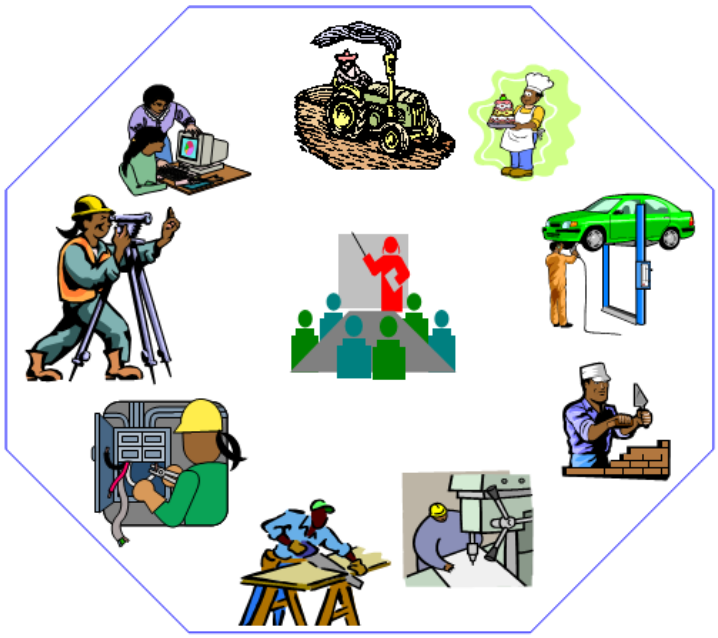
Footwear Production Supervision

Level IV

Based on November 2019, Version 5 Occupational Standards and February 2020 Version 1 Curriculum



Module Title: Preparing Footwear Design and Patterns Using CAD/CAM

LG Code: IND FPS4 M04 LO (1-7) LG (18-24)

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Bishoftu, Ethiopia

LG #18	LO #1- Operate personal computer

Instruction sheet

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

- Starting computer or logging
- Identifying basic computer icons and their function by using system information
- Opening, closing and accessing feature by selecting correct desktop icons
- Creating folders/subfolders with suitable names
- Saving files, renaming folders/subfolders ,and moving folders using different techniques
- Deleting and restoring folder/subfolders and files
- Installing appropriate soft wares
- Closing all open applications and shut-down Computer

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

- Start computer or logging
- Identify basic function and feature of using system information
- Open, close and access feature by select correct desktop icons
- Create folders/subfolders with suitable names
- Save files, rename folders/subfolders ,and move folders using cut, paste drag and drop techniques
- Delete and restore folder/subfolders and files as necessary
- Install appropriate soft wares where necessary
- Close all open applications
- Shut-down Computer according to user procedures

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your

trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Starting computer or logging

1.1 Introduction to Computer

A computer is an electronic device, operating under the control of instructions stored in its own memory. These instructions tell the machine what to do. The computer is capable of accepting data (input), processing data arithmetically and logically, producing output from the processing, and storing the results for future use. Most computers that sit on a desktop are called Personal Computers (PCs).

The "computer" is an ensemble of different machines that you will be using to get your job done. A computer is primarily made of the Central Processing Unit (usually referred to as the computer), the monitor, the keyboard and the mouse. Other pieces of hardware are commonly referred to as peripherals.

Computer as a revolution left no area of life untouched in the present world. It is of tremendous help in all field of life. Hence, the knowledge of computer is a necessity for existence of everybody in this global village. The invention of computer has transformed our simple manual works to sophisticated life of automated works to meet the global demand for the higher productivity and increased efficiency with high precision.

Computer is increasingly becoming compulsory in nearly all fields of studies, not because of anything but its accuracy and versatility in processing data. Many tasks at home or office are being automated rapidly with computer. Thus it is becoming apparent that in whatever discipline or working sector, the computer is now a very vital tool for efficiency improvement and precision of job or task execution.

1.2 Uses of Computers

People use computers in many ways: business, computers are used to track inventories with bar codes and scanners, check the credit status of customers, and transfer funds electronically, homes, tiny computers embedded in the electronic circuitry of most appliances control the indoor temperature, operate home security systems, tell the time, and turn video cassette recorders (VCRs) on and off, automobiles regulate the flow of fuel, thereby increasing gas mileage, they also entertain, creating digitized sound on stereo systems or computer-animated features from a digitally encoded laser disc.

1.3 Application of Computer in Different Field

Business

A computer has high speed of calculation, diligence, accuracy, reliability, or versatility which has made it an integrated part in all business organizations.

Computer is used in business organizations for:

- Payroll calculations
- Budgeting
- Sales analysis
- Financial forecasting
- Managing employee database
- Maintenance of stocks, etc.

Banking

Today, banking is almost totally dependent on computers.

Banks provide the following facilities:

Online accounting facility, which includes checking current balance, making deposits and overdrafts, checking interest charges, shares, and trustee records

ATM machines which are completely automated are making it even easier for customers to deal with banks.

Insurance

Insurance companies are keeping all records up- to-date with the help of computers. Insurance companies, finance houses, and stock broking firms are widely using computers for their concerns.

Insurance companies are maintaining a database of all clients with information showing:

- Procedure to continue with policies
- Starting date of the policies
- Next due installment of a policy
- Maturity date
- Interests due
- Survival benefits
- Bonus

Education

The computer helps in providing a lot of facilities in the education system.

- The computer provides a tool in the education system known as CBE (Computer Based Education).
- CBE involves control, delivery, and evaluation of learning.
- Computer education is rapidly increasing the graph of number of computer students.
- There are a number of methods in which educational institutions can use a computer to educate the students.
- It is used to prepare a database about

Performance of a student and analysis is carried out on this basis

Marketing

In marketing, uses of the computer are following:

- Advertising - With computers, advertising professionals create art and graphics, write and revise copy, and print and disseminate ads with the goal of selling more products.
- Home Shopping - Home shopping has been made possible through the use of computerized catalogues that provide access to product information and permit direct entry of orders to be filled by the customers.

Healthcare

Computers have become an important part in hospitals, labs, and dispensaries. They are being used in hospitals to keep the record of patients and medicines. It is also used in scanning and diagnosing different diseases. ECG, EEG, ultrasounds and CT scans, etc. are also done by computerized machines

Following are some major fields of health care in which computers are used.

- **Diagnostic System** - Computers are used to collect data and identify the cause of illness.
- **Lab-diagnostic System** - All tests can be done and the reports are prepared by computer.
- **Patient Monitoring System** - These are used to check the patient's signs for abnormality such as in Cardiac Arrest, ECG, etc.

- **Pharma Information System-** Computer is used to check drug labels, expiry dates, harmful side effects, etc.
- **Surgery** - Nowadays, computers are also used in performing surgery.

Engineering Design

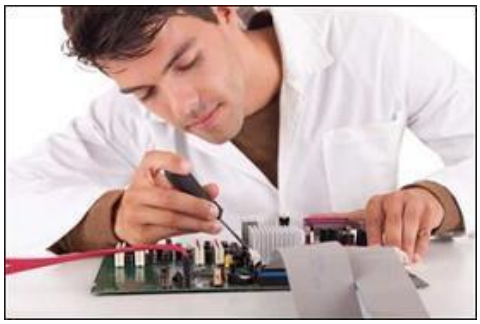
Computers are widely used for engineering purpose.

One of the major areas is CAD (Computer Aided Design) that provides creation and modification of images. Some of the fields are:

Structural Engineering - Requires stress and strain analysis for design of ships, buildings, budgets, airplanes, etc.

Industrial Engineering - Computers deal with design, implementation, and improvement of integrated systems of people, materials, and equipment.

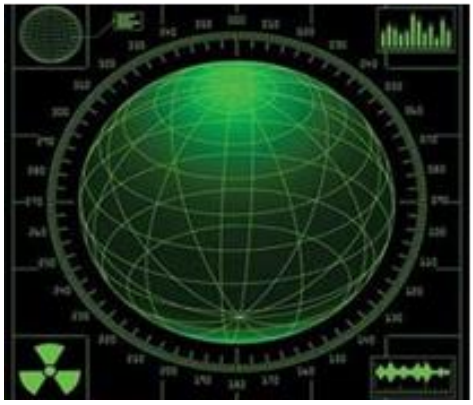
Architectural Engineering - Computers help in planning towns, designing buildings, determining a range of buildings on a site using both 2D and 3D drawings.



Military

Computers are largely used in defense. Modern tanks, missiles, weapons, etc. Military also employs computerized control systems. Some military areas where a computer has been used are:

- Missile Control
- Military Communication
- Military Operation and Planning
- Smart Weapon



Government

Computers play an important role in government services. Some major fields in this category are:

- Budgets
- Sales tax department
- Income tax department
- Computation of male/female ratio
- Computerization of voters lists
- Computerization of PAN card
- Weather forecasting

Leather Industry

Computers are widely used already in leather industry training. Good examples include BLC's tanning training software, INESCOP's CAD training CD, SATRA's Vision Stitch, TEcHNORG s.

1.4 TYPE OF COMPUTERS

PC (Personal Computer)

A PC can be defined as a small, relatively inexpensive computer designed for an individual user. PCs are based on the microprocessor technology that enables manufacturers to put an entire CPU on one chip. Businesses use personal computers for word processing, accounting, desktop publishing, and for running spreadsheet and database management applications. At home, the most popular use for personal computers is systems, these systems are normally linked together to form a network. In terms of power, now-a-days high-end models of the Macintosh and PC offer the same computing power and graphics capability as low-end workstations by Sun Microsystems, Hewlett-Packard, and Dell.

Workstation

Workstation is a computer used for engineering applications (CAD/CAM), desktop publishing, software development, and other such types of applications which require a moderate amount of computing power and relatively high quality graphics capabilities.

Workstations generally come with a large, high-resolution graphics screen, large amount of RAM, inbuilt network support, and a graphical user interface. Most workstations also have mass storage device such as a disk drive, but a special type of workstation, called diskless workstation, comes without a disk drive.

Common operating systems for workstations are UNIX and Windows NT. Like PC, workstations are also single-user computers like PC but are typically linked together to form a local-area network, although they can also be used as stand-alone systems.

Minicomputer

It is a midsize multi-processing system capable of supporting up to 250 users simultaneously.

Mainframe

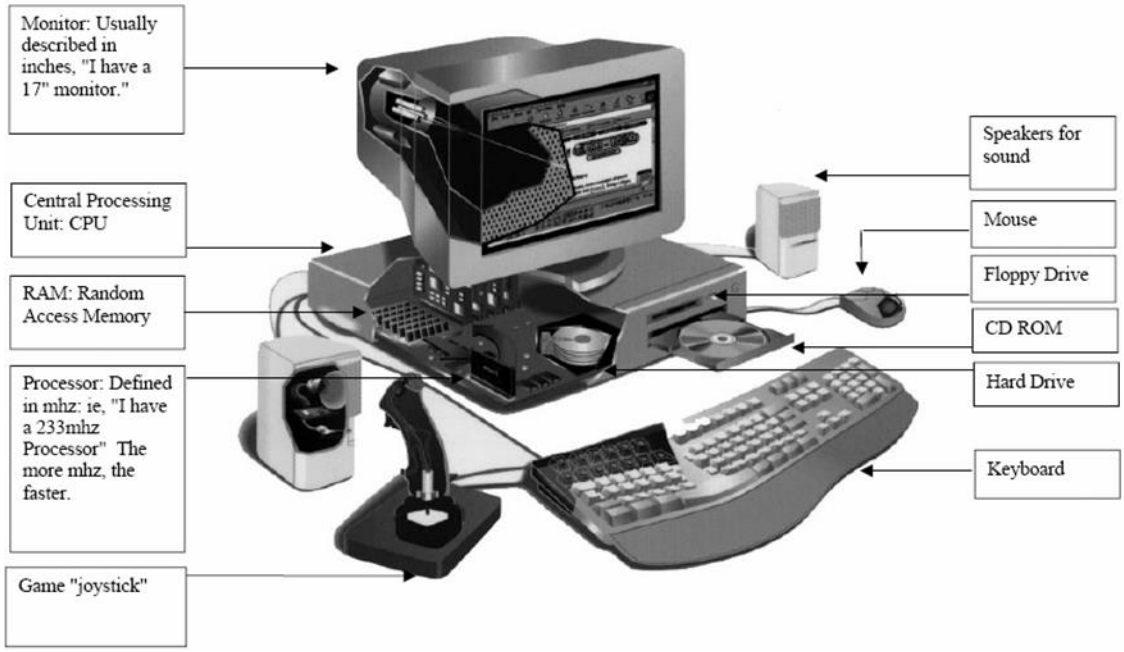
Mainframe is very large in size and is an expensive computer capable of supporting hundreds or even thousands of users simultaneously. Mainframe executes many programs concurrently and supports many simultaneous execution of programs

Supercomputer

Supercomputers are one of the fastest computers currently available. Supercomputers are very expensive and are employed for specialized applications that require immense amount of mathematical calculations (number crunching).

1.5 DIFFERENT PARTS OF A COMPUTER AND THEIR USES

The standard computer consists of a monitor, a keyboard, a mouse and the system unit. One can attach accessories such as printers and scanners by means of ports. Increasingly in the workplace, computers are connected to printers and other computers by means of a network.



Monitor

This is the Visual Display Unit (VDU). There are various technologies for the display unit, cathode ray tube (CRT) or Liquid Crystal Display (LCD) or electro luminescent screens or the projector. The monitor or screen displays your work. Facing it down reduces reflected glare from room lights. This reflection may affect your sight. Monitors come in different sizes. The (most important) size of the monitor is measured

diagonally on the screen (in inches). Based on this, the monitors range in sizes of 12", 14", 15", 17", 19", 21", 29", etc

Monitors are also characterized by the flatness of their screen. The flatter and the wider

Screens are usually the better.

System box or computer console

The system box is where all the computations that the computer performs take place. Inside are the CPU processor, the motherboard, the hard disk, any network or sound cards, memory chips (RAM), printer ports (at the back) and the drive bays for floppy disks, Zip disks or CDs. Outside the casings are the power buttons (ON/OFF and Restart) with some additional facilities like the casing USB ports, Webcams, etc.

Keyboard (Pressing)

This is the basic input device. It tells the computer what to do. It consists of the standard typewriter keys as well as a numeric keypad and function keys. You can use it to give the computer commands, name folders and files, and type text in word processing documents. The keyboard is made of three main categories of keys with

Each used for a different purpose.

Mouse (Clicking and Dragging)

This is another input device used to move a small white arrow pointer-the Cursor (but the shape will change depending on the context in which the mouse is being used) on

the screen. By pointing and clicking you can carry out commands. The computer may ask you to verify that you are sure to rename a file, by clicking on the ëOkí button. A mouse is primarily made of three parts: the buttons, the handling area, and the sensor (rolling object or light). There are either one, two or three mouse buttons.

By default, a mouse has two buttons: left and right. Most mice nowadays are also equipped with a wheel on top of the middle button called the Scroll Button.

To use the mouse, the first decision you make is to know which of your two hands you will be using to handle the mouse. By default, the mouse is configured to work for the right hand. If you are left-handed, the settings can be changed to suit your needs: Start Control Panel Double-click Mouse on the Buttons Tab, Check the Switch Primary and Secondary

You can also change the cursor from the default Up-Left Pointing to another but you should know that this is best determined by the computer as this varies from program to program. To change, click the Pointer's Tab. Also click the other tabs to review the different properties

Self-Check—1	Written Test

Name: _____ **Date:** _____

Instructions:

Write all your answers in the space provided in the answer sheet section.

Test: Short Answer Questions

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

1. What is computer?
2. List and describe the use of computer with regard to different discipline?
3. List and describe at least 4 types of computers?

Answer Sheet

Name: _____ Date: _____

Test: Short Answer Questions

1. _____

2. _____

3. _____

Note: *Satisfactory rating = 9 and above; (greater*

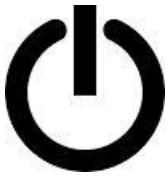
Unsatisfactory rating = below 9 points.

You can ask your teacher to correct your work.

Operation Sheet—1	Starting computer or logging

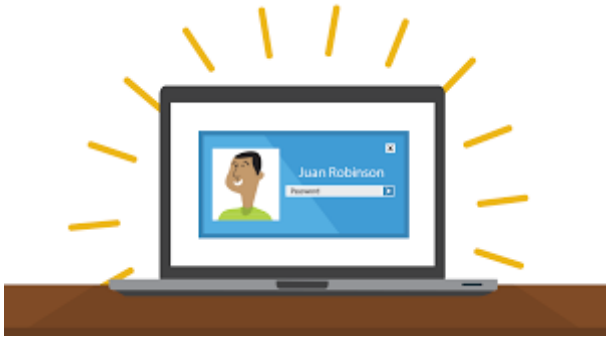
Step 1: Make sure that there is light and all cables are connected appropriately.

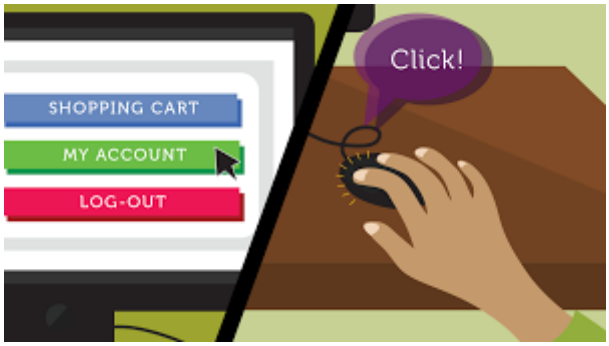
Step 2: Press the following button on your computer with your finger



Step 4: log in

Once the computer has booted up, it may be ready to use, or may require you to log in. This means identifying yourself by typing user name or selecting your profile then typing your password. If you have never logged in to your computer before, you may need to create an account.





LAP Test — 1	Practical Demonstration

Name: _____ **Date:** _____

Time started: _____ **Time finished:** _____

Instructions: Given necessary tools, materials, and CAD system you are required to perform the following tasks within 3 minutes.

1. Start up or log in your computer

Information Sheet 2- Identifying basic computer icons and their function by using system information

1.1 Identifying basic functions and features of system information

Information system

Information systems are combinations of hardware, software, and telecommunications networks that people build and use to collect, create, and distribute useful da Features and functions of information systems

Features and functions of information systems

The features and functions of information systems play a key role in helping businesses to make better, more informed decisions. Information systems aren't merely computers; instead they involve a combination of data, technology and people.

Features of information systems

Data

When data is entered in to an information system, it has to be entered in a way that can be managed and processed. When the data is processed it turns data into information which is then output to end users of the system. The data is generated from various sources such as different departments of a business as well as external sources. The data must be accurate or else the information output can be inaccurate or misleading.

People

Getting data and processing it involves the use of people in order to create information for specific uses or purposes that are relevant to a business. Staff training and skills in relation to information systems are important so that a business can get the most out of its information system.

Hardware

The hardware that IT systems use has to be capable of running the software required by the business and also be capable of handling a large amount of data and information processing. The hardware should be kept up to date which enables the fast capture, storage and use of data.

Software

The software that is used by businesses and the staff has to have the necessary features and functionality so that it can produce and use the information created by a business. The software should also have the features necessary for staff to carry out their work efficiently, for example: to analyse and process data and reports.

Telecommunications

The information that is produced by various departments in a business needs to be shared around a business as it will be used for different purposes. For doing this the telecommunications in a business needs to be effective so that the information shared and distributed goes to the correct destination after being processed.

Functions of information systems

There are various functions of information systems like the collection of input data, storage, processing, and producing the output information. The functions also control the information flow as well as the feedback loop. The systems can be also open and closed systems.

Input

The input in an information system has two types: Output is created with detailed data which is stored and processed .The specification of what type of analysis is done must be specified by the user

Storage

The storage of Data should be done at the most detailed level possible. Regular backups and various summaries should be completed to avoid losing any important data due to errors. The backups should also be stored in a geographically different location to avoid any major disasters such as flooding or fires etc.. which could impact on both the original data storage and the backup data storage.

Processing

A process is a function which transforms data into information. A simple process would be adding up a number of items that is sold by a business by a variable such as the location of a store or the product or the time and date. More complex processes are the functions that perform calculations and can make assumptions about missing data in order to create information from the data available.

Feedback / control loops

A feedback / control loop is what happens to output when it is processed and produced. The system continuously repeats the same processes depending on the output of the last loop which can then impact on the input of the next data in to the loop. For example if a business might want to buy stock from a supplier if the stock level reaches 10. The system might check stock levels every hour (in a loop) and if the stock level is above 10, the loop continues without action until the point it hits 10 or under at which stage the command gets executed and new stock is ordered.

Output

There are two types of output in this context, graphical and textual:

Graphical output is usually used to look at information on a larger scale which is then presented as charts, graphs, diagrams and pictures.

Textual output is information on a smaller scale which is presented as charters, text or numbers.

Self-Check—2	Written Test

Name: _____ **Date:** _____

Instructions:

Write all your answers in the space provided in the answer sheet section.

Test: Short Answer Question

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

1. Describe the functions of information system (IS)?
2. List at least 3 features of Information system
3. What is Information system(IS)

Answer Sheet

Name: _____ **Date:** _____

Test: Short Answer Questions

1. _____

2. _____

3. _____

Note: *Satisfactory rating = 9 and above; (greater*

Unsatisfactory rating = below 9 points.

You can ask your teacher to correct your work.

4.1 Folders

Folder, also called a directory, is a space used to store files, other folders, and shortcuts on a computer. A good analogy is the manila folders seen in an office to store papers or reports. When browsing computer files using a file manager, such as Windows Explorer, the icon for a folder should look similar to the image.

Why are folders important?

Folders help you keep your files organized and separate. If you had no folders on your computer, your documents, programs, and operating system files would all be located in the same place. Folders also allow you to have more than one file with the same file name. For instance, you can have a file called Resume.doc in your My Documents folder, and another file called Resume.doc in a different folder called Resume templates. If all your files were in a single place, every file would need a unique file name.

What can be stored in a folder?

A folder can contain one or more files of any type and can even store other folders. They may also contain shortcuts to programs.

Digital vs. physical folder

A digital folder has the same purpose as a physical folder – to store documents. Computer folders can also store other types of files, such as applications, archives, scripts, and libraries.

Folders are designed for organizing files. For example, you might store your digital photos in a "Pictures" folder, your audio files in a "Music" folder, and your word processing documents in a "Documents" folder. In Windows, software programs are installed by default in the "Program Files" folder, while in OS X they are stored in the "Applications" folder.

Fig. physical folder

Fig. digital folder

All folders are subfolders, or subdirectories of the root directory. For example, in Windows, C:\ is the root directory of the startup disk. The Internet Explorer application is installed in the C:\Program Files\Internet Explorer directory, which is also the directory path of the Internet Explorer folder.

While folders may contain several gigabytes of data, folders themselves do not take up any disk space. This is because folders are simply pointers that define the location of files within the file system. You can view how much data is stored in a folder by right-clicking it and selecting Properties in Windows or Get Info in OS X. To create a new folder, right-click on the desktop or an open window and select New → Folder (Windows) or New Folder (OS X).

How to open a folder

To open a folder without a mouse, on your desktop, press the Tab key a few times until one of the items on your desktop is highlighted. Then, use the arrow keys to highlight the folder you want to open. When the folder is highlighted, press Enter on your keyboard to open it.

Self-Check—3	Written Test

Name: _____ **Date:** _____

Instructions:

Write all your answers in the space provided in the answer sheet section.

Test: Short Answer Question

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

1. What is folder?
2. Why are folder important
3. Write the unique purpose of digital folder relative to physical folder
4. Write how to open a folder

Answer Sheet

Name: _____ Date: _____

Test: Short Answer Questions

1. _____

2. _____

3. _____

4. _____

Note: *Satisfactory rating = 9 and above; (greater*

Unsatisfactory rating = below 9 points.

You can ask your teacher to correct your work

Operation Sheet 2- Creating folders/subfolders with suitable names

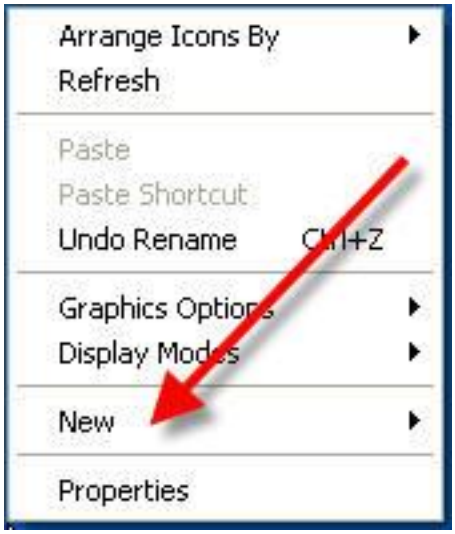
1.3 how to create a new folder

We create a new folder when you want to store a collection of files, such as images or PDFs.

Note: a few folders should exist in your site by default. These are:

Step 1: Right-click with your mouse anywhere on your desktop, as long as the area is blank.

Step 2: From the menu that appears left-click on New.



Step 3: Another menu will come up (yours may look different than mine!). Left-click on Folder

You'll get a new folder on your desktop. Your cursor will be automatically placed inside the folder name, so you can immediately type the folder name.

Step 4: Type the desired folder name and hit Enter. That's it.

If you ever want to change the folder name, right-click the folder, and choose Rename. Type the new name and hit Enter.

LAP Test — 3	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary tools, materials, and CAD system you are required to perform the following tasks within 15 minutes.

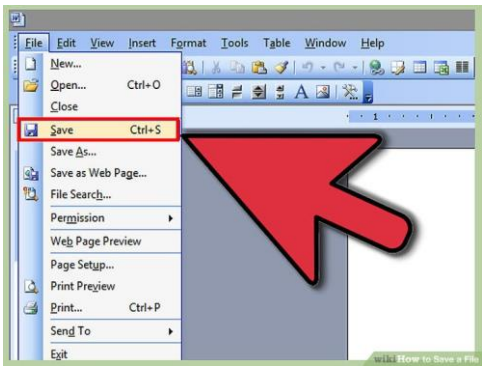
1. Create folder with your name in desktop directory
2. Create sub folder with the name of CAD

Operation Sheet 3- Saving files, renaming folders/subfolders and moving folders using different techniques

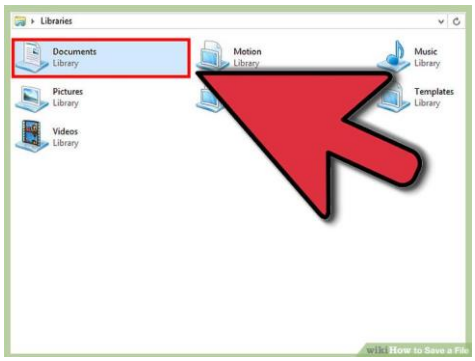
3.1 Saving files

Saving files is a crucial part of working with documents, images, videos, and any other files on a computer. Saving your work allows you to come back and continue later, share your files with others, and protect your work from errors and program failures. See Step 1 below to learn the best ways to save files and maximize your efficiency.

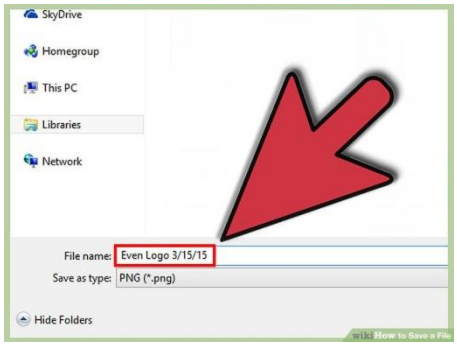
Step 1: Save files in Microsoft Word. Word is one of the most popular word processing programs in the world, and, as such, learning how to save files in Word is an important skill to have



Step 2: locate the correct path



Step 3: Name your saved files with useful names. When you first save a new file, you will be asked to create a name for the file. Make sure that the file name allows you to easily recognize the file, and contains any important information such as the date or the author of the file. This will help you find what you need when you're searching for a specific file on your computer.

