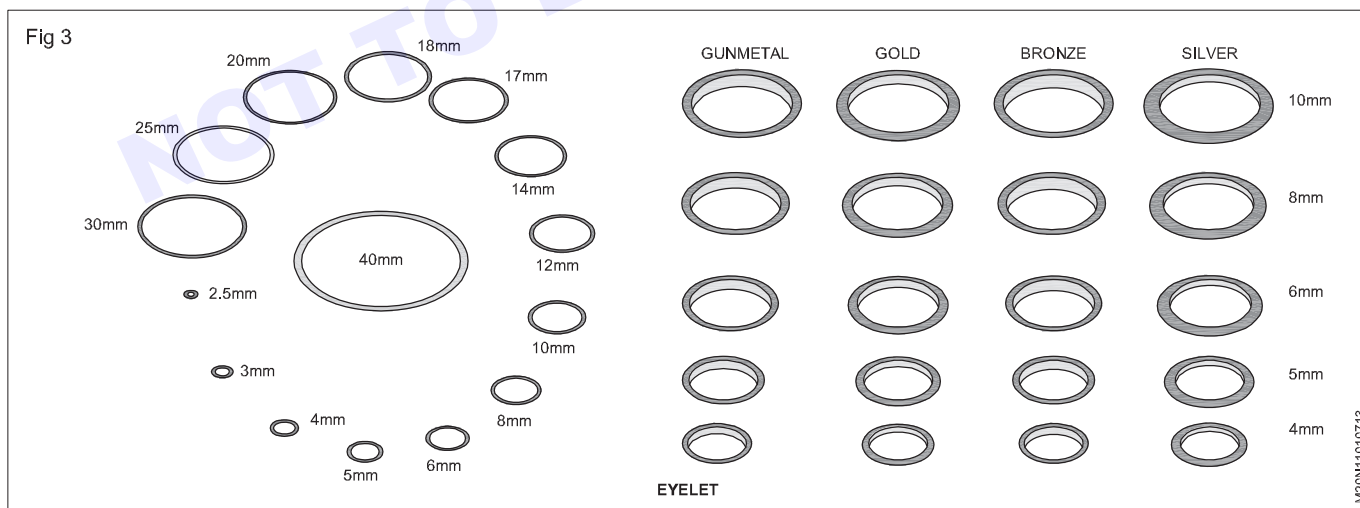
STRAP FITTING

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Eyelet buttons are manufactured in sizes ranging from 2mm to 50mm. It is produced in several alloys. It is used selectively according to the aperture in the material.

It helps the pores in the material to retain moisture without enlarging. Looks beautiful. This will also be an opportunity to improve the quality of the product. (Fig 3)

Fig 3



EYELET

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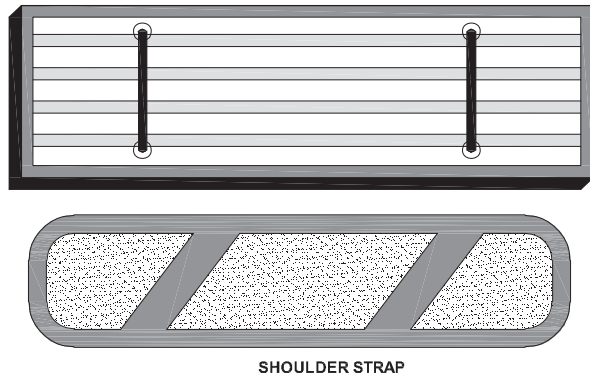
Shoulder Strap (Fig 4)

Shoulder strap is made of rubber material. It is manufactured in sizes as small as 1,1½, 2 inches etc. It is mounted on the solder handle of the material. This helps keep the weight of the object from pressing down on our shoulders while carrying the speech.

D – Ring (Fig 5)

'D' Ring is called 'D' Ring because it looks like English capital letter 'D' and is manufactured in sizes ranging from inch to 3 inches. This is depending on the size of the handle used, it is made of several metals. It is used to connect the object's side.

Fig 4



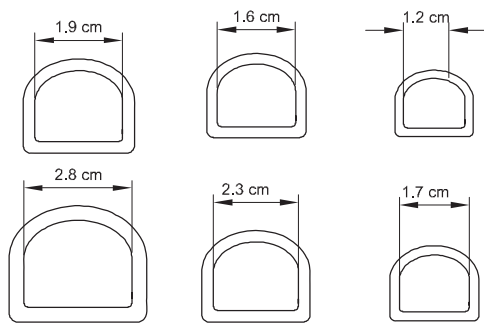
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Buckles (Fig 6)**Hand Joining (Fig 7)****Attaching to the belt buckle (Fig 8)****Roller Buck (Fig 9)**

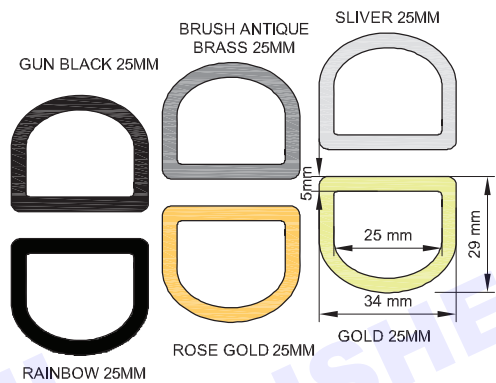
Attaching hinges to the inner part of the jewellery box

A hinge is a material used to hold two parts together in items such as jewellery box suit case, brief case. It is used for easy opening and closing of suitcases, brief cases, jewellery boxes etc. It is produced in many sizes, colours and textures. It is produced in separate system for external use and in double system for internal use. Its structure can be seen in (Fig 10 & 11)

Fig 5

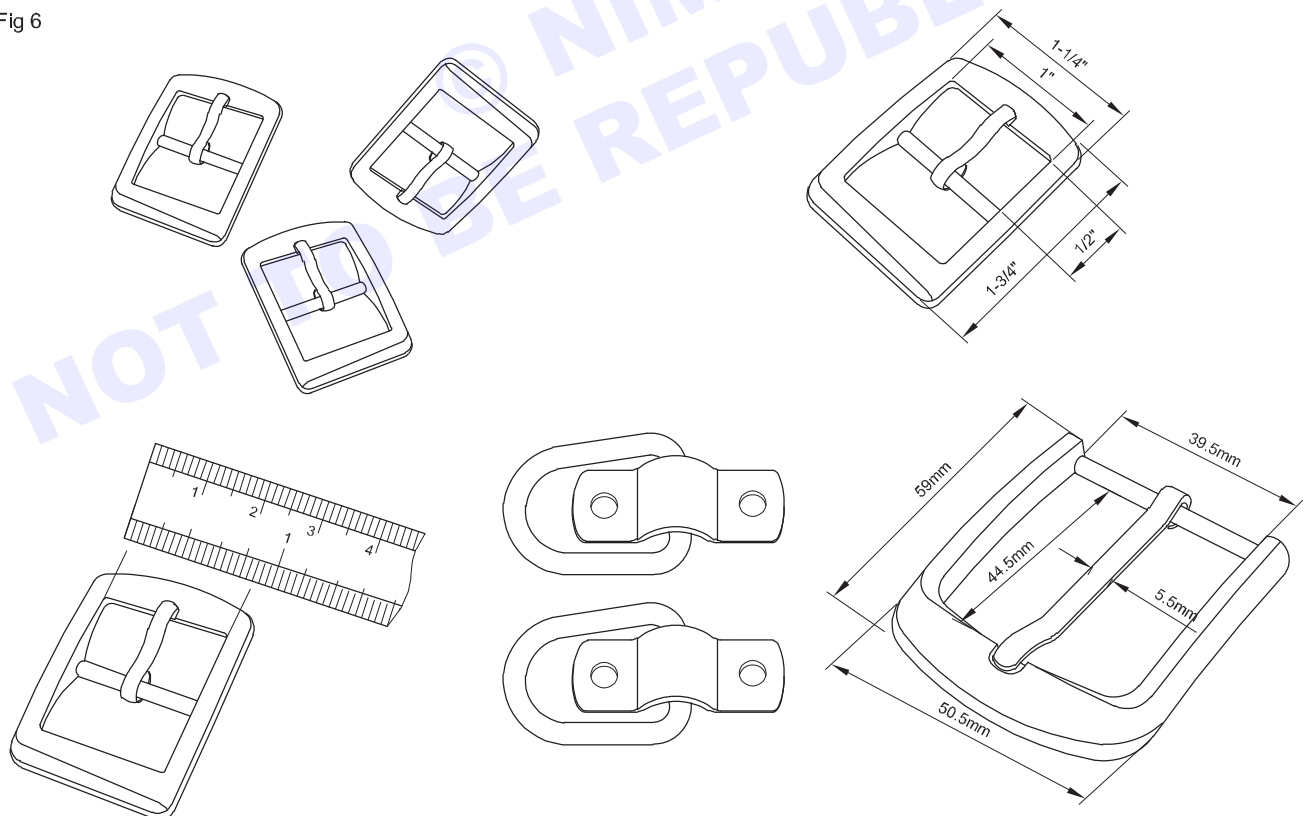


D - RINGS



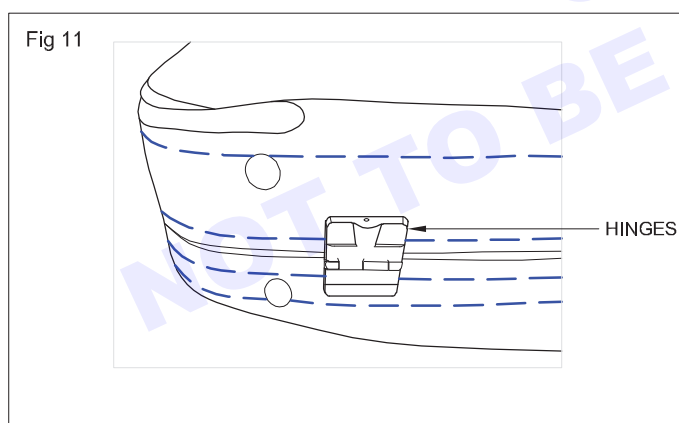
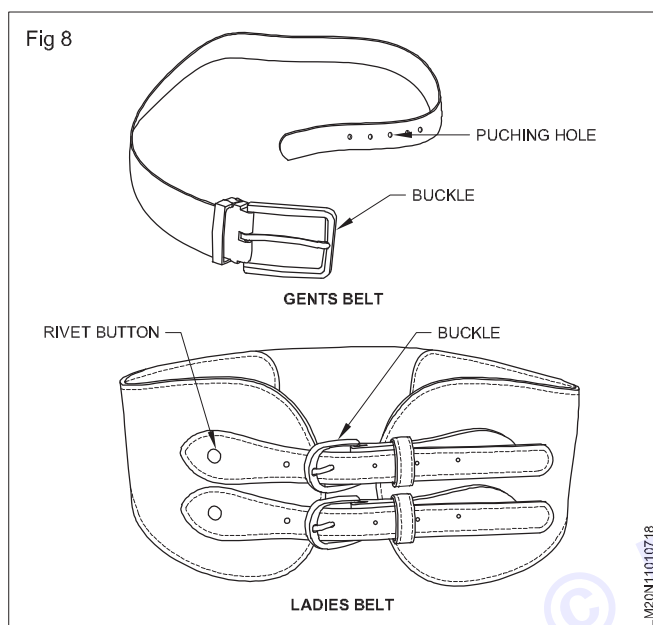
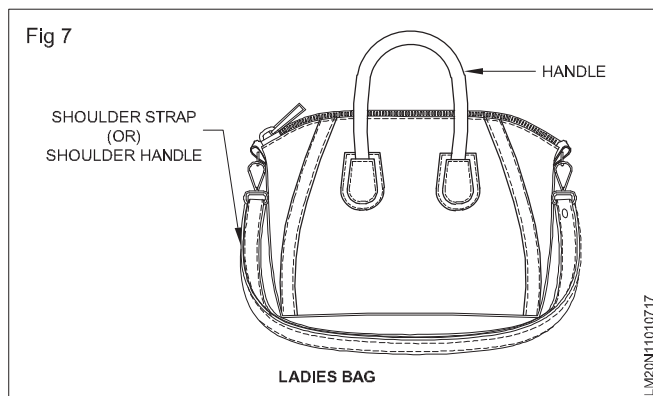
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Fig 6



BUCKLES

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Briefcase (Hingwes) (Fig 11)

Rivets (Fig 12)

The zipper is a split zipper with a nail-like design. Its opposite half has a snail - like structure. The insert of the material to be joined should be evenly spread and hit with a hammer.

Now the zipper is well coated and holds the material snugly. It is produced in several sizes.

For example, 100% to 200% is produced. It is also produced in several alloys.

Rivet button (Fig 13)

A zipper button is used to permanently join two parts together. With this the joined parts cannot be separated easily. It is made in two parts. One is male and other is female part. It is also manufactured in sizes from 3mm to 20mm.

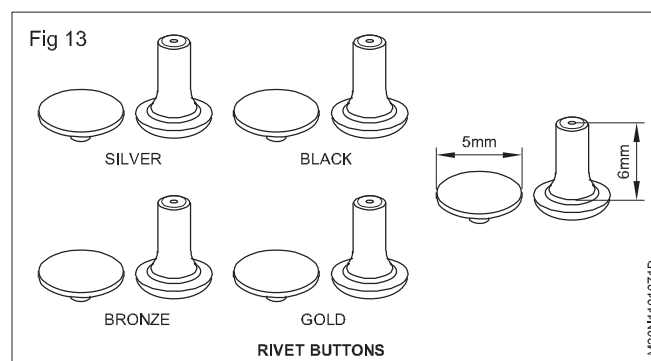
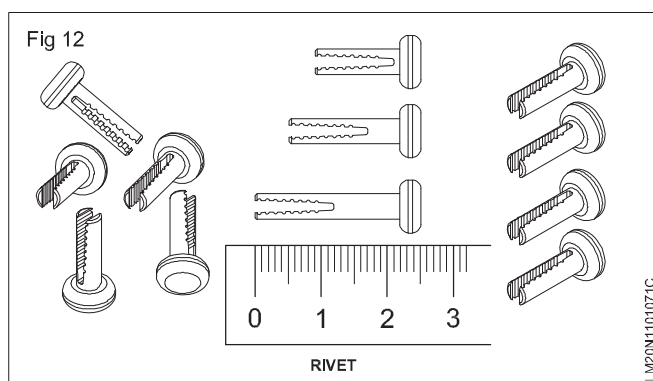
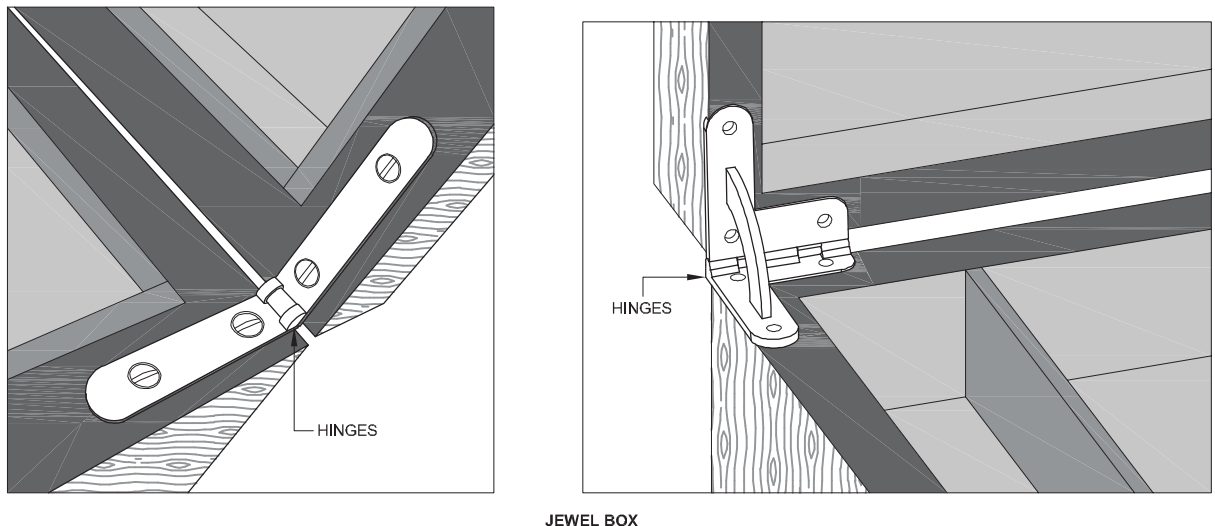
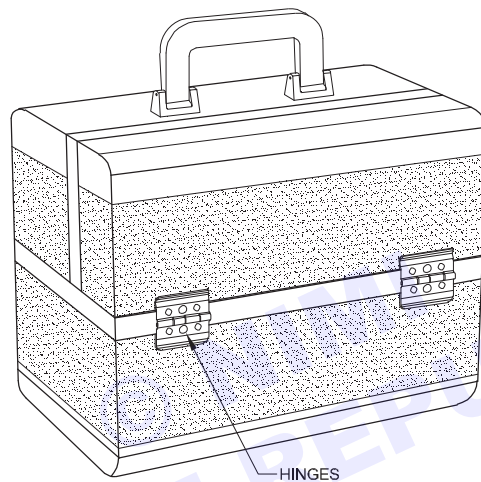


Fig 10



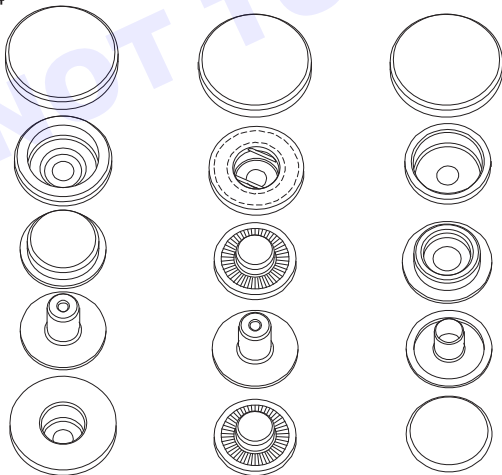
JEWEL BOX



LM20N1101071A

Press Button (Fig 14)

Fig 14



PRESS BUTTON

LM20N1101071E

A press button consists of four parts. It is called the done button. This button is used to fasten the lids for easy opening and closing of items. It is produced in 2/2, 2/3, 3/3, sizes.

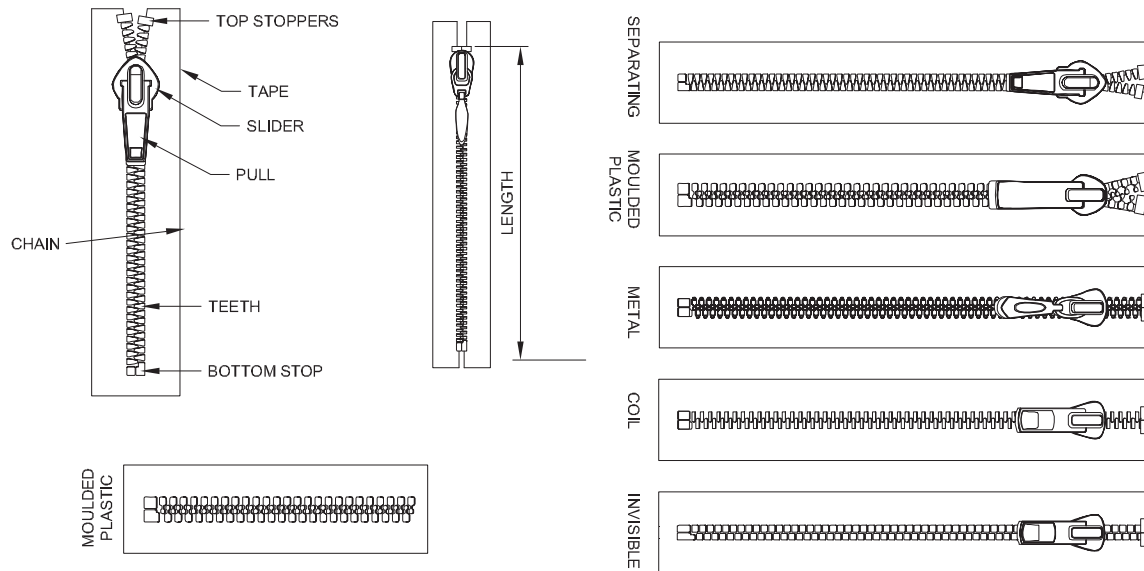
Zip and Runner (Fig 15) : A zip is made of plastic metal aluminum brass like teeth on the edge of two fabric tapes. It has a runner attached to it and used for easy opening and closing of the lid. It is from 3mm manufactured up to 20mm size. In this, the size of the teeth is taken as the size. It is made and broken in many colours. Depending on the size of the zip, the runner is made accordingly. This runner is manufactured in several models.

You should use this zip and runner together. Both cannot be used separately. (Fig 16)

Velcro (Fig 17): Velcro is a material made of nylon material. It is made in two parts. They are 1) loop part 2) hooch part. The loop is part fibre-part pin-like structure. These two pieces can be combined into two-piece pieces for easy closing and opening. This prevents items placed in the basket from getting lost easily.

These are produced in original sizes up to 3 inches. It comes in many colours. It is available in lengths such as 10m roll and 25m roll. It is used on the exterior and interior of the watch strap basin. Used in original as required. Velcro is now widels used in many different applications.