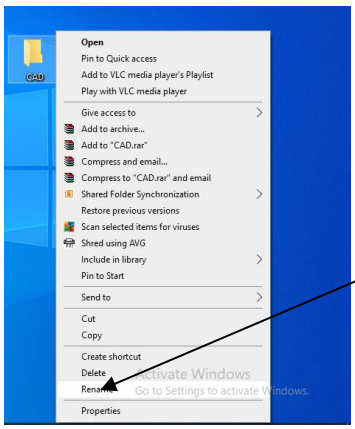


3.2 Renaming

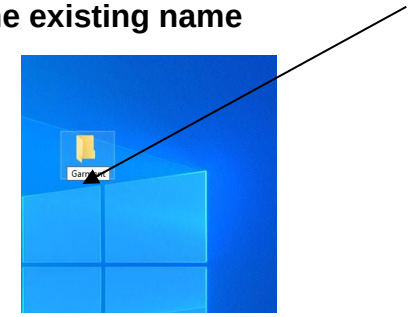
Step 1: Select folder

Step 2: Right click on the name of folder

Step 3: clicks “rename”

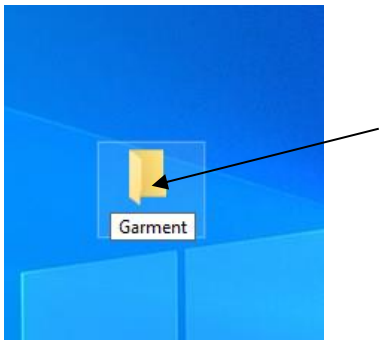


Step 4: write new names/ rename the existing name

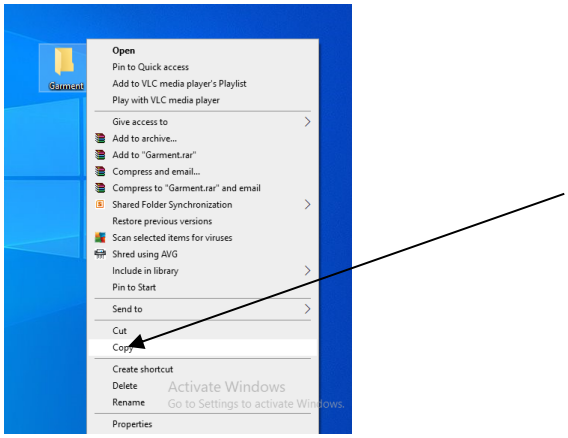


3.3 Move folder

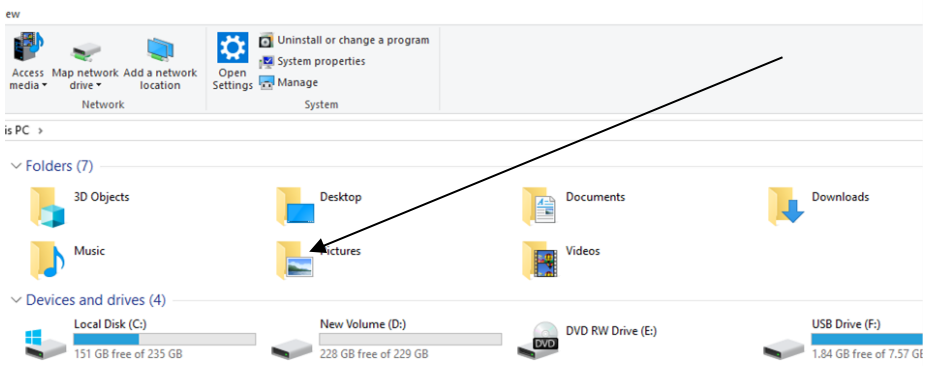
Step 1: select the folder you want to move



Step 2: right click and select cut tecqunie to move the folder



Step 3: selects picture directory to drop off the given folder



LAP Test — 3	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary tools, materials, and CAD system you are required to perform the following tasks within 15 minutes.

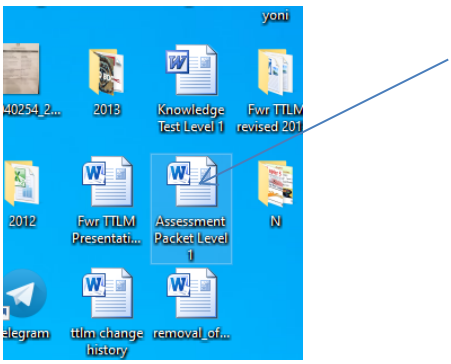
1. Rename the folder CAD to Garment
2. Move the folder from desktop directory to document
3. Create sub folder within Garment folder
4. Create the file and save it with the name of “file”

Operation Sheet 4- Deleting and restoring folder/subfolders and files

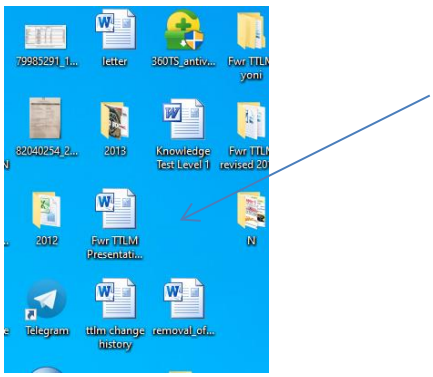
4.1 Deleting files

To delete a file:

Step 1: Select the item you want to delete.



Step 2: press the Delete key on your keyboard.



4.2 Permanently deleting files

To permanently delete a file:

Step 1: Select the item you want to delete.

Step 2: Press and hold the Shift key, then press the Delete key on your keyboard.

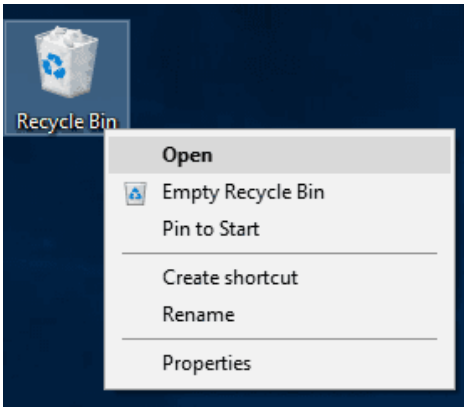
Step 3: Because you cannot undo this, you will be asked to confirm that you want to delete the file or folder.

4.3 Restoring Deleted Files

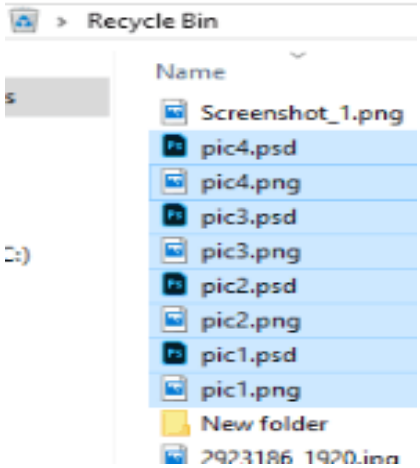
Restoring Files means restoring Deleted Files from the Recycle Bin to Their Original Location.

Step 1: Open recycle bin

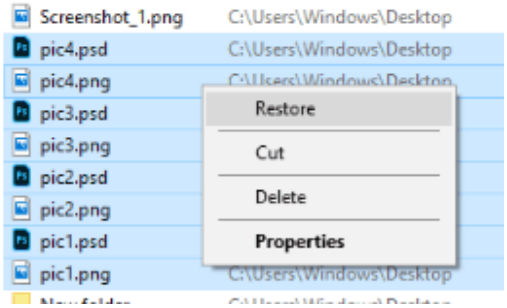
Open the Windows Recycle Bin by double-clicking on its desktop icon. Otherwise, right-click on it and open a context menu



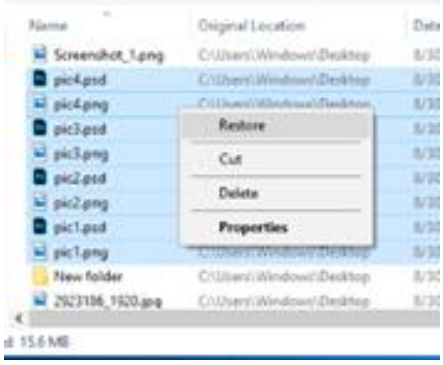
Step 2: Select the files you'd like to restore from the list of deleted files and folders,



Step 3: Right-click on the selected files. The selected files will immediately be returned to their previous location where they were right before being deleted.



Step 4: select the section restore



To achieve the same result, after selecting the files click on Restore the selected items button which you can find in the Recycle Bin tools tab.

Now go to the location of the restored files and folders, and open every one of them to make sure they are working properly.

Lap test —5	**Practical – Demonstration**

*Name:*_____ *Date:* _____

Time started: _____ *Time finished:* _____

Instructions: Given necessary tools, materials, and CAD system you are required to perform the following tasks within 15 minutes

1. Create folder with name of “Coat ”
2. Delete created folder
3. Restore deleted folder (Coat)
4. Permanently delete the file

Information Sheet—4	Installing appropriate soft wares

1.7 Installing appropriate software.

Software, instructions that tell a computer what to do. Software comprises the entire set of programs, procedures, and routines associated with the operation of a computer system. The term was coined to differentiate these instructions from hardware—*i.e.,* the physical components of a computer system. A set of instructions that directs a computer's hardware to perform a task is called a program, or software program.

Types of Software

Generally, there are two main classifications of software, which are namely, System Software along with the Application Software.

1. System Software In case of system software, it helps the user as well as the hardware to function and even interact with each other easily. Essentially, it is software which is used to manage the behavior of the computer hardware in order to offer basic functionalities which are needed by the user. In simpler word, it can be said that system software is essentially an intermediator or even a middle layer between the user as well as the hardware.

   This software sanctions an environment or platform for the other software to easily work in. Hence, it is the reason why the system software is quite important in the management of the entire computer system. Whenever you turn on the computer first, it is this system software which gets initialized and then gets loaded in the system's memory. System software essentially runs in the background, and it isn't actually utilized by the end-users. Due to this reason, the system software is also known popularly as "low-level software". Companies usually hire the best software development company to build system software. Few of the common system software examples are

Operating System

Being a prominent example for system software, it is essentially a collection of software which handles resources as well as offers general services for various other applications which actually run over them. There are different types of operating systems like embedded, real-time, distributed, single-user, multi-user, mobile, internet and much more. Full stack web development services develop apps to operate on a mobile operating system like Android and iOS. Some of the key examples of operating systems are as follows:

MS Windows

1. macOS
2. Linux
3. iOS
4. Android
5. CentOS
6. Ubuntu
7. Unix

Device Drivers

This type of software controls particular hardware which is essentially attached to the system. Different hardware devices which require a driver to connect to a system easily consist of displays, printers, sound cards, hard disks, keyboard, and mice. Few of the examples of such drivers are:

1. BIOS Driver
2. Motherboard Drivers
3. Display Drivers
4. ROM Drivers
5. Printer Drivers
6. USB Drivers
7. Sound Card Driver
8. VGA Drivers

Firmware

It is actually permanent software which is embedded in the system's read-only memory. It is essentially a set of instructions which are permanently stored onto to the

hardware device. It offers vital information regarding how a particular device interacts with different other hardware. Some of the examples of firmware are:

1) Computer Peripherals
2) Embedded Systems
3) UEFI
4) BIOS

Utility

These software are designed to assist in analysing, as well as optimizing, along with configuring and maintaining a given computer system. It provides support to the computer infrastructure. Software like disk cleanup and management tools, anti-viruses, defragmenters, compression tools etc. are all utility software. Some of its examples are:

1. Norton Antivirus
2. McAfee Antivirus
3. WinRAR WinZip
4. Piriform CCleaner
5. Windows File Explorer
6. Directory Opus
7. Razer Cortex

Application Software

They are also popularly known as end-user programs or even productivity programs which assist the user in completing various tasks like conducting online research, making notes, designing graphics, maintaining accounts, carrying out calculations or even playing computer games. They essentially lie above the system software. They are actually used by the end-user as well as have specific functionality or tasks which they are designed to perform. These soft wares are often developed through custom software development, based on the requirements of the users. There is a variety of application software. Some of them are:

A. Word Processors

Such applications are meant for documentation. It also assists in storing as well as formatting and even printing of the documents. Key examples of such software are:

1. MS Word
2. Apple iWork-Pages
3. Corel WordPerfect

4. Google Docs

B. Database Software

It is used to create as well as manage a database and also known as Database Management System or in short, DBMS. Such software assists in the data organization. Some of the examples of DBMS are:

1. MS Access
2. FileMaker
3. dBase
4. Clipper
5. MySQL
6. FoxPro

C. Multimedia Software

This is software which is able to play, create as well as record images, audio or even video files. These software are utilized for animation, video editing, graphics as well as image editing. Due to the high demand for such software, every software product development company has vast avenues in developing them. Some of the examples of such software are:

1. Adobe Photoshop
2. Picasa
3. VLC Media Player
4. Windows Media Player
5. Windows Movie Maker

D. Web Browsers

These software are utilized to browse the internet. Web browsers assist the users in locating as well as retrieving data well across the web. Some of the key examples of them are:

1. Google Chrome
2. Mozilla Firefox
3. Internet Explorer
4. Opera
5. UC Browser

Self-Check—4	Written Test

Name: _____ **Date:** _____

Instructions:

Write all your answers in the space provided in the answer sheet section.

Test: Short Answer Questions

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

1. What is software
2. Write the function of software program
3. Write type of software program

Answer Sheet

Name: _____ **Date:** _____

Test: Short Answer Questions

1. _____

2. _____

3. _____

Note: *Satisfactory rating = 9 and above; (greater*

Unsatisfactory rating = below 9 points.

You can ask your teacher to correct your work.

Operation Sheet 6- The Fundamentals of the Quality of the Products

4.1 You can follow the steps below to install an application from an .exe file.

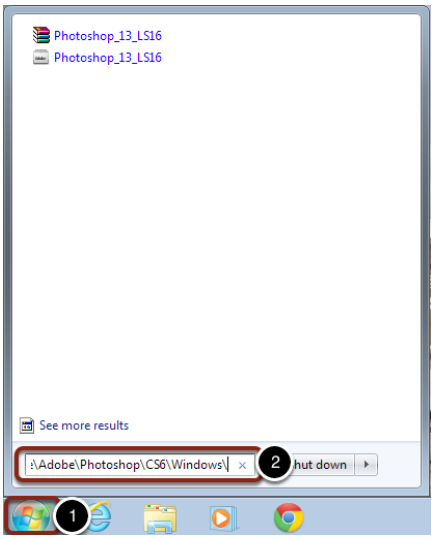
1. Locate and **download** an .exe file.
2. Locate and double-click the .exe file. (It will usually be in your **Downloads** folder.)
3. A dialog box will appear. Follow the instructions **to install** the **software**.
4. The **software** will be **installed**.

4.2 Installing software from the Web

1. Locate and download an .exe file.
2. Locate and double-click the .exe file. (It will usually be in your Downloads folder.)
3. A dialog box will appear. Follow the instructions to **install** the **software**.
4. The **software** will be **installed**.

4.3 Installing appropriate software

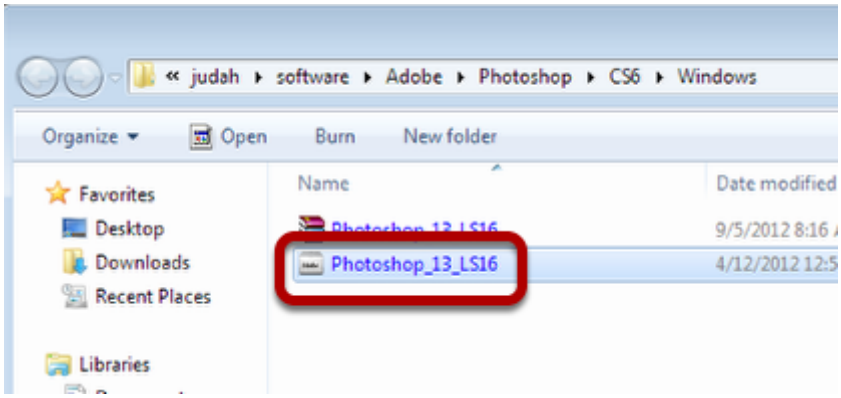
Connect to the Server



1. Click the Start button
2. Search for \\software.oc.edu\dist\Adobe\Photoshop\CS6\Windows\ in the search bar

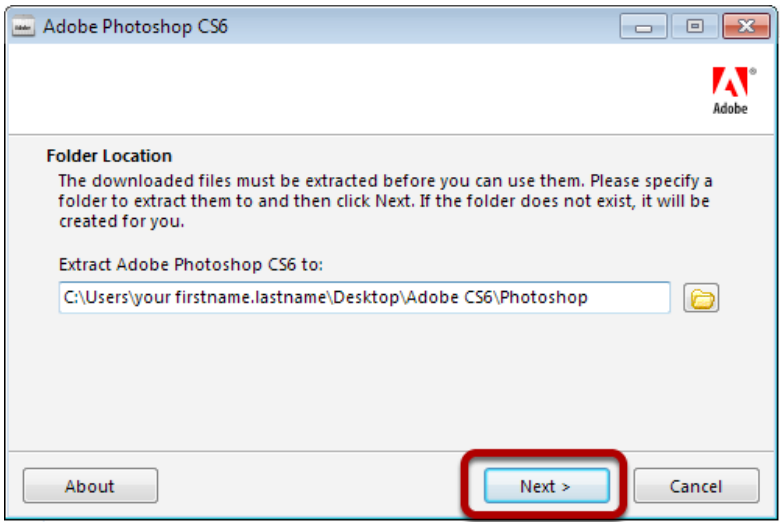
- Hit **Enter** on your keyboard

Open the Photoshop Installer



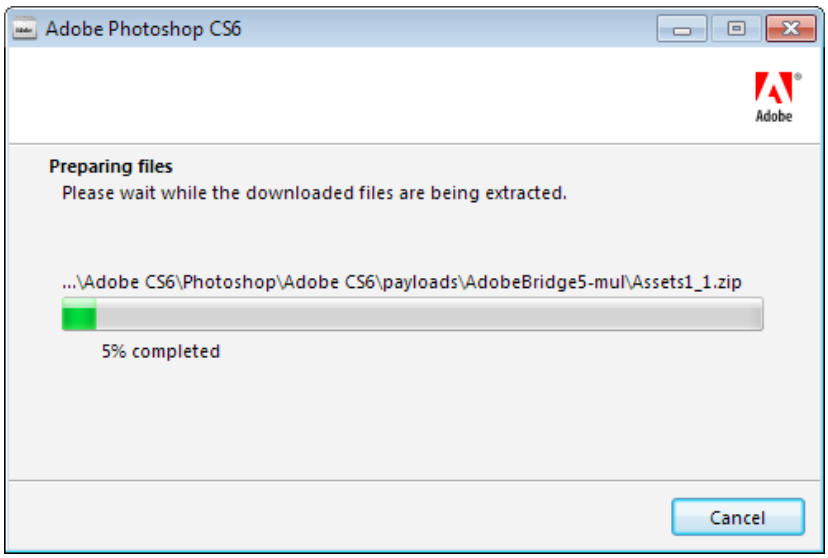
- Double-click **Photoshop_13_LS16**

Choose Location for Download



- Click **Next**
- You can change the location later if you would like.

Allow the Installer to Load



This may take several minutes.

Open the "Adobe CS6" Folder

- Double Click the **Adobe CS6** Folder located on your desktop.

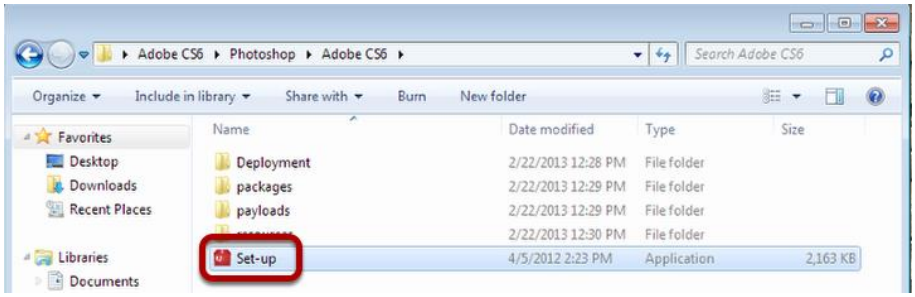
  Open the Photoshop folder

- Double click **Photoshop**

  Open the Adobe CS6 folder

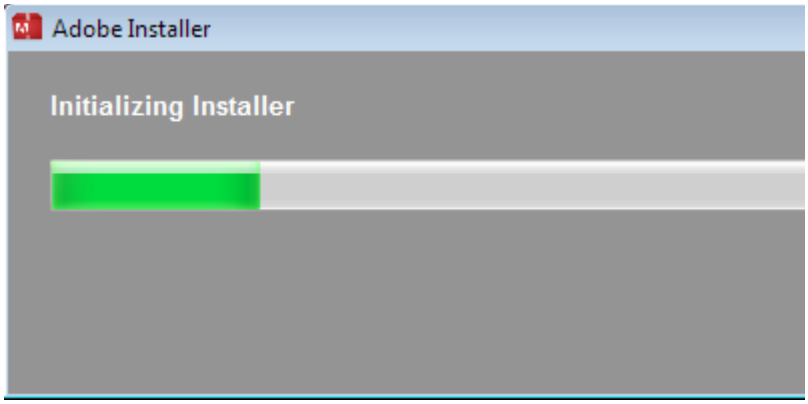
- Double-click **Adobe CS6**

  Open the Set Up Wizard



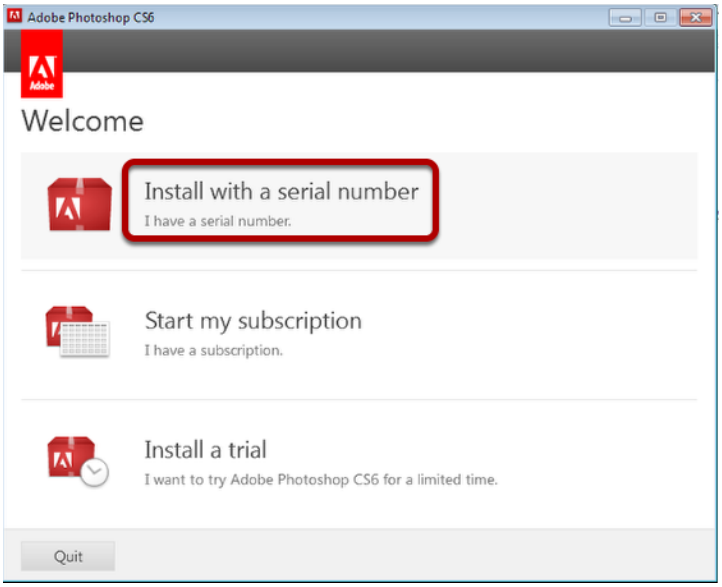
- Double click **Set up**

  Allow Initializer to Load



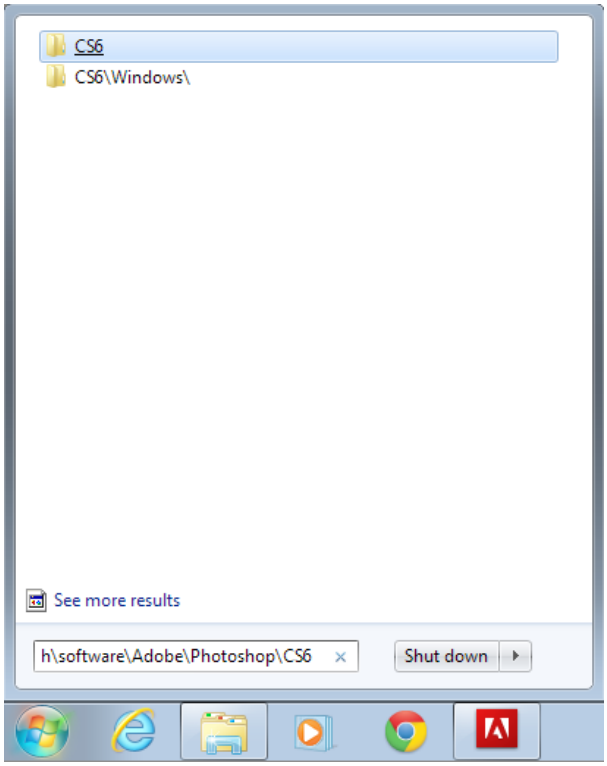
This may take several minutes.

Choose Install



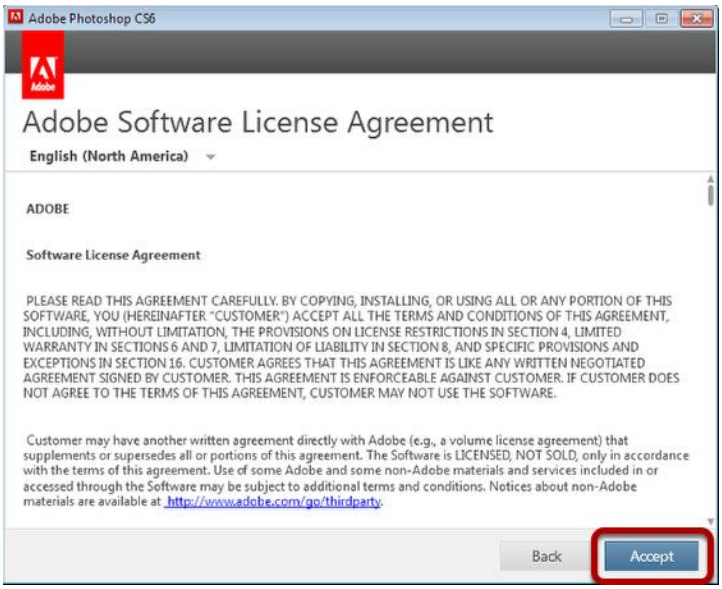
- Double-click **Install with a serial number**

Connect to \\woftware\dist\adobe\InDesign\CS6\



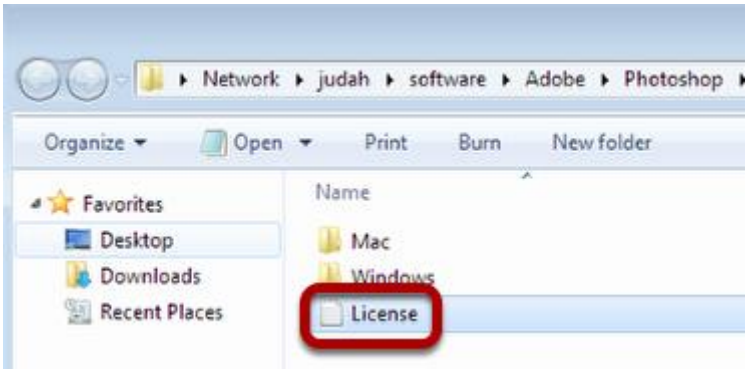
- Connect to **\\software\dist\adobe\InDesign\CS6**

  Accept the License Agreement



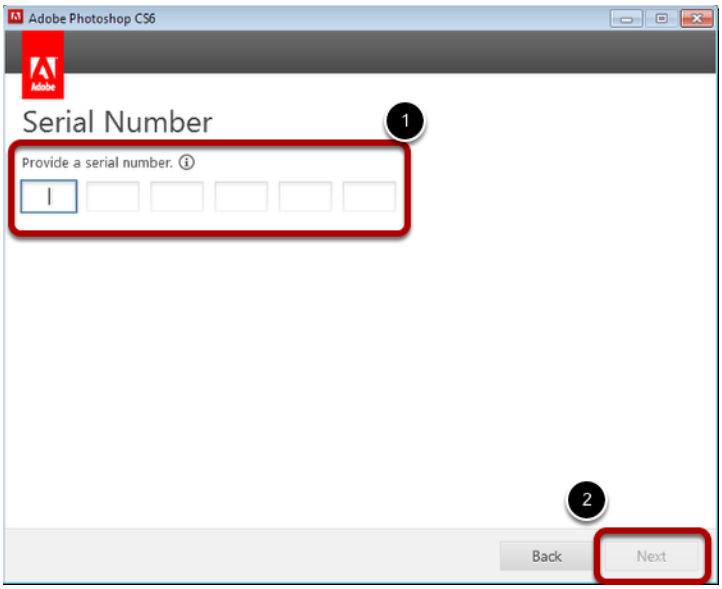
- Click **Accept**

Open the License file



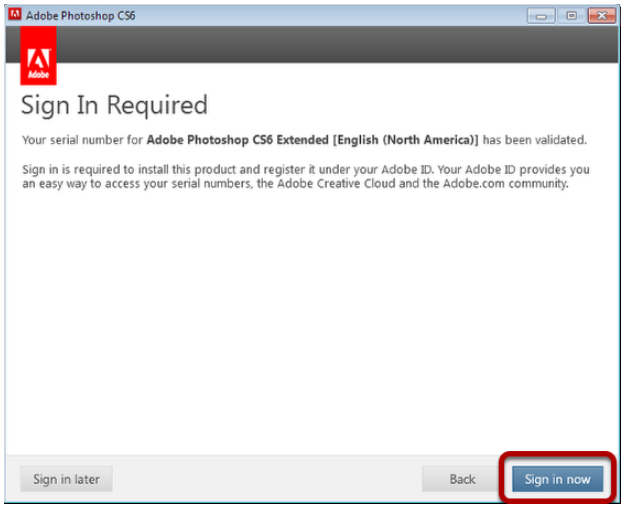
- Copy the Windows license key.