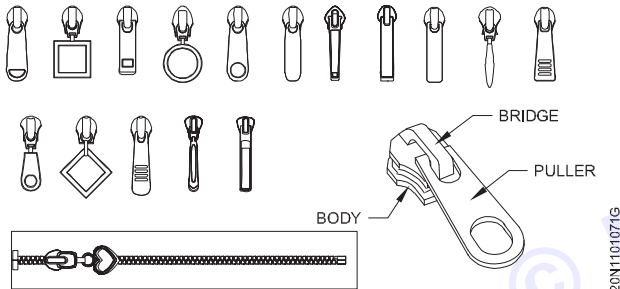
Fig 15



ZIP AND RUNNER

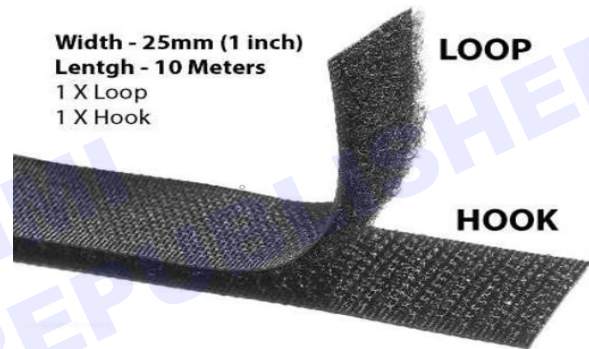
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Fig 16



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Fig 17



Hand tools and their safety

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

- **know about the use of hand tools and their safety.**
-

Use of hand tools

The use of machinery in the manufacture of leather goods is very important. Choose the right tool for each activity. The patterns of the psyche have a unique structure. When truth is removed, it fragments into multiple forms. When working with materials, it's essential to choose the right one for the job. For example, when cutting leather, a ramp should be used, especially for leather that can withstand high heat. Additionally, ramps can also be used for sky driving.

Like this there are many types like Hammer, Bal peen Hammer, chiropractic Hammer, sledge Hammer. A hammer should be selected and used for any operation. When all the tools are used properly in the production of goods, their quality will be good.

Safety rules for hand tools

- 1 Utensils should be thoroughly cleaned and de-oiled immediately after work and placed in appropriate envelopes.
- 2 While using Satyal etc., the paste should be shaken with a good noise on the affected area.

- 3 Use only suitable tools for the job.
- 4 When using screwdrivers for work, they should be wiped and then used
- 5 Sharp instruments should be handled carefully while painting.
- 6 Proper tools should only be used for the proper job.
- 7 Gralam gave helps sharpen the foot, when using a sharpening tool like saki.
- 8 Fragile screws should be washed carefully.
- 9 The functionality of each sensor should be assessed and then used.
- 10 Don't use broken gloves.
- 11 Any tools used should be handled with care so as not to cause any damage to yourself, others or the tools.
- 12 Sharp instruments should not be stored together with other instruments.
- 13 Designing tools should be kept separate.

Leather selection for portfolio bag and its characteristics

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

- know about the properties of leather suitable for patch stitching
- explain the leather suitable for portfolio bag.

Leather for packing a portfolio bag

Goat skin

Goat skin passion has smooth, distinct, and evenly spaced pores that are pleasing to the skin, as well as skin elasticity and surface uniformity.

Each Solder Patch Portfolio Patch etc are made using goat skin.

Cow Leather

The surface area of cow leather averages over 3 square feet. Its thickness ranges from 1mm to 2.5mm in which the sap holes are smooth and rough. The surface is smooth. It has high strength and long working life is divided according to the imperfections on the surface of the skin.

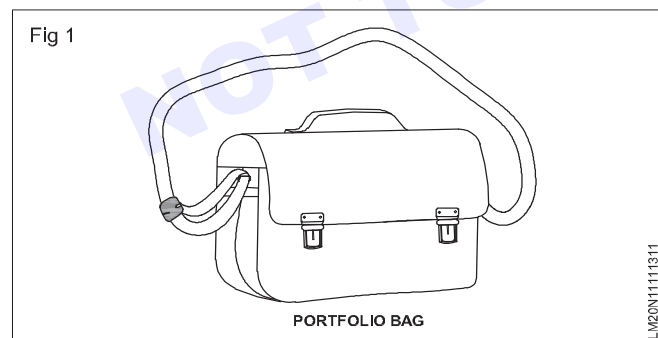
Soft leather is used to make a range of products including milled leather, travel bags and other accessories.

Pub leather

The surface area of pub leather averages over 3 square feet and this leather is 1.5mm 5-mm In this, the actualising is finely ground and leaves to a gap. And the surface is a bit rough.

You can make portfolio bags, suitcases, briefcases, etc. with pub leather.

Portfolio bag (Fig 1)



After finishing the tanning, various finishing touches are made to correct the defects of the skin. The finished leather is used to make many leather goods.

Finished leather (Fig 2)



1 Aniline finish : Aniline finished leather is the first leather. Generally, its expensive exterior has no flaws.

Make-up is done by spraying the dye solution. Purse portfolio Bag, ladies Bag is made using Aniline leather.

2 Soft upper leather

It is made from slightly less sticky leather. It has a smooth resin finish and can be used to make fancy goods, fancy purses are manufactured like the portfolio bag pellet.

3 Burnish leather

Its surface is snubbed and finished. It is made of first quality leather. Its weight is slightly higher. This leather is available in a wide range of colors and be used to create various types of lashes. It is easily accessible and can be worked with to create desired products.

4 Grain Leather

This lash finish is made from tanned leather. The top is made by embossing. Resin pigment is sprayed, this makes the surface defects disappear. Airbag, belt portfolio bag is made with this leather eye.

5 Oil pull up leather

This premium leather is made using natural method and is used to create high - quality patches, including executive, port folio, and solder patch.

Designing of portfolio bag, pattern cutting, components cutting, skiving, splitting and quality checking

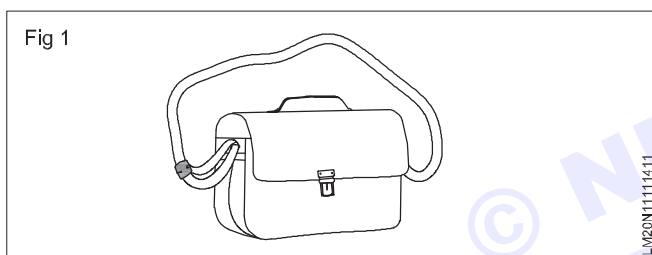
Objectives : At the end of this lesson you shall be able to

- know about designing a portfolio bag
- know about pattern cutting for a portfolio bag
- know about cutting parts for a portfolio bag
- know about splitting skive the portfolio basin parts and check quality.

1 Designing portfolio bag

First of all, you should visualize the portfolio bag model on a chart paper or look at another model and if the drawn layout is correct then select the appropriate size. The selected size is base top: 16 19-inch (1 number), front top or front pocket 16×10 inch Chest 34x6et (1) Centre pocket or drawer 16×10 (1). These dimensions should be cut out on the chart paper as batons.

Drawing up the portfolio basin structure (Fig 1)



2 Learning about pattern cutting for portfolio bag

When making a pattern for cutting, you need to create separate patterns for shutting, lining, reinforcement and others. Each pattern requires accurate net sizes. These pattern are used to create a working pattern, cutting pattern and allowance pattern.

In this, nett pattern or net size is the size we can see in the material. The amount of shuttering is the amount of pelting that is invisible to our eyes in the material. And in addition to the defects in shaving, the amount of pattern taken is the hitting pattern. Similarly, the lining pattern is the pattern that adds the lining to the required size or slightly larger than the top pieces + inforcement is a material used to strengthen parts of leather goods. For this also select the required size and take the pattern.

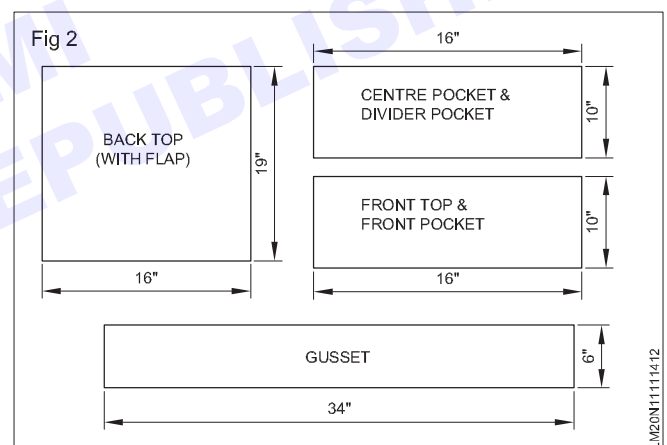
After that all the pattern cut out should be prepared as a template. Template means we cannot use the batons we have cut out on the chart paper as they are. Thus, template matching is the process of increasing the accuracy.

If we want to make a template, we can use the pattern that we have taken only for the champ. This is the total order i.e. 5,000 pieces or 10,000 pieces, it is impossible to make so many pieces with chart pattern. Corresponding pattern in diazo or metal.

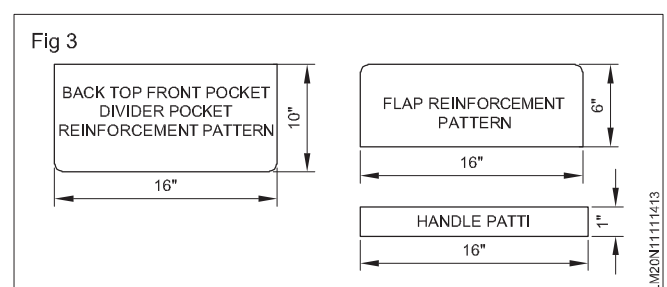
Template matching is an essential task in leather goods manufacturing as it can be used until the order is placed on board.

Similarly, if there is material such as Valetta while cutting the pattern, the dimensions like folding allowance should be added to the shuttering plate. If it is the same, stitching allowances should be added to the net pattern and cut. Thus, when things vary, we have to take this into account and only then can we produce things in the expected or fixed quantity. Follow the steps below to cut pattern.

Cutting of net or working batten (Fig 2)



Cutting of reinforcement pattern (Fig 3)



Cutting the lining pattern (Fig 4)

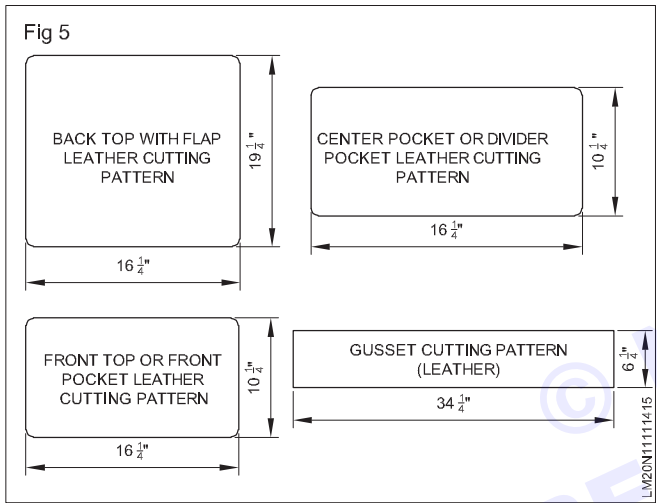
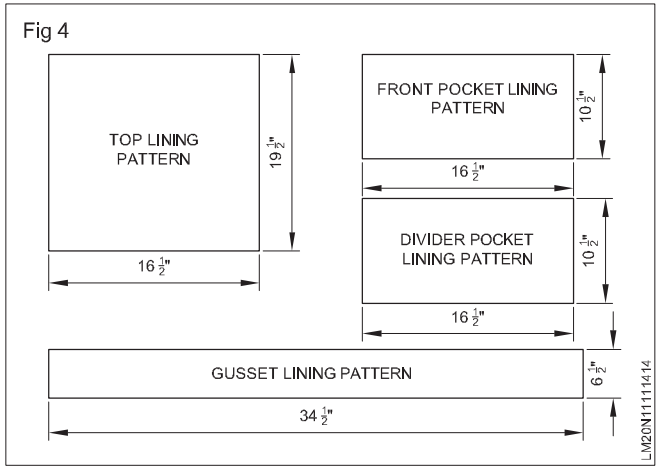
Cutting of cutting pattern or allowance pattern (Fig 5)

3 Cutting and splitting parts for portfolio bag

First take the cut leather patterns, then we have to take the skin on which the material is prepared. Those patterns should be cut with the help of sati by selecting

a quality part of the skin. When cutting, it should be cut without sticking. If there is a cut in the machine, it should be cut with a dye. Do not cut off immediately when the skin affections are cut.

yourself. Thus, machine splitting makes it possible to easily produce fine pieces with uniform size and accuracy.



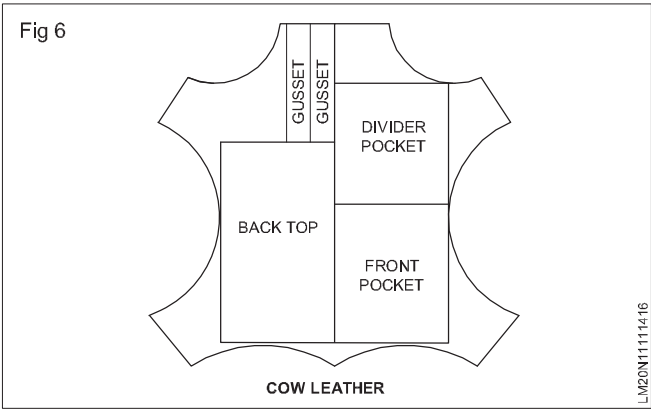
Before cutting the skin, the skin should be cut and cut according to whether the skin is of good quality, colour, size, elasticity, elasticity etc. And the basin is good for all affections

It is not possible to cut only in quality parts. In such a situation, main parts can be cut in good bearing areas and inner parts, lining parts etc. can be cut in areas of equal quality. At the same time, the defective areas should not be cut out. Otherwise, the quality of the product will decrease and hence the price will also decrease. This product is not allowed to be exported to other countries. Also, the shuttering work is also done as an important job as they want to use them for local sale.

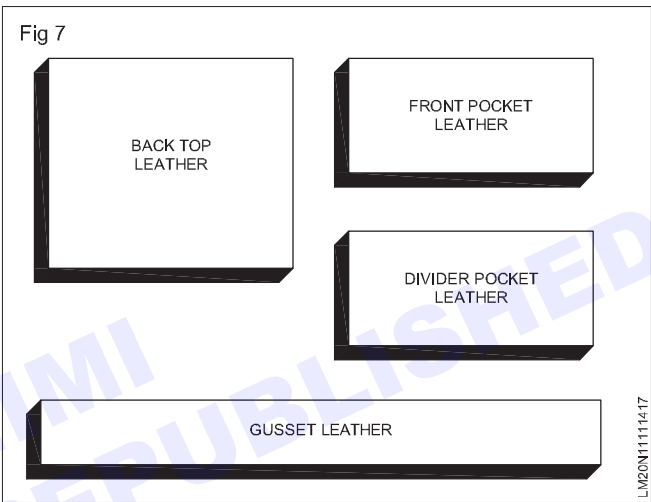
Cutting parts for portfolio bag

Splitting (Fig 6)

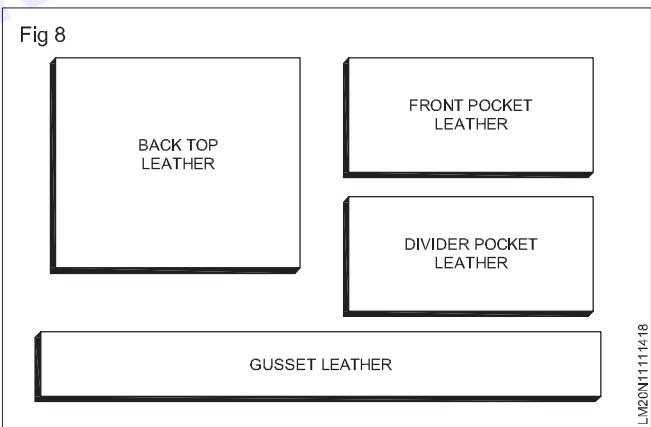
After excision of skin folds, splitting should be done only if there is a need for splitting. When we select the skin, we choose the skin carefully considering all the features. If there is no other option, then if we choose a skin of great size as per our needs, we must do the splitting. When working with psyllium, it's best to follow the natural splits or divisions in the material, rather than trying to split it



Volume of skin before splitting (Fig 7)



Volume of skin after splitting (Fig 8)

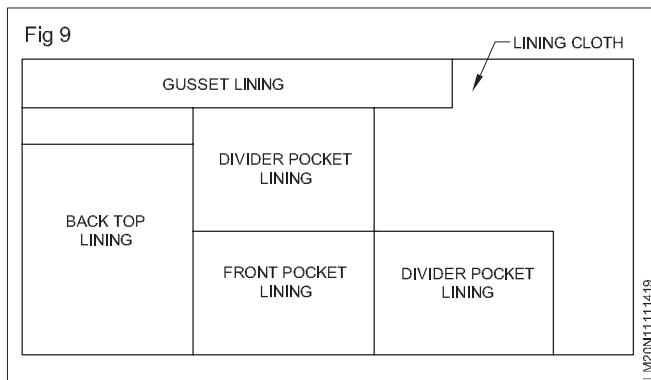


Take the cut lining pattern and place them one by one in the lining slat and cut them with the help of sati and cutting mat. The sati should be cut without tearing.

Cutting the lining (Fig 9)

4 Arithmetic about skiving and quality checking portfolio bag parts

Split skin can be repaired by gluing it together. The process is called sial and involves applying adhesive. This method is not suitable for large scale production. It is best to do this by machine because of desire. By doing this, slicing is uniform and skiving is possible to shive large pieces in less time.

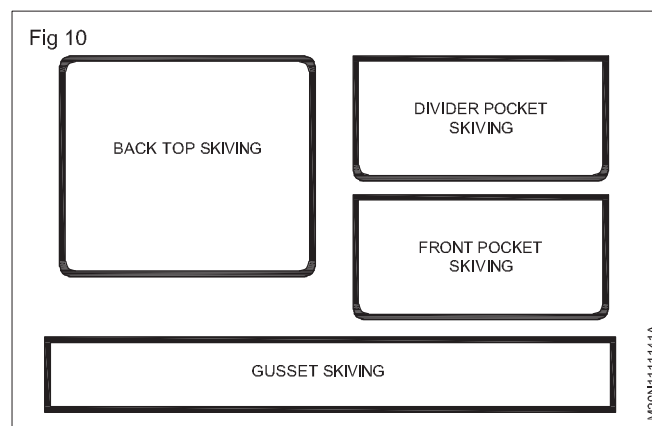


Skiving (Fig 10)

Learn about quality control

To check the quality of the above work for the portfolio base, first take the top skins and see if the colour is

uniform on the top. Are its skins set up properly? Is there any other defect? Check whether the skin tone is even. Then the splitting and slicing should be checked for correctness and defects.



Adhesive & its types, fitting materials

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

- **describe adhesives and their types, fitting devices.**
-

Adhesives

Adhesives are used in leather goods manufacturing and textile manufacturing. Adhesives are used to join two or more components temporarily or permanently.

Types of Adhesives

Adhesives for joining upper leather. Re-lining and folding the edges of upper leather-mucus. Reinforcement material is also used for gluing. Joining two or more joints using an adhesive is called cementing. This paste can be divided into two categories based on the method of production.

A Solvent method

B Hot melt method

Two lashes can be separated by keeping the stickiness.

1 Temporary Adhesives

2 Permanent Adhesives

Temporary Adhesives

Temporary Adhesives are used to temporarily join two or more components together.

This Natural rubber solution is made using scrap rubber. This scrap rubber carbon tetrachloride is prepared by emulsifying at high heat using Benzene petrol Qu metro solvent. It is firmer than water paste. It is called "Temporary Adhesives" because it is used for temporary bonding. It dries to a yellowish grey colour.

It should not be used on permanent adhesives.

Rubber Latex (Temporary Adhesives)

Ammonia is prepared by mixing natural rubber or synthetic rubber. It belongs to the category of Temporary Adhesives. This latex should be allowed to dry well before gluing. Also drying is very delayed. This latex of rubber is ground to 32% to 35%. It is white in colour. It is ground with a foul Odor. It is firmer than Rubber Solution.

Water paste (Temporary Adhesives)

Water paste is prepared by heating water and zinc in a special way with Maida. The part that uses this paste is

quick. Zinc is mixed with water to make a water paste. The price will be amazing.

Dextrin (Temporary Adhesives)

It is prepared from Starch Dextrin by acid leaching. It is used to join objects temporarily. It is a permanent adhesive that is stronger than water paste.

It is widely used for gluing materials in leather goods manufacturing. It is prepared by heating bone ash, gelatine and dark sandalwood acid. It decomposes in the solid state. Its price will be cheap. It is used to glue objects permanently.

Suitcase, despatch case is mostly used for sticking.

Dendrite (Permanent Adhesives)

This type of adhesive belongs to the category of permanent adhesives. It is used for permanent bonding of materials and is prepared by rubbing and heating with chemicals like rubber petrol. It grinds to yellowish red colour. Drive well while using it.

Neoprene (or) Polychloride Prine Adhesives (permanent Adhesives)

This synthetic resin is a sticky, yellow substance made from synthetic solvent. It's expensive but useful for its adhesive properties.

Poly Urethane Adhesives: (Permanent adhesives)

It is synthetically produced. The price will be amazing. It is not used in the manufacture of leather products. Permanently sticky.

Nitrocellulose (Permanent Adhesives)

It is made synthetically. It is highly sticky. It depends on the permanent glue stick. Its price is very good. It is widely used abroad.

Fittings

Refer Exercise No: 1.10.101.