  Enter the serial number



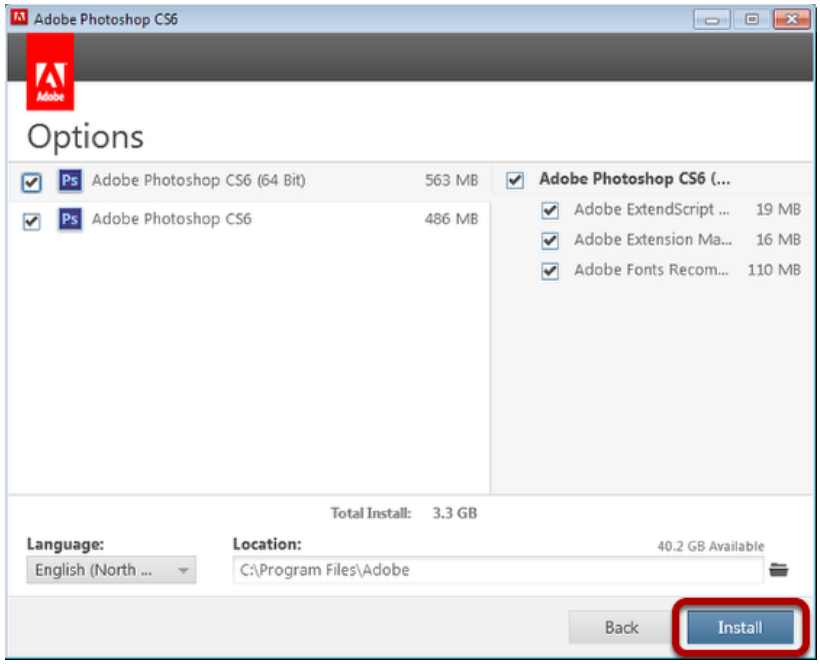
1. Paste the serial number
2. Click **Next**

   Sign in to Adobe



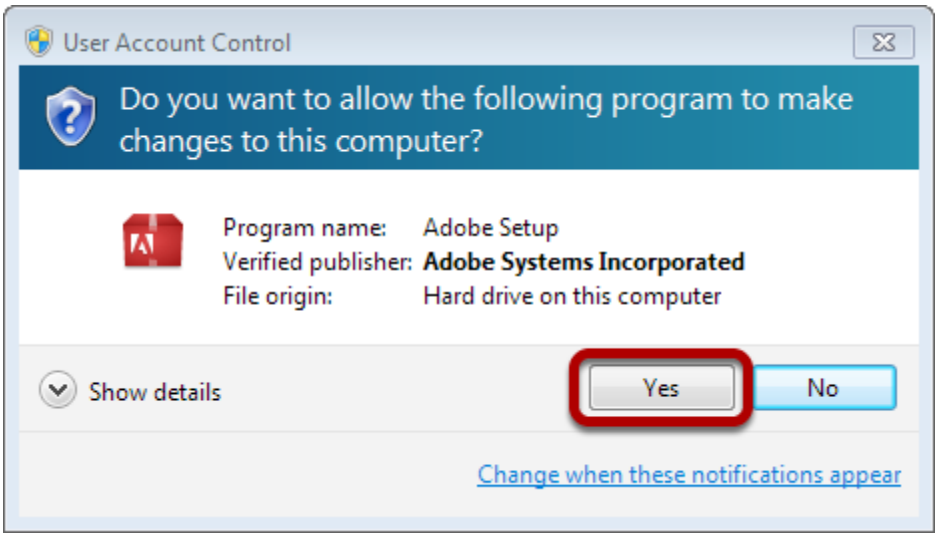
- If you do not have an Adobe account, you will need to create one. If you do have an Adobe account, sign in with those credentials now.
- Click **Sign in Now**

  Install Photoshop



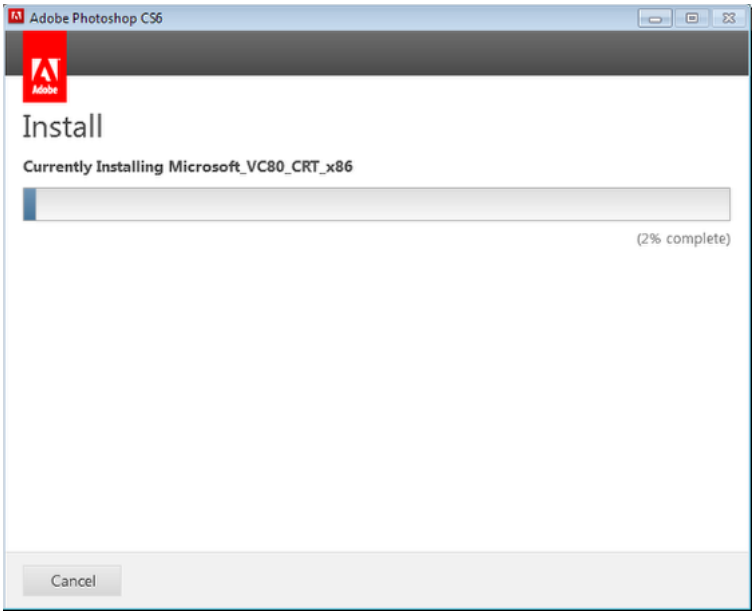
- Click **Install**

  Allow changes



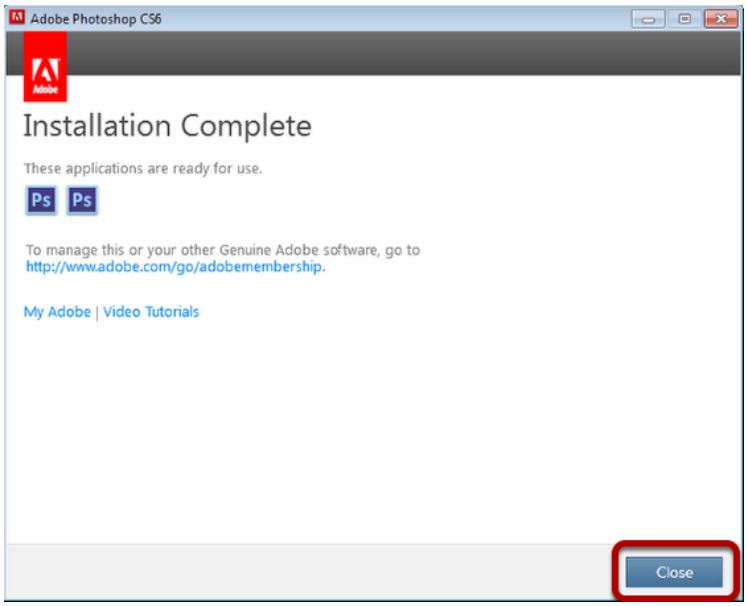
- Click **Yes**

Allow Adobe to Install



This may take several minutes.

Installation Complete



- Click **Close**

  Success!

- You have successfully installed Adobe Photoshop CS

LAP Test — 6	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary tools, materials, and CAD system you are required to perform the following tasks within 30 minutes.

1) Install the given software program
2) Follow the basic steps and install an application from an .exe file

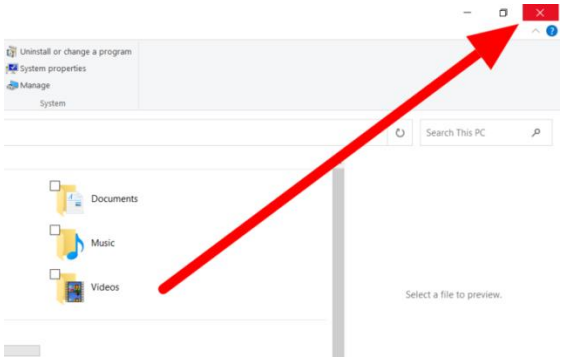
Operation Sheet 4- Closing all open applications and shut-down Computer

4.1 Closing all open applications

There are different ways to close opened application

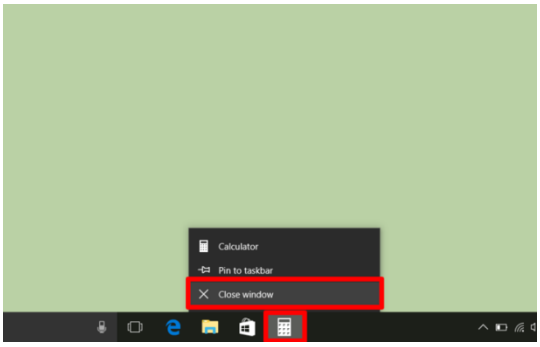
1) Use the ✕ button window control.

- Move your mouse to the top-right. Be sure to hover over the ✕ button.
- Watch for it to turn red. It should happen instantaneously.
- Click it. The app will close.



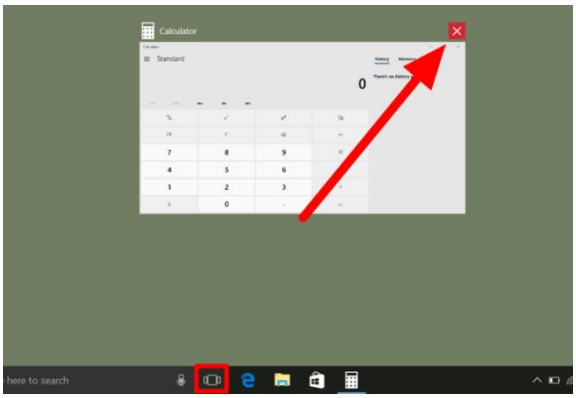
2) Right-click the taskbar icon. Right-clicking the taskbar brings up a list of options, including the ability to close the window(s).

- Locate the icon of the app you wish to close.
- Right-click the app icon.
- Click ✕ Close window. It's the option closest to the icon.
- Note: The option will be listed as ✕ Close all windows if the app has multiple windows open and you've configured the icons to combine. You can configure this setting in "Settings > Personalization > Taskbar > "Combine taskbar buttons" dropdown".



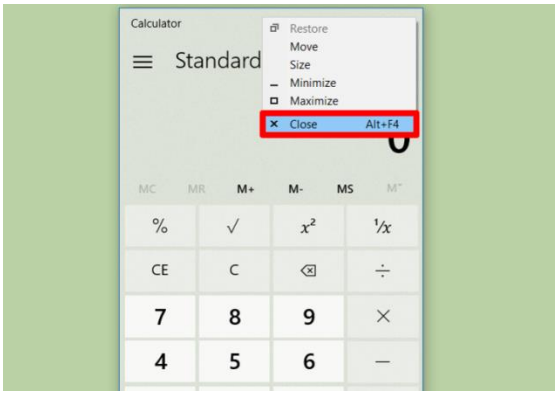
3) Use the Task View window.

- Click the taskbar task view icon. It's to the right of the search bar/icon. Alternatively, press ⊞ Win+Tab ↹ together.
- Locate the app you wish to close.
- Move your pointer to the top-right of the app preview, parallel to the title.
- Click the ✕ button. It'll turn red when highlighted.



4) Use the title bar context menu.

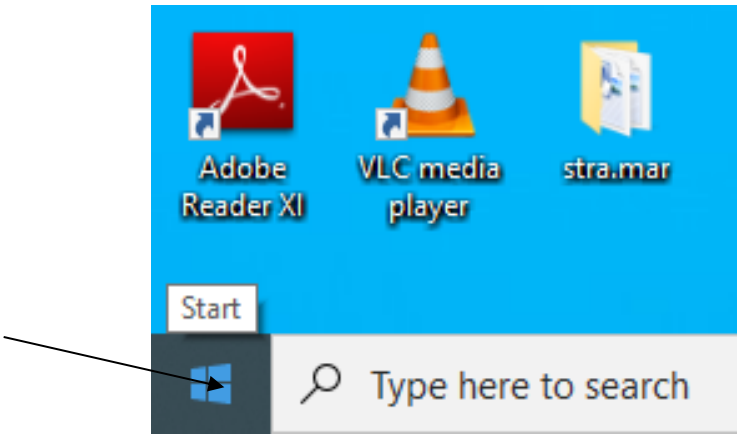
- Right-click the title bar of the app.
- Choose × Close. It's at the bottom of the menu.



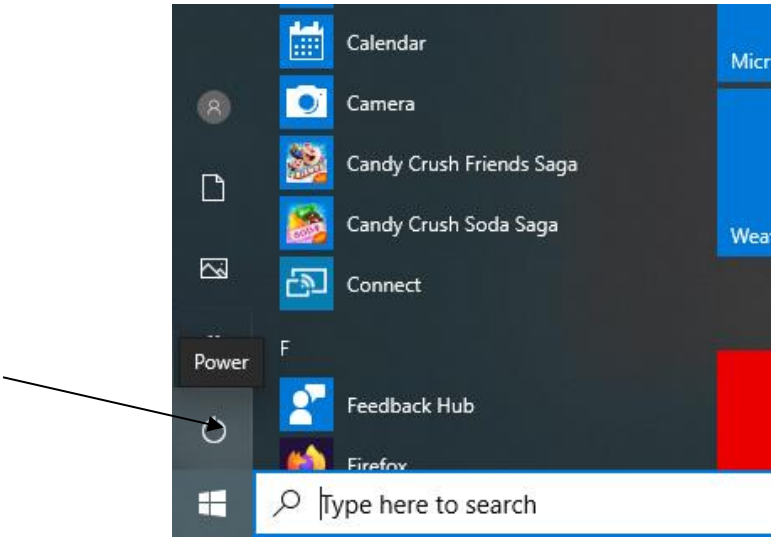
5) Use the Alt+F4 keys. Pressing these two keys will close the currently selected app window. Unselected windows won't be affected.

4.2 shutting-down Computer

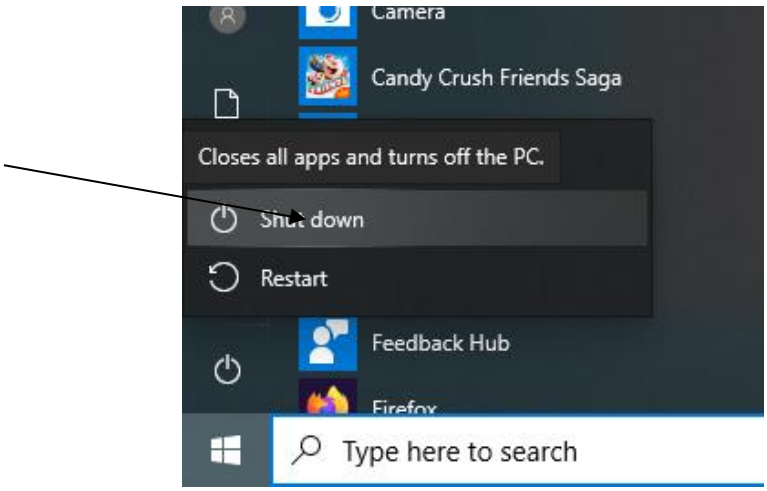
Step 1: click start button



Step 2: Click power button



Step 3 click shut down button



Note: before shutting –down the computer program, make sure all opened applications were closed properly.

LAP Test — 7	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions**:** Given necessary tools, materials, and CAD system you are required to perform the following tasks within 30 minutes.

1. Open the computer system
2. Create file in MS word(optional)
3. Save the file
4. Close file
5. Shut – down the computer

LG #19	LO #2- Digitize mean form

Instruction sheet

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

- Preparation of tools and equipment and their readiness for work.
- Starting the system to run CAD/CAM program/software.
- Preparing mean form or standard pattern for digitizing.
- Digitizing mean form or standard pattern in line with preferred standard pattern

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

- Prepare tools and equipment and ready for work.
- Start the system to run CAD/CAM program/software.
- Prepare mean form or standard pattern for digitizing.
- Digitize mean form or standard pattern in line with preferred standard pattern

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Preparation of tools and equipment and their readiness for work

1.1 Introduction to CAD CAM

CAD CAM is the abbreviation of Computer Aided Design & Computer Aided Manufacturing. It is the fastest mode of making the designs along with their patterns. One can change the designs as and when required. Many style variations can be developed on one last copy or the standard that has been digitized

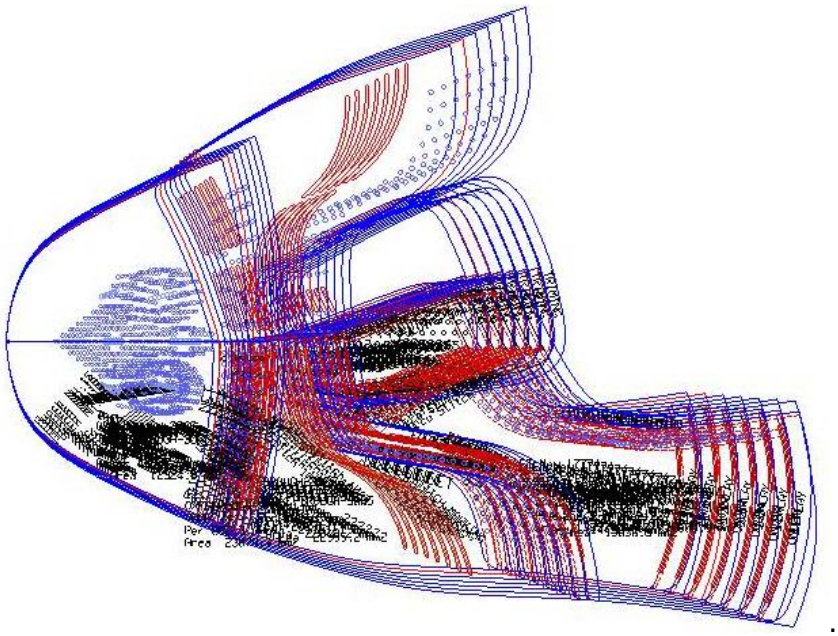
Computer aided design was introduced in the footwear industry in 1970s. Initially it was used primarily for pattern grading. It enabled manufacturers to perform complex grading easily and quickly. CAD systems today have been developed with a much wider range of functions. Logos, textures and other details can be incorporated into product designs of both the uppers and soles to help reinforce branding on all areas of the model. It automates routine procedures, increasing speed and consistency whilst reducing the possibility of mistakes. CAD data can now be used effectively for a wide variety of activities across footwear manufacturing business. CAD/CAM generates data at the design stage, which can be used right through the planning and manufacturing stages.

CAD/CAM software are PC/workstation-based, which are on module to perform the activity as per requirement, likewise 2D Module for 2D Designing, pattern engineering, grading etc. 3D for surface modeling to generate the rendered view of a product etc.

Objective of Pattern Grading

Grading is a process of producing a size range of patterns from an original model size that is increased or decreased proportionally to the original model size.

When we talk about grading most people tend to associate this with only the upper only but we also need to grade the bottom tooling area as well. If done correctly we can combine many components which in turn saves capital cost for tooling equipment and makes manufacturing much easier by reducing the number of sizes needed to cover the overall size range.



Graded complete Upper view

CAD CAM consists of two major components:

Hardware components & software components

Hardware components are Input devices, Process device & output devices.

Input devices are 2D (2 dimensional) and 3D (3 dimensional) digitizers used for digitizing standards, patterns, lasts, heels). 2D and 3D scanners are used for scanning photos sketches, material, lasts, feet, soles, heels). Digital camera used to capture the texture pictures.

Process Device is PC/Workstation with monitor, keyboard, mouse; specification of the devices will be as per the requirement of the application/software.

Output devices perform the role of CAM. These are Printers used for printing reports, images or 3D printers for prototypes building, Cutters plotters used for cutting paper pattern, material cutting. Milling machines, turning machines, CNC machines are also out devices of CAD

Input devices:

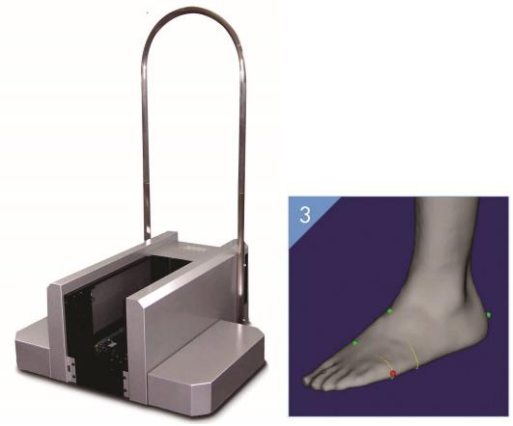
2D digitizer

3D digitizer

2D flatbed scanner

3D scanner

Digital camera



3D Foot scanner

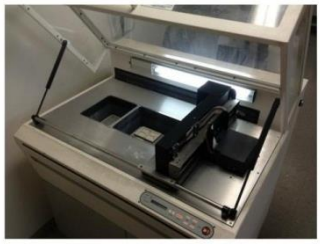
foot scanner

Process Device

Specification of the computer is provided by the software vendor. If you are using the 3D module of the software it is suggested to use the workstation with high end graphic display card due to its capability to handle the heavy graphic files smoothly.

Output devices

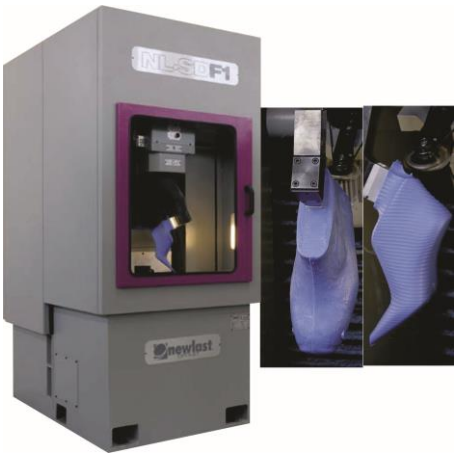
2D color printer



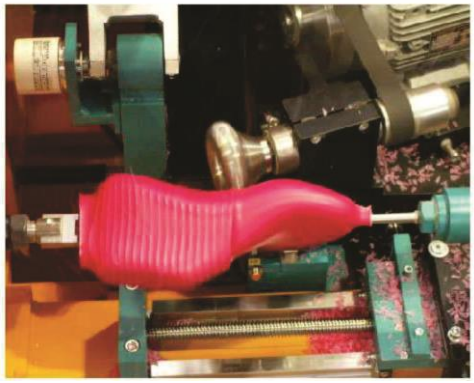
3D Printer

Paper Pattern Cutting Machine small

Material Cutting Machine



Last Modeling Machine



Last Turning Machine

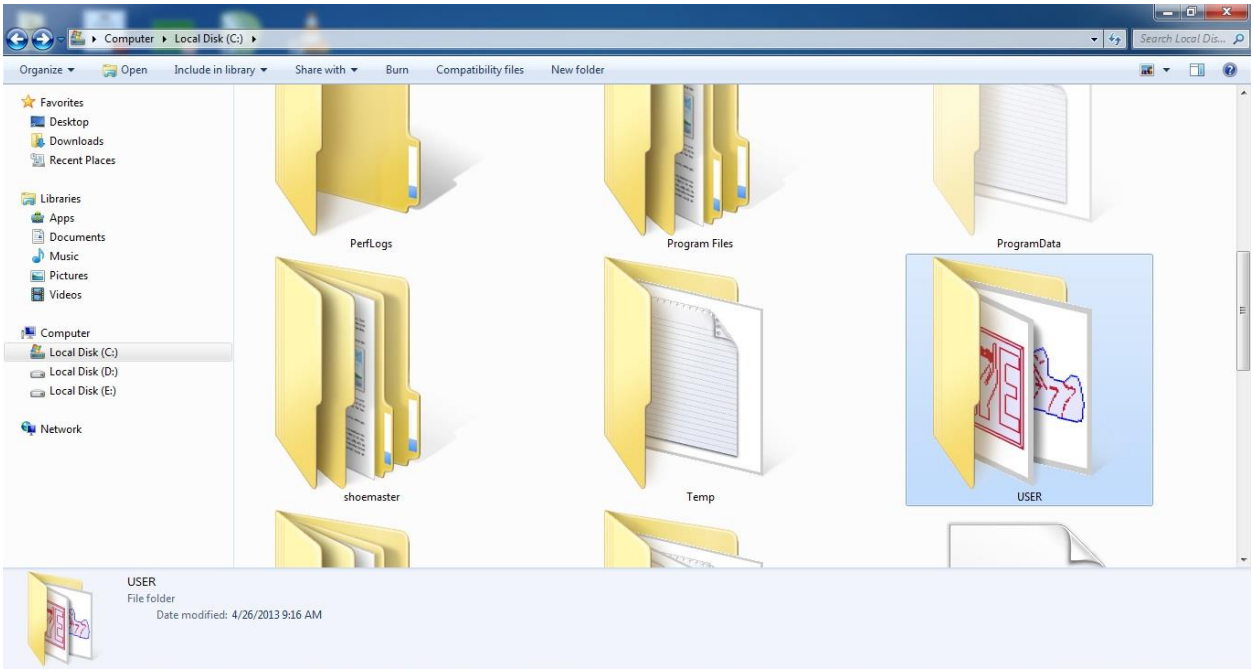
Software components of CAD CAM

Software components

The software in CAD CAM is available as per objective. i.e 2D for standard designing or styling and pattern engineering, 3D for surface modeling and to get rendered view of a product, some interface software which works as a bridge between the CAM machine and CAD.

Data storage pertaining to CAD including modification

Data management of the CAD needs utmost care. In CAD application the data generated are of different nature and these data are stored on a specific location which is either generated by the software during the process of installation or user needs to generate a designated location for storage of data for easy traceability and retrieve ability.



For example User's Data is stored under the folder of **USER**. Similarly user needs to be created folders for specific user data on a dedicated location. The data folder required are **Shell file folder, Punch file folder**,  

Understanding of work procedure including description of functions

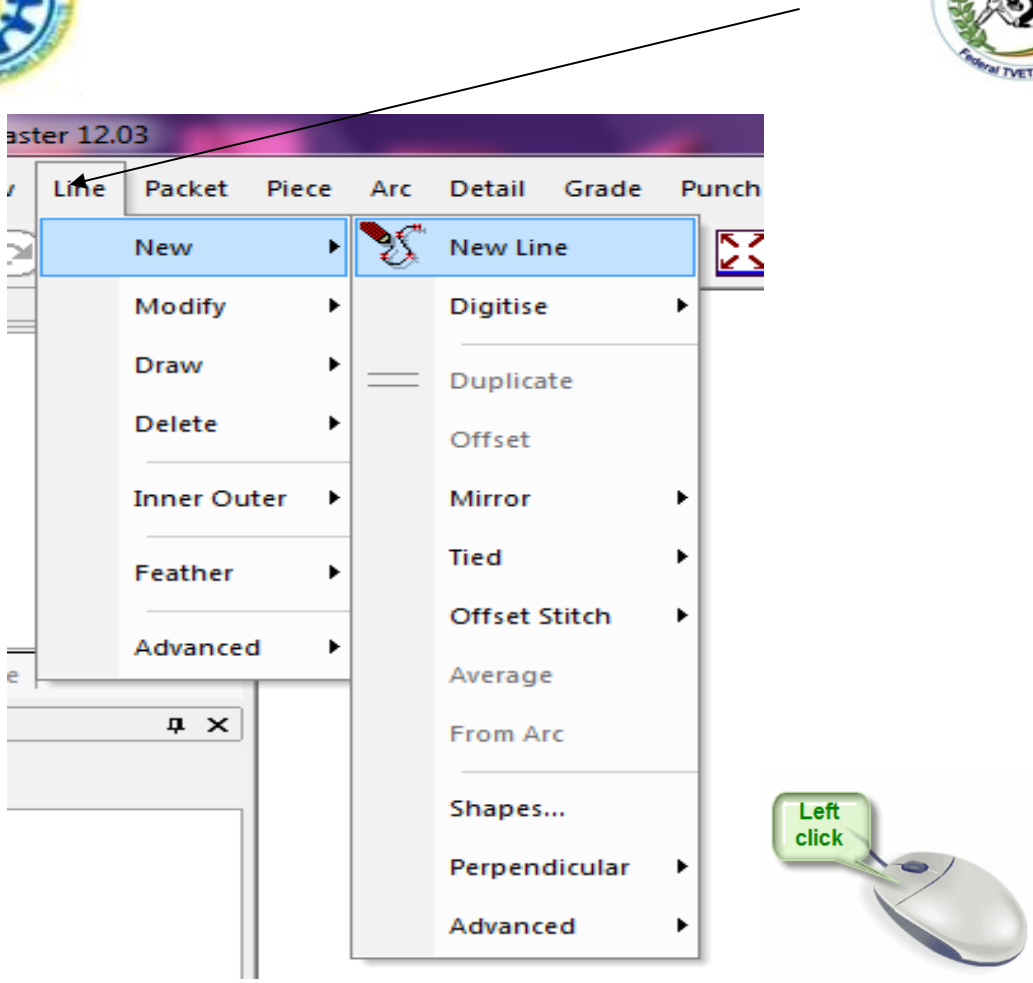
In this module we are going to learn the software of last copy/standard/pattern digitizing processing and produce the output. For the purpose, we are using software Shoemaster.

Before we start the first step of operation, it is very important to understand the basic commands of the software, to make ourselves comfortable with the software to understand the nature of its. The file extension generated by software is **SHE**. It stands for shell file or style file. The description of menu will be along with the utility of the command is explained further.

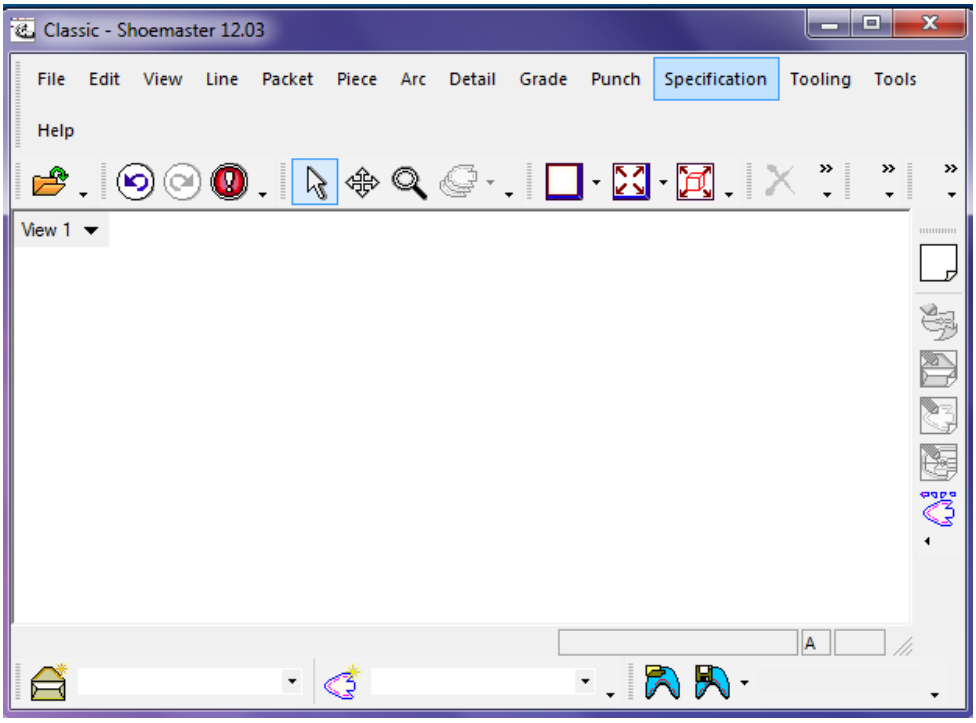
For creating any shape you are required to create a line, so the first command is **Line.**

Line

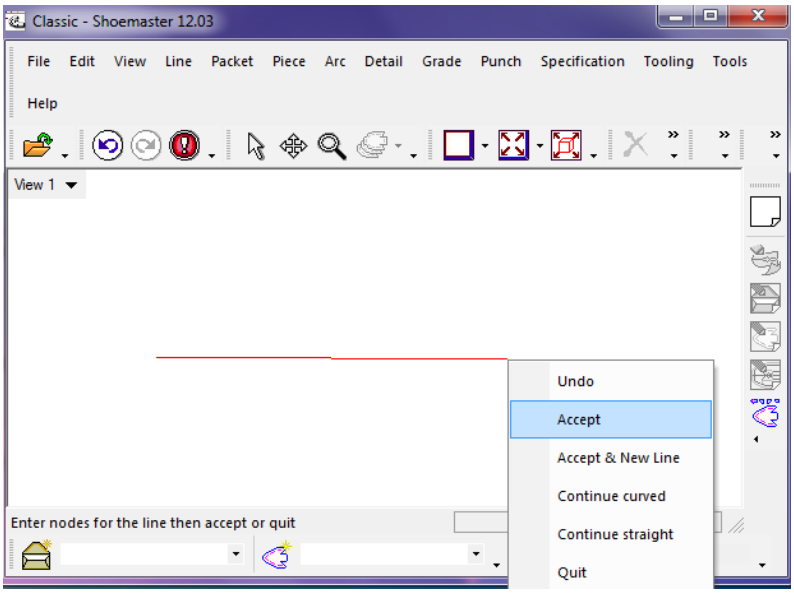
To draw a new line go the line pull down menu and go to new and click on the new line with the left click on mouse.

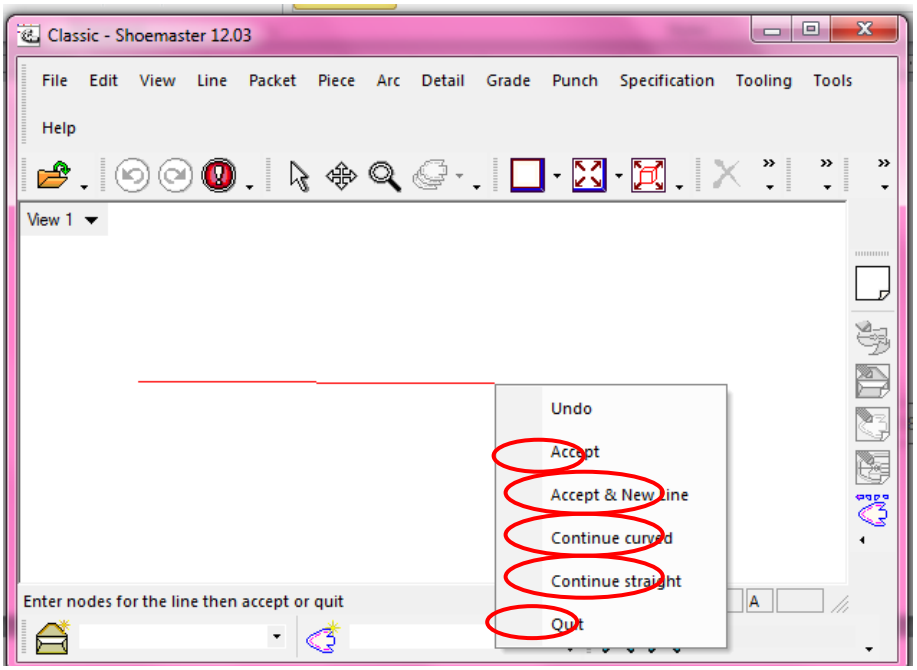


Now click on working area with lift click of mouse

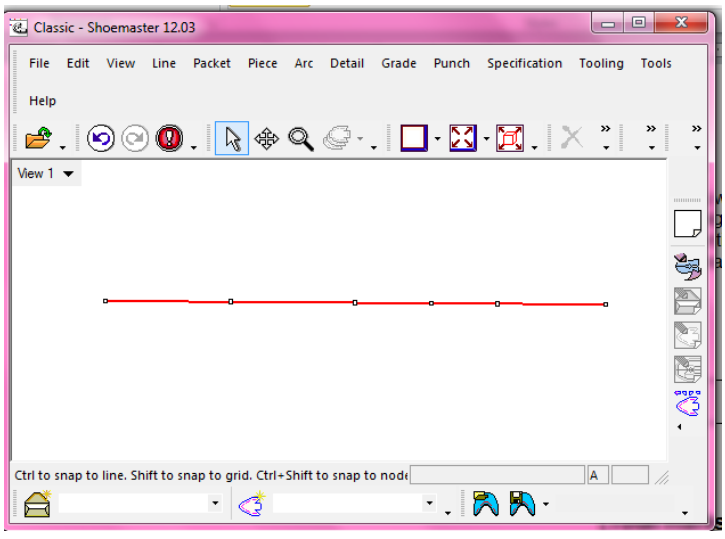


Click on the second point with lift click and click right  on the mouse a menu appears left click on the desires command, if you want to accept the line click on accept.



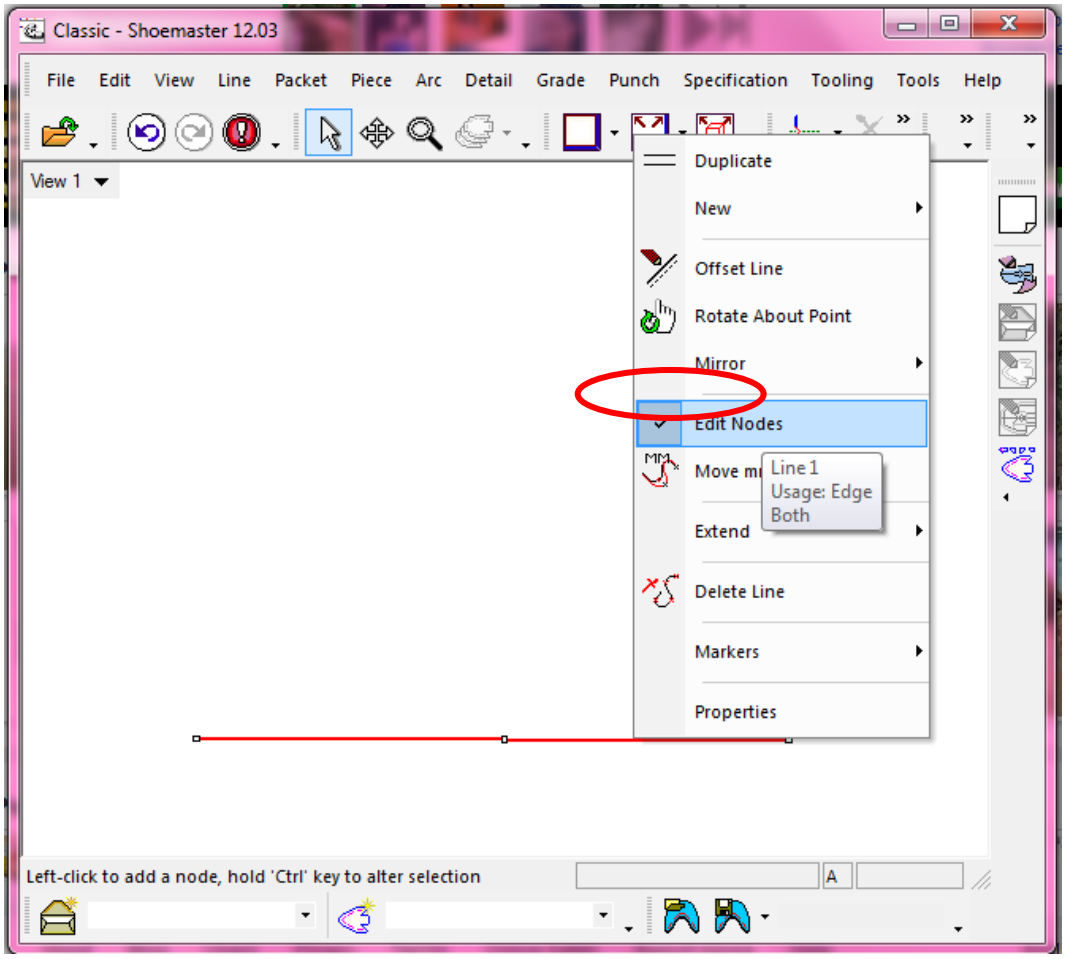


To create another line after completing the line click on **Accept & New Line** if you want to continue the line as a curve click on **Continue curved** if you want to create straight curve click on **Continue straight,** the difference between continue curved and continue straight is continue curved create the line in curves only while continue straight created the line with corners. To quit from command click on **Quit.**



Node is a point of line by moving which you can change the shape of line, to insert the node on a line click on a line you will get a node added on the point where you clicked.

To delete the node form the line hold the **ctrl** key on the keyboard and click on the node, it will be deleted

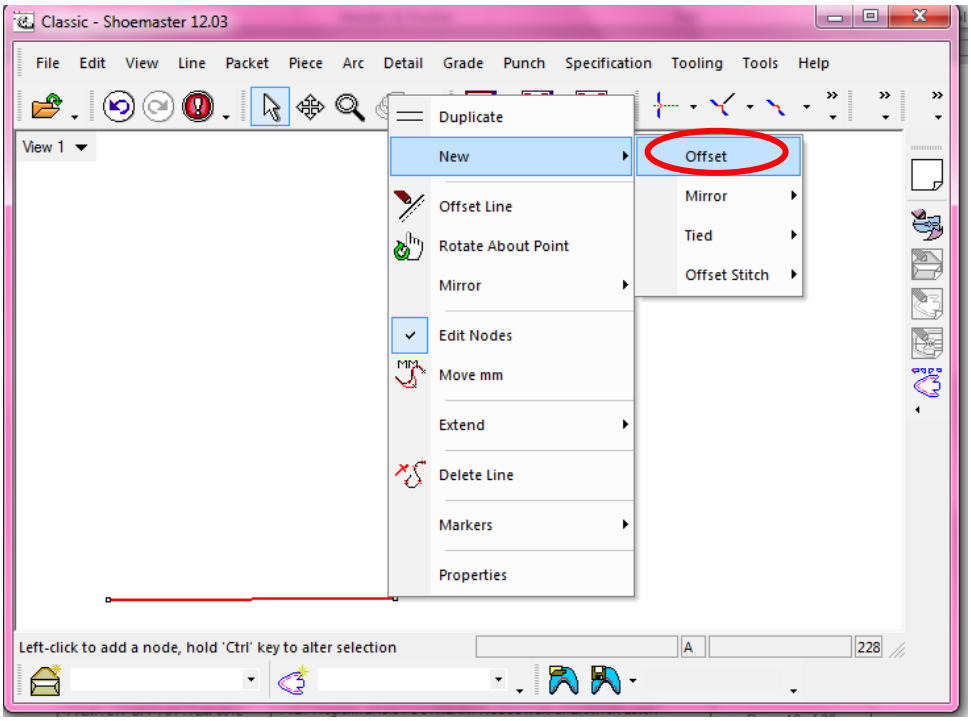


If node of line is not visible on the line. **Right Click** on the line, a menu of line appears and **check(√)** on the **Edit Nodes** option.

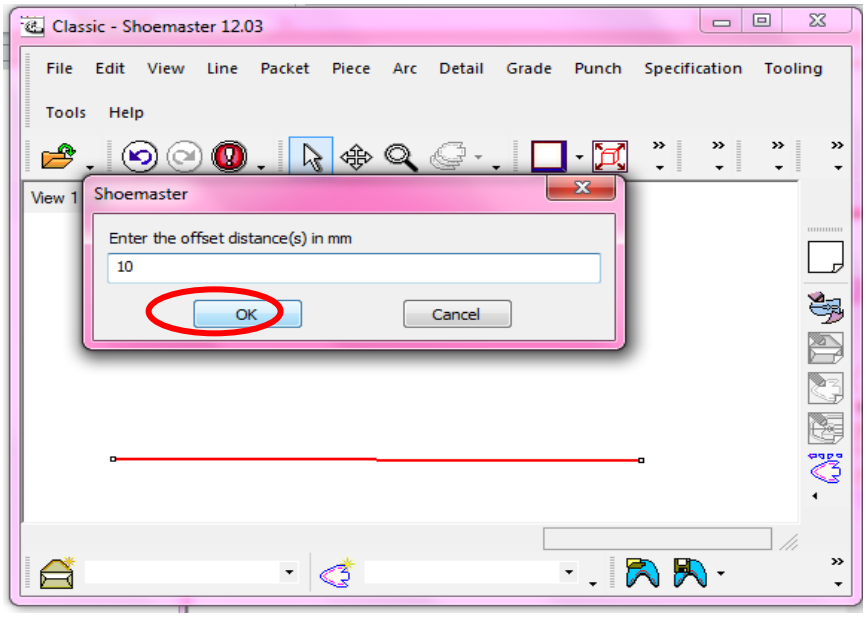
OFFSET LINE

In the designing process or pattern engineering process there is constant requirement of offset line or parallel line.

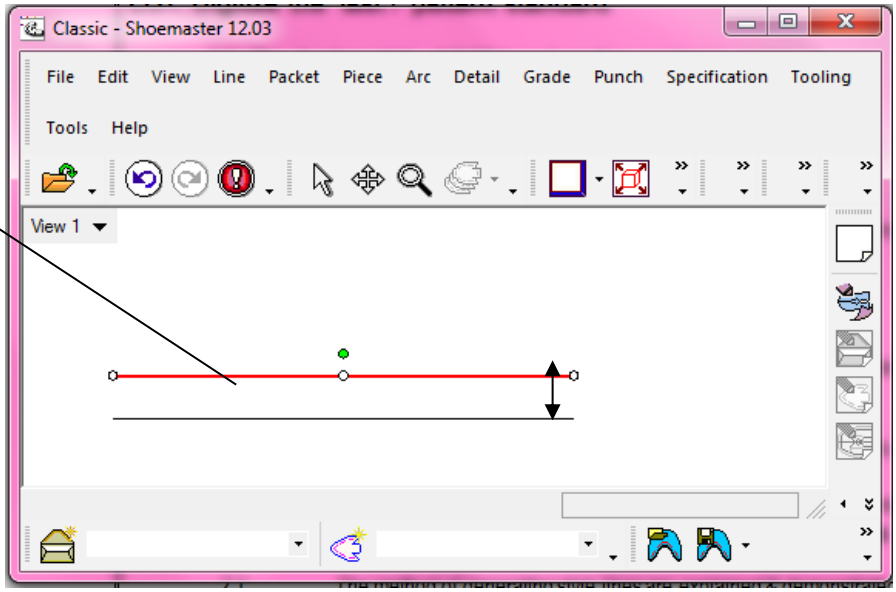
To create the new offset of the line **Right click** on the line, line menu appears go the **New** and select the **offset**.



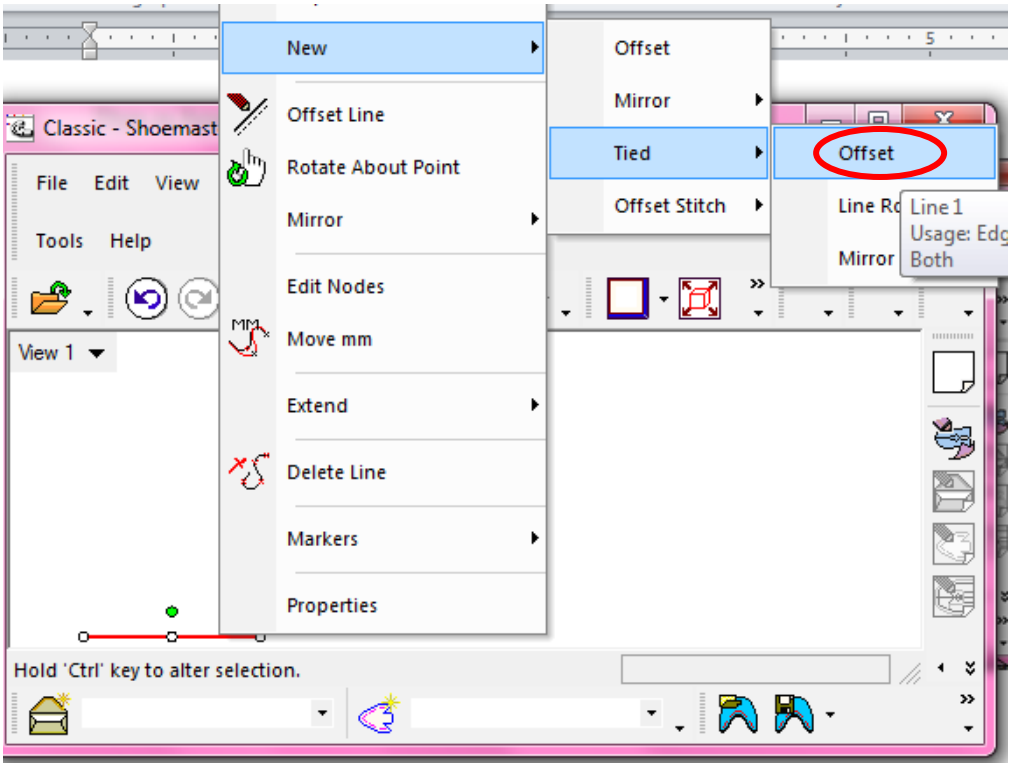
Now enter the **value** in the window of the distance **offset** you requires i.e 10mm eg.



This is how you can achive the offset of the a line

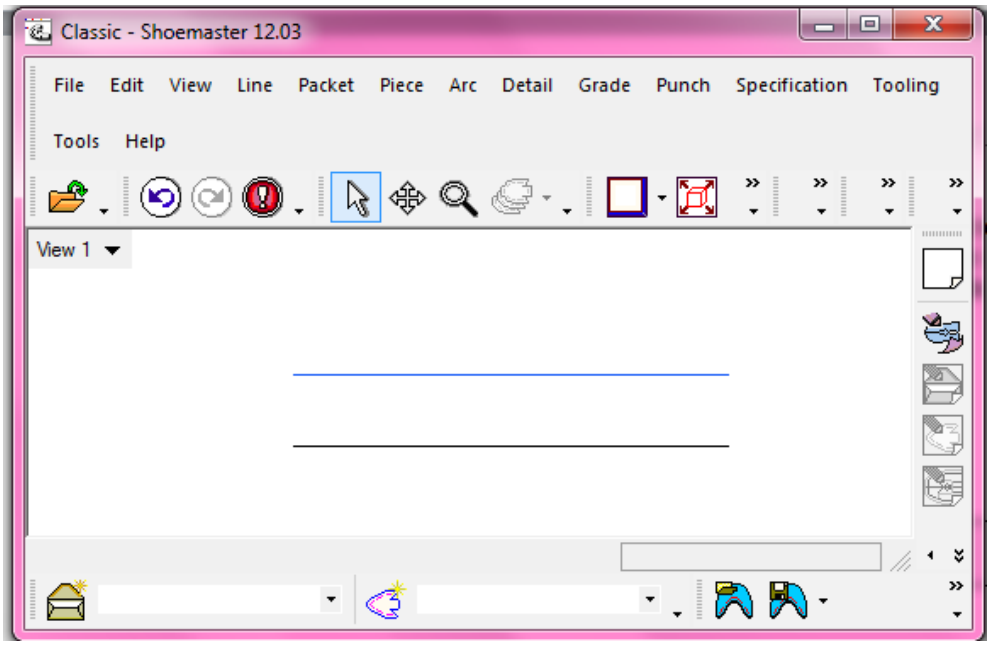


10mm

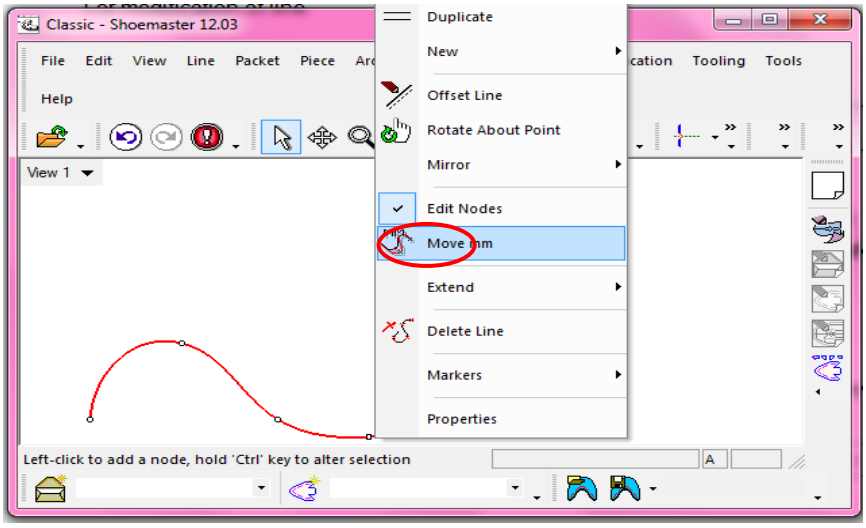


Another offset option is with **tied**. **Tide** means the **dependability** of the new line will remain with the principal line. User cannot edit the **new tide** line. If there is any change in the

principal line, **new tide** line will follow the **principal line**. New tide line is always in light blue color. Process of achieving the **new tide offset** line is as shown above.

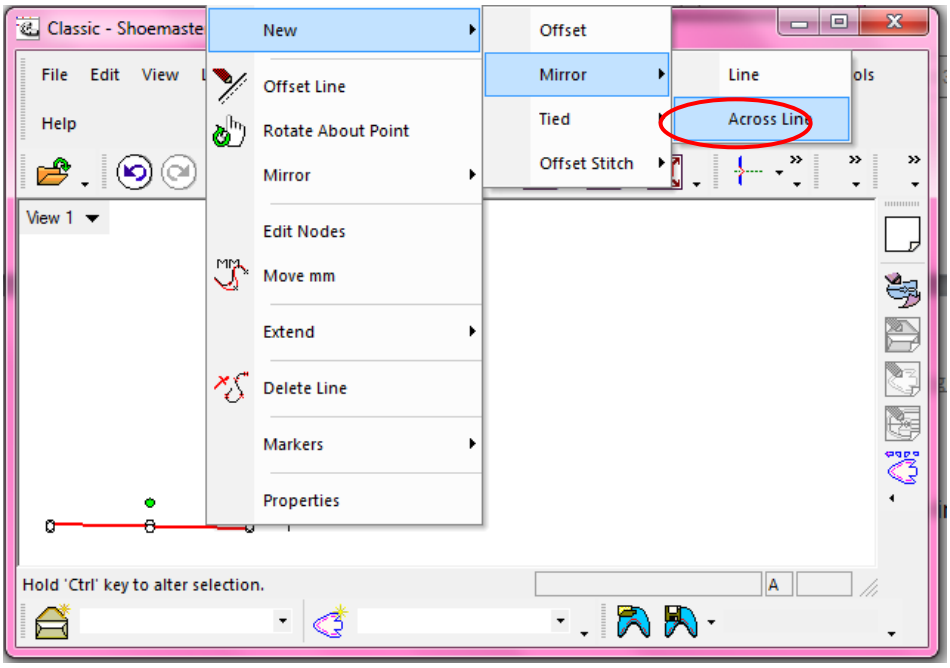


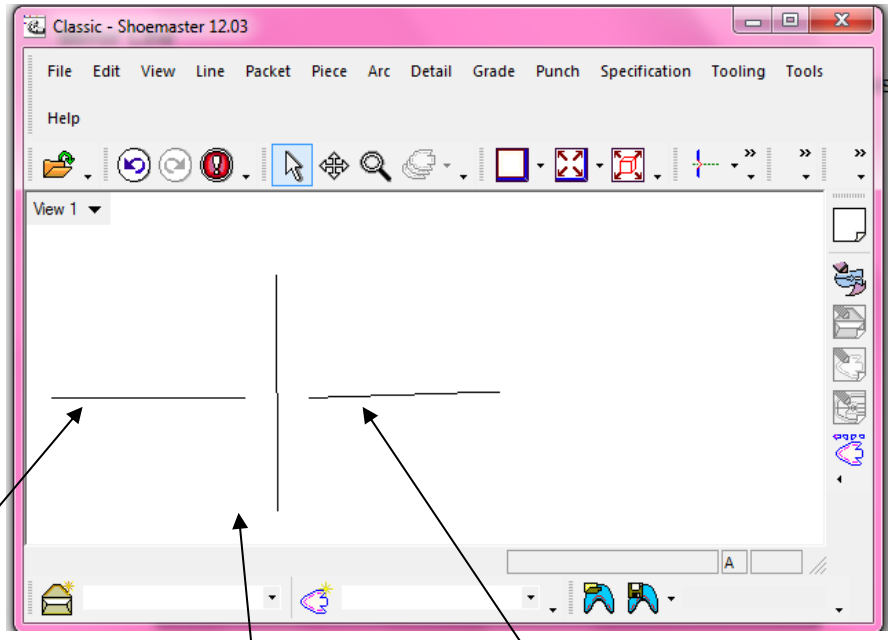
For modifying the shape of line user is required to hold the node of line move it freely as desired. If user wants to move the line with some pre-defined value, User is required to follow the line edit option by **Right click** on the line go to **Move mm** enter the **value** in the **pop up window** by which user want to move the node of line to achieve the desired shape.