Hand - thonging, various thonging methods and colouring process in leather goods

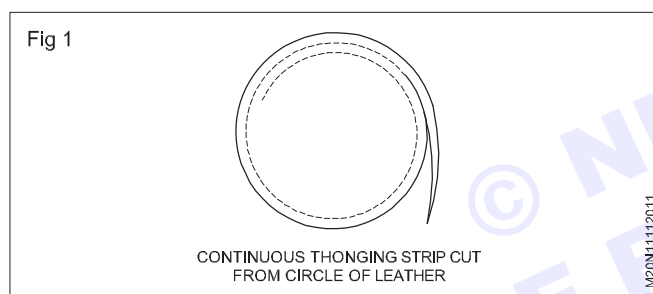
Objectives : At the end of this lesson you shall be able to

- know about different types of stitches
- know about of colouring techniques
- know about the uses of leather strips
- know about seams and seam type.

1 Different types of stitches

Thonging is a knit stitch techniques that uses leather or plastic strips. Natural leather is preferred over plastic for its benefits, and it creates a good fit and look.

To cut leather lace, take a round piece of leather and cut out a continuous line of lace. The length of the lace will depend on the size of the circular skin that we have cut. Therefore, according to the size of the material, we have to cut the required amount of circular leather to cut the leather lace. Please refer to (Fig 1) for this.



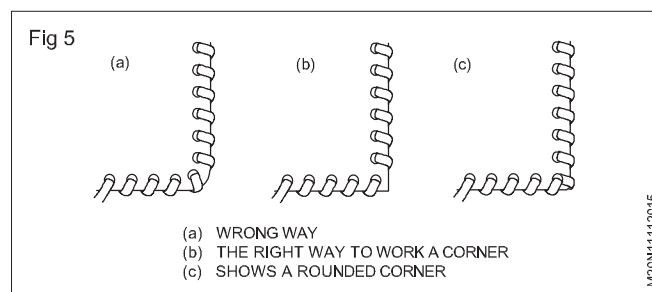
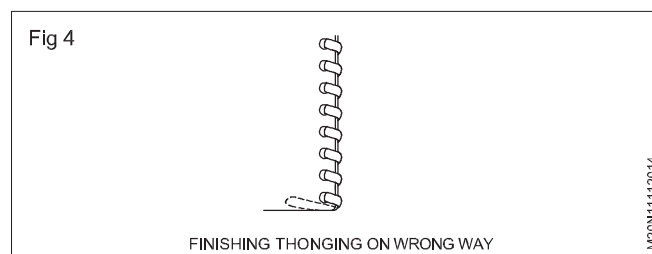
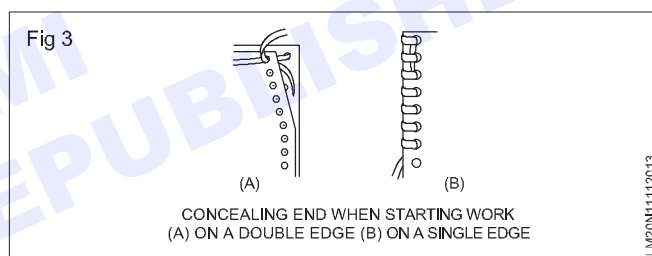
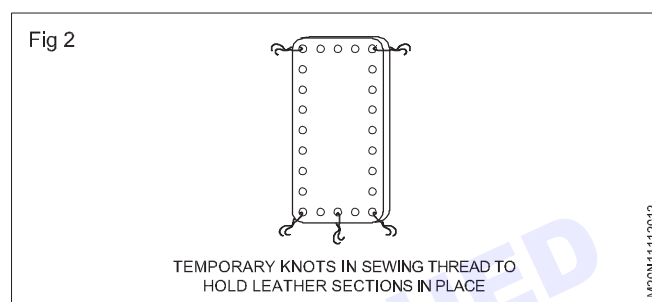
Leather lace cutting method

The initial step is preparing for thening is drilling holes. This process also know as punching, create small evenly spaced holes. Holes of the two pieces to be joined should be equal while punching. If it is not equal then the product connection is likely to fluctuate. Proper punching should be done. This requires the use of a hollow punch, a stitch marker and a hammer. After punching the parts of the material to be made, make temporary knots using sewing thread as shown in (Fig 2). After that start work on double edge and single edge areas. Know how to start when and how to finish when the work is finished as shown in (Fig 3).

Punching and making temporary knots

Knowing the stitch start and end position : While making the thong, apply glue to the end of the lace and under three or four stitches on the inside of the thong as shown in (Fig 4). In this way, the length of skin to be grafted should not be too short. The same method should be done at the beginning of the stitching.

When towing in corner areas, follow the correct method shown in Fig 5b. Avoid the incorrect method shown in Fig 5a, as it is not suitable for thonging.



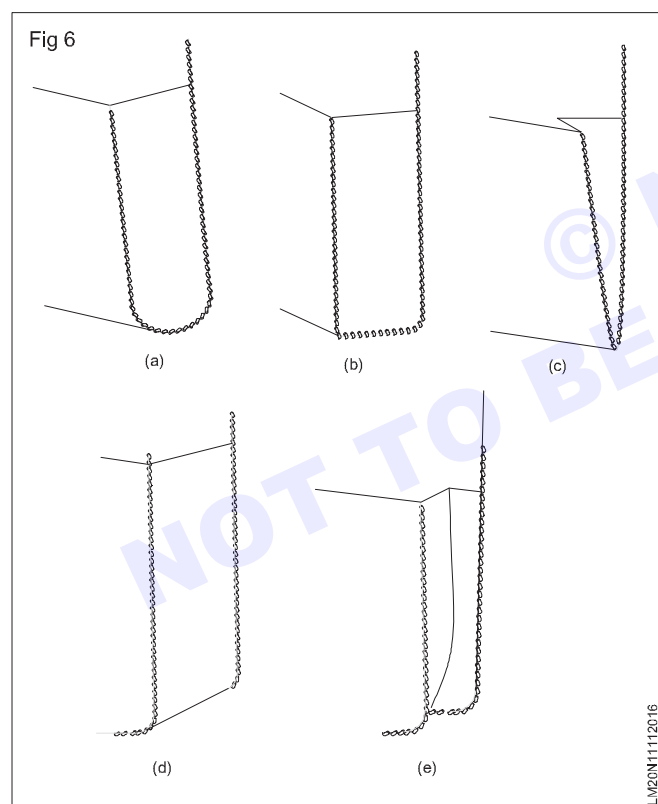
A gusset is a part that gives a complete shape to an object. (Fig 6) shows five different types of systems used in the manufacture of bags. Although they look the same, the methods of connecting them are different. So these methods can be followed while making the products.

Finishing the butting on the inside of the object colour (Corners) (Fig 5)

- a is the wrong way
- b is the correct way
- c is the correct way

Organizations of five different Gazettes

The structure shown in (Fig 6a) has a semi-circular shape at the bottom of the cassette. Similarly, in (Fig 6b), the structure at the bottom of the cassette is slightly different. (Fig 6c) The arrangement shown in Fig 6c is a V-shaped cassette fitted as a cover. In which the lower end is narrow and the upper end is curved. (Fig 6d) The cassette type shown in Fig 6d is a more difficult system to fit. Because it combines the side pieces and the bottom piece with a long leather lace to form its structure. The cassette arrangement shown in (Fig 6e) is another arrangement of Fig 6d. This gazette is folded inwards in the middle. Fitting of cassettes is the most important job in pack making. If the cassette is not fitted correctly, the system of the pack-varies from its form. Therefore it is very important to fit the cassette perfectly.



Thanging techniques for joining and decoration

Not only is it a useful technique for joining two pieces of leather together, it is also used for decoration. Its details can be seen in (Fig 7)

- 7a Cloudy suture
- 7b Cloud stitch with two colours
- 7c Couching stitch
- 7d Criss has two ways to do thonging

7e Running stitch

7f Blanket Sewing

7g Combining two leather pieces together

7a This thong stitch is a beginner basic stitch pattern. This is a simple sewing technique.

7b This thong stitch is a modern two- colour stitch technique.

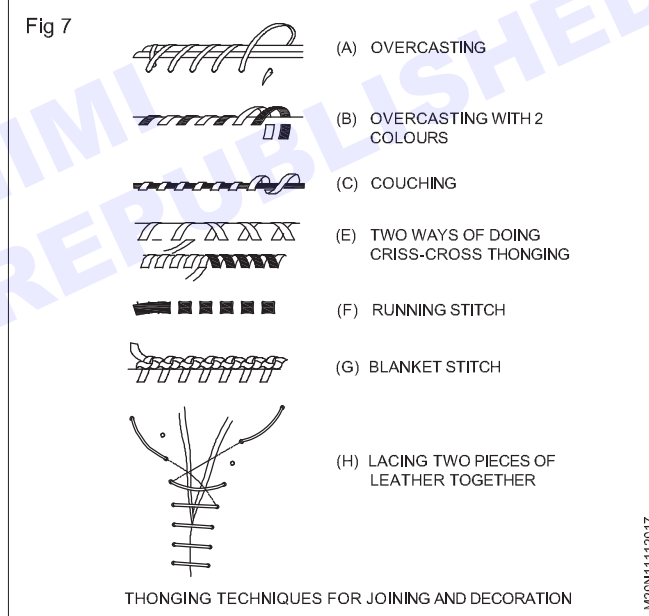
7c This stitch is used in the edge trimming area.

7d Cross stitch. This involves first sewing a line of overcast stitch and then a second line of thong overcast stitch to sew in the opposite direction.

7e This is the familiar running stitch. It is often used for bonding technique on thick skins.

7f This is called blanket stitch. This is done with every stitch just like a normal stitch.

7g It is used for joining leather for belts and other articles. It should be thonged through evenly matched holes in the style of shoe laces. Slit can be used instead of punch holes for this job. This requires the use of a spacer and a punch.

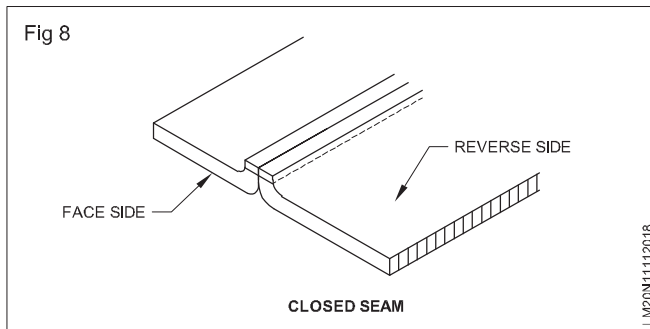


Seams and seam strength

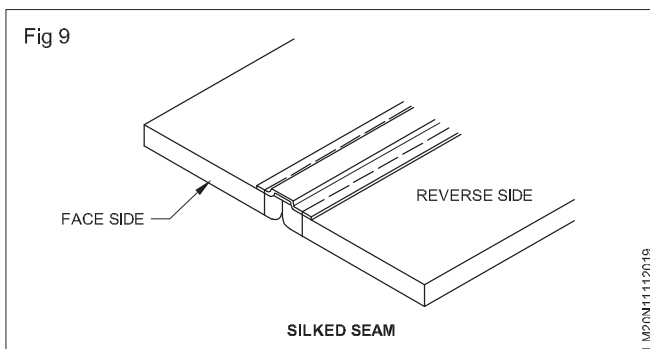
A seam is a row of stitches created by hand or machine sewing. The strength of a seam depends on the tension of the threads. Both top and bottom threads are necessary to create a strong seam. Proper tension is key to locking the thread in place, resulting in a durable seam. In leather working a strong seam is essential for quality and different materials require different seam forming methods.

Types of seam

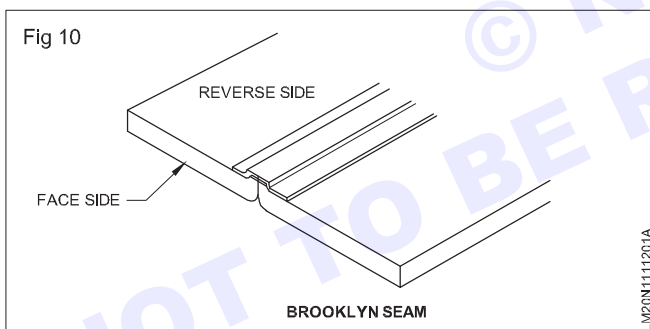
- 1 **Closed seam** : Place the parts on the front side and sew with a 1.5 mm (1/16 inch) seam allowance. Then the seam should be separated and rubbed well. (Fig 8)



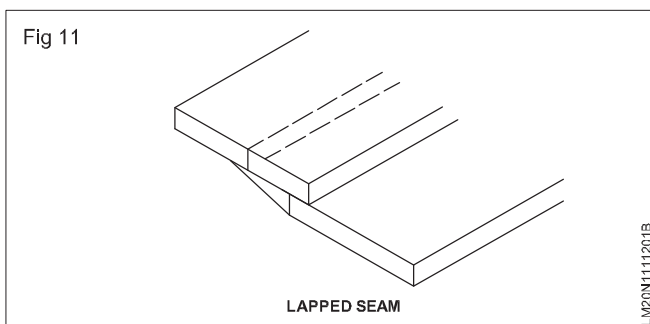
- 2 Silked seam :** Sew a closed seam then press the edges. Apply a woven tape to the back of the seam using a special machine with a tape guide. This machine stitches the tape in place, reinforce the seam. (Fig 9)



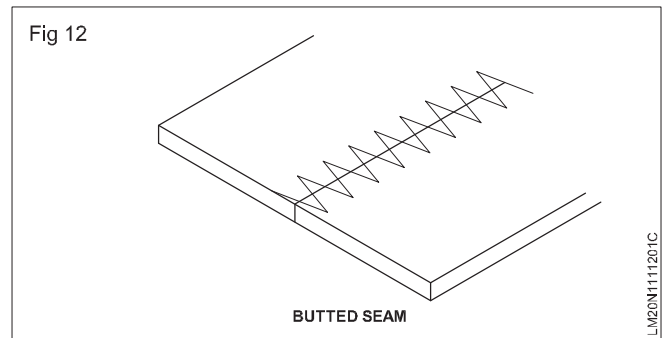
- 3 Brooklyn seam :** A closed seam is made, then a paper or fabric tape is taped on the back, over the seam. (Fig 10)



- 4 Lapped seam :** A lapped seam where two parts are sewn together is called a lapped seam. Skive and stitch the lower part. This lapping allowance may range from 6mm to 12mm as the seam should go deep enough to join the two parts. One or two rows of stitching can be done. (Fig 11)

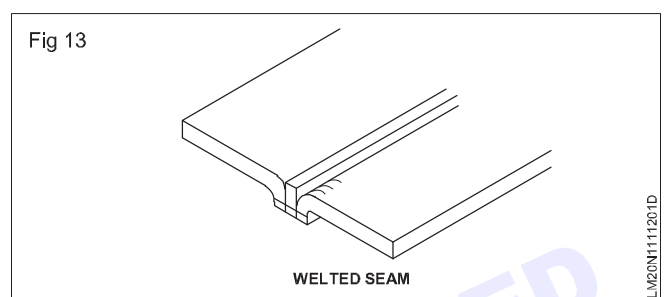


- 5 Butted seam :** A zigzag stitch where two parts are glued together by sewing machine. (Fig 12)

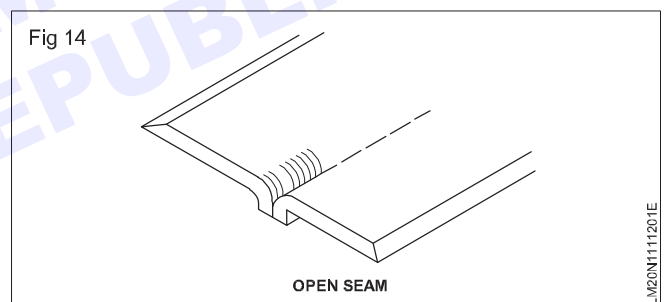


- 6 Welted seam :** When sewing a closed seam on thick leather, stitch a long narrow line between the two parts (Fig 13)

An additional strip, called a weld, will be inserted.



- 7 Piped seam :** It is done in the same way as a welded seam. But instead of the weld a piping strip is inserted and sewn. Piping is usually well coloured. (Fig 14)



- 8 Open seam :** This is the opposite of a closed seam, where the edges of the part to be sewn are visible on the outside.

- 9 Bonded Seam :** First apply liquid glue to the parts should be applied. Then the required heat and pressure stitched.

- 10 Welded seam :** A welded seam is where two or more parts are joined together by melting and pressing under extreme heat.

Types of stitches

Stitching is the joining together of a continuous thread or several threads, for strength or beauty.

The purpose of stitching

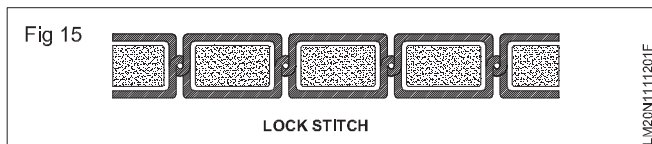
- 1 Permanent joining of one or more materials.
- 2 for strength and
- 3 for beauty

Types of stitching

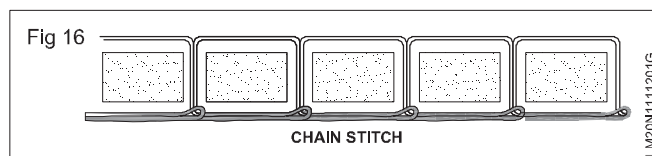
Generally there are two types of stitching there are

- 1 Lock stitch
- 2 Chain stitch

1 Lock stitch (Fig 15): This is caused by two threads. The upper thread comes through the eye of the needle, and the lower thread comes from the bobbin case in the bed area of the machine. This results in a lock between the two tight threads of the material.



2 Chain stitch (Fig 16): Chain stitch occurs by creating a chain under the material in a single thread.



Colouring methods : To match the color of the main part of the leather goods a pigment is applied to the cut edge. This process is called edge colouring. Here how it's done.

- 1 Prepare the raw edge or cut edge of the skin
- 2 Select a pigment that matches the color of the main part of the object.
- 3 Apply the pigment to the cut edge using a small brush
- 4 Let it dry for a while.
- 5 Use a cotton cloth to wipe away any excess pigment. This process ensure that the color of the cut edge blends with the main part of the object, creating a uniform look. By following these steps, you can achieve a perfect match and get the job done.

Wastes, Its Proportions and Limits

Wastes

Wastages are the small pieces comes after cutting to the required sizes during the production of products. Waste leather can be made into small products in many ways according to its area, time and situation. However, there is no rule to do this permanently with this type of scrap leather. So waste leathers come in many shapes and angles. These We can make as many products as we need according to the size of the skin.

Waste cutting and their utilization

Many modern small products are usually made from waste scrap leather depending on its surface. They are as follows,

- | | |
|--------------------|------------------------|
| 1 Ladies purse | 2 Watch strap |
| 3 Pen cover | 4 Key case |
| 5 Key holder | 6 Belt loop |
| 7 Knife cover | 8 Optical cover |
| 9 Money purse | 10 Micrometer cover |
| 11 Comb case | 12 Scissors case |
| 13 Diary cover | 14 Passport cover |
| 15 Calendar cover | 16 Book binding pieces |
| 17 Tool kit case | 18 Dog belt |
| 19 Foot ball cover | 20 Cap |
| 21 Dynamo cover | 22 Washers |
| 23 Tumbler cover | 24 Toilet kit |
| 25 Leather mat | 26 Radio cover |

All the above products are made to suit the surface of waste leather. Nothing can be left out as waste in the production of leather goods. Because waste leather can be made into many products. Save left over leather scraps, as they can be used to make new products. A little extra effort will pay off.

Pen Cover

Pen cover can be made from leather cutting waste. This helps prevent the pen from breaking and scratching.

Watch strap

Watch strap can be made from these strap pieces. Doing these things will look good, last longer and be profitable. Also watch wearers prefer leather strap so leather wastage is not wasted.

Key case

A key case is essential to keep the keys that we use everyday from getting lost. These are made from waste leather in many colours and designs.

Optical case

To keep the glasses we wear on our face from breaking, the glasses need a cover. An optical case is made by using a small area of skin to cover the glass and giving it a sponge-like lining.

Washer

Washer is a material used to keep the motors of electrical machines. Also installed in essential vehicles such as motor, lorry, bus etc. Such washers can be made from VT leather.

Micrometer cover

It is used to ensure that the glass in the micrometer does not break and the readings do not fade. This cover can be made from waste leather.

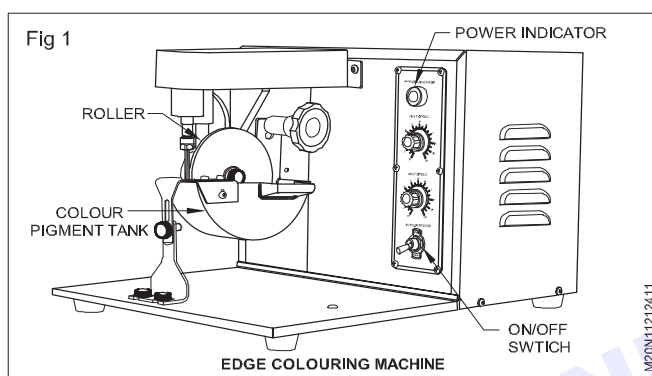
Describing of edge colouring machine & heavy duty flat bed sewing machine

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

- know about edge colouring machine
- know about heavy-duty flat bed sewing machine.

Explanation (Fig 1)

Edge colouring machine is used for dyeing the edges and parts of products in leather goods manufacturing. Usually the colour on the surface of the leather varies in its cross- sectional area. Due to this, the quality of the leather goods is likely to decrease significantly. So edge colouring is done with the help of edge colouring machine.



Mechanical operation

Made for our industry in two ways:

They are

- 1 Cut Edge Articles
- 2 Finished Edge Articles.