Mirror Line

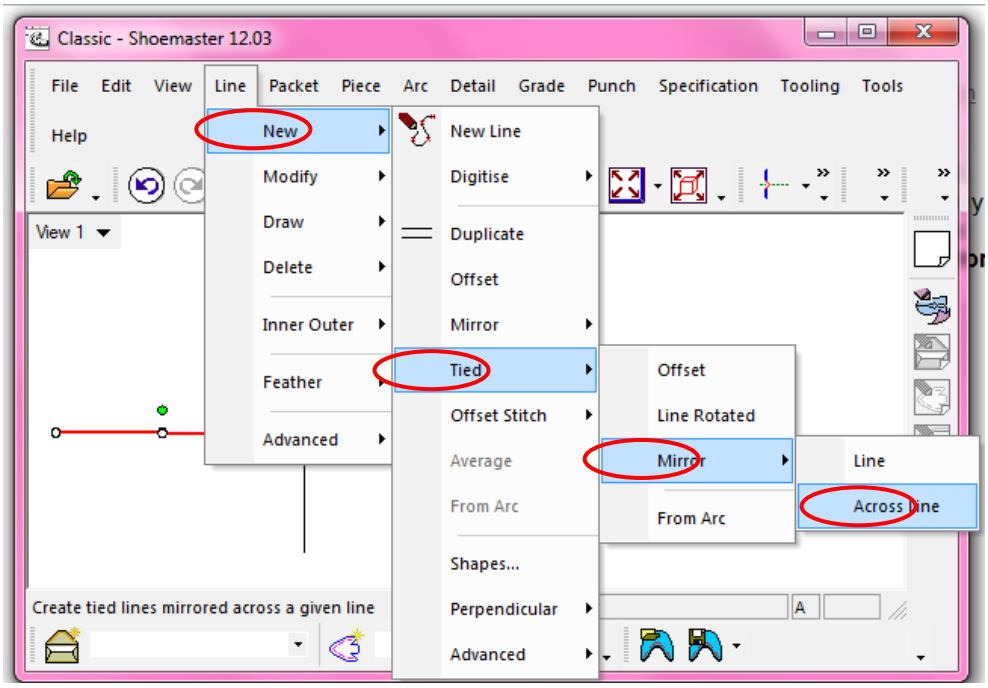
Mirror option is option with which you can create a new mirror the line across the axis.

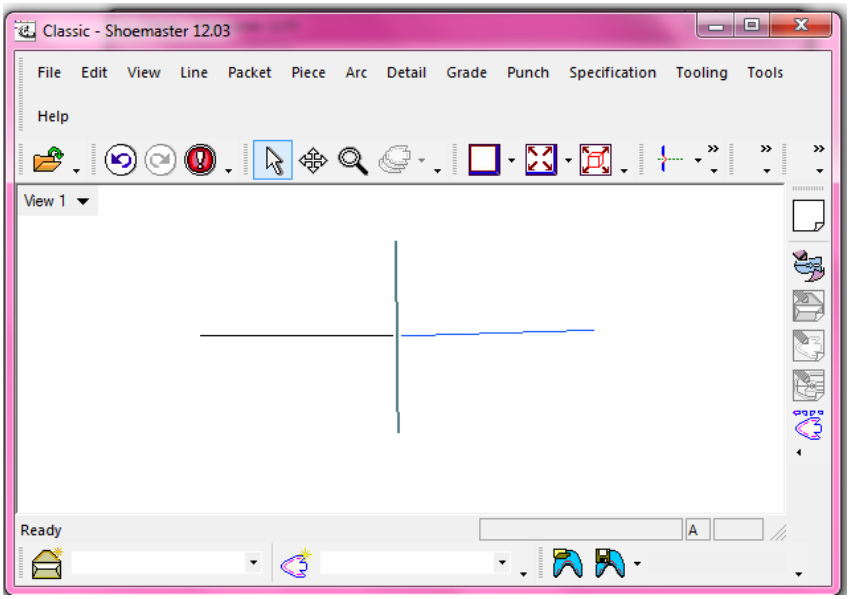




Principal line **Axis Line** **Mirror Line**

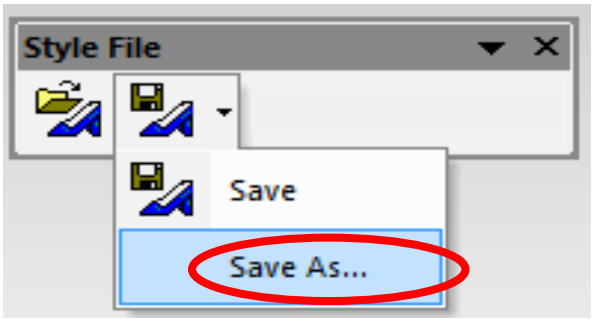
Another mirror option is with **tied**. **Tide** means the **dependability** of the new line will remain with the principal line. User cannot edit the **new mirror tide** line. If there is any change in the **principal line**, **new mirror tide** line will follow the **principal line**. New **mirror tide line** is always in light blue color. Process of achieving the **new tide mirror line** is as shown below.





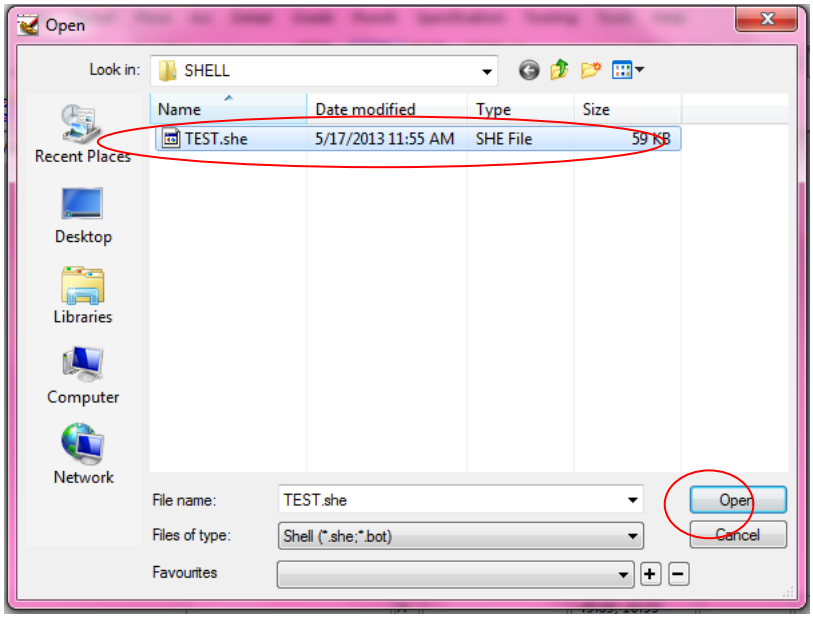
Save & Open

When you are working on the software it is very important task is to save the work, which you have worked on the data needs to be saved on the designated location as explained data storage section. To save your work you are required to style files window. There are two icons Floppy Icons is for save the file and Open folder icon is to open the file.



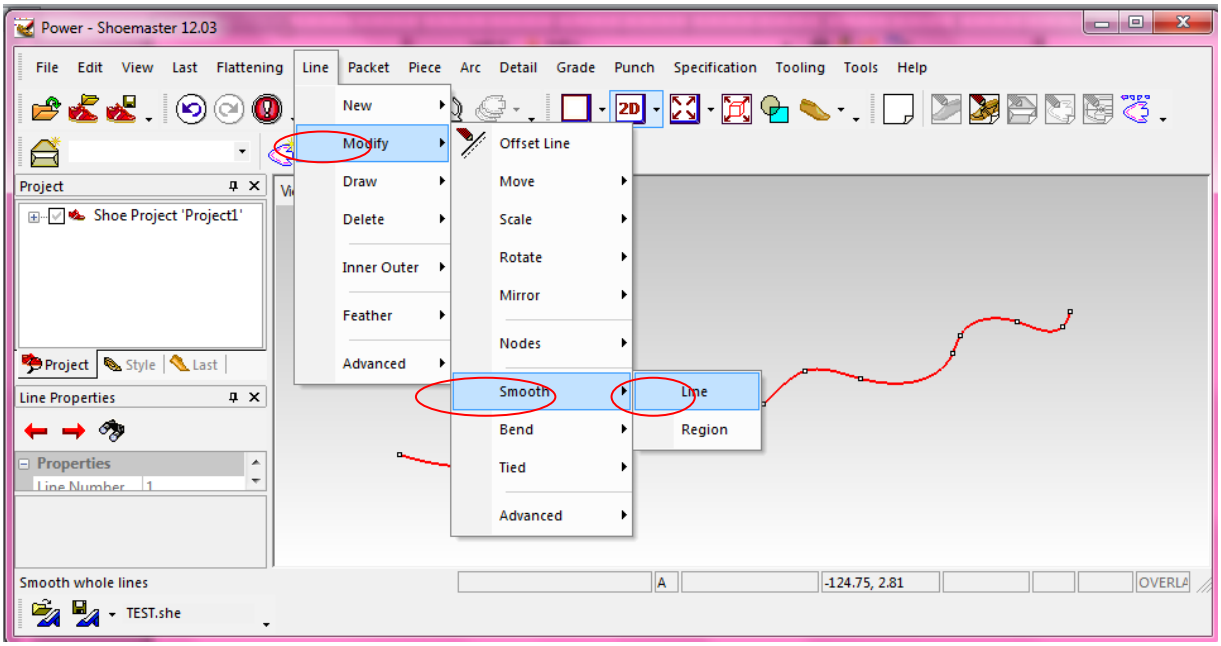
When you are saving the file first time you are required to **click** on the drop down arrow with the **follpy icon** and **click** on the **Save As** option. Once file is saved you can save the modification by Clicking the floppy icon only.

To open the saved file as mentioned above you are required to **click** on the **Open folder** Icon. Window appears on which open the **SHELL** folder under **USER** folder select the file you wants to open and **click** on **Open**.



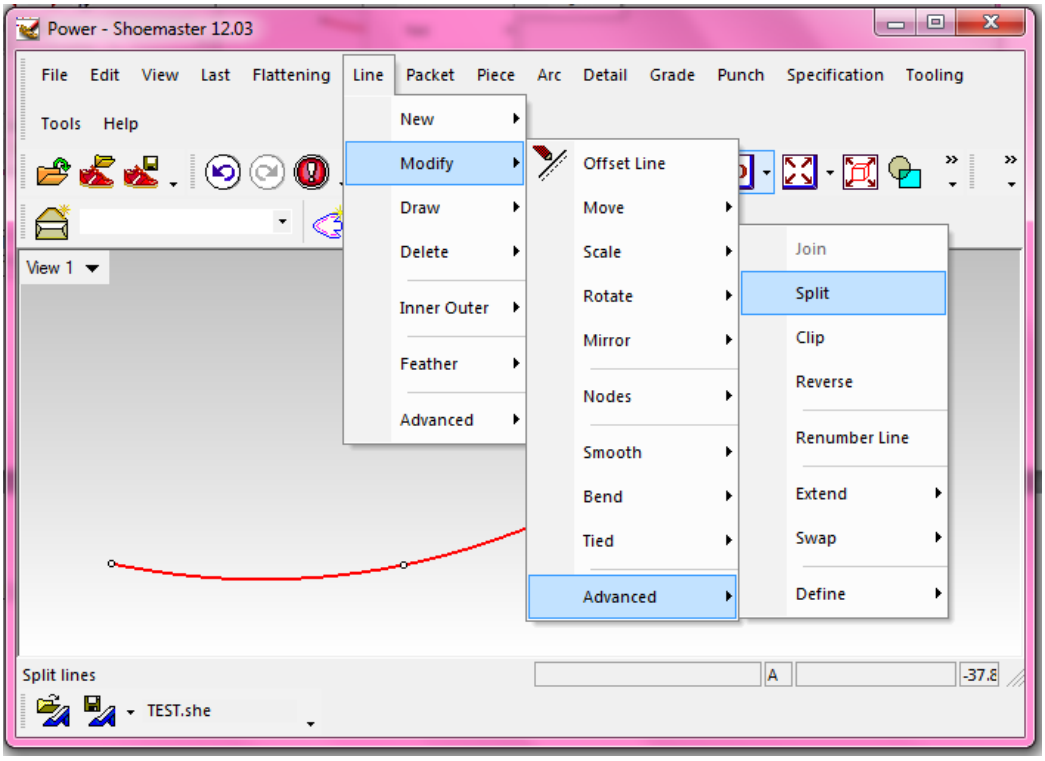
Smooth

For smoothing the line go the line pull down menu go to **Modify** -> **Smooth** -> **Line** You will get the line smooth, if you want to smooth the particular region of line for that you are required to click on the smooth, then click on the start point and end point of region of line. Only selected region will get smooth**.**



Split & Join

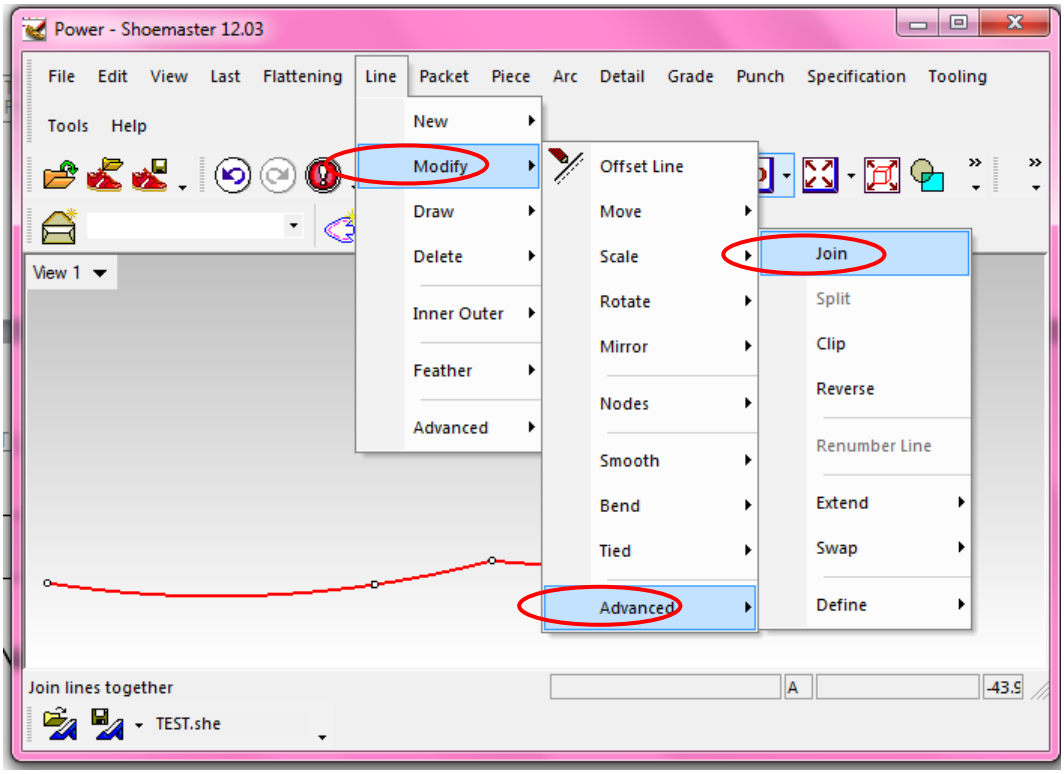
Split function is to break a line. To break a line you are required the line which you want to break. **Click** Line pull down menu click to **Modify->Advanced->Split**. Now **click** on the point where you want to **break** the line, line will get split.



Join function is to join the two separate lines. Most important aspect of the command is the lines, which you want join together should be colliding face to face. If you try to join the line from any other angel the final shape of line will get distorted.

To join the two lines, select both the lines together and click on line pull down menu click to **Modify->Advanced->Join.**

You will achieve the single line.



Measure

The measure function of the software is to measure length or width of the shape or line. Under the measure function there are three sub functions **2D distance**, **2D distance Along line**, **Specify 2D distance along line**.

2D distance is to measure the 2D distance or straight distance between two points as shown in(Figure 1).

2D distance along line is to measure the 2D distance along the curve or line as shown in (Figure 2)

Specify 2D distance along line is to identify the point of specifc distnace as shown in (figure 3).