In this, edge colouring should be done while making cut edge articles. Belt, conductor bag, coin purse, fancy bag etc are cut edge articles. Dye of the same colour as the article should be prepared and filled in the machine. This machine can be powered by electricity. Edge colouring is likely to take more time when we do it manually. Edge colouring is machined for faster production. During production of products, colouring should be done at cut components stage. Edge colouring is usually done before skiving.

Edge colouring becomes difficult after skiving as the weight is less. Sometimes edge colouring can be done in a contrasting colour to the surface colour. As the machine is electrically operated, extreme care must be taken. After finishing the edge colouring of the required material, it should be thoroughly cleaned. Then the colour dye for the next product should be prepared and poured into the machine. Now the machine is ready for the next material edge colouring.

Machine safety and maintenance

The machine should be cleaned after every work. As it is powered by electricity, please wear shoes and operate

with caution. The machine should be maintained on a regular basis. If any noise is heard during operation, stop the machine immediately.

Heavy duty flat bed sewing machine

- 1 Pressure Bar Regulating Screw
- 2 Thread Guide
- 3 Pretensioner
- 4 Head
- 5 Oil check Window
- 6 Balance Wheel
- 7 Stitch Length Adjuster
- 8 Back Tacking
- 9 Bed
- 10 Thread Tensioner
- 11 Needle Bar
- 12 Pressure Foot
- 13 Slide plate
- 14 Pressure Foot Lifter
- 15 Hooks

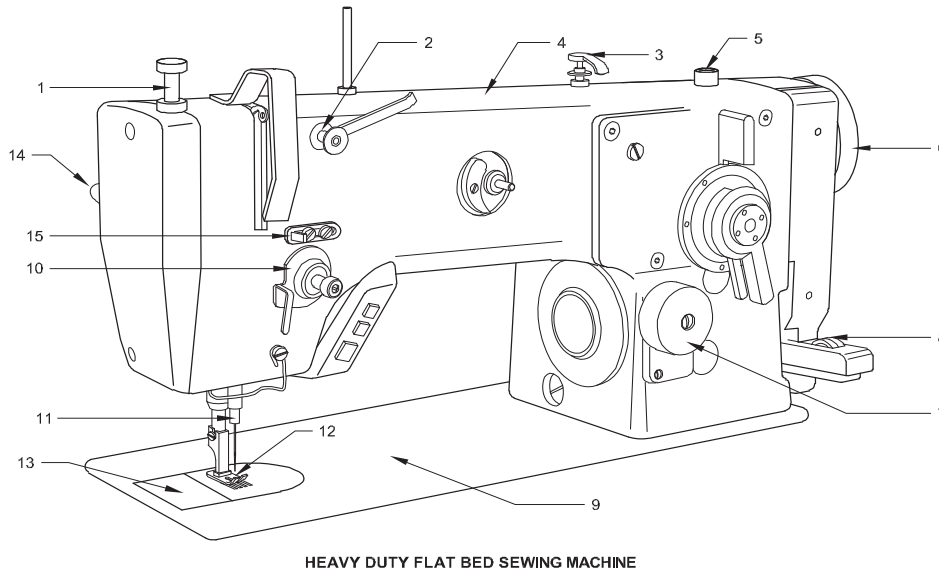
Structure and uses of heavy duty flat bed sewing machine

After bed sewing machine can perform straight stitching on leather up to 8 mm thick, with a stitching speed upto 300 stitches per minute.

Structure (Describing)

- In this the sewing area is flat, hence it is called Flat bed sewing machine.
- The machine has a pillar on the right and an arm on the left.
- The arm, holds the needle bar and pressure bar.
- The balance wheel is on the right.
- The feed dog moves to feed material during stitching.
- Bobbin winder is attached to a pillar-like structure.
- Needle bar, Pressure bar- Face Plate is seen on the left.
- Stitch length- The stitch length adjuster is found at the top with a pillar-like structure. Parts like thread adjuster, pre-tensioner, tensioner, hooks, thread take up lever are also found.
- Shuttle case in this machine is big. (Fig 2)

Fig 2



HEAVY DUTY FLAT BED SEWING MACHINE

LM20N11212412

Job operation

Pretensioner & Thread

Insert through the three holes in the tensioner in an “S” shape. Then insert the lever into the thread take up lever and insert it into the needle through the hooks.

Bottom thread

- Use a bobbin winder to fill a bobbin with thread, then put it in the bobbin case.
- Then it should be fixed in the hooks Point which can be fixed in the Bobbin case. 4cm thread should be taken out before fixing it in the bobbin case and pulled and fixed. If you hear a sound (Tick) while fitting, you can know that the Bobbin case is fitted correctly.
- Then hold the upper thread and rotate the balance wheel towards the direction we are sitting. By doing

this, the bobbin thread will come up. Now you can see that the machine is in sewing mode.

- With this machine we can sew leathers of high volume.
- When we choose the Needle we have to choose the Needle carefully.
- Heavy leather goods are mostly used for sewing very heavy leathers.
- Stitching per minute is less than other machines.
- Straight stitching can be done using this sewing machine.
- Motor is used to run this sewing machine.
- The volume of thread used for this will be high.

Leather

Related Theory for Exercise 1.12.126 - 129

Leather Goods Maker - Marketing and Selling Methods

General maintenance, system of machine, equipments & tools. Faults in sewing machines & remedies

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

- know about the maintenance of machines and tools
- explain repairs and solutions in sewing machines.

Refer Theory Exercise No. : 1.8.82 to 1.9.87.

General manufacturing defects of articles and their trouble shooting

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

- know the common defects of different types of leather products
- know how to identify defects such as zip, runner, size, structure and link size
- know how to plan and prepare for the damage of a gazette size in a leather Bag
- know how to repair the damage on the bottom of a leather bag
- check shoulder strap, 'T' ring bar and know about preparation of shoulder strap to ring size
- know how to repair the damage and defects of the straps with the appropriate materials according to the handle fitted with the ring, zipper and zipper punch.

To know the common defects of different types of leather products. There are many types of leather goods. They are

- Small leather goods
- Medium leather goods
- Solid leather goods
- Heavy leather goods.
- Sports leather goods
- Industrial leather goods
- Fancy leather goods
- Upholstery leather goods.

Edge colouring

Below are some of the common defects that occur in the above variety of leather products. Regardless of the type of leather goods, its size is according to the manufacture of the goods and different defects will occur as appropriate for the systems.

Small skin products and defects and their repair (Fig 1)



Small leather goods include Coin Purse, Key Case, Key Holder, Watch Strap, Gents Wallet, Passport Case, Ladies Wallet, ATM Card Pouch, ID Pouch etc. Generally, in all of these, stitching defects, bolting defects, connection defects occur in some items, zipper defects, press button connection defects occur.

To correct defects, sutures must be stitched properly. If there are defects in the folding area, split the seam, fix the folding and then sew it properly. If there are defects in the zipper, separate the parts reassemble them correctly.

Medium type leather products and their defects and their correction (Fig 2)

Medium category leather goods include ladies bag, gents bag, cash bag, shopping bag, laptop bag, school bag, portfolio bag, gents belt, ladies belt etc. A common defect in all of these is stitching defects are, missing zip, runner defects, piping defects, lock and push clip defects etc.

To correct these defects, the stitching can be split and repaired at the point of stitching defects. Similarly, zip and runner defects can be repaired by replacing them with new ones. And while repairing the defects in this way, the defects should be repaired safely without causing any damage to the goods. Piping defects can be repaired by splitting the seam and sewing it properly. These defects can be corrected by replacing them with lock and push clip defects.

Solid leather products, their defects and their repair (Fig 3)

Solid leather goods are based on hard leather materials. That includes jewelry boxes, prep cases, etc. Defects in hinges, locks, studs etc. are likely to be repaired. And the handles are also prone to mal function.

To repair such repairs, damaged hinges, locks, studs and handles can be removed without damaging the leather material and replaced with new fittings.

Hard leather products, their defects and their repair. (Fig 4)

Hard leather products are products that are large in size, very firm and hard. This mainly includes leather cases. Possible defects in these types of boxes are hinge, lock and stud repairs. To correct these defects, the damaged connectors can be replaced with new ones.

Types of sports leather material, defects and their repair (Fig 5)

Sports leather goods include sports goods. These include items such as balls, gloves, shoe bags, bat covers, etc.

Defects in these include stitching, zip, runner defects, connection defects in shoes, eyelet button defects. Sewing defects are defects in all materials. This defect can be repaired by hand stitching or machine stitching at the damaged area. Other defects such as lack of connection can be repaired by taking it apart and rubbing it well and applying glue to fix it. Or fix it in the machine. To repair an eyelet button defect, a damaged button or buttons can be repaired by taking them apart without damaging the material and fitting new buttons.

Industrial leather products, defects and their repair (Fig 6)

Industrial leather products are the gloves, aprons, and shoes that we use in factories every day. Leathers gloves and aprons can wear out quickly due to daily use, causing defects like abrasion, shrinkage and tears. Replace or repair them promptly to prevent further damage. Using a converter can help to extend their life span.

Fig 2



Fig 3



Fig 4



Fig 5



Fig 6



Defects in luxury leather products and their Remedy (Fig 7)

Luxury leather goods are those goods used for beauty and fashion rather than necessities. These defects are most commonly found in ladies bags and fancy bags. Common defects like stitching defects and 'T' ring repair, handle repair, frame repair, zip, runner repair etc may occur. To correct this, the seam should be separated and

re-stitched at the point where the seam is defective. D ring, handle, frame, jib and runner should be repaired or replaced with the new fittings for repair or damage.

Fig 7



Household leather goods, defects and their repair (Fig 8)

Fig 8

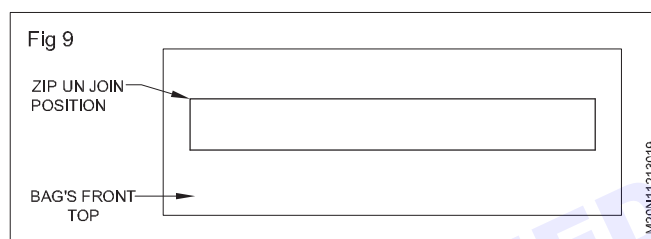


Household leather products include sofa covers, leather cushion covers, vehicle seat covers, etc. that we can use at home. Defects in this are likely to be stitching defects only. This can only be fixed using a manual method.

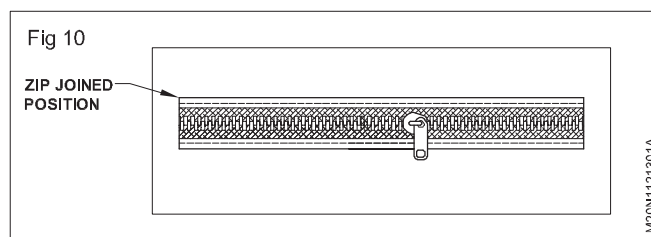
Identifying defects like zip runner, size, structure and connection size (Fig 9-10)

Different types of manufacturing defects occur in the manufacture of leather goods. One of them is the zip and runner defect. A zip defect results in defects such as improper sizing and improper fitting of the runner. To find this out we check if the zip is the right size, the runner is fitted correctly or the structure is correct. Such defects can be easily detected during such testing. For example, let's take the configuration in (Fig 9) as the front of a backpack with a zip pocket open.

Front of bag ready for zip fastening (Fig 9)



The size, connection and runner fit, arrangement etc. should be correct as the zipper (Fig 10) The front of the bag shows the zip attached to the centre of the opening, as seen in Fig 10 which demonstrates how to connect the zip. While cutting the zip, the connection size should also be cut. The connection size should be cut 1 cm more on each side than the zip cord at most. It should be connected with proper spacing while connecting but it not only by cutting too much. Similarly, when fitting a runner, it should fit properly. As above, manufacturing defects can be identified and corrected them.



Knowing about planning and preparing for gazette damage of a leather bag

A leather bag should have a gusset size of two-thirds of its total circumference. Further increasing and decreasing the amount is depends on the at the customer's discretion. Some customers like the small size of the gazette and the fact that it's zipped. A few customers want to keep the same size and will ask for it specially. We can fulfill orders for either one piece or two pieces. This is the total order, we can prepare it either way, we can also stock up on the gazettes if that's what our customers prefer.

Thus, if the size of the gazette should be two-thirds as stated above, we should not cut the parts exactly two-thirds of the size, as such cutting will reduce the size of

the gazette while preparing the products. Therefore, when cutting the cassette, two-thirds should be cut at the rate of 1 cm per part, and at least two centimeters should be added to the two parts. Keep this in mind when cutting. Similarly, the zip bar should be cut at the rate of one third and one centimeter per section and two centimeters per section. The splice allowances are the parts cut together in the gazette and zip. Connect the parts and the gusset and zip bar will be the right size. Now attaching it to the top is correct and easy.

To avoid damage to the gazette size as mentioned above, one should plan and prepare.

Learn about repairing damage to the bottom of a leather bag

The bottom of the leather bag represents the area where the bush is attached. These bushings help protect the bottom of the bag from early damage due to wear. The bottom of the bag is the core of the cassette. Bushes are installed to protect this core. All of these are worn out equally, either due to two bushing rubbing against each other or bushing being damaged for other reasons.

To correct such defects, the damaged bushing can be removed, and a new bushing can be fitted in its place. A few buttons are fitted with a zipper. A few bushes come without a zipper attachment. You can simply remove the buttons in this zipper and replace them with new ones. For non-zippered bush we have to separate split zipper and washer.

Perhaps the bottom beyond these bushes gazette in case of damage the whole thing has to be taken apart and replaced with a new one. Thus, damaging the bottom of the bag can be fixed.

Checking shoulder strap, 'D' ring bar and preparing shoulder strap to 'D' ring size

While preparing the shoulder strap and 'D' ring for a bag, measure the internal dimension of the 'D' ring while cutting the components for them and fold the shoulder strap and 'D' ring bar according to the required volume i.e. if the lining is to be folded into two folds and then one size, same consistency. Consider that if three folds are required, cut one size for it.

For example, if we are going to use a 1 1/2" D ring for the material we are going to manufacture, the ring bar and shoulder strap will have a width of inches for a double play and 4 inches for a triple play. Keep and cut the skin. Cut it into two folds and fold it so that the joint is visible. If it is to be covered, a separate leather strap 1 3/4 inches wide should be cut, stitched and used for trimming. Thus prepare shoulder scrap and 'D' ring bar according to the size of 'D' ring.

Knowledge of repair of damage and manufacturing defect with suitable materials according to handle fitted with 'D' ring, rivet and rivet punch.

A handle fitted with a 'D' ring and a zipper punch is prone to damage if we do not fit the zipper properly while fitting the zipper with the help of a zipper punch. Thus, the handle is likely to be wasted. Therefore, when fitting the zipper button, the zipper button and button punch should be selected according to the width of the handle. For example, a 1/2-inch-wide strap requires a 6mm zipper button and a corresponding zipper punch. Similarly, when making a wider strap, use a slightly larger rivet and a corresponding button punch. Maybe use two buttons instead of one zipper button if that is not possible.

Thus damaged straps can be repaired with suitable materials.

Describing of valises

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

- **knowing about travel bags and suitcases.**

Travel bags and suitcases

Valises refers to travel bags and suitcases. Valises (travel bags and suitcases) are used to carry the necessary clothes while travelling. Valises are one of the essential items that can be used by people of all walks of life. Therefore, it is manufactured and available in different quality, different prices and different models so that people of all levels can buy and use it according to their economic status. Nowadays, all types of valises are fitted

with wheels at the bottom for easy portability ready to go and available for sale. Due to this, the valises can be easily carried by small to big and old people.

The goods carried in valises are highly protected from rain, sun, snow, wind and dust. Also these suitcases and suitcases are made of materials like leather, nylon materials, fiber materials. This valises is made to be easy to carry and easy to drag in case of non-lifting. (Fig 1) some sample setups of this, are shown in pictures.

Fig 1



Selection of Leather for various leather article, types of leather used for different articles & their characteristics

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

- **select suitable leather for making leather goods and knowing its properties.**
-

Selection of leather for leather goods

Different types of finished leather are generally used to make leather goods. Since leather is natural, there is a wide variation in quality. And various products are made according to that quality by finishing. Leather goods made from good quality leather can be expensive. Materials are selected for use of leather as appropriate.

Cow and Buff leather can be used to make large types of leather goods such as suitcases, travel bags, bedding rolls, etc. Sheep skin and goat skin can also be used to make small items such as purses, wallets, coin purses, etc.

To make leather goods**Application of Various Finished Leather**

- 1 Aniline leather :** Aniline leather is of good quality. Good flexibility and shiny surface. These are finished by spraying with colour dye solution. Leather has a natural look and is used to make high quality leather goods. Leather goods such as handbags, wallets, belts, sketch bags, suitcases, purses can be made from aniline leather.
- 2 Nappa Leather :** Nappa leather is prepared from high quality leather. Its surface is very smooth. It is mostly prepared in goat and sheep leather. Used to make small leather goods like coin purses, ladies bags etc.
- 3 Upper Leather :** Upper leather is prepared by finishing by mixing a little pigment with a dye solution. The surface is smooth with good elasticity. Due to its good weight, it is used to make large leather goods like traveling bag, suitcase, port bag etc.
- 4 Burnish Leather :** Furnish leather is prepared from quality cow, buff and goat hides. It is prepared by vegetable tanning. Finishing should be done with a dye solution spray. Belts, ladies bags, gents bags, purses etc can be made using burnished leather.
- 5 Nubuck Leather :** The surface of the slightly inferior leather is prepared by lightly snuffing and spraying with dye solution. Its surface looks like velvet. Vallet, bag, travel bag, prep case etc. are made with nubuck leather.
- 6 Suede Leather :** Suede leather is prepared from inferior goat and sheep skins. The surface is buffed and produced by colour dye solution spray. The surface is velvety. Suede leather can be used to make purses, wallets, pansy leather goods.
- 7 Vegetable Tanned Leather :** Herbal tanning is done by grinding tree bark and some tree seeds and rubbing them on the skin. It will be heavier. Dye solution is sprayed for finishing. This leather can be used to make conductor bag, belt, ladies bag, suit case, toilet case, jewelry box etc.
- 8 Oil pull-up leather :** Vegetable tanned leather dip in oil and oil pull up Leather is prepared while doing Finishing Oil spray is done. This leather is strong, firm and flexible, perfect for making belts, bags and straps.

Describing of holdall, marketing of finished product and selling methods

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

- know different materials of bag and lining, zip, runner connection
- learn about taping the front and back of the bag and marking the center point
- know about preparing zip bar and gusset with lining
- know about the 'D'ring connection on both sides of the gusset
- know how to center the back part of the bag, and the flap part and attach the cassette
- know about trimming
- marketing of products
- knowledge of sales methods.

1 Knowing about different materials of bag and lining, zip, runner attachment :

Let us assume that the object taken to identify the different items of the bag is hold all. A hold all is an item that is usually used to carry all the things we need in one bag when we go out and about abroad. This bag is a hold all that can be used to carry all kinds of things that we use on a daily basis in one bag instead of carrying them in multiple bags. It is leather. Synthetic leather, canvas is made using raw materials like polyurethane. Its capacity is currently sold in liters. That is depending on the size of the bag Available in sizes like 65 L, 70 L, 80 L, etc. These dimensions are measured in length, width, and height and converted to liters.

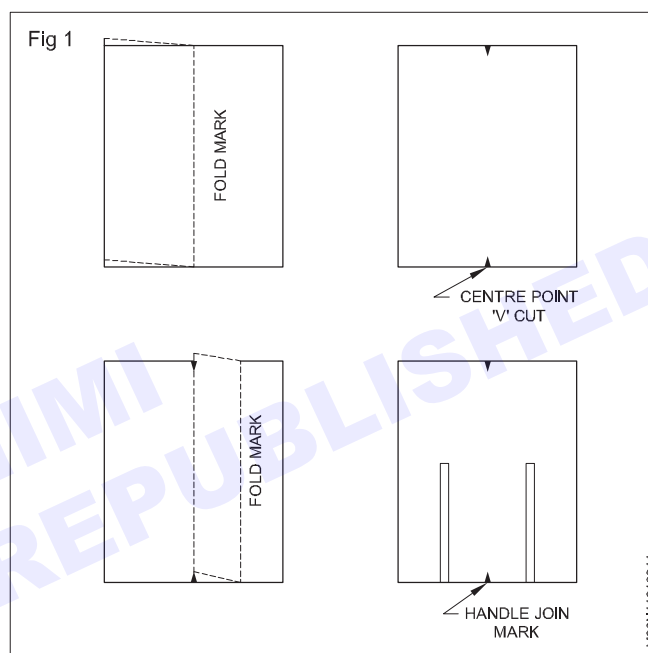
A variety of materials are used in hold all. They are, they are

- 1 Upper Leather
- 2 Lining Leather or Lining Cloth,
- 3 'D'ring,
- 4 Adjustable 'D'ring
- 5 Zipper button
- 6 Bottom Bush

Such materials are used. Not only this, materials like zip and runner are also used. Additionally, materials like reinforcement fab.

2 Learning about tape marking on front and back of bag and center point marking

When we make parts in the material we need to mark the size for attaching the handle tape or leather straps to be attached to the front and back top parts. A marking pencil or a silver pen should be used for such marking. While doing this, you should first make a center mark on the front and back tops. An easy way to do this is to fold the tops in half lengthwise and make a slight 'V' cut along the edge. This is just for identification. So cut into small cuts. Then mark the center by folding from the same edge of the raised part to the center point. This mark can be used to attach the handles to the front and back top using the center of the tape attachment. These can be known by following (Fig 1). Mark the center point and handle tape in the above manner regardless of the size of the pack.



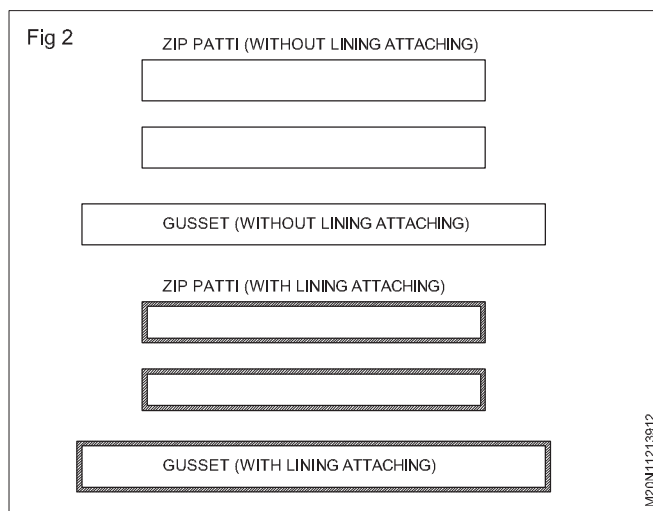
3 how to prepare a zip bar and gusset with lining ?

The zip bar is 1/3 of the circumference of the bag Shares are two shares of gazette piece 3 size should also be set. If necessary, these doses Can be adjusted as needed. When cutting the lining, add a 5mm margin around all four sides to protect the cassette and zip bar. This may require additional reinforcement in certain pieces, depending on the design. The size of the lining to be cut can be increased from 5 mm to 10 mm and if required a little more. This can be seen in (Fig 2).

When sticking the lining to the zip bar, stick the zip to one side of the long edge, hide the zip in the zipped area and stick the lining. After sewing the zip, fold the lining and stick to the other long edge of the gusset. Similarly sew the zip on both the zip bar and join the two edges of the zip with a runner.

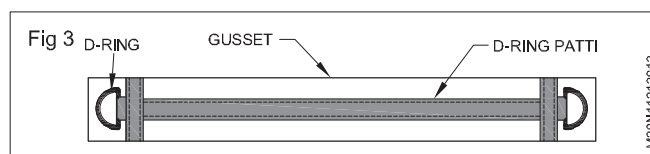
Then cut off the excess lining on the wide edge of the gusset where the lining is attached and apply glue on the edge of the gusset, after drying it should be folded to a size of 8 mm to 10 mm and stitched to both edges of the zip bar. In this connection method the edge of the zip bar is exposed.

This method is old method. But now we do not glue the lining to 1 inch to 2 inches on the wide sides of the gusset. Therefore, this method is now widely used. Similarly, a zip gusset is made by stitching the upper lining to both sides of the gusset and the two edges of the gusset.



4 Connection on both sides of the cassette with 'D'ring

A 'D'ring is fitted on the cassette to attach the handle. It was the old-fashioned way of cutting a 'D'ring bar and attaching it to the 'D'ring and attaching it to the wide side of the zip bar and then placing the zip bar on top of it. But in the current method, the 'D' ring is attached separately and stitched together with a strip for it. In this method either tape is used for the 'D'ring or (or) leather strap is cut to the length of the gusset and stitched together as shown in (Fig 3). Thus, even if the bag contains a large amount of material, the cassette area is not affected.



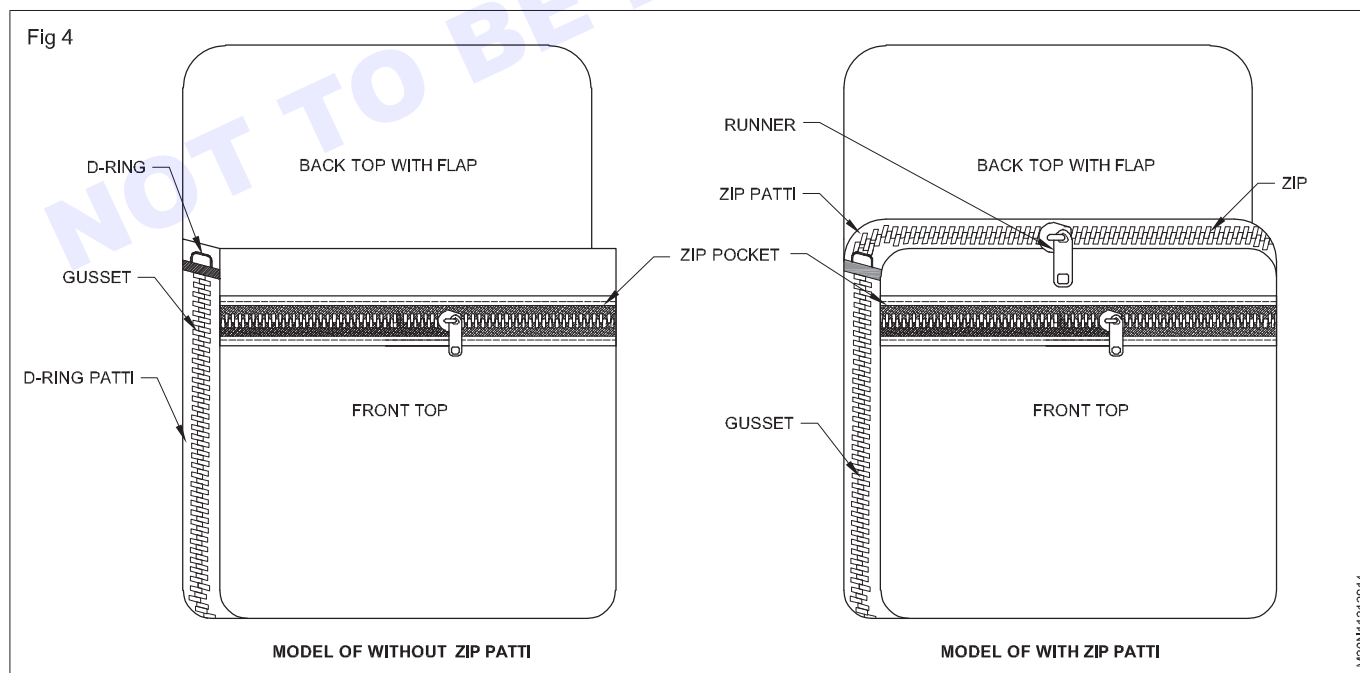
5 About the center point on the back of the bag and the flap, about attaching the gazette

To create a center point on the back top with flap, follow these steps,

- 1 Refer to Fig 1 and its explanation.
- 2 For packs without a zip strap, fold the newspaper in half and make a small V - cut at the crease to mark the center point.
- 3 Align the center point of the top and gazatte, and stick them together.
- 4 For models with a zip strap, merge the gazettes, fold the zip tie to the zip tie, and stitch them together.

This will create a secure and even center point.

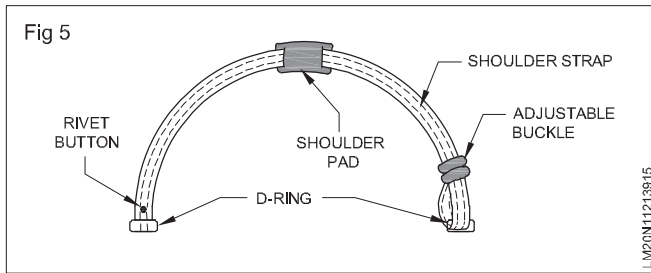
The 'V' seam on the top pieces and the 'V' seam on the zip gusset should be joined and glued together. In this way, the texture of the bag will not change and the texture of the bag will be perfect during stitching. And the flap is mostly used on the model without the zip bar. If the flap is required, it can be made separately and attached to the bag's back top. Or if you want it to be attached to the top itself, it can be designed and prepared accordingly. This can be seen by looking at (Fig 4).



6 Making Solder Strap and Connecting Using D-Ring, Adjustable D-Ring Solder Strap : A solder strap is a long rod used to carry a bag over the shoulder. If it is a nylon tape attachment, thick nylon tape and if

it is leather, we have to cut the 'D' ring according to the size of the 'D' ring we have already attached to the bag's gusset and fold it to prepare it as a strap. After preparing the solder strap, insert the adjustable

D-ring into the strap and fasten one end of the strap to the D-ring with a zipper. Insert the other end of the strap into the 'D'ring on the other side of the gusset and insert the adjustable 'D'ring into the stem in the middle and fasten the zipper button. This can be seen by looking at (Fig 5).



7 Explanation of trimming

Trimming is the process of cutting off the excess skin at the ends of the product in the production of leather goods. This trimming is done with a knife and scissors. Also trimming is done by trimming device while sewing on sewing machine. Trimming is considered as an important job in the production of leather material. Material without trimming, does not get a complete look. Hence trimming is essential.

8 Marketing of products

A constant market for manufacturing good quality leather goods to suit the times and trends "Marketing" is the name for selling. Marketing is very important in leather product manufacturing. Marketing works as a separate department in every company. Civilization of people is growing day by day. So market analysis plays an important role to know it accurately and to manufacture leather products accordingly.

Marketing of finished products

It is very important to sell the leather products in a profitable manner after making them. There are several factors to consider while selling.

Jobs in Sales

- 1 Disclosure
- 2 Expansion
- 3 Packing
- 4 Pricing
- 5 Distribution
- 6 Selling

Knowing about sales

- 1 Knowing the size of the market
- 2 Assessment of market niche
- 3 Knowing the population
- 4 Estimating national income growth

Disclosure of sales

- 1 Make good sales opportunities.
- 2 The nature of the product should be disclosed according to the nature of the market.

Expanding sales : Selling products at multiple locations.

Packing : Packing the product according to the nature of the people

Pricing : When people buy products, they should be priced according to convenience.

Distribution : Distribution of goods from the place of production to the market.

Selling : We need to make some changes in serving the customer and develop the product.

Advertising : The nature of the product should be advertised to the public.

9 Selling Methods

i **Wholesale dealers :** Whole sale dealer is the method of buying leather goods after making them in bulk and selling them at fixed/price free of local duty. They buy the product in bulk from the whole sale dealer and sell it in the shops after raising the price a bit and calculating the internal tax. If you sell leather products with good quality and reasonable price, you can get whole sale dealers as customers.

ii **Commission Basis Selling :** After making the leather goods, get a familiar agent to sell them. He will be given commission. This method of selling is called Commission Basis.

iii **Export order :** If the leather product is to be sold abroad after completion, then an order should be obtained from the company and an order should be obtained from the export council to export the goods to foreign countries. We need to be a member of export council to get this order. The foreign company will give us a sample first. After the samples are made, the quality should be checked and the contract should be signed.

iv Procedures to be followed in case of export of goods abroad.

- 1 Our product should be of international standard.
- 2 Export Council of India from I.S.I Must be certified. This certificate to receive is done.

Tensile strength

- 1 Leathers (para chloro phenol) P.C.P which we use to make leather goods.
- 2 Unit producing leather goods, small scale, industrial certificate should be obtained. With all this we can get more profit by exporting leather goods to foreign countries.

3 **Retailer :** In the production of leather goods, we call retailer for the method of manufacturing and selling leather goods by setting up a shop in places with high traffic and keeping a sewing machine there.

4 **Street vendor :** Vendors sell their wares from street to street in pushcarts. We call them street vendors.

5 **Sales Representative :** Large companies manufacturing leather goods must appoint representatives to sell their products in a good manner. These people go to the shops that buy leather goods in cities and localities and tell them about the quality, show them the types of designs, gain confidence and get an order to buy the goods from their company. These people are called Representatives.

6 **Exhibition Sale :** They will set up a shop at tourist fairs and trade fairs and sell the products manufactured by their company there. This we call it as "Exhibition".

7 **House to house sales :** We call house to house sales when we make products at home and sell them from door to door.

Describing of laptop bag, costing and selling prices, over head cost and their distribution over production

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

- know about laptop bag
- know about cost and selling price costs.

1 Laptop bag : A laptop bag is an item that is used to carry the laptop that we use safely. It is used to keep the laptop safe from any damage. Materials like leather, nylon soft lining cloth, 10mm thermos pom, zip, runner, adjustable D ring, glue are used to make the laptop bag.

A laptop bag is a bike pouch in structure or like a backpack. A laptop bag with a thermo - protected cover, lined with cloth, and a secure fitting system keeps your laptop safe from movement and damage. The bag features:

- A snug fit to prevent shifting
- Easy to carry handles and adjustable buckles
- Protection from rain, shine and dust.
- A front and back design like other bags.

This ensure your laptop is well - protected and easy to transport. Components like cassette, zip bar, handle, solder handle, front pouch are arranged.

Laptop bag (Fig 1)



- 1 Shoulder handle
- 2 Handle
- 3 Zip &
- 4 Runner
- 5 Front pouch
- 6 Main zip patti
- 7 Main gusset
- 8 Adjustable buckle

9 Nylon Taple

10 Gusset pouch

2 About price and selling price (General costing of leather work introduction)

Estimation is the method of estimating the costs that may be incurred to complete a work.

1 Raw material (or) Cost of materials.

2 Labor charge

3 Over head charges

Cost of materials

The invoiced amount of raw materials required for our work including sales tax, loading and unloading charges, transportation and delivery charges etc. Total amount should be added for expenses incurred etc. This is called Cost of materials.

Labor charges

How many people are required to do a particular job and how many days will it take to complete the job? Wages of employees should be added accordingly. A worker needs to spend a certain amount of money to complete a job. Overhead charges

- i Depreciation of tools and machinery.
- ii Maintenance cost of machinery.
- iii Rent of buildings.
- iv Cost of electricity.
- v Expenditure on notebook, paper, pencil bill book, pen etc.
- vi Owner's Investable Savings
- vii Salary of Supervisor and Workmen.
- viii Advertising and traveling expenses
- ix Amount due for welfare and savings of workers and other contributions.

4 Profit : This is a fair amount due to the owner as well.

5 Central GST and State GST (Central Goods Service Tax & State Goods Service Tax)

GST is levied on the production of any item. Central GST is 9% and State GST is 9% on manufacture of leather goods. We must include this central and state tax in the invoice.

There are two ways to calculate material cost:

ii By measurement

i By weight (or)

Cost of a suitcase made of leather Size: 24"

SI. NO	PARTICULARS OF ITEMS	QUANTITY REQUIRED	RATE	COST
1	Printed side upper leather	200 Sq Dcm	2.50 per Dcm	500.00
2	Card board	4Nos	5.00 Per.No	20.00
3	Silk lining cloth	3mts	25.00 P.mtr	75.00
4	Metal Frame	1 No	10.00 P.No	10.00
5	Ply wood	2 No	20.00 P.No	40.00
6	Lock	1 pair	25.00 P.pr	25.00
7	Stud	8 No	0.50 P.No	4.00
8	Miscellaneous		20.00	20.00
				694.00
	Transport charge			10.00
				704.00
	Overhead charge (12 to 15%) 13%			91.52
				795.52
	Labour charge			100.00
				895.52
	Profit 10%			89.55
				985.07
	CGST 9%			88.65
	SGST 9%			88.65
	Total			1162.37

A 24" size leather suitcase costs Rs. 116300

Cost of a leather pouch

SI. NO	PARTICULARS OF ITEMS	QUANTITY REQUIRED	RATE	COST
1	Printed side upper leather	10 Sq Dcm	2.50 per Dcm	25.00
2	Silk lining cloth	1/2 mtr	25.00 P.mtr	12.50
3	Miscellaneous	3mts	15.00	15.00
				52.50
	Transport charge			57.50
	Overhead charge (12 to 15%) 13%			7.50
	Labour charge			10.00
				75.00
	Profit 10%			7.50
				82.50
	CGST 9%			7.42
	SGST 9%			7.42
	Total			97.34

Price per leather pouch is Rs. 98.00

Cost of a suitcase made of leather 26"

SI. NO	PARTICULARS OF ITEMS	QUANTITY REQUIRED	RATE	COST
1	Printed side upper leather	210 Sq Dcm	2.50 per Dcm	525.00
2	Card board	4Nos	6 p.b	24.00
3	Silk lining cloth	3 ½ mtr	25.00 P.mtr	87.50
4	Metal Frame	1 No	15.00 P.No	15.00
5	Plywood	2 No	25.00 P.No	50.00
6	Lock	1 pair	35.00 P.pr	35.00
7	Stud	8 No	1.00 P.No	8.00
8	Miscellaneous		50.00	50.00
				794.50
	Transport charge			15.00
				809.50
	Overhead charge (12 to 15%) 13%			05.25
				914.75
	Labour charge			150.00
				1064.75
	Profit 10%			106.50
				1170.25
	CGST 9%			105.32
	SGST 9%			105.32
	Total			1380.89
	Total cost of a 26" Leather Suitcase			Rs. 1381.00

Cost of an Airbag made of leather

SI. NO	PARTICULARS OF ITEMS	QUANTITY REQUIRED	RATE	COST
1	Leather	100 sq Dcm	2.50	250.00
2	Silk lining cloth	2 mtr	25.00	50.00
3	Studs	8 mtr	1.00	8.00
4	Cardboard	1 No	10.00	10.00
5	Miscellaneous (Dendrite, threed, zip, Runner)		50.00	50.00
				368.00
	Transport charge			10.00
				468.00
	Overhead charge (12 to 15%) 13%			60.84
				528.84
	Labour charge			75.00
				603.84
	Profit 10%			60.38
				664.22
	CGST 9%			59.77
	SGST 9%			59.77
	Total			783.76
	1 No of airbag (made of leather) Cost			Rs.784.00

Cost of a Laptop bag made of syhthetic material

SI. NO	PARTICULARS OF ITEMS	QUANTITY REQUIRED	RATE	COST
1	Nylon matte	3/4 mtr	150/p.mtr	112.50
2	Lining cloth	3/4 mtr	100/p.mtr	75.00
3	Thermo foam	1/4 mtr	40/p.mtr	10.00
4	Adjustable buckle	4 Nos	2/p.price	8.00
5	Nylon tape (thick 1 1/2")	2 mts	5/p.mtr	10.00
6	Bush (stitch type)	2 Nos	1/p.price	2.00
7	Zip 10mm	2 Nos	10/p.price	20.00
8	Runner 10mm	6 Nos	2/p.price	12.00
9	Velcro	1/4 mtr	40 mtr	10.00
	miscellaneous			10.00
				269.50
	Transport charge			10.00
				279.50
	Overhead charge (12 to 15%) 13%			33.54
	Labour charge			30.00
	Profit 10%			343.04
				377.34
	CGST 9%			33.96
	SGST 9%			33.96
	Total			445.26
	Total cost of a 26" Leather Suitcase			Rs. 446.00

Describing of bedding role

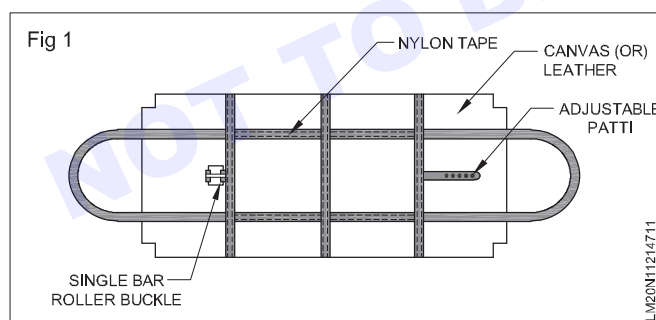
Objectives : At the end of this lesson you shall be able to

- know about materials used for bedding roll
- know about preparation of back part of bedding roll
- know about preparation of front part of bedding roll
- know about gusset connection in back part of bedding roll
- know about gusset connection in front part of bedding roll.

- 1 Ingredients for bedding roll :** Leather, Canvas, Nylon Tape Thick, Nylon Tape Thin, 'T' Ring, Single Roller Buckle, Zip, Runner, Sponge (6x3).

A bedding roll is a material that is used to make the bed mattress that we use for sleeping as a bag and easily carry it from one place to another. This bedding roll is designed to be easily carried by the military personnel while moving from one place to another. Bedding rolls are not only used by military personnel, but also by tourists and outdoor enthusiasts, such as forest explorers, who need a convenient, who need a convenient and portable sleeping solution.

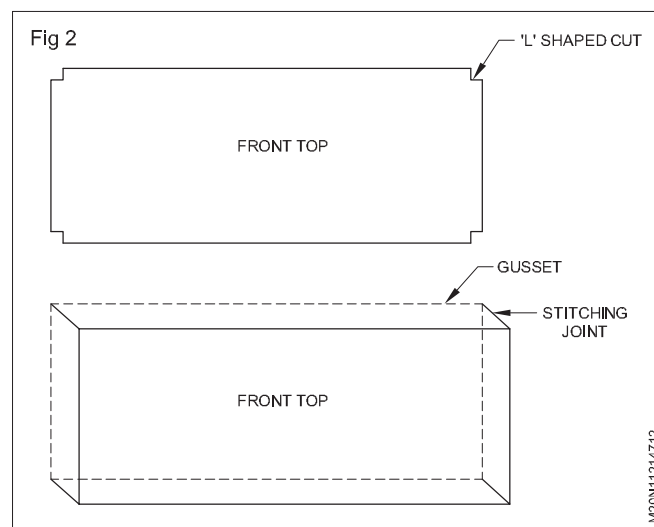
- 2 To know about preparation of back part of bedding roll :** The back part of the bedding roll should take canvas or leather $6\frac{1}{4} \times 3\frac{1}{4}$ to prepare. It should be marked and cut out by measuring feet. If it is canvas, it should be in one piece and if it is leather, it should be combined in two or three pieces according to its area. After that nylon tape $1\frac{1}{2}$ or 2" wide thick tape should be cut to 13 feet length. Mark and sew the cut tape to the leather or canvas top piece we have already cut (Fig 1).