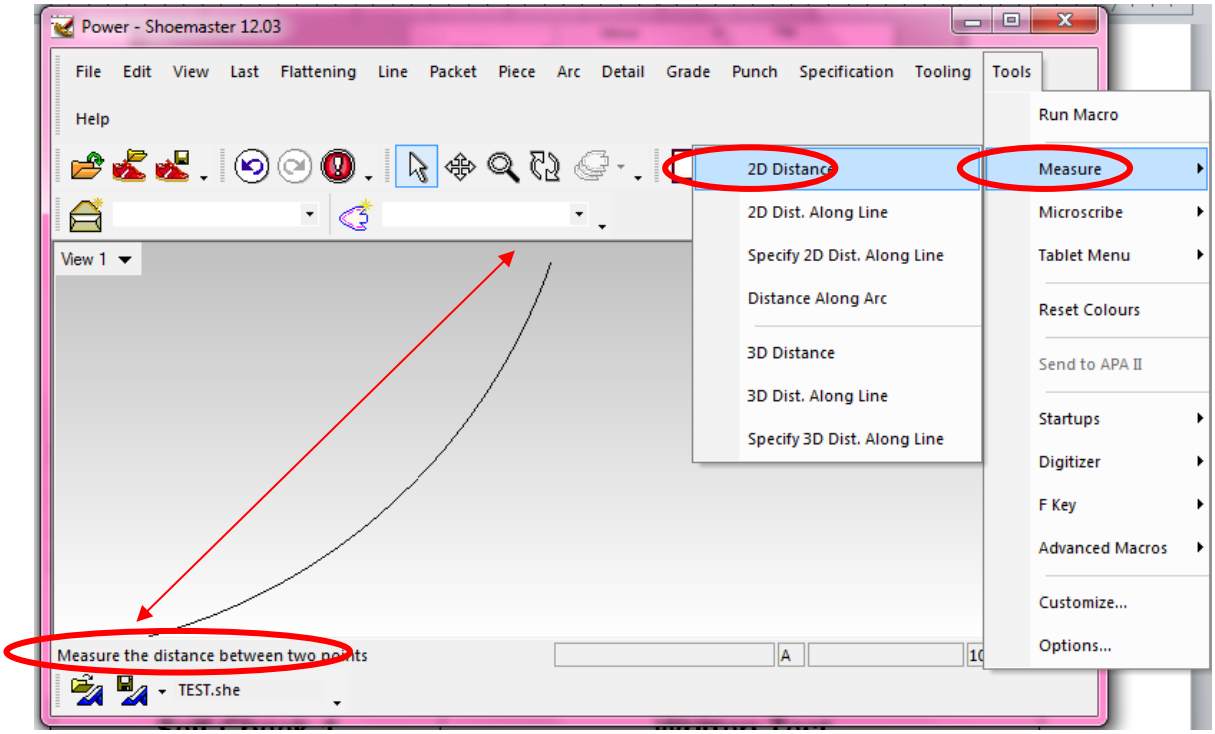


Figure 1

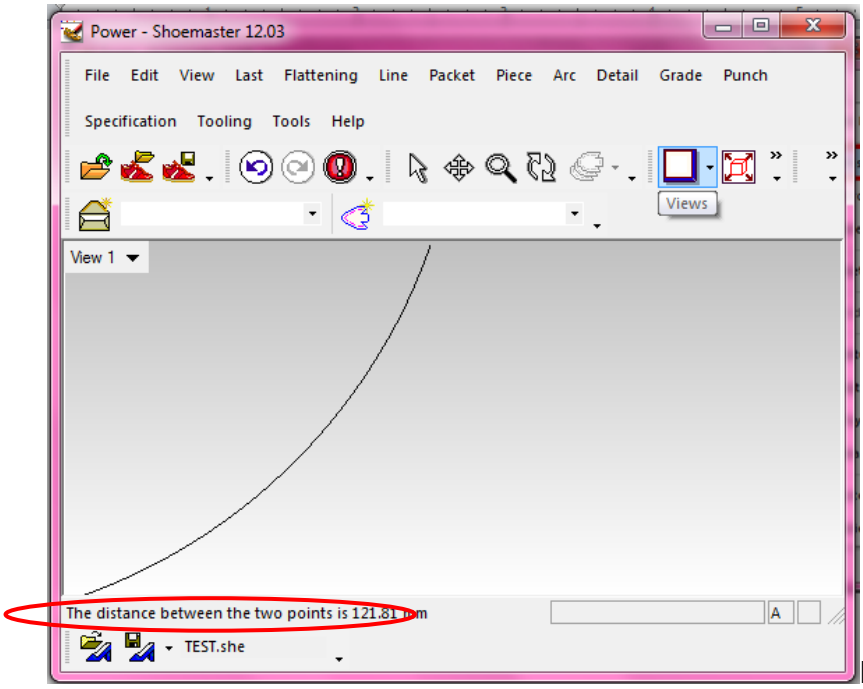


Figure 1A

The value get displayed on the command line as shown in Figure 1A

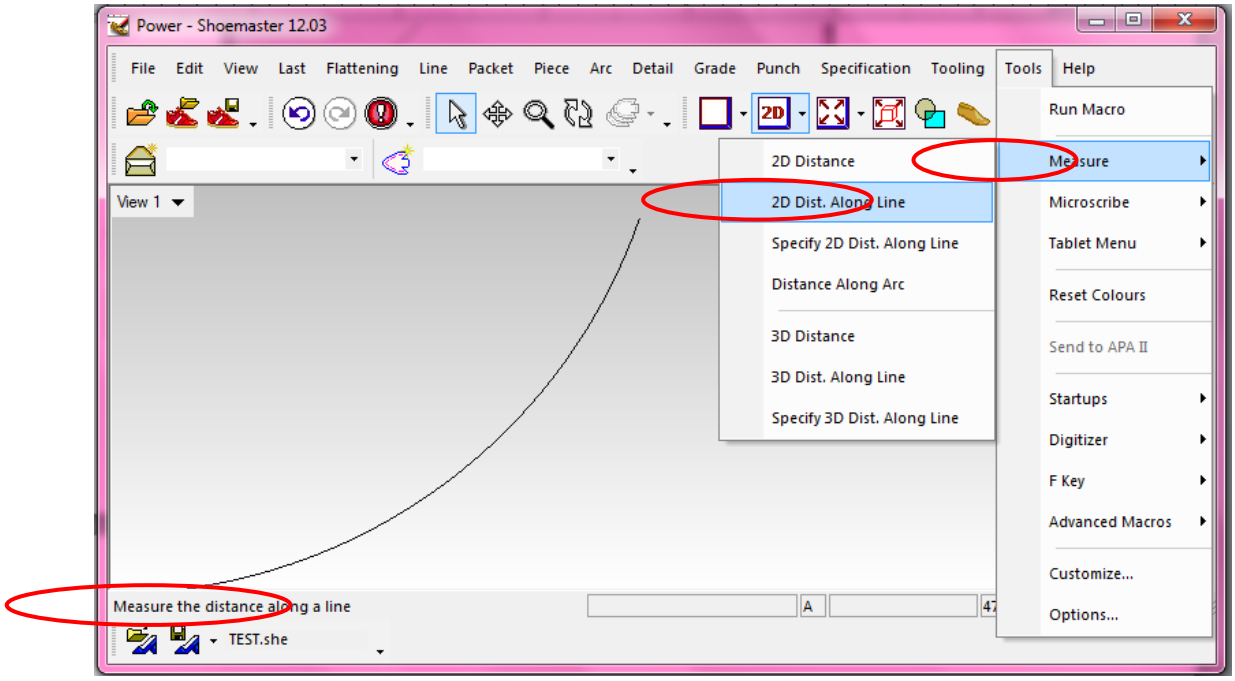


Figure 2

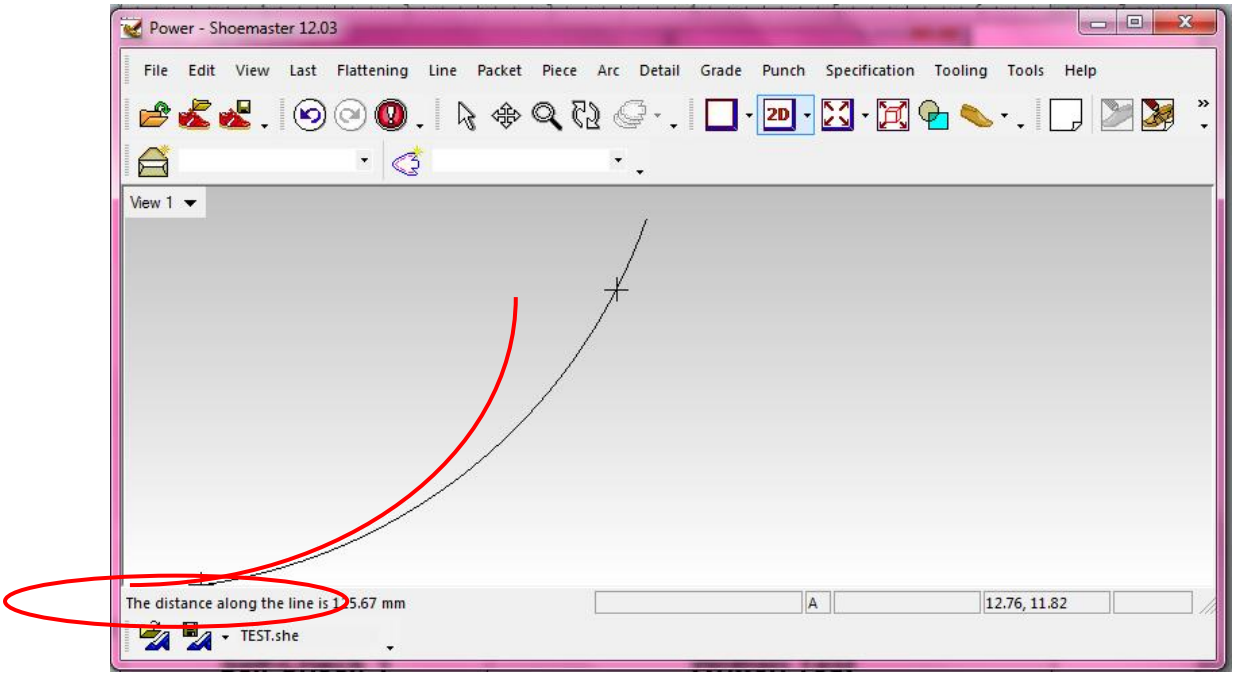


Figure 2A

As shown in a Figure 2A the distance along the cure is measured

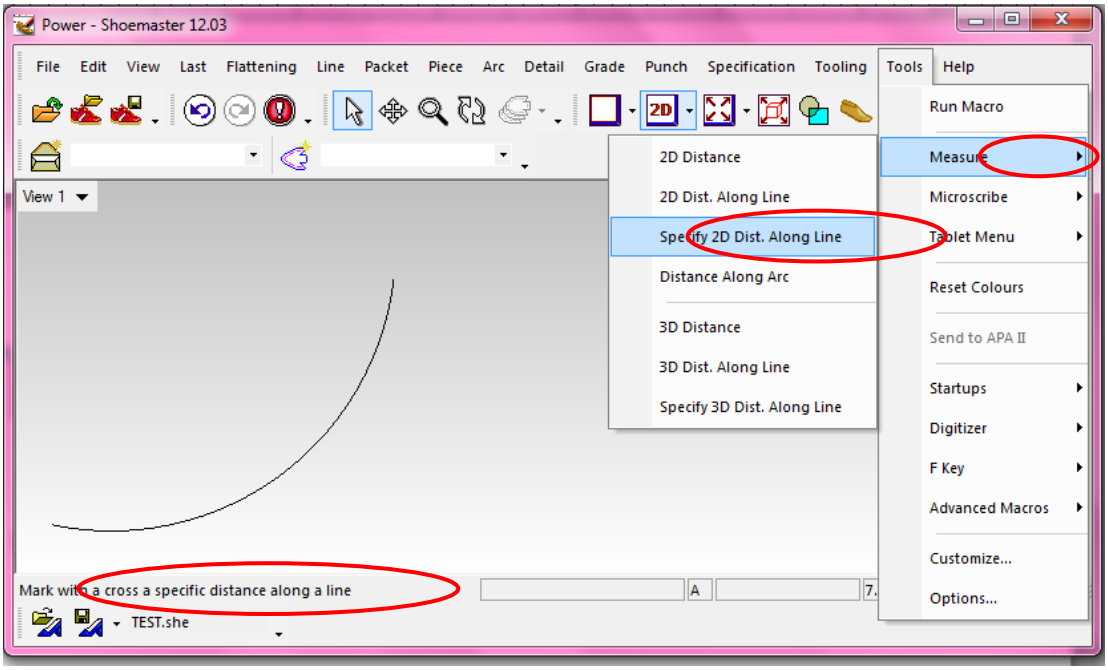


Figure 3

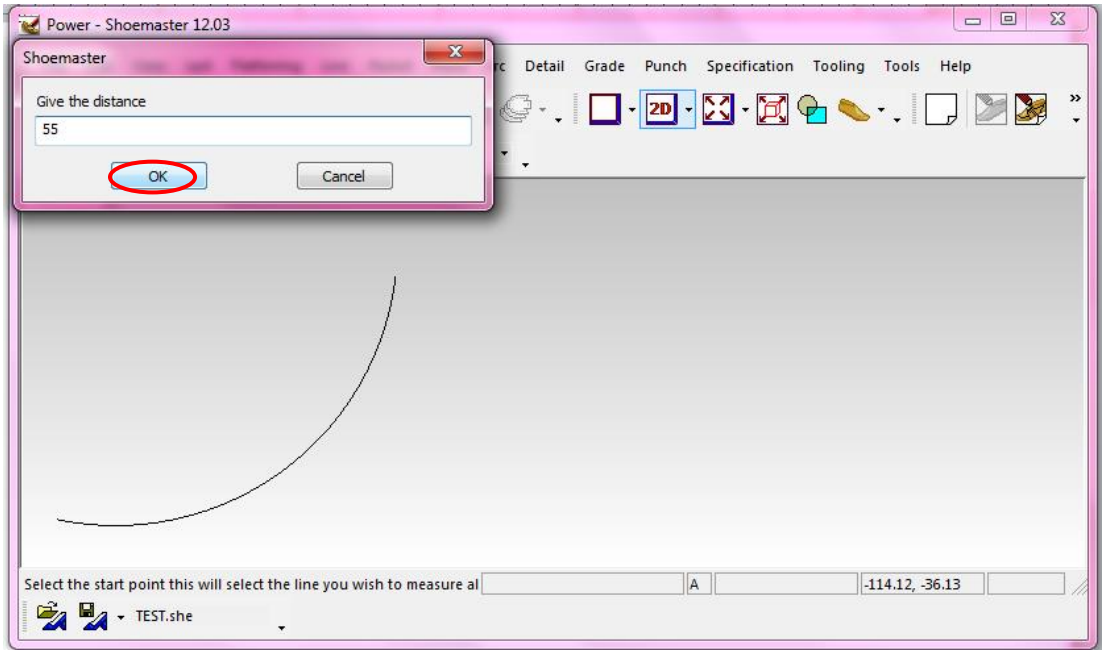


Figure 3A

As shown in Figure 3A the point you want to identify in a curve e.g. 55mm from starting.

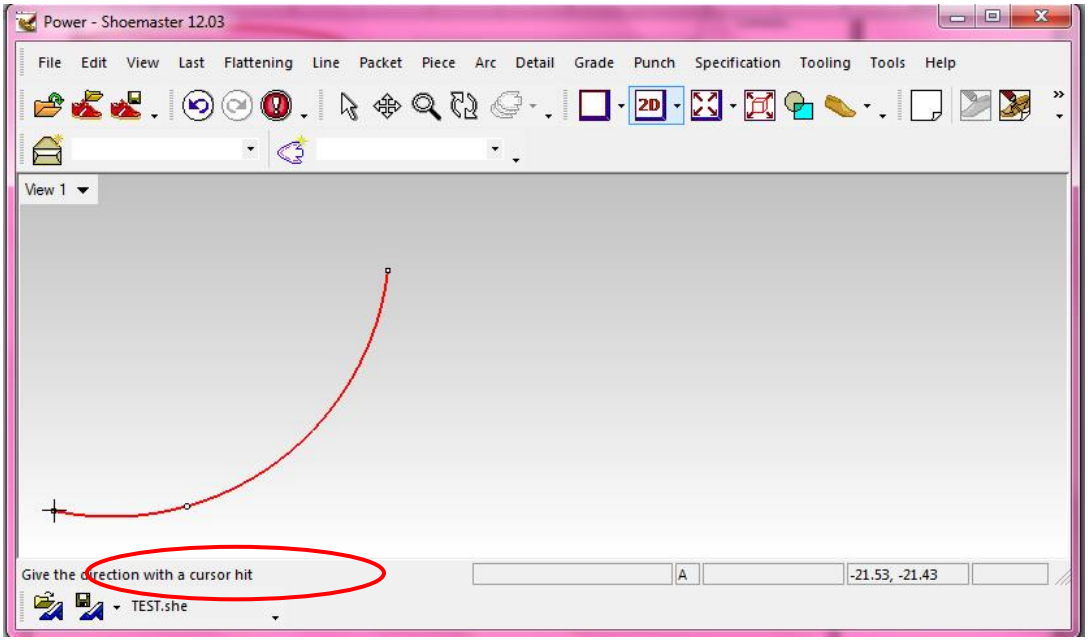


Figure 3B

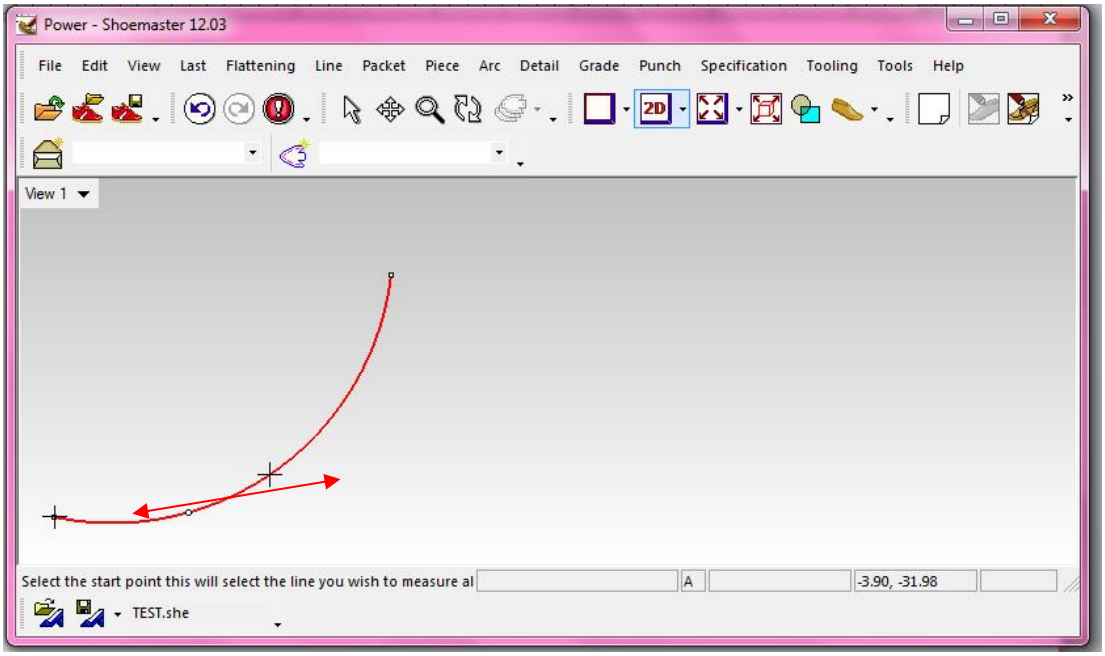
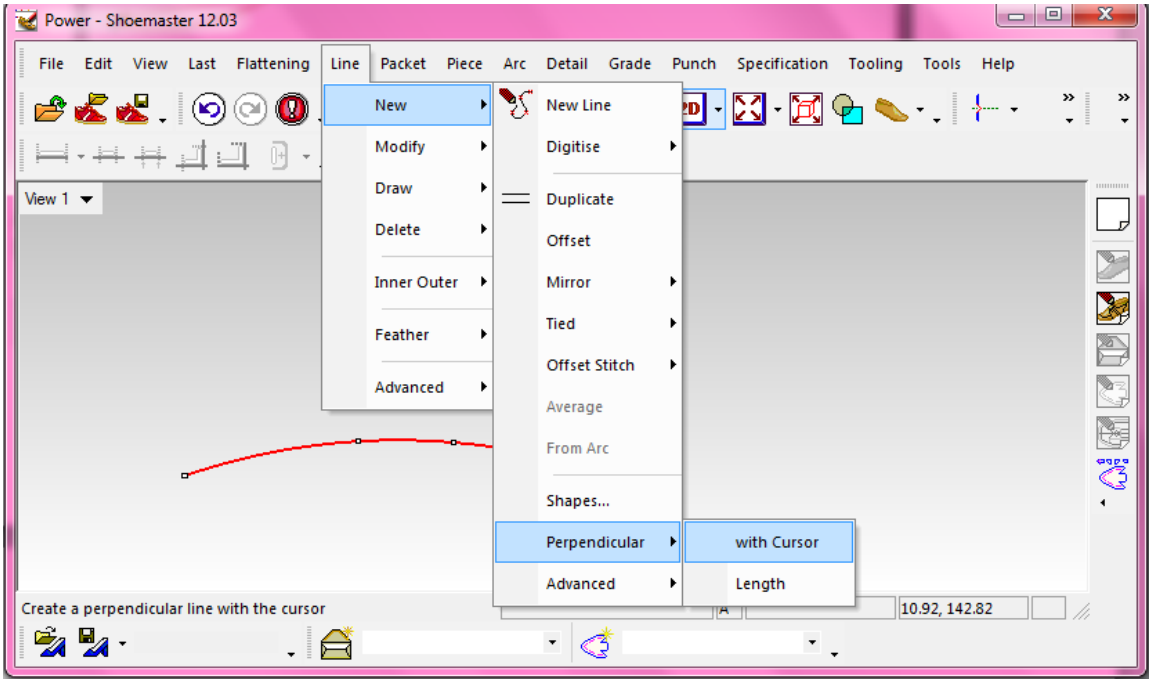


Figure 3C

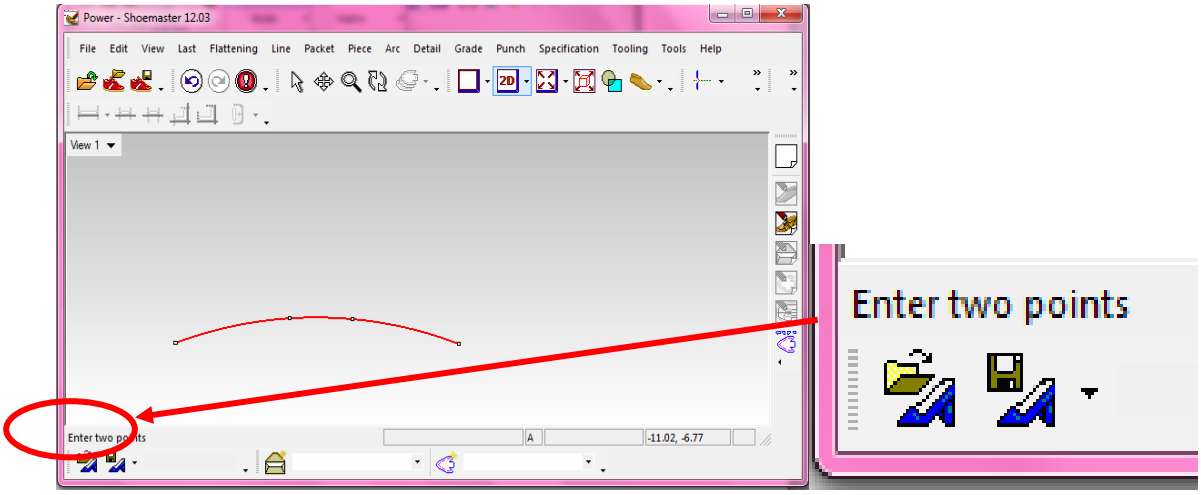
As shown in Figure 3C, the cross is visible on starting point of the curve and identified 55mm mark.

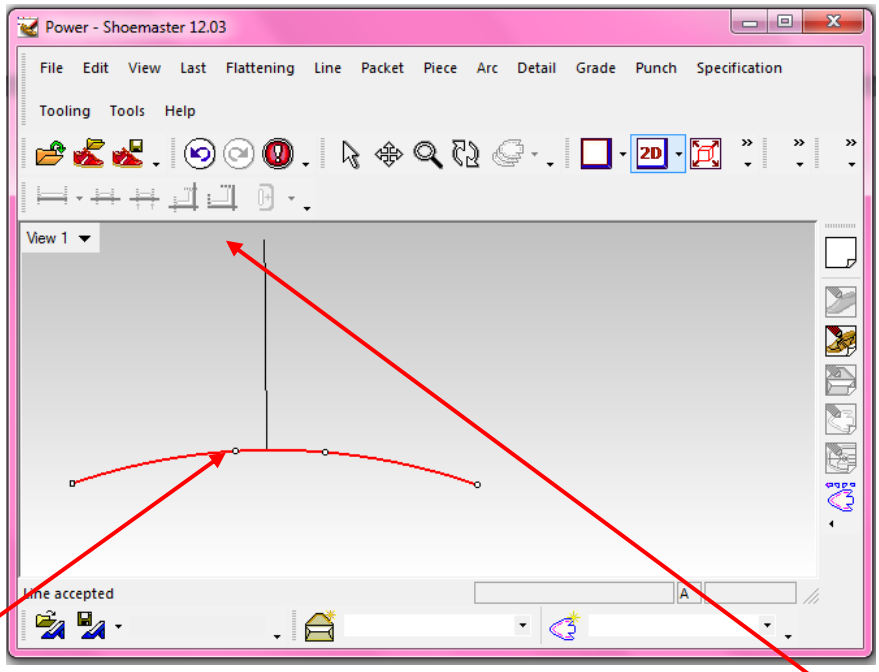
Perpendicular

Creating perpendicular line is an important function while user is generating the style lines and standard line on last copy. To create a perpendicular line you are required to select the line on which you want to create perpendicular go to line pull down menu **New->Perpendicular->with Cursor.**



Click on the line at the point where you are want perpendicular.





First Point

Second Point

You achieve perpendicular line.

The functions/commands of software will be described further as per their application and will be narrated with example to make user understand it utility.

Self-Check 1	Written Test

Name: _____ **Date:** _____

(Total marks:-8)

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

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

Test I: Fill in the blanks:

1. _____ is a term used for Computer Aided Manufacturing. (Mark 1)
2. Pattern Grading is a process of producing _____of patterns. (Mark 1)
3. _____ devices perform the role of CAM. (Mark 1)
4. 3D digitizer is a _____device. (Mark 1)

Test II: One word answer:

5. What file extension is generated by software when you save the style file? (Mark 1)
6. With what function or command you can create a line? (Mark 1)
7. What is the purpose of offset command? (Mark 1)
8. With what function or command you can break a line? (Mark 1)

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Test II. Short Answer Questions

1. _____

_____

_____

2. _____

_____

3. _____

_____

4. _____

_____

Information Sheet 2- Starting the system to run CAD/CAM program/software

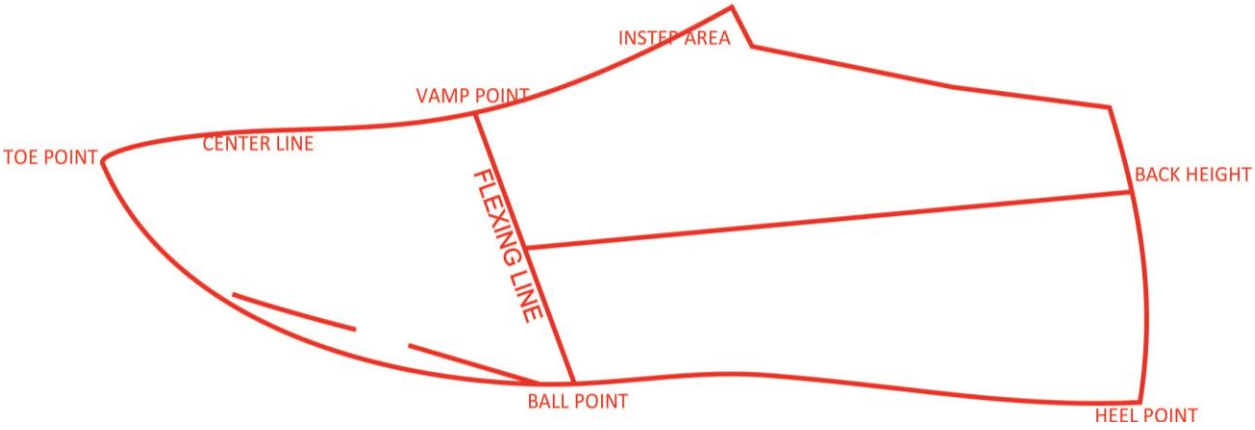
This portion is incorporated in this competence under LO2 information sheet 4.

Information Sheet 3- Preparing mean form or standard pattern for digitizing

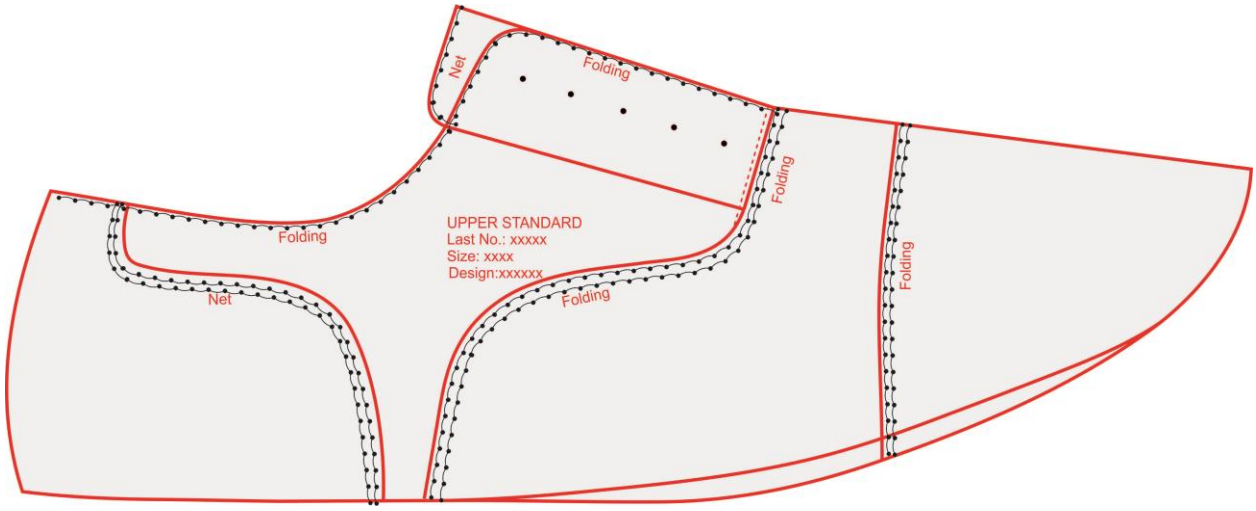
Purpose of last standard/copy

The flat representation of the upper surface of last is called last copy. It is the basis of the shoe upper pattern. It is a 2D replica of a 3D object i.e. last. The last copy is the master pattern or blue print from which the upper and lining standard/patterns are developed. It also shows the shoe and design & gives a break-down of the upper construction. When user is working on the CAD system for footwear, it is up to user to generate the last copy through digitization process and proceed further styling digitally on the software or user can create design standard manually and digitize the standard with 2D digitizer.

Copy of last (Mean form)



Upper Standard

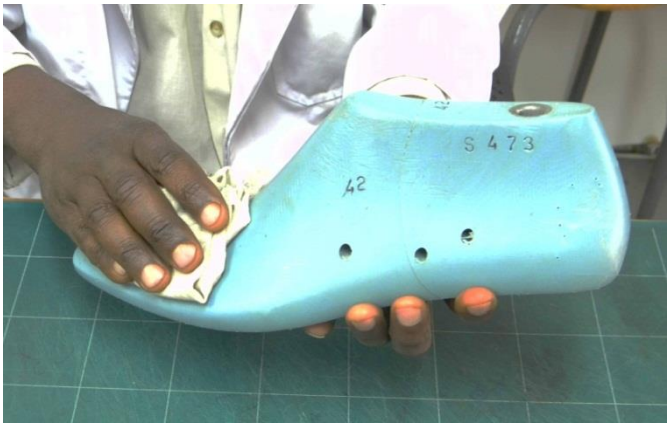


Method of Preparation of last Copy

MATERIAL NEEDED FOR MASKING

a).Last b). Masking Tape c). Ruler d).Cutting Knife

STEPS BEFORE MASKING



Before applying the masking tape on the last ensure the surface of the last is clean and last is not damaged from any part. Wipe the last with the clean cloth

STEPS OF MASKING

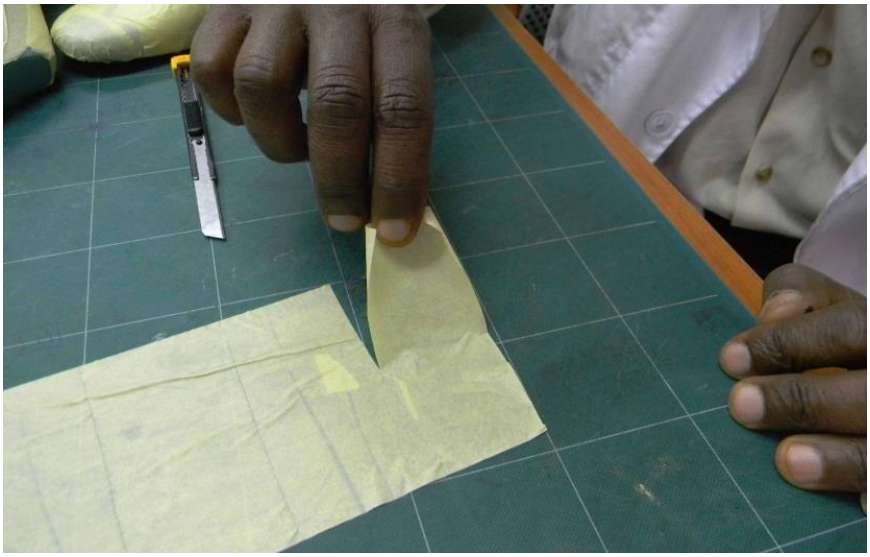
Take out the masking tape in small pieces from the roll and apply on the last. It is suggested to use the 2 inch width masking tape which is ideal for the masking. If you are using the masking tape more than 2 inch you are required to paste the tape first on the cutting mat and

then cut the small pieces and apply on the last.