- 3 Knowing how to prepare the front part of the bedding roll :** To prepare the batting roll, cut a piece of canvas or leather to the desired size for the back top. If using leather it can be either one piece or divided into two or three piece of material and attach a zip to the designated area, but only stitch the zip in place, without attaching it to the rest of the material.

- 4 To learn about attaching the gusset to the back part of the bedding roll :** To connect the gusset to the back top of the bedding roll, we get a gusset structure by joining the 'D' shaped block cut in the four corners of the two tops. There is no need to attach a separate gusset to our chosen model. As a part of the front top is stitched with a zip, similarly a part of the back top should be attached with a zip. This zip connection should be attached to the back top on the opposite side of the stitched part on the front top. Only then will it come right during the final connection.

- 5 Learning about attaching the gusset to the front top of the bedding roll :** A gusset is added to the front top of the bedding roll, and all four corners are cut to fit a D - shaped frame, which provides sufficient support. By joining these four cuts separately, a gusset structure is obtained. So there is no need to attach the gusset separately to the front top. In (Fig 2) the part to be connected is shown in the shape of D. Follow this and do the gusset attachment. The above connection methods can be followed for front and back tops as well. If perhaps the gusset is required separately, prepare the batten accordingly and prepare the gusset accordingly and attach it.



Quality inspection during manufacturing. Defects analysis and action about correcting the fault

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

- know about quality inspection during material production
- know about analysing defects and correcting mistakes.

To know about inspection during material production

During the production of leather goods, the work done in each section from the initial stage to the finishing stage should be analyzed. Only then we can produce quality products without defects. For that it becomes very necessary to carry out segment wise studies. Based on that the first section we need to examine is the cutting/ clicking section.

Leather, the primary material for production is cut using one of two methods.

- In small factories, leather parts are cut manually with a knife.
- In large factories, a clicking machine is used to cut the leather efficiently.

In these two types of cutting methods, the skin parts to be cut- must be examined. While doing such testing, the skin to be cut should be checked for defects such as scratches, folds, wrinkles, uneven volume, slacks etc.



Colour mismatch
Source: Improper deployment and retention



Brand marks Evidence:
Improper handling



Surface: irregularity
Source: Animal



Surface: defect due to scratch mark
Evidence: Injury to the animal during improper handling or



Growth Marks
Source: Rubbing against fences or natural veins.

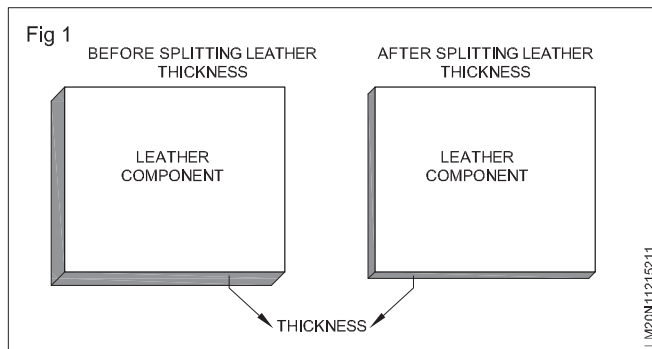
The next study is the splitting section. In this section, the work is done to uniformly reduce the volume of the skin, which is more than our requirement, through the splitting machine. Small factories are unlikely to have this section or this machine at most. Similarly, even in large factories, this machine is not used much. We choose and buy leather hides that have enough materials for our purpose. So there is no situation where we have to use splitting machine. Maybe if we don't get the skin in the volume we expected, we buy the skin with more volume and it there will be a need to split. In such a situation we have to examine the splitting section as well. While doing such inspection, we have to check whether the spare parts of the leather goods have been splinted evenly in the volume required by us using a leather thickness measuring gauge. Skin volume should be uniform in all areas examined.

After the splitting section, the next section is the skiving section. This machine is essential even for a small factory in this segment, there should be at least two machines. (Fig 1)

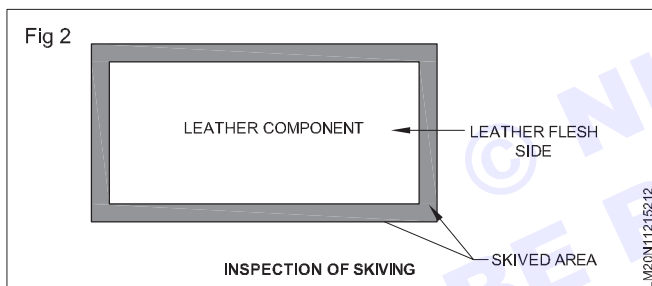
Because skiving is a very important job in leather goods manufacturing industry. Because scraping is very important for leather to finish the product well.

Therefore, a study in the skiving section is essential to be carried out. While working on all components, ensure that skiving is done correctly. Investigate any deficiencies or issues with skiving, especially in areas where the material is very thin or has a low volume. This is crucial because

improper skiving in these area can lead to folding problems, which can compromise the products quality. Therefore, be extremely careful and through in your investigation.



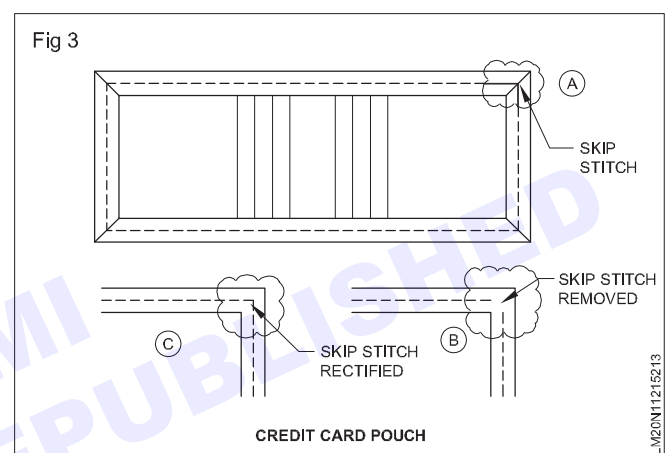
Skiving section inspection is followed by assembling section (table work) inspection. In this section the work is done from applying glue to final stitching. So first the adhesives inspection should be done to ensure that the lining is properly applied and then bonded. If any defects are found in these inspections, they should be advised to correct them immediately. After this the stitching of the components should also be checked. Then the assembled components should be inspected to see if they are properly joined and if the final stitching is done properly or not. Only when all these tests are carried out properly, the product can be obtained with good quality. (Fig 2)



Knowing about analysing defects and correcting mistakes

A finished product should be taken to analyse the finished product for defects. Let's take a credit card pouch for that. So take the material and subject it to examination. While doing such inspection, it should be analysed whether there is any defect in bolting, stitching defect, connection defect or any other defect as already known in the previous lesson.

If any defects are found in the analysis, immediate action should be taken to correct them. When sewing a credit card pouch, make sure the final stitch doesn't over lap with the corner stitch. To avoid this, separate the final stitch from the corner stitch by 2 - 3 stitches, immediately after completing the skip stitch. Finish by stitching two or three stitches together on both sides of the seam. Fig 3 shows that the deficiencies are addressed as above.



Describing of stamping machine

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

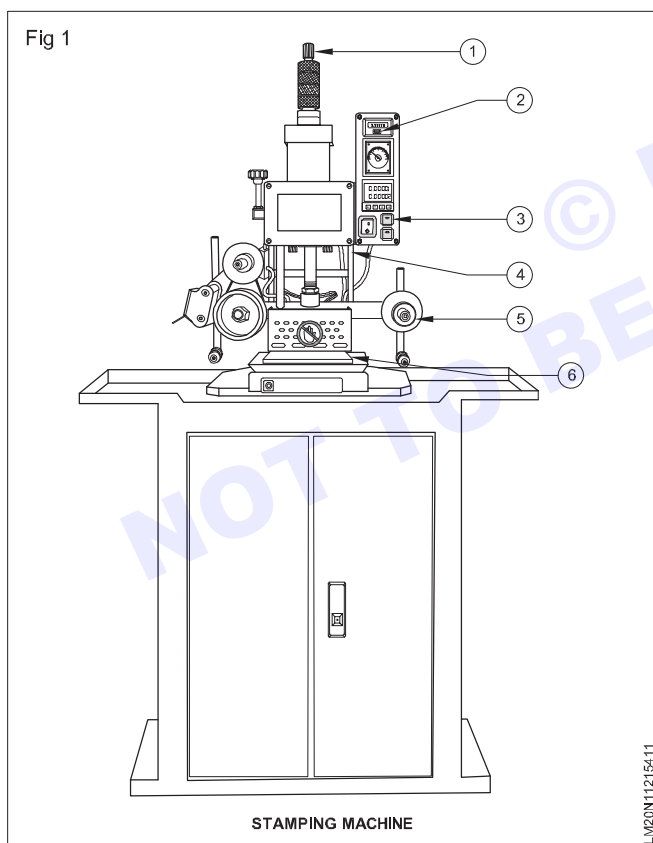
- explain the working method of stamping machine.

Stamping machine (Fig 1)

Parts of the machine

- 1 Air Pressure Adjusting Knob
- 2 Timer Button
- 3 Temperature Control Knob
- 4 L Shape Arm
- 5 Foil Adjusting Knob
- 6 Alpha

This stamping machine is widely used in the production of leather goods. This machine is used for stamping parts of leather material with Alpha numeric die where required. (Fig 1)



System

- This machine works in pneumatic mode.
- The machine looks like an inverted L-shape.
- Various controls are found in this arm area.
- In Arm area, timer button, foil adjusting Knob, speed controller, Alpha numeric die is found.
- Stamping adjusting knob, air pressure adjusting knob is found at the bottom of this arm part.
- Heating coil temperature controller is found to heat this Alpha numeric die.
- This stamping die also has a pedal to operate.
- This machine is operated by electricity.

Job operation

First turn on the machine. stamping Alpha numeric die should be placed in the size we need. Air pressure should be adjusted. The part of the leather material to be stamped should be placed under the Alpha numeric die. Temperature, air pressure required for stamping should be adjusted. Now press the pedal, then necessary stamping will be done on the leather material.

Uses

- We can do the stamping with this machine.
- The stamping impression is correctly done by machine.
- It can be done faster.

Economic cutting of components

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

- explain economical cutting of parts.

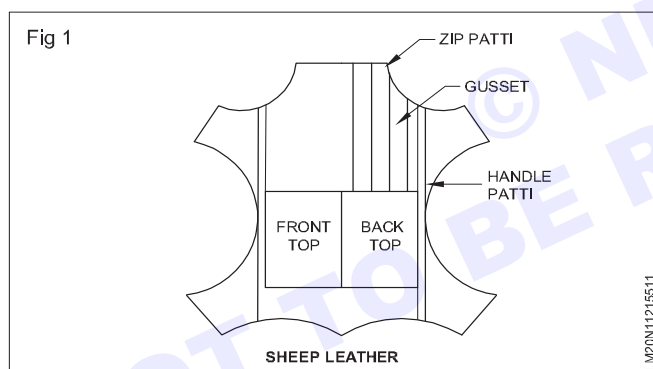
Economical cutting

Leather is the primary and most expensive form of leather goods. So while cutting the leather, marking and cutting should be done carefully. The lower the wastage, the lower the cost of the product. When cutting sparingly, we prevent skin wastage.

A hydraulic clicking machine can be used in a factory for high-volume production and for quick, finished work. When doing mechanical clicking, wastage is reduced, and economical cutting can be done. Care should be taken when cutting by hand, only then the wastage will decrease.

A finished piece of full leather should be spread out on the table and inspected, marking any imperfections.

Then we have to make the parts to be cut evenly without gap and keep the pattern as marking shown in the picture. (Fig 1)



After marking it should be cut with a knife without any lumps.

The knife should be too sharp. In the butt portion of the leather, the main parts such as front top and back top can be cut. Parts such as gussets, handle straps, zip bars can be cut on the leather belly. Areas like the gusset and handle strap require a bit of flexibility, so the belly area is tight. Similarly, the smaller parts should be marked and cut at the appropriate place.

Things to consider when cutting leather

- A manual cutter should act carefully.
- When cutting with a machine, the cutter must be well experienced.
- Make sure the cutting die is sharp.
- While cutting in a hydraulic clicking machine, the leather should be spread on the fiber board and the cutting should be done steadily starting from one side.

- If small pieces of leather are wasted while cutting, they can be used to make small leather items such as coin purses, watch straps, etc.
- When cutting by hand, place the cutting mat on a level surface.
- Also the angle of the cutting blade should be 45° .
- It is essential that the knife used is of good quality.
- Hold the leather well with the left hand and apply pressure with the right hand for cutting.
- It should be cut in a single cut without any mush.
- While cutting the particular part, the leather should be turned and cut slowly with the left hand.
- To minimize wastage of leather we first need to decide which parts to cut.
- The cut parts should be arranged immediately and sent to the next operation. (Figs 2 - 4)

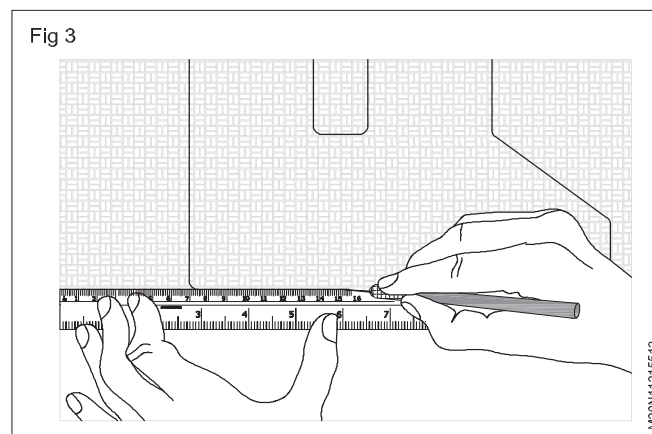
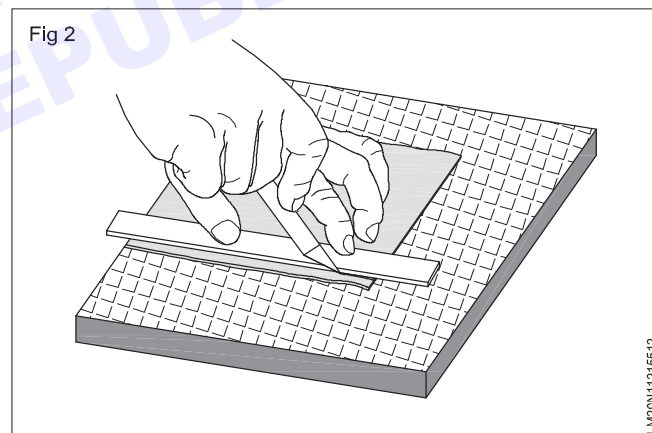
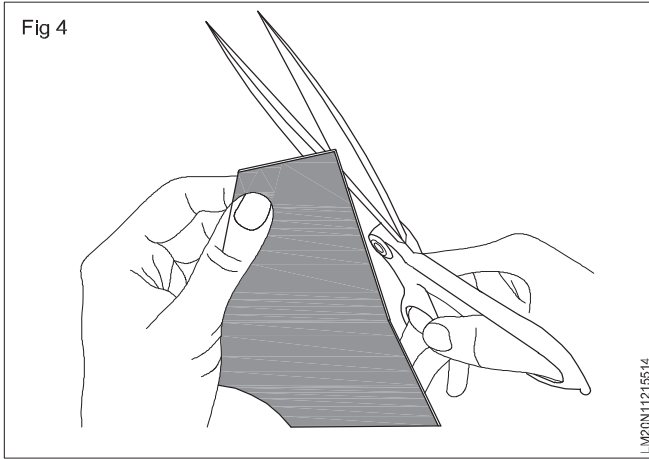


Fig 4



Leather

Related Theory for Exercise 1.12.156

Leather Goods Maker - Marketing and Selling Methods

Checking of quality during manufacturing goods

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

- know about inspection and repair while making goods.
-

Refer Ex.No. 1.12.152 & 153 - for inspection and repair while making goods

Describing of grinders & fitting materials

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

- know about the applications of implantable devices.

Refer chapter 1.10.107 & 111 for applications of matching devices

Fittings

Various types of fitting equipment are used for manufacturing leather goods. These are made of metal and plastic. By these the construction of the goods is perfected, and the value added. We have to select the appropriate equipment according to the nature of the work we are doing.

- 1 Locks :** Locking devices are called "Locks". Locking devices are used to keep the contents of the bags from falling due to flow and shock. Locks are made from steel, aluminum, chromium brass (copper). Locks for school bags and some types of bags, Cherry Locks and VIP Locks are used for dispatch cases. These are available in 1" to 1"1/4, 1"1/2 sizes.
- 2 Corners :** This device is decorative fitting in the corner areas of the products. It is made from steel, aluminum, chromium, copper. As these are applied to the leather goods, the goods are given a beautiful appearance. These are mostly fitted in note cases, wallets and some types of bags. It is available in "1/2", 3/4", 1", 1"1/4, 1"1/2" sizes.
- 3 Rollers :** A similar device is the spinning wheel. Made of kanak plastic will be Both sides are fitted with steel knobs. The middle of the roller is made of steel parts on both sides and fixed on the bottom of the suitcase.
By fitting these rollers under the goods, large suitcases, bag types and dispatch cases are used to be dragged on the ground when they cannot be lifted. It is mostly made of steel, brass metal. This device is available in standard size.
- 4 Key hooks :** This matching device is used in the key case to prevent the key from falling down. It is available in sizes 1", 1 1/4", 1 1/2", 2", 3". Hooks are 1 to 8 in number. This device is made of aluminum, chromium, brass metals.

- 5 Fancy buckles :** Fitting these accessories to leather goods adds to the beauty of the items. It is available in many designs. Mostly made of plastic, steel, metal.

- 6 Stud button :** This corresponds to the action of the rivet button. Used to fit africa suitcase, briefcase, leather trunks Plain plate, VIP beading plate. It is mostly made of steel.

- 7 Plastic bush :** This device is installed so that the bottom of the goods does not wear out.

Example : The bottom of handbag, traveling bag, dispatch case, suitcase, briefcase is fitted to prevent wear and tear. design-5 made of plastic, aluminum steel materials. Some Bushes are designed for direct fitting with the help of a split rivet.

- 8 Dog hooks :** It is made of Steel. When making a dog belt, dog hooks are attached. By fitting in this way, the chian can be attached separately from the Dog- belt through Hooks. It's beautiful to look at. These Dog hooks are used to connect the shoulder handle to the "D" cut in school bags. And in Fancy leather goods also handle is used to connect goods. At present, this Dog hook is fitted on the solder handle of all types of packs.

- 9 Plain plate :** The device is mostly made of Aluminum. It is called "PLAIN PLATE" because its surface is normal. Used when making briefcase, suitcase, leather trunk. These fit the suitcase securely. Working long hours. It is sold in meters.

- 10 VIP beading :** The device is made of Aluminum. Its surface is not plain but with a line like structure on both sides. Briefcase, suitcase, leather trunks are fitted to ensure stability. Small nails are hammered in the middle of it when it is fixed. Small nails are hammered in the middle to hide it. Black tape is placed in the middle to hide it. It's beautiful to look at. This device is sold by the foot.

Threads & its types, types of stitches, stitch length

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

- explain the types of threads
- describe types of stitches
- knowledge of stitch pattern and stitch length.

Thread : It is widely used in leather goods manufacturing and shoe manufacturing. It is used to join various parts together. Threads are created by twisting multiple strands together, typically between 3 to 12 times (forming a cord). When sewing, it is essential to choose the right threads for specific material you're working with.

Example : Choose the right size for your material

- Thin materials: Use 50 or 60 size thread.
- Thick materials like rexine and leather: Use 40 size thread
- Heavy - duty material: Use 30 sizes yarn

The characteristics of the thread should be as follows

They are

- A Breaking strength
- B Uniformity
- C Elasticity
- D Appearance
- E Abrasion and microbes resistance.

A Breaking strength : Breaking strength is the equivalent strength of yarn. When a stitch is formed on a sewing machine must be durable, and it should be strong enough not to cut under the force of the machine while sewing. Therefore the strength of the thread is essential.

B Grade (Uniformity) : The yarn should be in uniform weight. The sewing machine we use is very sophisticated, so consistent heavy thread should be used. Otherwise, the machine is likely to be repaired and several strands may be twisted together. If not, you will see patches here and there. So, the appearance of the thread will not be consistent.

C Elasticity : Resilience is important for thread. Resilience should be moderate. The elasticity of the leather that we used for making a leather product flexible. Otherwise, the leather material is likely to tear. Similarly, if the yarn has high resilience, the shape of the object is likely to change over time, so we need to consider the resilience while choosing the yarn.

D Appearance : When we working with leather, choose a thread that complements the material's appearance. If the seam will be visible, select a thread that blends in or matches the leather's color to ensure a visually appealing finish.

E Wear and antimicrobial resistance : As the thread passes through the thread guide, friction wears out and is likely to cut. The thread we select should be durable and resistant to microbial attacks, such as bacteria, to ensure it can withstand degradation and maintain its integrity.

Types of yarn : Yarn is divided into three types based on the raw material used to make the yarn. They are

A Natural thread

- i Cotton thread
- ii Linen thread
- iii Silk thread

B Artificial thread

- i Nylon thread
- ii Terylene thread

C Blended thread

- i Polyester

A Natural thread : This type of thread is called Natural thread as it is available naturally.

i Cotton thread : It is obtained from the cotton plant. Its strength, resilience, uniform weight, appearance etc. are moderate. It is made by twisting three strands and twisting several strands together. These are called 6, 9, 12 cord respectively. Cotton thread is used to sew conductor bag, suitcase etc.

ii Linen thread : It is made from a fiber extracted from the stem of a plant called Flax. It looks strong. The top looks as rough. It is mostly used for sewing heavy leather goods. Rayon thread is obtained by combining the yarn extracted from animals with this type of yarn.

iii Silk thread : This type of thread is obtained from the cocoon of the silkworm. It is moderately strong and moderately resilient, but the price is high. These are mostly used for sewing clothes. This thread is also called animal thread as it is obtained from silkworm. Its appearance is beautiful.

B Artificial thread : This type of thread is called artificial thread as it is made artificially.

i Nylon thread : Nylon is synthetically made from chemicals. They can be used instead of silk thread as they have many of the properties of silk thread. Further it is stronger than cotton thread. Recovery is consistent.

ii **Terylene** : It is artificially produced. Its strength is consistent. It is more resilient than nylon thread. It's not very useful.

Blended thread

It is made by combining natural and synthetic fibers. It is called polyester. The strength and resilience of these threads is consistent.

Natural Thread

Natural threads, like cotton or wool, can be identified by their slow - burning reaction to fire. When exposed to flames, they ignite and burn gradually.

Artificial thread

Synthetic yarn burns with thick smoke when exposed to fire, after burning a small ball like material is seen. And it burns quickly.

Types of stitches

Stitching is the joining together of a continuous thread or several threads for strength or beauty. We call that happening in a straight line. That is called as the seams.

The purpose of stitching

- 1 Permanently joining one or more materials,
- 2 For strength and
- 3 For beauty.

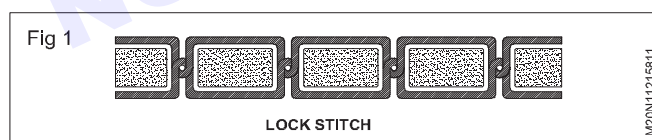
Types of stitching

There are generally two types of stitching.

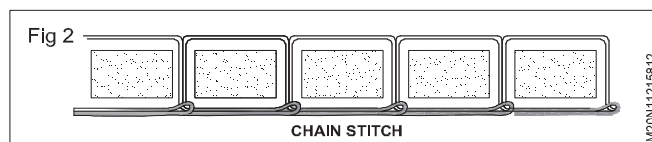
They are

- 1 Lock stitch
- 2 Chain stitch

1 **Lock stitch** : This is caused by two threads. The upper thread comes through the eye of the needle and the lower thread. The bobbin comes from the case in the bed of the machine. These two tight threads form a lock inside the material. (Fig 1)



2 **Chain stitch** : Chain stitch occurs by creating a chain under the material in a single thread. (Fig 2)



Stitch appearance and length

Stitching is very important for the exquisite beauty of leather goods. The sewing machine, the thread, the material and the stitcher all need to be precise for the stitching to be perfect. While sewing, the seam allowance should be at the required level.

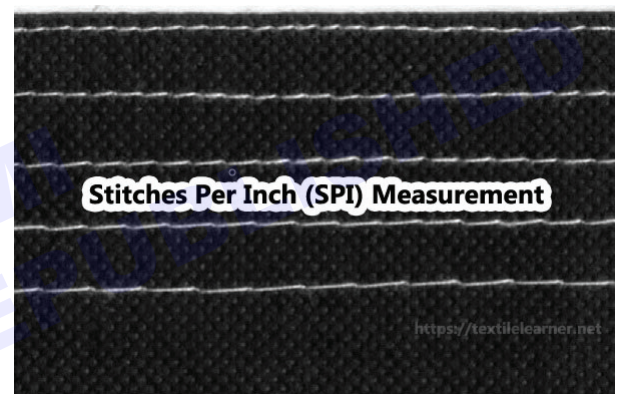
Generally, leather goods are manufactured with 8 to 10 stitches per inch. The stitch length is set by the "stitch length adjuster" on the sewing machine. For small articles like coin pouches, purses etc., set to 8 stitches per inch.

Otherwise, one for large leather items like suit case, hold all etc. Set to 10 stitches per inch. (Fig 3 & 4)

Fig 3



Fig 4



Choose a thread that matches the colour of the leather for a neat look. Similarly, the weight of the thread should be correct. When good quality thread is used, the durability and appearance of the product will be good. (Fig 5)

Fig 5



Leather	Related Theory for Exercise 1.12.159
Leather Goods Maker - Marketing and Selling Methods	

Explanation about trimming & finishing

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

- knowledge of trimming and finishing.

Refer chapter 1.3.34 - Trimming and finishing

Leather	Related Theory for Exercise 1.12.160 & 161
Leather Goods Maker - Marketing and Selling Methods	

Quality checking of finished products, faults found & their rectification. Various departments in leather goods making

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

- know about defects of finished products and their remedy
- knowledge of various sectors in leather goods manufacturing.

Correction of defects in finished material Refer Chapter 1.12.130 to 136
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Various sectors in leather goods manufacturing

1 pattern making department

Designing

pattern cutting

2 Cutting department

Leather cutting

lining cutting

Media cutting

3 Manufacturing sector

Splitting

Skiving

Marking

4 Assembly department

Pasting

Side folding

Insertion joining

Clear cutting

Stitching of connecting devices

5 Finishing department

Trimming

Viscose thread cutting

Cleaning

Greasing

Colouring

Polishing

6 Experimental department

Quality control

Packing

Parts manufacturing

There should not be any kind of defect when we make leather goods. Therefore, all types of operations should be performed as per requirement. First of all, the components required for the leather goods should not be damaged. Then you have to select the required input for it. Following operations are mainly to be done while making leather goods. They are

Study

Marking and cutting

Splitting

Skiving

Side folding

Punching

Finishing

Clicking or cutting

Clicking is important in leather goods. (It is called "clicking" to mark the size of the design or the size of the pattern and cut out the leather).

Clicking can be done in two ways

1 Clicking with hand

2 Mechanical clicking

1 Clicking with hand : Cutting leather by hand is called "Clicking". To do this,

- 1 Place the leather flesh side up on a viewed board.
- 2 Spread the pattern and mark the leather with your left hand.
- 3 Apply pressure with your right hand and cut in one smooth motion using a knife.
- 4 Cut a 45 - degree angle to prevent cracks.
- 5 Use a straight edge or weed to ensure a straight cut.
- 6 When cutting multiple layers, press down firmly to avoid uneven cuts.

Cutting the curved part

Free hand cutting should be done while cutting the curved part. Cut by holding the knife at an angle of 60° with your fingers. To cut a rounded part, the knife must rotate the material in several directions.

2 Mechanical clicking : Cutting leather by machine is called machine clicking. Here hydraulic clicking machine is used to cut leather.

pattern cutting

Before we take the pattern we need to see the shape of the object and decide the parts. Then draw them on the paper board. Cut the corners with the help of sets square. Curved areas should be drawn with the help of compass. Then cutting should be done with the help of scissor (or) knife. Then they should be glued temporarily.

Leather cutting

Leather must be viewed before clicking. Leather quality and weight should be uniform. After viewing, skins should

be spread on flesh side cutting board. Next, mark the pattern onto the leather using a pattern paper. When we are clicking, we have to cut with the help of knife. Apply pressure to the Leather with the fingers of the left hand and cut with the right hand. Scale should be used when cutting a straight line. Free hand cutting should be done while cutting the curved part. Hold the knife at an angle of 60° and cut with finger pressure. When cutting a rounded part, the knife must rotate the material in several directions.

Cutting of lining material

When cutting the lining material, keep the pattern. If we are going to sew the lining, a large cut is sufficient.

Cutting the media

The inserts should be cut slightly shorter than the pattern. Care should be taken not to touch the material while stitching.

Production department

Splitting or skiving of cut parts as required. Then the correct volume should be checked and marked.

Assembly Department

Apply adhesive on one side of all the parts. After the glue is dry, fold the edge. After that the insert should be attached and clear cutting done. Then the fitting devices should be fitted and the final stitch should be done.

Finishing department

Trimming and cutting the vise thread for the finished piece of sewing. Then colouring and cleaning and greasing should be done. Finally polishing must be done.

Department of Testing

Quality inspection should be done after completion of packing all operations.

Describing of beam clicking press and different types of finished leather, chrome leather, suitcase leather

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

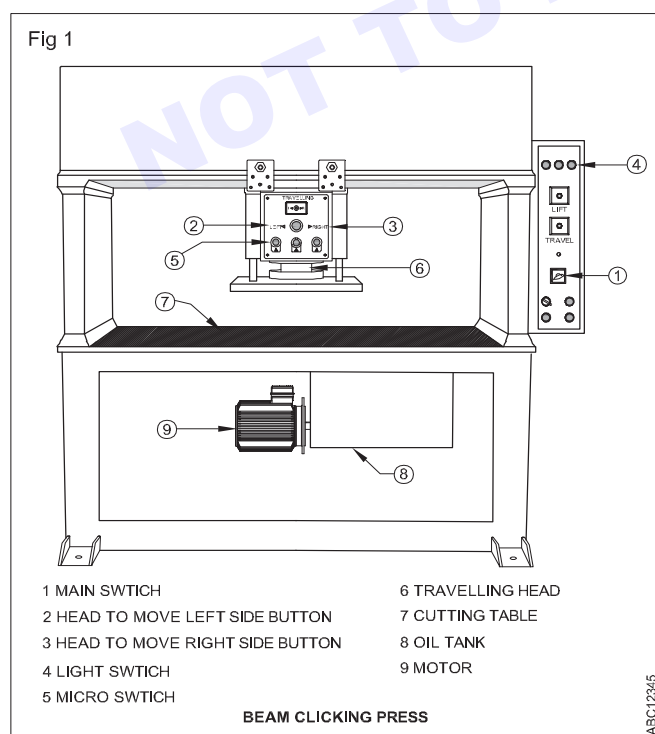
- explaining how beam clicking press works
- advantages of beam clicking machine
- explain the safety to be followed in beam clicking machine
- know different types of finished leather.

Knowing how beam clicking press works : This machine helps to cut leather parts, lining parts and boards required for leather material and shoe manufacturing. This machine is available from 25 to 45-ton pressure and is very heavy duty to cut things.

Beam clicking machine is also known as traveling head cutting press machine. The machine consists of a travel head press attached to a pillar-like structure, below the press there is a very strong steel flat bar on which the material to be cut is placed, and the polypropylene board is placed on it.

There are two buttons on the front of the column to move the travel head left and right. Also an adjuster is found at the front of the column to control the pressing speed of the travel head press. This machine is hydraulically operated. Currently, this machine is manufactured with automatic feeding and computer assisted operation.

Operating mode : First check whether the die to be cut is correct. Then the die of the pieces to be cut is to be cut (a) so that there is not much waste on the lining to be coloured. Then switch on the machine. Then set the correct pressure. (Fig 1)



Position the travel head correctly and press the correct button to press the right (a) left side as required, now the travel head applies pressure on the pieces to be cut and cuts the material.

Advantages of Travel Head Press

- Excess pieces can be Easy to cut with this machine.
- Can cut heavy stuff.
- The cutting edge will be correct.
- Wastage can be reduced.
- Get accurate cutting.

Precautions to be taken in beam clicking machine

- Organizational connections should not be separated unnecessarily.
- When moving the travel head, it should not touch the hand.
- Faults in the machine should be rectified only after switching on the machine.

Different types of finished leather and it's uses

Nappa Leather

- The appearance of Nappa Leather is significant.
- It is a very supple soft leather.
- Flexible.
- It has a waxy feel and is made in many colours.
- It is usually made in sheep, goat, and cow leather.

Uses

- Used to make fancy goods.
- Used to make leather garments.
- Ladies purse and wallet are used to do
- Used to make domestic gloves.

Suede Leather

- Flesh side is important.
- Its flesh side looks like velvet.
- No suede leather finishing.
- It is made in many colours.

- Processing dyeing can be obtained.
- It is very soft.
- Smooth.
- Flexible.
- It is made from common goat and sheep leather.

Uses

- Used to make fancy goods.
- Used to make leather garments.
- Used to make ladies purse, wallet.
- Used to make domestic gloves.

Burnish Leather

- It is first class leather.
- Its thickness is slightly higher.
- Appearance is important.
- It will be medium soft.
- Its surface is snuffed and finished.
- Made from goat, cow, buff leather.
- Flexible.
- It is made in many colours.

Uses

- Used to make suitcase and briefcase.
- Used to make shoes.
- Used to make belt, wallet, purse, leather goods.

Nubuck Leather

- It is made by snuffing like burnish leather.
- Snuffing is done several times. (80 Emery paper to 1500)
- The surface looks like velvet.
- Made in many colours.
- Thickness will be slightly higher.
- Flexibility is moderate.
- Usually made from goat, cow, buff leather.

Uses

- Used in fancy leather goods.
- Used in shoe manufacturing.
- Used to make belt and briefcase.

Cow Softy Leather

- Its grain side is important.
- It is resin finished
- It has a thickness of 0.8mm to 2.5mm.
- It has many colours.
- It is flexible.

- It has flexibility.
- It has a waxy feel.
- It is made from low quality cow leather.

Uses

Used to make leather goods (ex) traveling bags, air bags, shoulder bags, etc.

Glaze kid Leather

- It is made from top quality goat leather.
- Its grain side is important.
- It is medium soft.
- Its surface is shining like a mirror.

Uses

- Used to make wallet, cosmetic case, jewel box, etc.
- It is used to make shoes.

Resin finished leather

- Its grain side is important.
- It is made in many colours.
- It will be medium soft.
- Thickness leather is produced.

Uses

Used to make ladies handbag, fancy purse and belt.

Chrome Leather

Leather tanned by chrome tanning is called chrome leather. Good quality leather is aniline finished after chrome tanning. A slightly lower quality is the nubuck finish, embossed leather.

Suitcase leather

Chrome tanned cowhide with a resin finish is used to make the suitcase. And the slightly inferior leather is lightly snubbed and printed with a resin finish. With this Suitcases can be made. Its surface is shiny and has good flexibility.

Embossed Leather

A slightly lower quality leather is prepared by applying resin finish and then embossing and plating our desired design, various designs are also done by hand. A variety of fancy leather goods is made from this leather.

E.I (East Indian) Tanned Leather

- It is made with herbal ingredients.
- It is called "kattai Leather".
- It is brownish yellow in colour.
- Seen in thickness.
- Less flexibility.
- Smooth.

Uses

- Used to make conductor bags and police belts
- Shoe - Top sole is used in shoe manufacturing.
- It is used as an intermediate material when making Suit-case etc.
- It is used to make belts and industrial products.

Characteristics of Leather

- Leather-(hair holes) are seen.
- Air permeability is due to the presence of pores.

- Water absorbent.
- Durable.
- Resilient and stretchy.
- Flexible.
- Smooth.
- Leather can be skived.
- Leather splitting can be done.

All the above mentioned are the characteristics of leather.

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Describing of hydraulic clicking machine and its operations, measurement & its principle, area measurement of leather & pattern

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

- knowledge of hydraulic clicking machine
- knowing about scales and its principles
- knowing about measurement of area of pattern and skin.

For hydraulic clicking machine Refer Chapter No:1.10.97,99 and 100

Scales and its principles : Sizes are very important in leather manufacturing. Ingredients are measured by weight and area we use.

Example

BT Sole Leather is priced by weight. Upper and lining leathers are priced by area.

Principles of Measurement (Principles of Measurement)

First we need to determine whether we want to calculate the weight or area of the leather that we are using.

Weighing scales should be government approved.

Weight scale and weight stones should bear government stamp.

If there is a zero error when using measurement then it needs to be fixed.

When loading more than 100 kg, check that the machine is in proper condition.

Scales used to measure leather area should be ensured to be evenly spaced.

Measurement of skin surface area

First, determine how much leather is needed to make a specific item. According to the use of the leather, its area should be measured and marked on the right side of the Flesh side. After packing leather from tannery we need to check packing slip. Then the skin should be sent to the Cutting Section. Scrap remains after clicking the skin. It should be cut into small components. First, the area of the cutting leather and the area of Scrap Leather should be added and the average should be calculated. The price of leather does not depend on its surface area but on its type and quality.

Leather can be measured in several ways

Card Board -

Measuring Frame

Square Board

Electronic measuring machine

Card board : This method makes measuring the skin much easier. First we need to spread the skin to be

measured on the table. Spread the Card Board with the measurements (1/4, 1/2, 3/4, 1 Square feet) on the leather. Then how many Card Boards are there on leather, Calculate that and find out the area of Leather. Area cannot be determined accurately in this method.

Square board

Skin is measured with the help of Square board. We need to spread the leather on the table first and then spread the square board on the leather stop (1/4, 1/2, 3/4, 1 Square feet). You can know the area of leather by looking at it.

Measuring frame

Take two wooden frames of 4 feet x 4 feet. Less moment wires should be spaced evenly for each wire. Wires of 1 square feet should be painted. This frame should be fixed on the table and we can easily know how many square feet the skin is by placing the skin under the frame.

Electronic measuring machine

With this machine, the skin surface area can be accurately calculated. There are two rollers on both sides of this machine. These are connected by conveyor wire. In the center of this machine (under the Conveyor wire) a glass 10cm wide is arranged. A tube light is also arranged above the mirror. The light from the tube light is arranged to reflect on the mirror. It is connected to electronic system. Display board and printer are found here.

A starter is found to run this machine. As soon as the starter is pressed the conveyor wire starts running. When the leather passes over the glass, the tube light is blocked by its surface area. Now the area of leather is visible on the display board. This machine can be used to accurately calculate skin surface area. This method comes in metric system measurement.

Weight

Certain leathers are sold by weight.

Example

BT Sole Leather, Kattai Leather

Measurement

Some are sold on a specific skin area basis.

Example

In nappa Leather, suede leather, burnish leather, square feet or Square DCM calculated by multiplying the length and width of the skin to calculate the surface area of the skin.

Area measurement of leather

Generally the area of hide or skin is sq.ft. Or the method of measuring in sq.dcm measurements is called Area measurement of leather. Meter scale electronic measuring machine is used to measure the area of the skin in this way. First, take a leather and measure the length of the leather from its head to the center of the tail using an inch tape. Then measure the width of its belly (Belly to Belly) in the middle of the central part of the length. Multiply both to get Square Inch. Square feet is obtained by dividing these by 144. 144 Square Inch = 1 Square feet. If the shape of the skin is uneven, it can be calculated using the above method.

Area measurement of Pattern

Whenever we make any item, if we make the items directly without taking the pattern, the wastage will increase. So first you need to take the pattern. The area of the pattern is obtained by multiplying the length and width of the pattern. By doing this, the wastage of leather is reduced and it is possible to calculate how much leather is required to make the item.

Importance of metric system

- Metric system is very easy to use.
- A separate unit is given for each measurement.
- Since measurements are given in fractions, conversion is easily done.
- The number of measurements can be incremented or decremented.

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Describing of strap cutting machine parts and functions

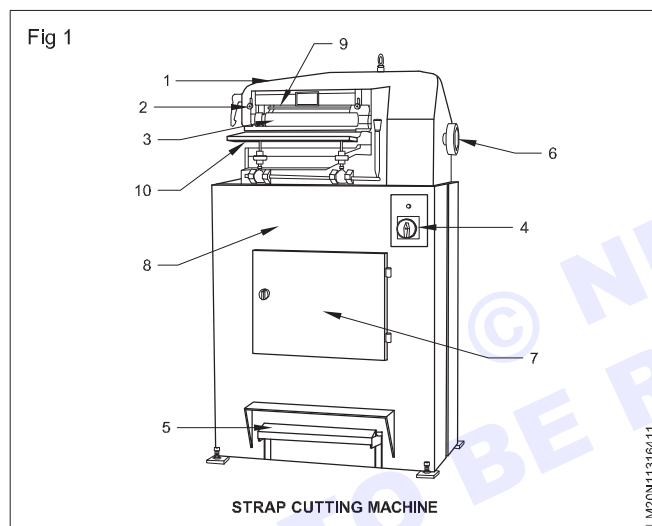
Objectives : At the end of this lesson you shall be able to

- know about the parts of strap cutting machine
- know about the operation.

Strap cutting machine : A strap cutting machine is a machine that is used to easily, accurately and quickly cut long parts of leather goods.

This machine is designed for cutting long leather parts like belt straps with high precision. It can anywhere from 1 to 10 pieces at a time, making it faster and more efficient than manual cutting. The machine cuts straight lines without curves, allowing for accurate cuts and increased production.

Structure of strap cutting machine Parts (Fig 1)



- 1 Head
- 2 Knife roller
- 3 Feed roller
- 4 ON / OFF switch
- 5 Pedal
- 6 Wheel
- 7 Door
- 8 M/c Base Body
- 9 Feed Tray
- 10 Safe guard

How a strap cutting machine works

First clean the machine thoroughly. Then we need to set the blades in the machine according to the size of the leather we need to cut. That is, if a belt strap is to be cut

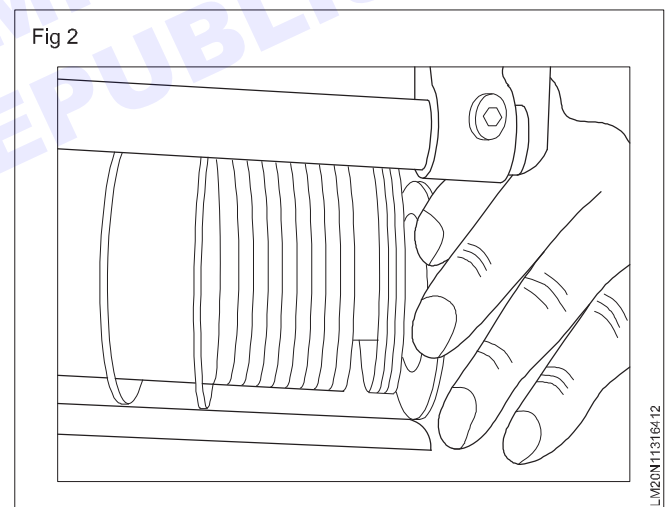
to 1 1/2", the blades on the machine must be set to 1 3/8", the maximum number of blades that can be attached and kept ready.