Take out the masking tape from the 4 inch masking tape roll

Past the masking tape on the cutting mat

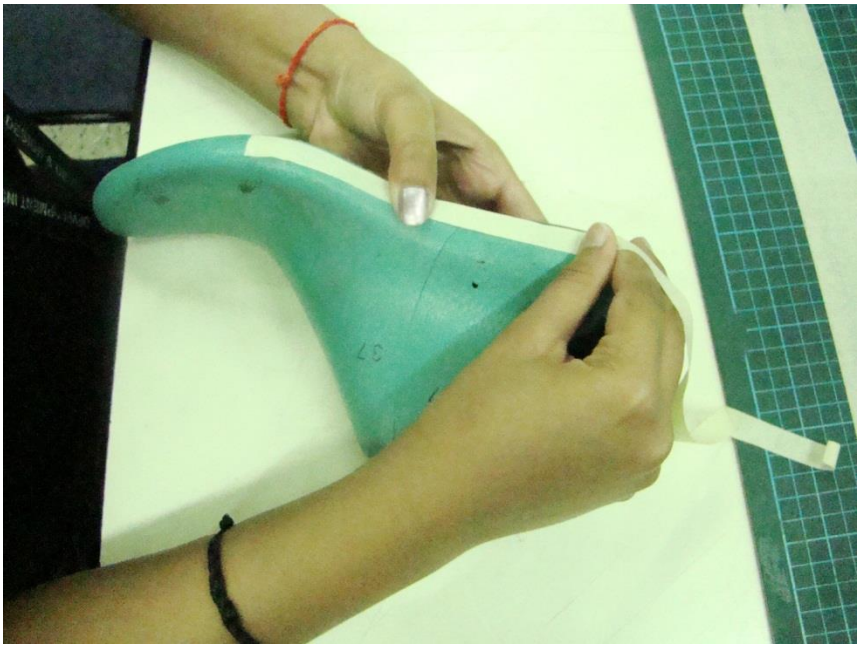
Cut the masking tape in small pieces



Remove the small pieces to apply on the last

Methodology

Always past the masking tape on the last with overlapping of 10 mm (millimeter) on each other it help while removing the tape from the last. *Masking from Top to Bottom of the Last, Outside to Inside, No Wrinkles Allowed while masking*

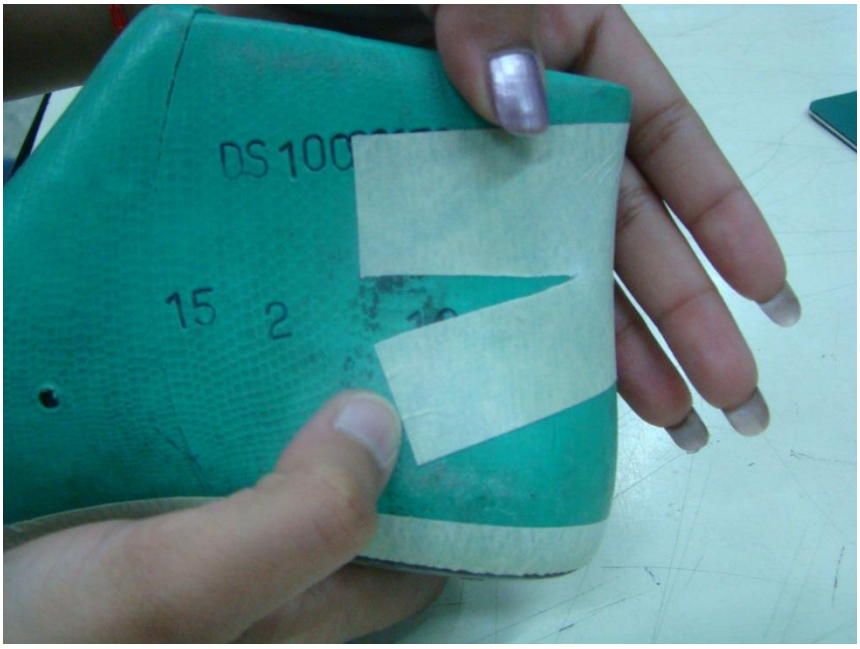


Begin with securing the feather edge

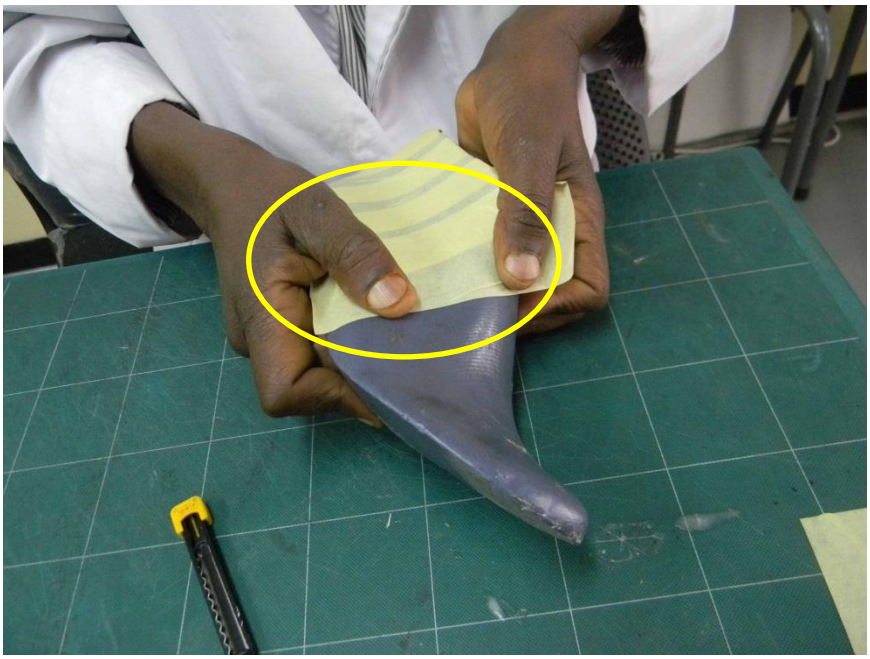
Begin masking with the outer profile of the last Top to Bottom

Past the masking tape on the last from back to toe

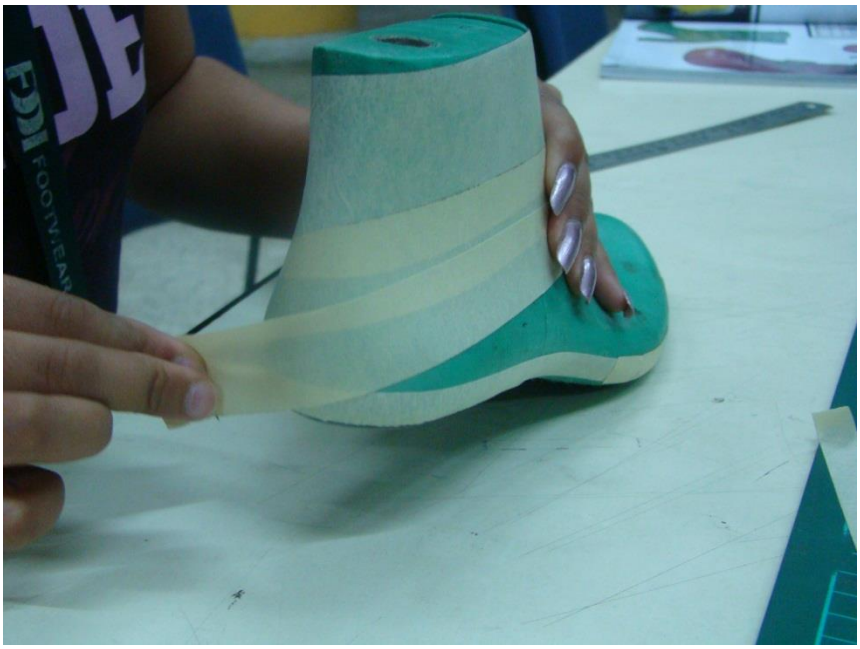
Make cut in the tape to escape any chance of wrinkles



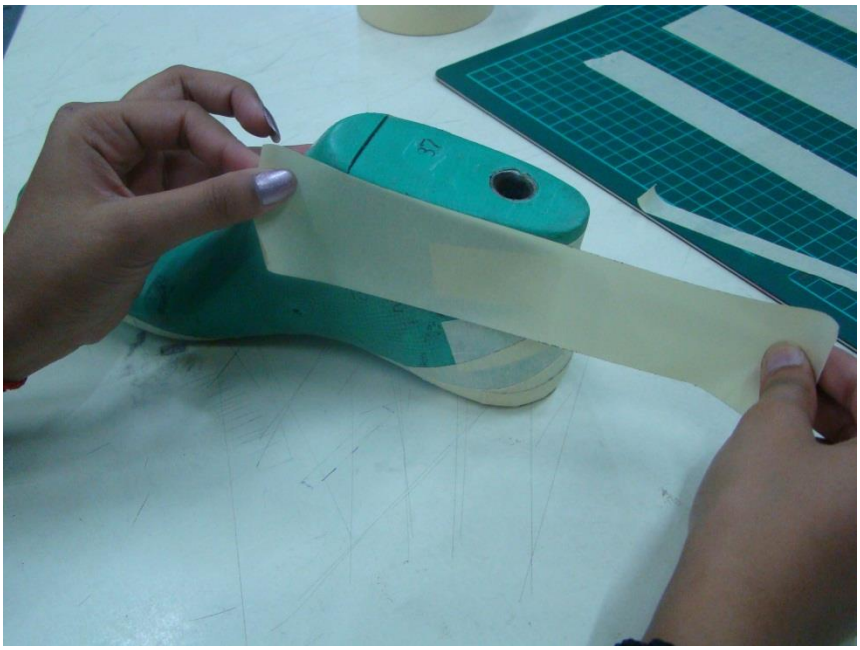
While pasting the masking tape ensure no wrinkle remains on the surface



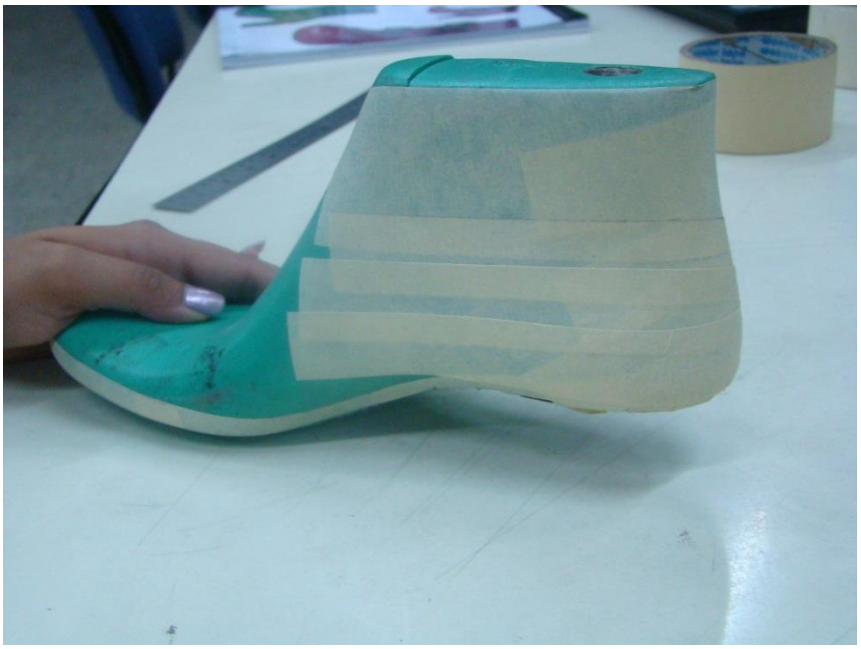
Paste the masking tape strips with overlapping with each other



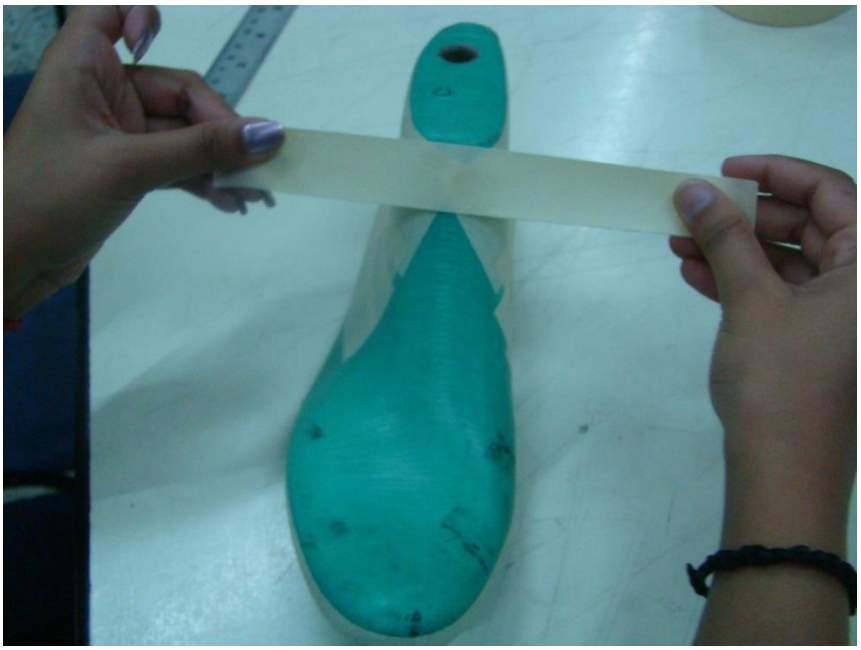
Outer Profile masking complete



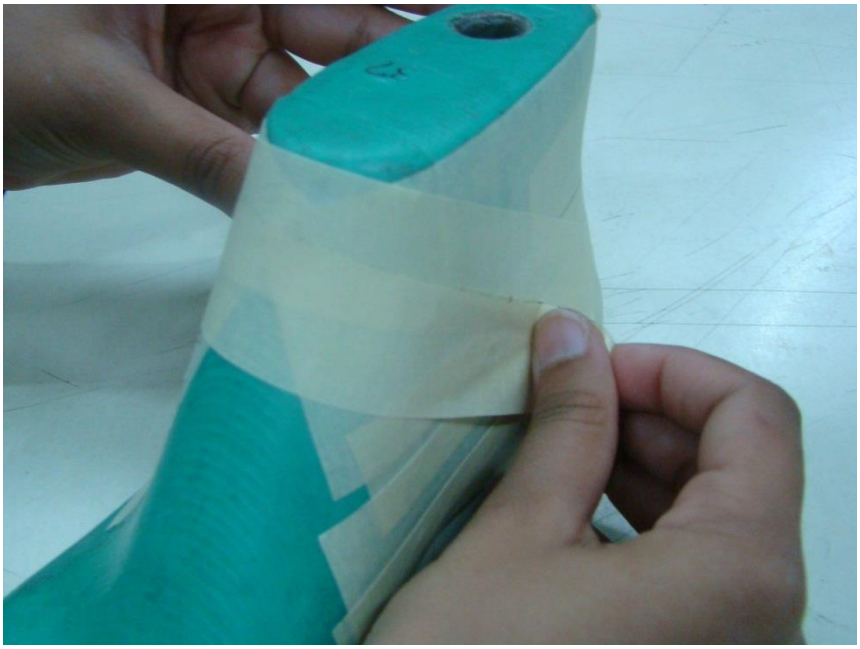
Now begin with inside profile



Inside Profile Masking Over



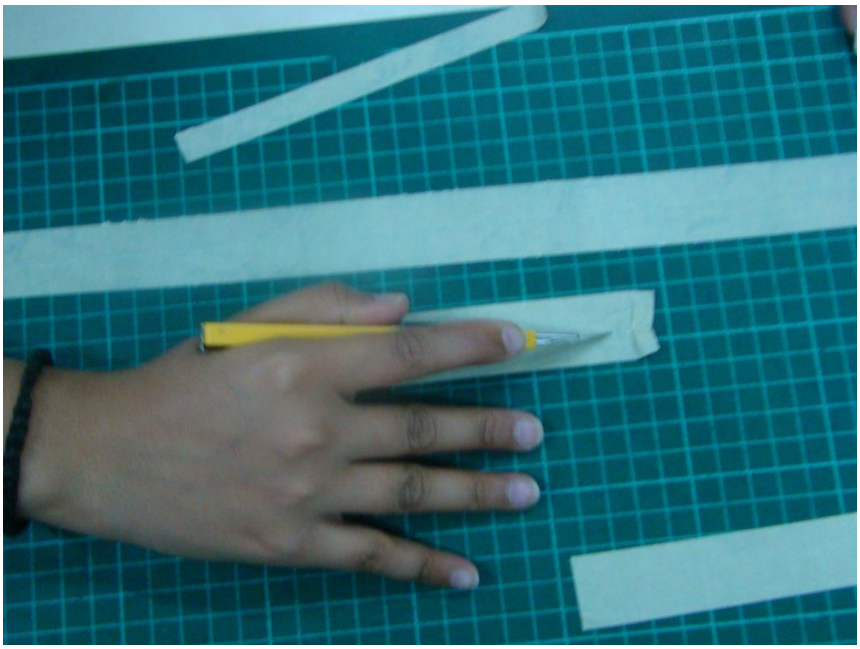
Now begin Masking Centrally



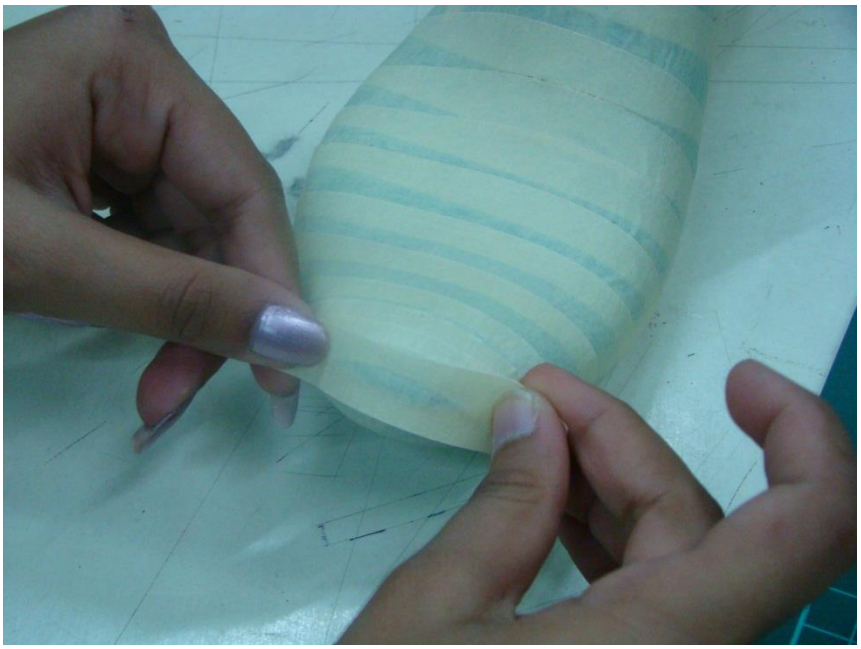
With No/Minimum Wrinkles

Continued…

Masking will continue till this point



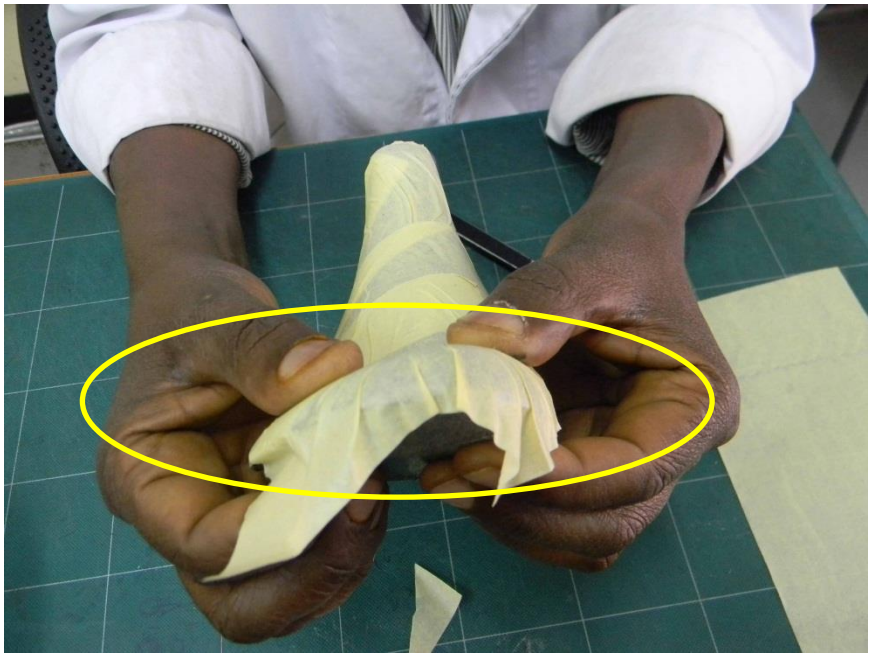
Cut thin strap of tape



Now end masking with that thin strap of tape

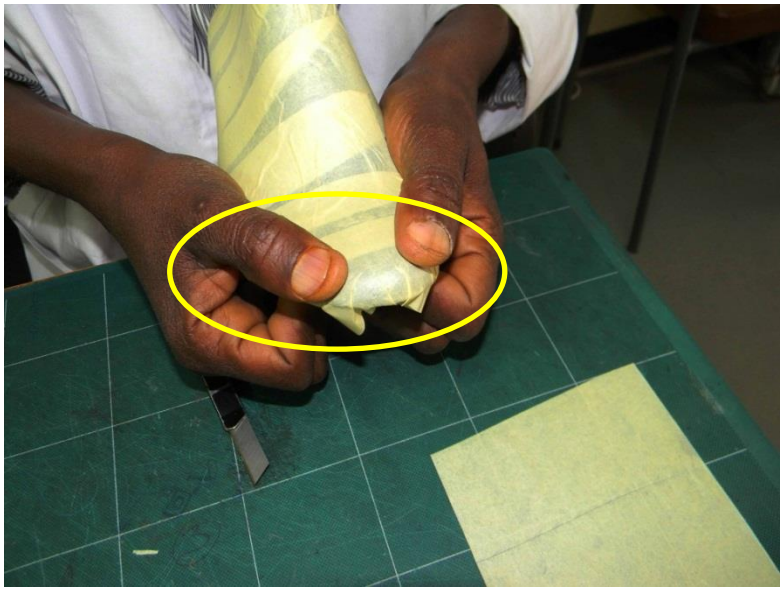
Masking Complete

PRECAUTIONS FOR WRINKLE

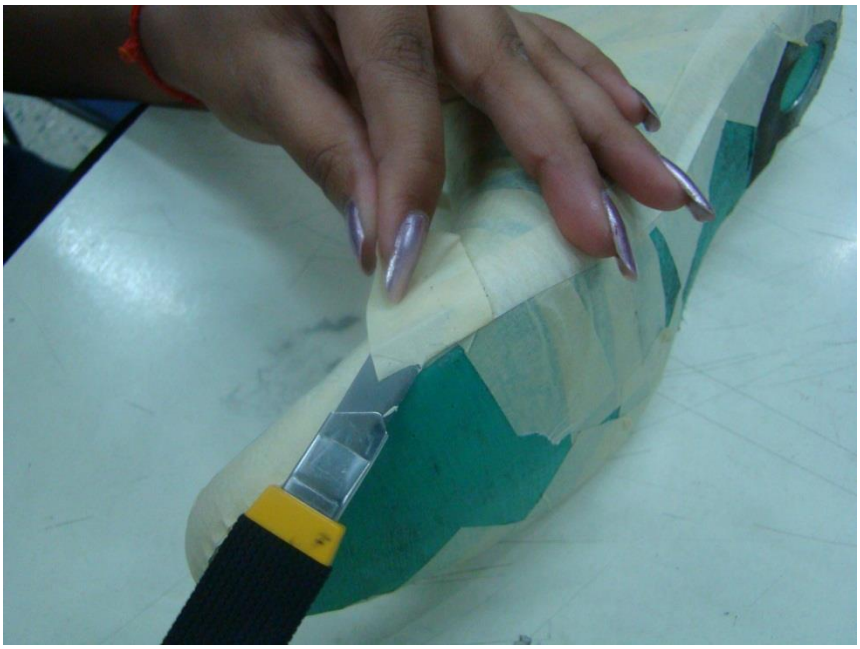


At the feather edge area on toe and back needs special care for wrinkle

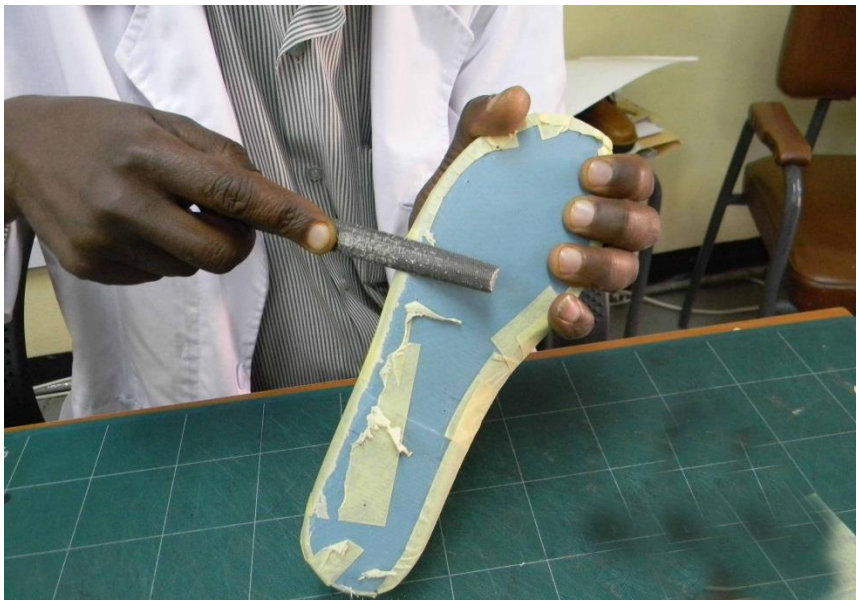
WRINKEL DISTRIBUTION



If wrinkle appears on the surface press with thumb and distribute equally



Extra tape can be cut using Cutting knife

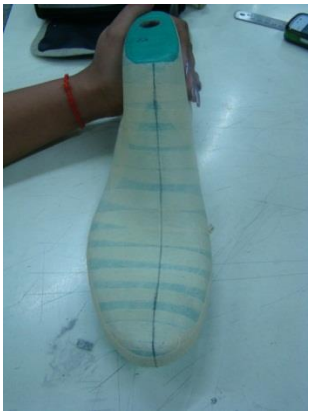


Remove the extra tape by Filer

While removing the extra tape from bottom part tape should be as per the last feather edge.

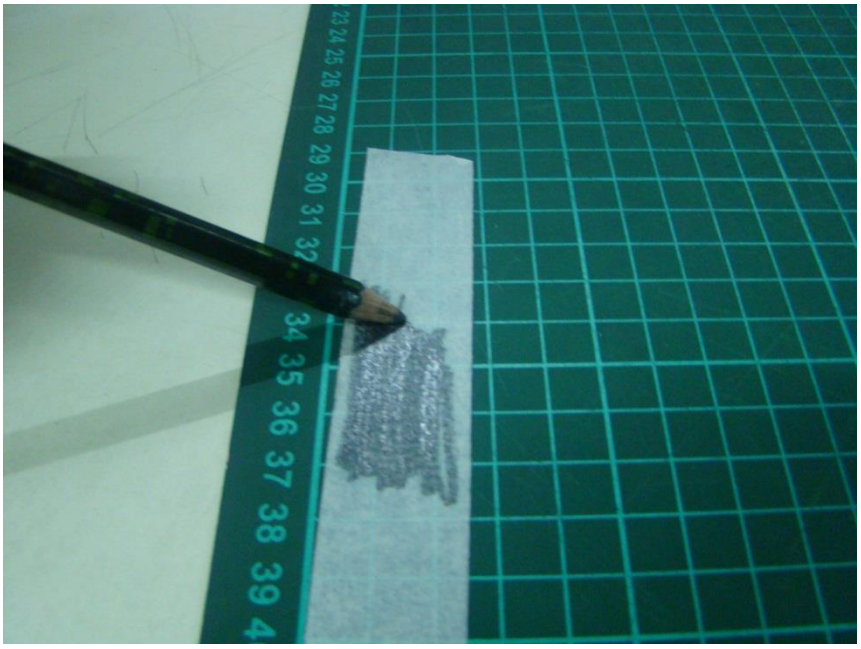
Separation of inner & outer

Mark center line to divide inside an outside profile: This center line divides the last in tow pieces Inside & Outside. After extracting from the last we get the 2D profile of a 3D object.



Centre line along the front curve

Centre line along the back curve

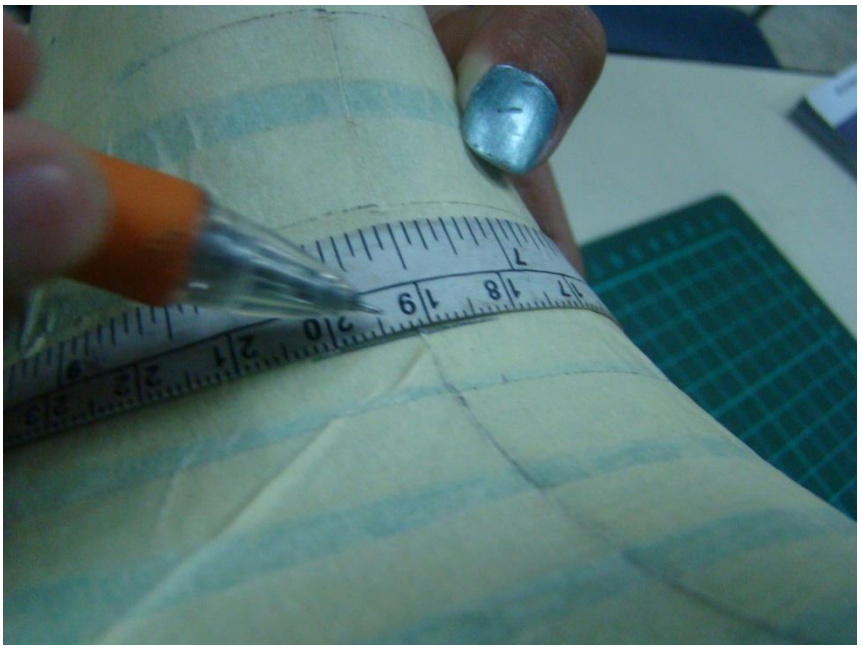


To mark the Ball point Rub Bold Pencil 6B or above on a paper or small piece of pasted masking tape on the cutting mat.

Rub the last touching the ball point to the pencil mark inside and outside of the last. Ball point or girth point is the height point on the last inside and outside feather edge.