Fitting the Blades

We have to keep the leather ready to be cut as wide as the machine can cut the leather. That is, if one foot wide skin can be cut, the skin should be cut to that width and kept ready.

Then turn ON the machine and start the motor. Once the machine is turned ON, place the leather skin in the feed tray and press the pedal. The machine's roller will pull the skin in and a fixed blade will cut it into straps. These straps will become the belts we want to produce.

As shown in (Fig 2), the knife roller in the machine should be removed using the necessary tools and the round block in it should be taken separately and fixed.

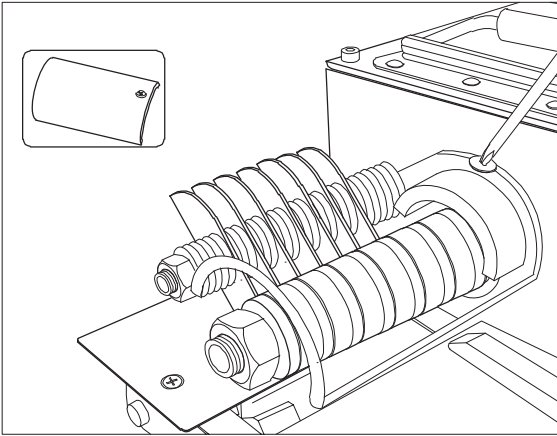


Align and fix the blades as shown in Fig 3 and Fig 4.

Feed the skin into the feed roller and stop (Fig 5).

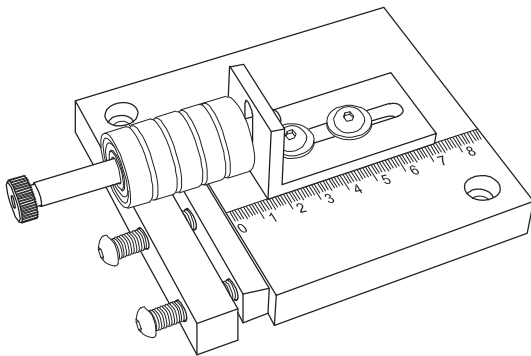
A system in which the blade cuts the skin into straps and passes it posteriorly (Fig 6).

Fig 3



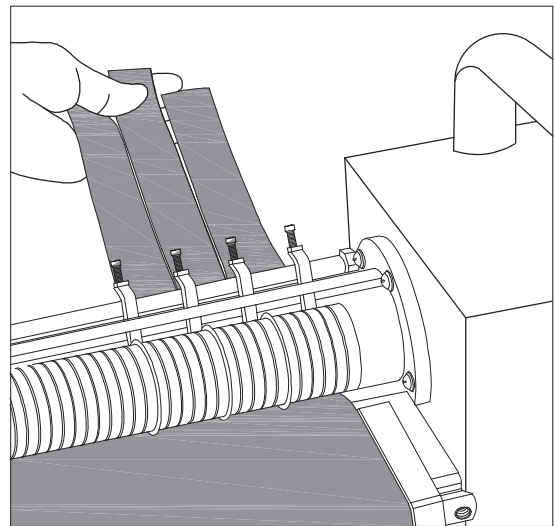
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Fig 4



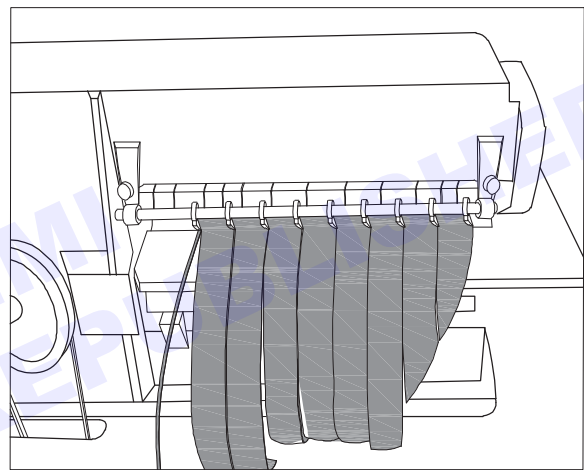
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Fig 5



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Fig 6



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Describing of splitting machine and its parts, cross section of leather

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

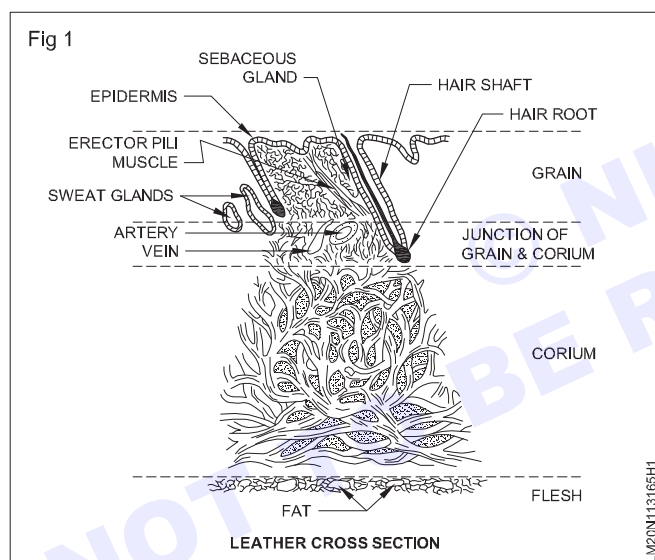
- know about splitting machine
- knowledge of cross-sectional appearance of skin.

For splitting machine Refer Chapter No: 1.08.80

Cross-sectional view of Leather : Generally the cross-sectional view of hide or skin is three layers. They are

- Epidermis Layer
- Dermis (or) Corium Layer
- Flesh (or) Adipose Layer

Epidermis Layer (Fig 1) : It is a very thin layer. It makes up one or two percent of the total volume of the skin. Hair follicle, fat gland, sweat gland etc. are found here. This layer is removed during liming.



Dermis (or) corium layer

It is found under the Epidermis Layer. It is the heaviest layer, accounting for 96 to 98% of the total volume of the skin. This part is what we get as Leather. Here fine fibers are more common. This layer is divided into two sections.

They are

- Corium minor
- Corium proper

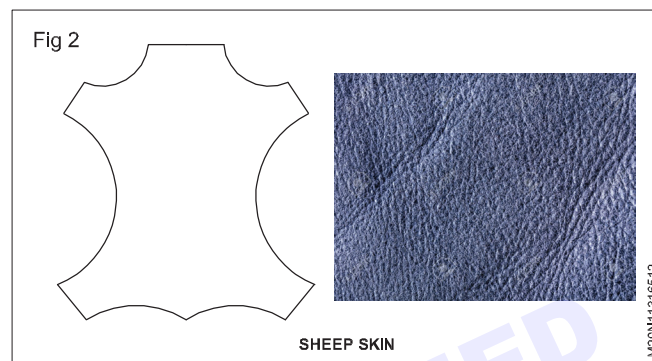
Flesh (or) adipose layer

It is found below the corium layer. It is the thinnest part. It is found in one or two percent of the total volume of the skin. This part is removed during liming.

Different types of skin

Lecture on different types of leather

Sheep skin (Fig 2)



The skin taken from sheep is called Sheep Skin.

Size and Thickness

It is similar to the thickness of goat skin. It has an average area of 4 sq ft to 8 sq ft. The volume ranges from 0.4 mm to 1.4 mm

Characteristics

Hair holes are more and closer in sheep skin. Softness will be more. Flexibility is high.

Uses

Mostly used for making shoes. Leather is used to make clothes. Used to make leather gloves, wallet, ladies purse, pouch.

Goat Skin (Fig 3)



The skin that is peeled from the goat is called Goat Skin.

Size and thickness

Its surface area is on average 4 sq ft to 8 sq ft and its thickness is 0.4mm to 1.5mm.

Characteristics

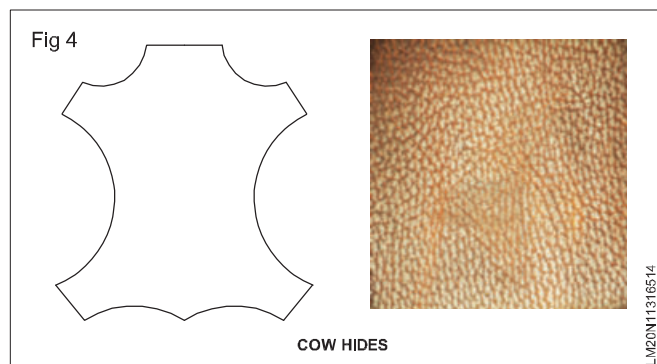
Hair holes are isolated, widespread and evenly spaced. Flexibility of Goat skin is less than Smoothness.

Uses

Used as upper component in leather production. Inferior quality leathers are used as lining in purses, airbag and shoulder bags.

Cow Hides (Fig 4)

The leather extracted from cow is called Cowhide.



Size and Thickness

Its area is more than 8 square feet on an average. Its thickness ranges from 1mm to 2.5mm.

Characteristics

Its hair holes are widespread. Surface will be Smoothness. Stronger than goat and sheep skin. It is long-lasting and durable.

Uses

Leather is used to make a variety of products. In Cowhide Cow softy leather, cow milled leather is used to make Airbags, traveling bags. It is used to make sofa cover, seat cover etc. Inferior quality cow hides are used as lining leather.

Buff Hides (Fig 5)



Buff hides are the hides taken from buffalo.

Size and Thickness

This area will be more than 8 square feet. Its thickness ranges from 1.5mm to 5mm.

Characteristics

Its hair holes are widely spaced. Its surface is very smooth and more powerful.

Uses

It is used to make hard products in leather material production, splitting is used as low quality leather lining and reinforcement material.

Calf leather

Leather from a calf between 8 and 12 months old is called bulf calf leather.

Size and Thickness

It has an average area of 7 sq ft to 12 sq ft. Its thickness ranges from 0.5mm to 1.5mm.

Characteristics

The smoothness of leather is affected by the number of hair holes, which varies depending on the type of leather.

Uses

It is mostly used to make intermediate goods in leather goods manufacturing. Used to make belt, purse, suitcase, executive bag.

Kid leather

The skin of goat between 5 months to 8 months is called kid leather.

Size and Thickness

Its area is on an average 3 sqft to 5 sqft. Its thickness ranges from 0.4mm to 0.9mm.

Characteristics

It is seen as grain side smoothness. Grain side flatness and softness.

Uses

Used to make first quality shoes. Used to make wallet, leather purse, executive case.

Kip leather

It is the skin of the smallest reptiles.

Size and Thickness

Its area ranges from 1 sq.ft to 3 sq.ft. Its thickness ranges from 0.8mm to 2mm.

Characteristics

The mane is varied according to the species, its natural colour is preserved during processing, and it is durable.

Uses

Used to make wallet, ladies purse, watch strap, key case, fancy leather goods.

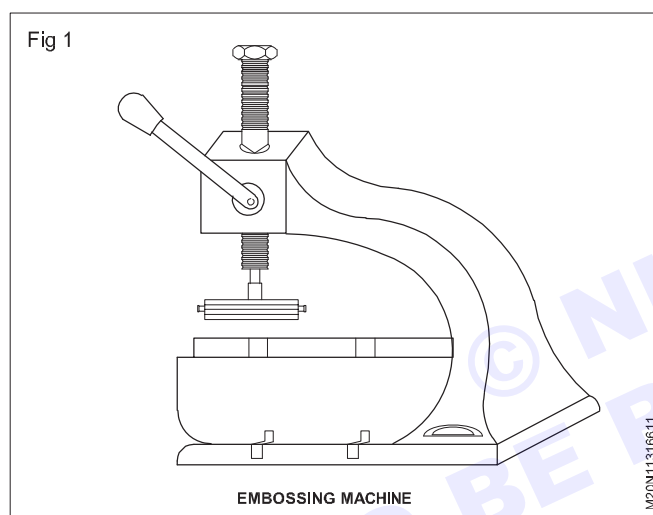
Describing of hydraulic embossing machine and its functioning aspects, different types of hides & skins

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

- know the operation of hydraulic embossing machine
- explain the different types of leather.

Hydraulic embossing machine : Embossing is the process of creating a type of brand design, decoration, lettering or graphic design on leather or other material. In conventional printing or an embossing, plates are pressed against the surface to engrave a name detail. However in embossing, pressing using die pressing adds a new dimension to the material and raises the surfaces.

Embossing machine (Table Type) (Fig 1)



After the leather products are finished, various designs and trade marks are printed on the products. These are called embossing. Embossing can be done on the back or upper parts after finishing the products.

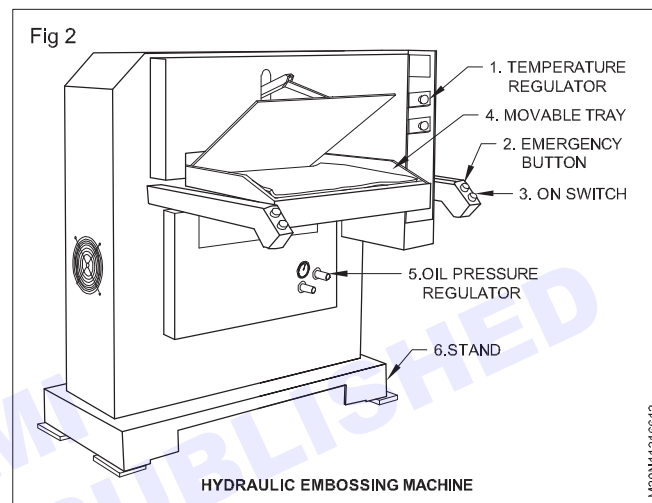
Heated blocks for embossing required designs is used on top of it is a plate made of stainless, steel.

It can be heated by electricity. The bottom of this is equipped with an emblem, design, trademark or symbol to be printed on the upper parts. This emblem can be fixed with steel plate and screw as needed or replaced with other design emblem. Sometimes gold foil paper, silver foil paper or aluminum foil paper is attached to it as per requirement. We can use any colour we want.

The upper part to be embossed should be kept below the die. Heat the design die as required. Heated by electricity. Then press the handle and the emblem is pressed on the upper part and the design is printed as per the requirement.

Hydraulic Embossing Machine (Electric Drive) : This machine is used for heat plating or printing various designs on leather. It operates hydraulically

under oil pressure. The mould should be mounted on the mould holding plate in the machine. The leather to be embossed should be placed on a movable tray. (Fig 2)



- 1 Temperature Regulator
- 2 Emergency Button
- 3 ON switch
- 4 Movable tray
- 5 Oil pressure regulator
- 6 Stand

Parts and functions

Heat regulator

We can set the heat using the heat regulator. For example if the temperature is set at 70°C, once that temperature is reached the power will be cut off and the temperature will be maintained constants.

Emergency button

In case of an unexpected accident, pressing this emergency button to cut off the power and stops the machine.

ON switch

Press the ON switch to start the machine.

Movable tray

On this movable tray we have to place the leather to be embossed.

Oil Pressure Regulator : This regulator is used to keep the hydraulic pressure constant.

Stand : It is made of solid iron. The engine is mounted on it.

Describing of different types of skin : To know about different types of skin see lesson no 1.13.162.

Describing of cementing press machine and its functions

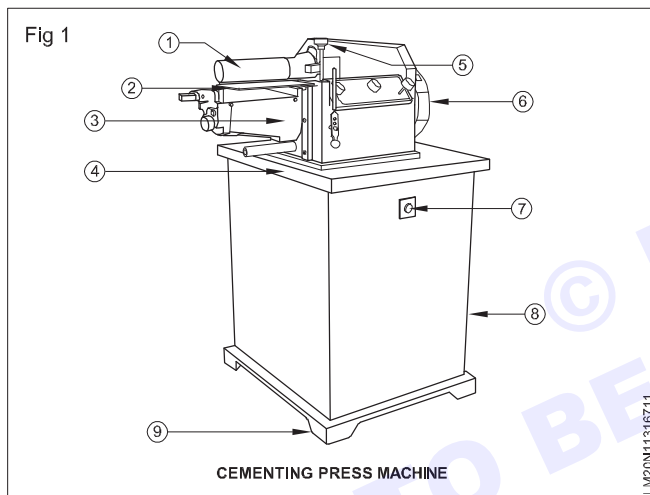
Objectives : At the end of this lesson you shall be able to

- know the structure of cementing press machine
- knowing how to operate the machine.

Structure of cementing press machine : A cementing press machine is a machine that is used to apply adhesive and glue two or more leather components together.

This machine applies glue to materials the reinforce and bond them together. It events ceats the surface, increasing the material size and strength. The machine also connects components precisely and consistently, creating a strong and seamless joint that's almost visible resulting in a sleek an elegant finish.

This machine is widely used not only in the production of leather goods but also in the footwear industry. (Fig 1)



Parts

- 1 Pressure roller
- 2 Feed roller
- 3 Working area
- 4 Metal body
- 5 Adjusting Knob
- 6 Motor
- 7 ON / off switch
- 8 Steel body
- 9 Stand

How to operate the machine

- 1 Clean the machine thoroughly.
- 2 Adjust the knob to match the size of the parts to be joined.
- 3 Apply a small amount of glue to the parts and let it dry.
- 4 Feed the parts into the machine, placing them between the rollers.
- 5 Run the machine, and the rollers will bond the parts together.
- 6 Once the parts are securely joined, push them to the back of the machine to collect the finished products.

Describing of zig-zag sewing machine and its function

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

- know the structure of zig-zag sewing machine
- know the workings of sewing machine.

Structure and Uses of Zig-Zag Sewing Machine

Zig-Zag sewing machine

Zig-Zag sewing machine is used for Zig-Zag stitching. It is used to connect two components side by side. This machine can stitch up to 1000-2000 stitching per minute. Maximum stitch length of 2mm to 5mm can be stitched with the help of this machine.

Describing

- In this the stitching part is flat.
- On the right side of the bed is a pillar-like structure and to the left of it is an arm-like part.
- Needle bar, pressure bar is found on arm.
- Machine- Balance wheel is seen on the right.
- A feed dog is fitted to move the material while stitching.
- Bobbin winder is attached to a pillar-like structure.
- Needles bar, pressure bar face plate is seen.
- Parts like thread adjuster, pre- tensioner, tensioner, hooks, thread take up lever are found.

Structure and Parts of Zigzag Sewing Machine (Fig 1)

- 1 Feed dog
- 2 Pressure foot
- 3 Tension disc
- 4 Thread solide

- 5 Bobbin winder
- 6 Stitch breadth adjuster
- 7 Stitch length adjuster

Mode of operation

The pre-tensioner should be inserted through the three holes in the thread tensioner in an "s" shape. Then insert the thread at take up level and insert it into the needle through the hooks.

Bobbin winder

Place the thread - filled bobbin into the bobbin case. Pull out about 4 cm of the thread from the bobbin. Then attach the bobbin case to the machine. Then the Bobbin case should be attached to the hook point where it can be attached.

If you hear a tick sound while fitting, you will know that the bobbin is fitted correctly.

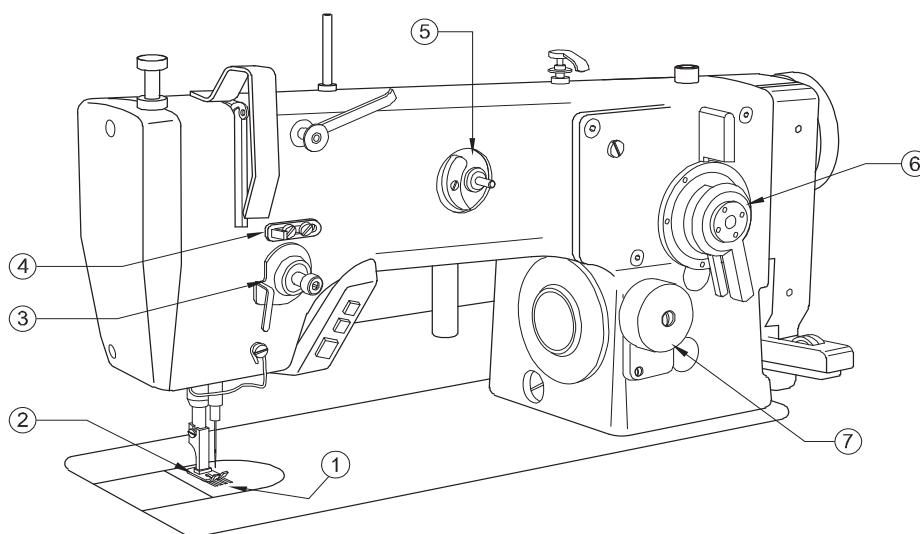
Then hold the upper thread and rotate the balance wheel towards the direction we are sitting. By doing this, the bobbin thread will come up. Now let's learn machine sewing. that is in position.

Uses

Zig-Zag sewing machine can sew Zig-Zag Stitching.

Cutting enough scrap leather can be placed on the sides and Zig-Zag Stitching to make small items.

Fig 1



ZIG ZAG STITCHING MACHINE

Describing of cylinder bed & post bed stitching machine and parts

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

- knowing about cylinder bed sewing machine
 - learning about post bed sewing machine.
-

To learn about cylinder bed sewing machine see Chapter No: 1.3.23.

To learn about bed sewing machine see Chapter No: 1.10.94 to 96.

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