Place tape on the ball point outside

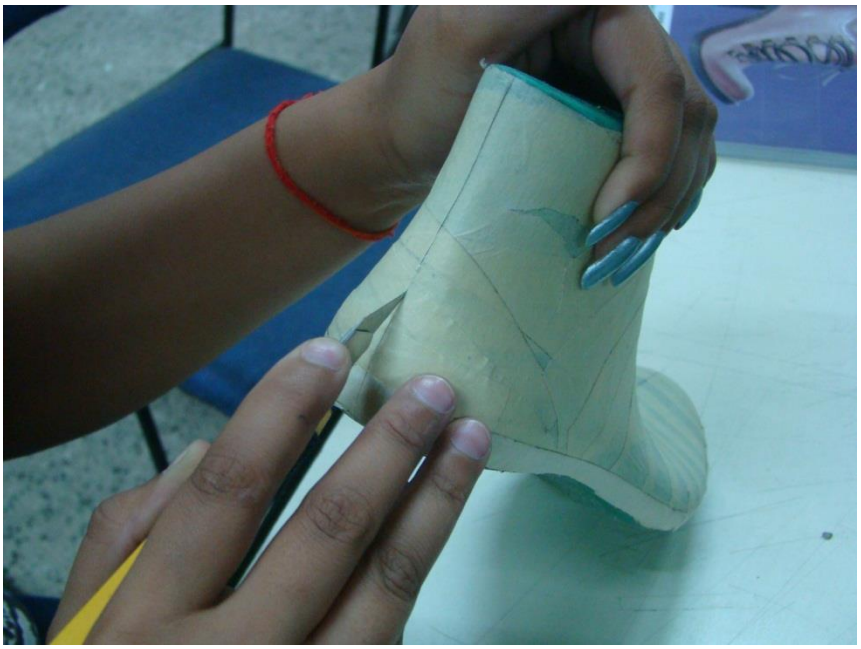
And also inside with the same edge of measuring tape



Mark Flexing Point or Vamp Point: It is point where foot flexes and gives the movement to the body

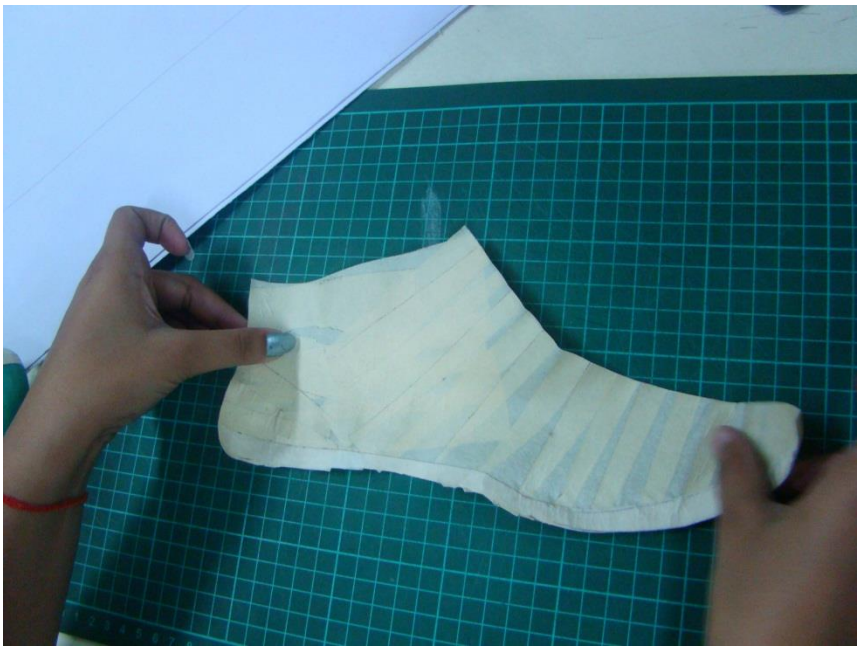
Mark Back Height Point: It is point up to the foot will be covered by shoe and give the grip to the foot.

Cut Center Line



Cut Center line along back curve

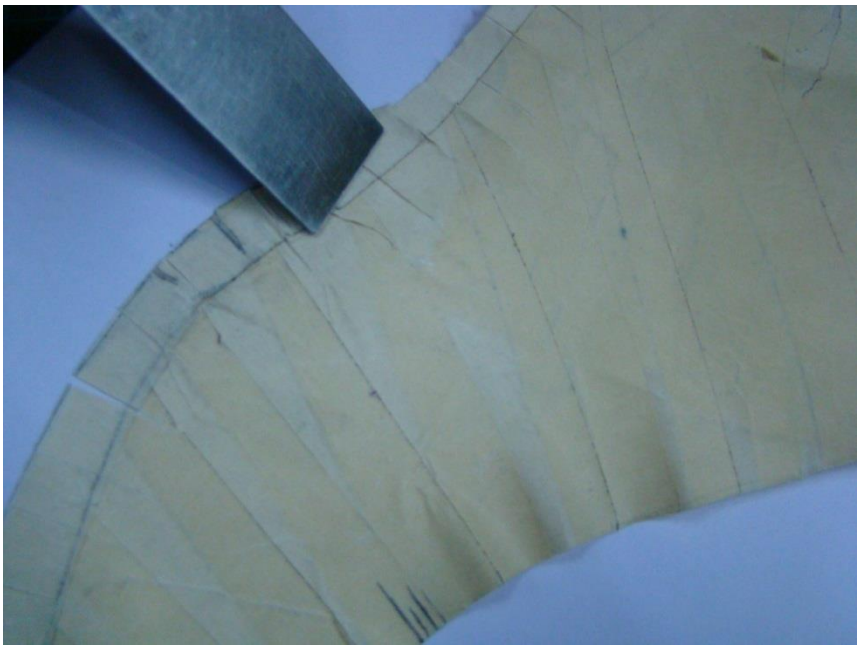
Remove masking tape outside copy



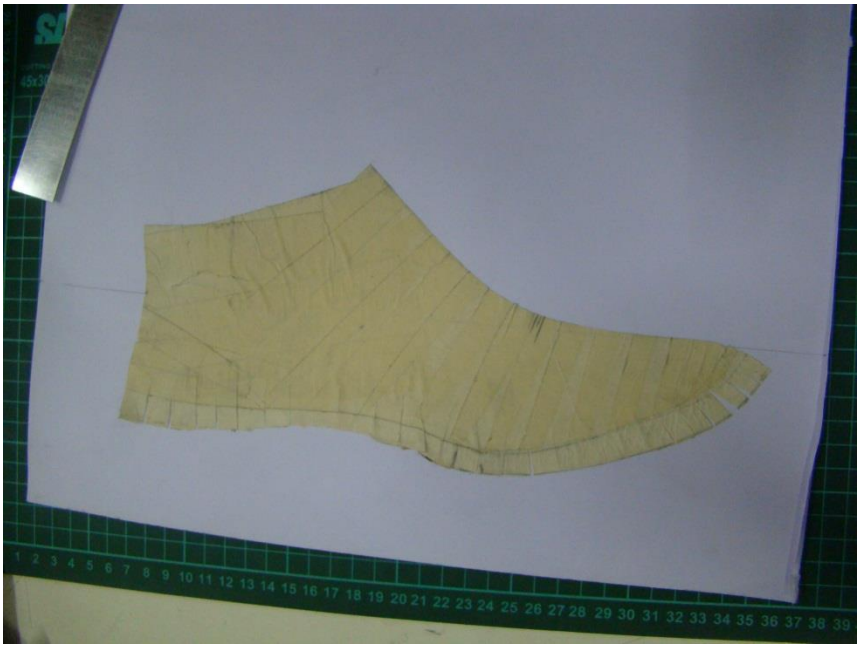
Keep the outer copy on mat

Cut along the feather edge to make 2D profile

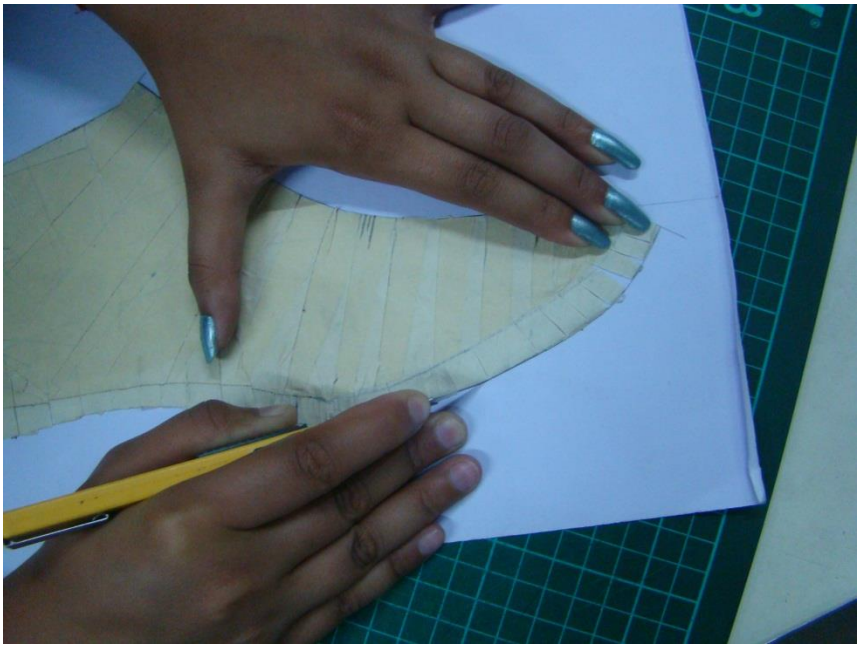
Paste on pattern sheet



Reduce wrinkles

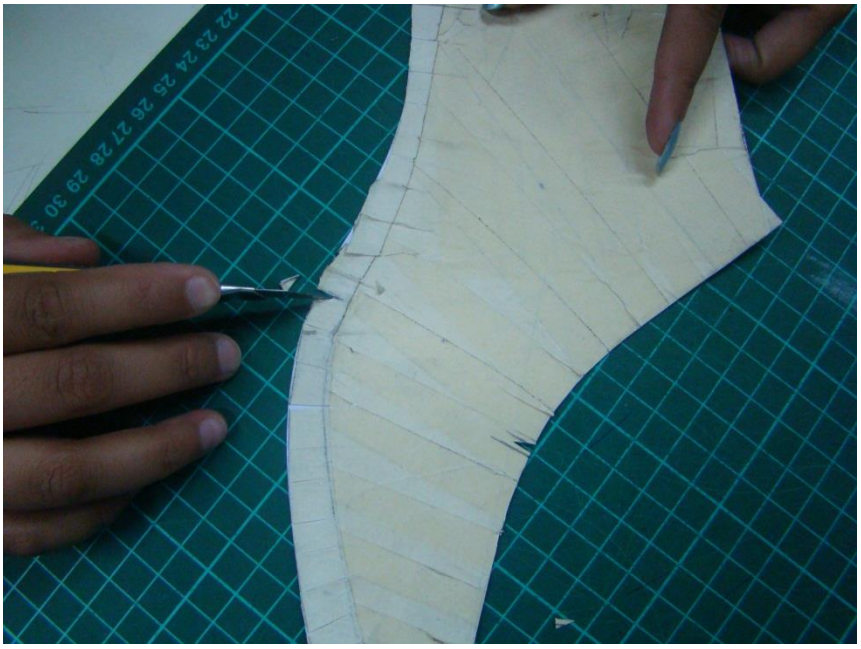


Pasted with minimum wrinkles on the tape

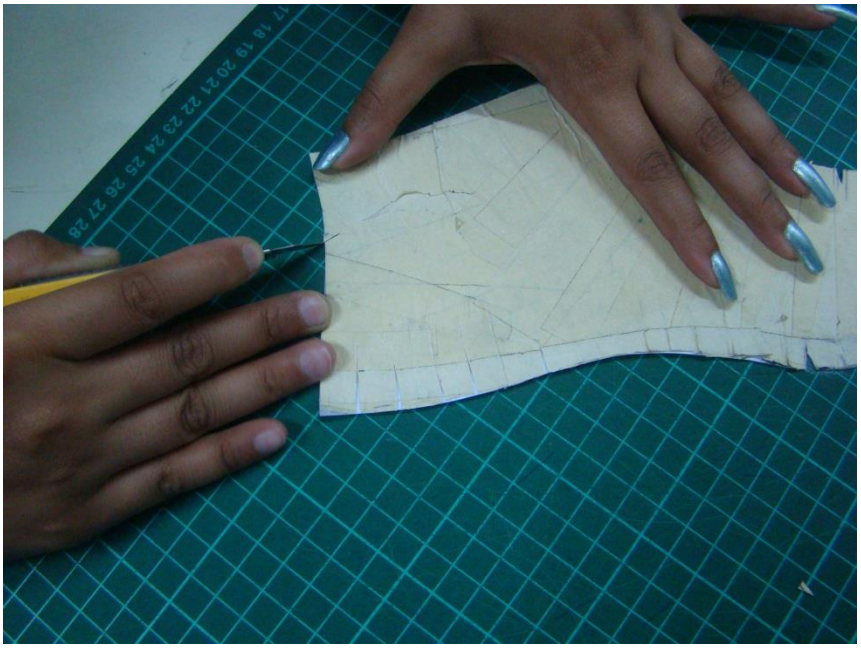


Cut along the edge

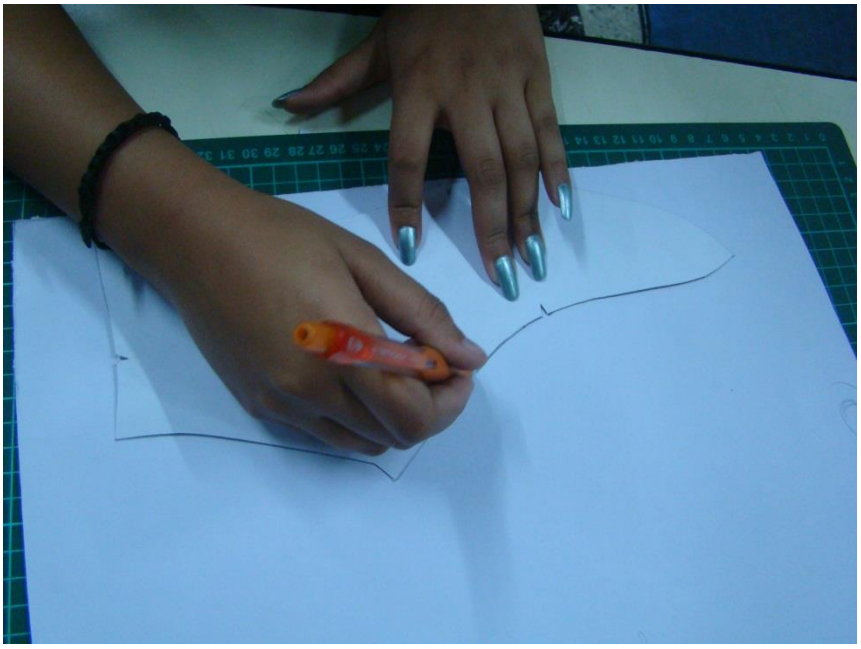
Outer Profile



Mark Ball Point only in outer profile

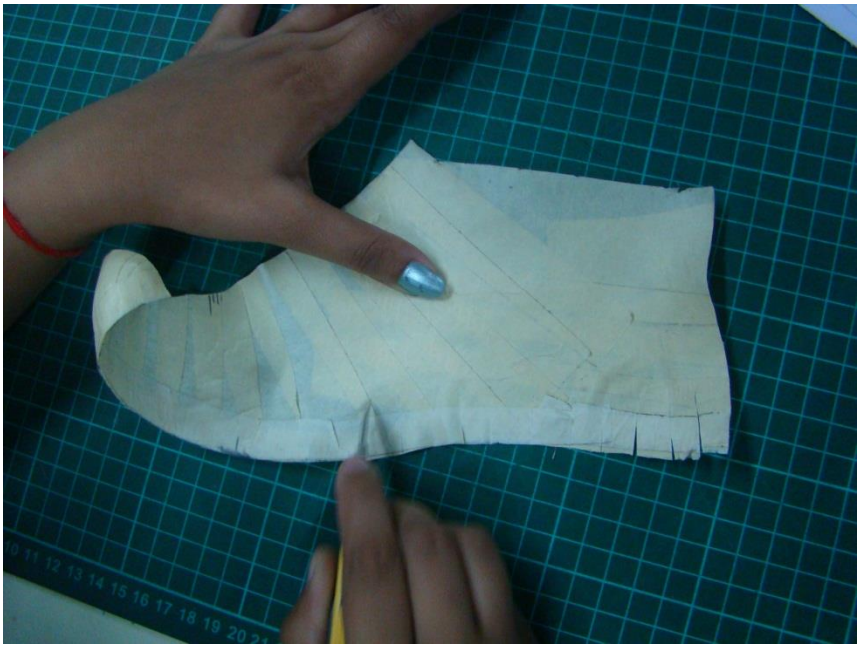


Mark Back Height

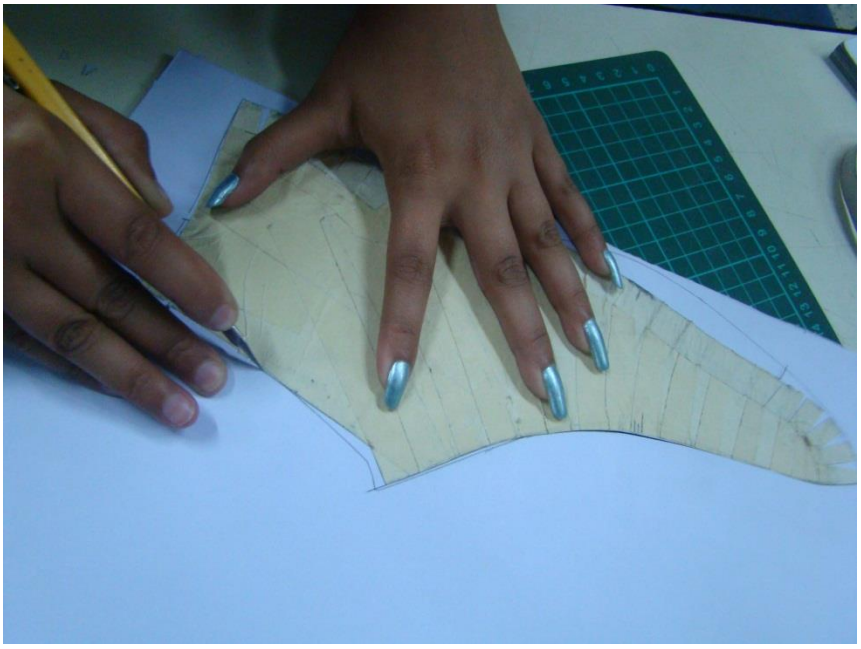


Reverse and Trace the outer copy

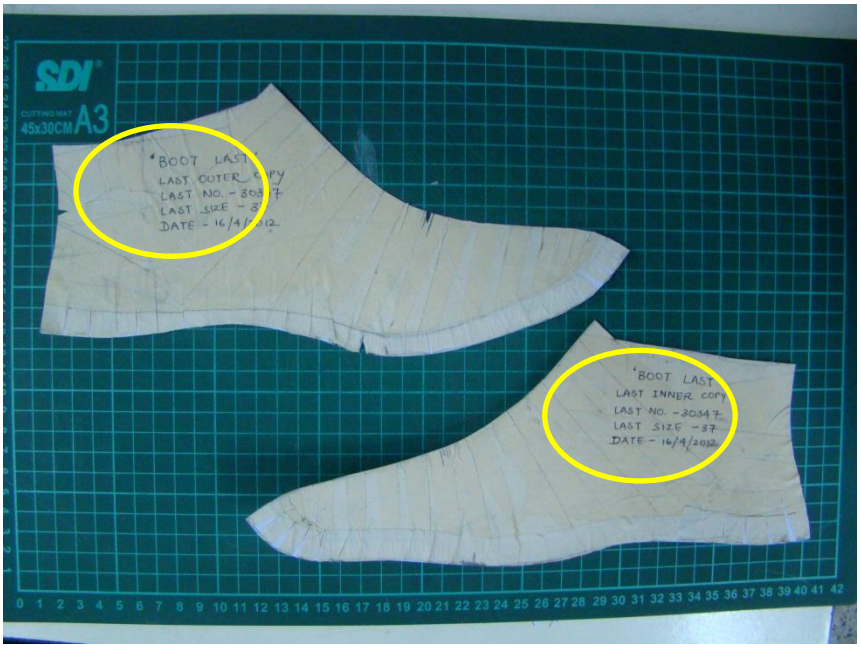
Now remove inside copy



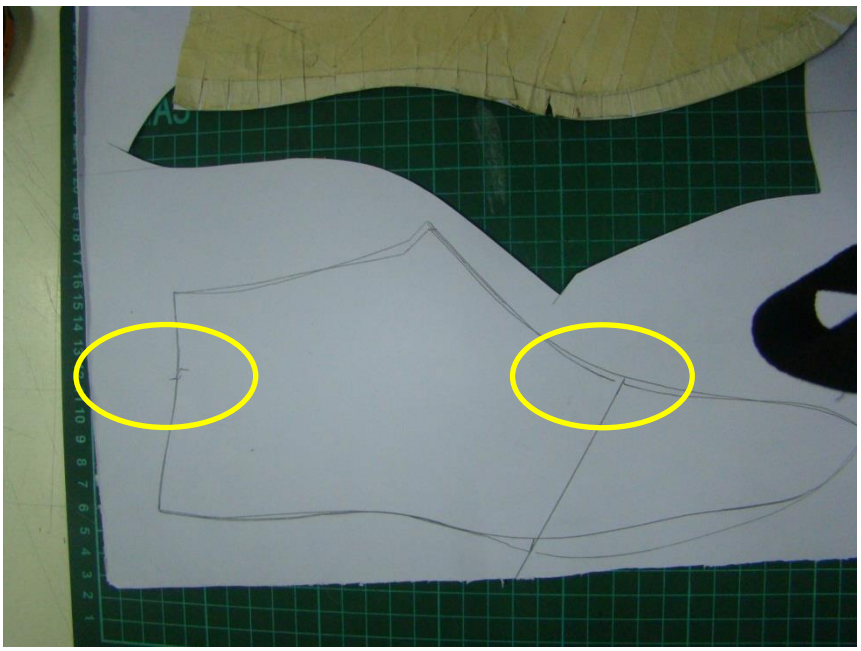
Paste and make slits on feather edge



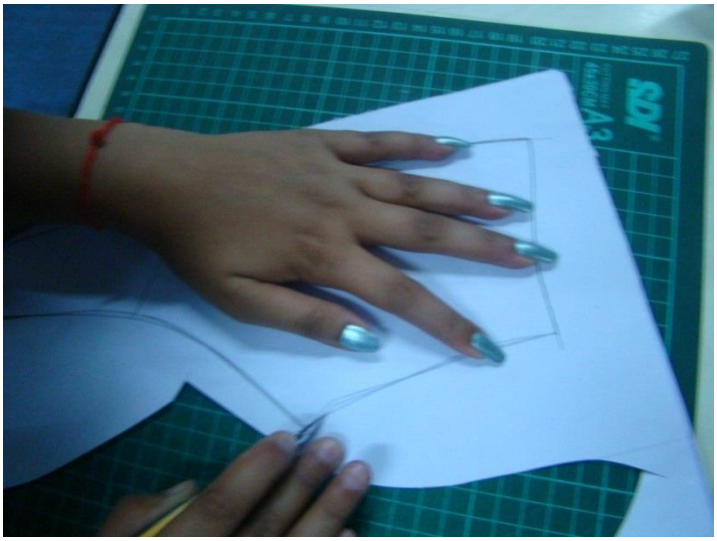
Cut inside copy and mark back height & flexing point



Mention details on both 2D profiles: Last Name/No./Size, Inside/Outside copy, Last Size & Date

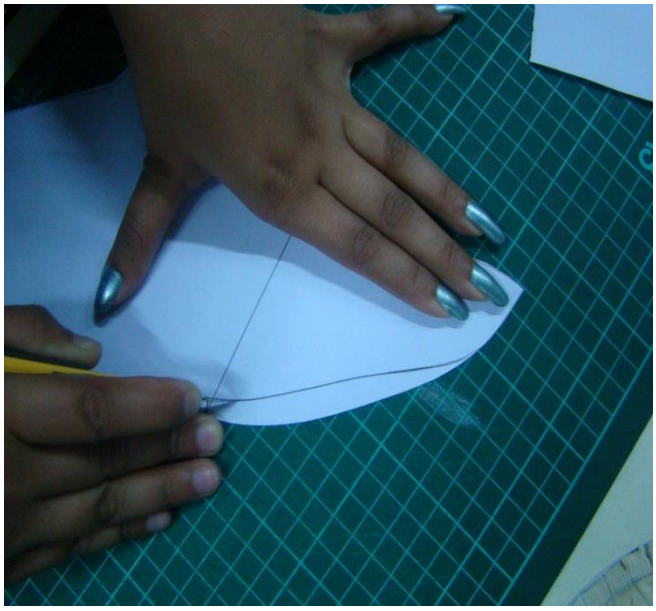


Trace both the profiles matching Flexing Point and Back Height Max. Difference between the traced lines shall not be more than 5mm



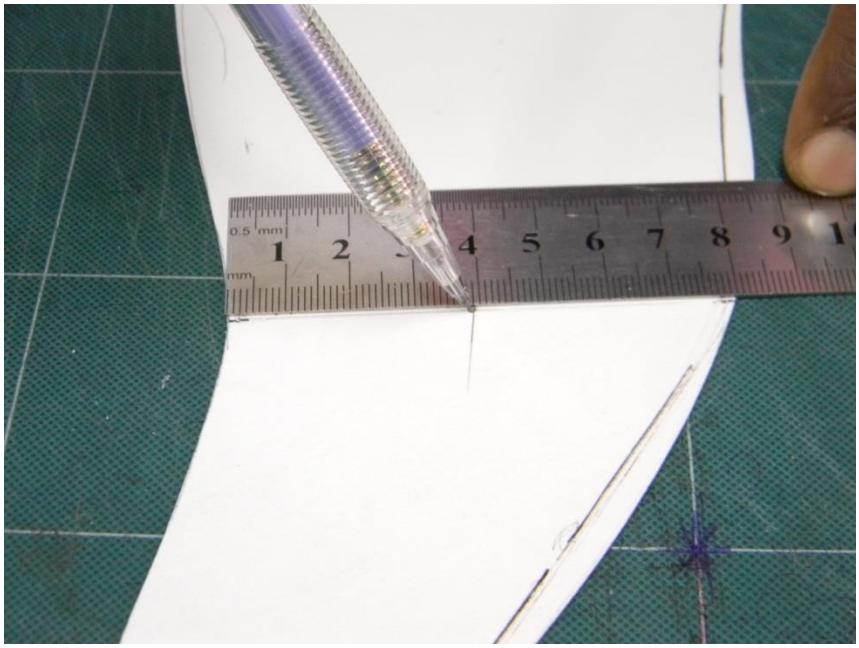
Cut along the mean line, line between inside and outside copy lines Keep Feather edge lines distinct if the difference is more than 5 mm

Open Slots to mark inside

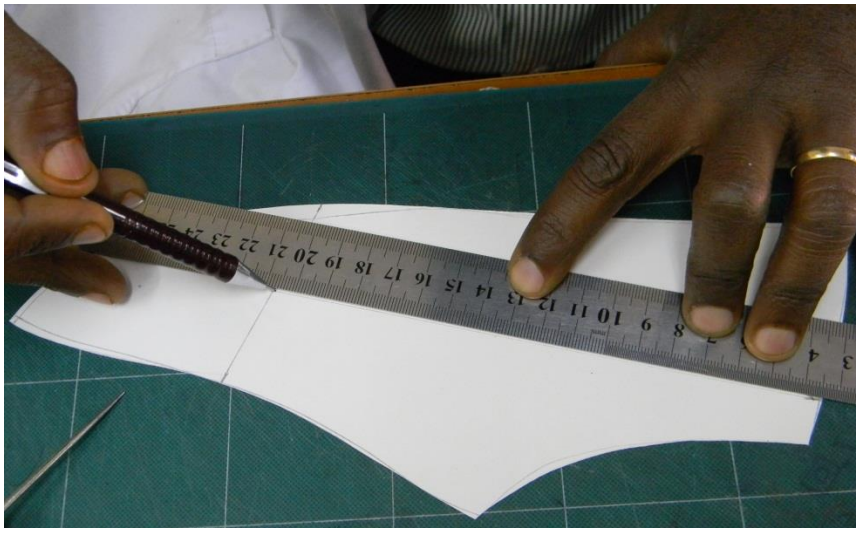


Open Slots to mark inside

Draw the principle lines joining the ball point & joint girth point. Join Flexing point or Vamp point and Ballpoint Outer and mark its center

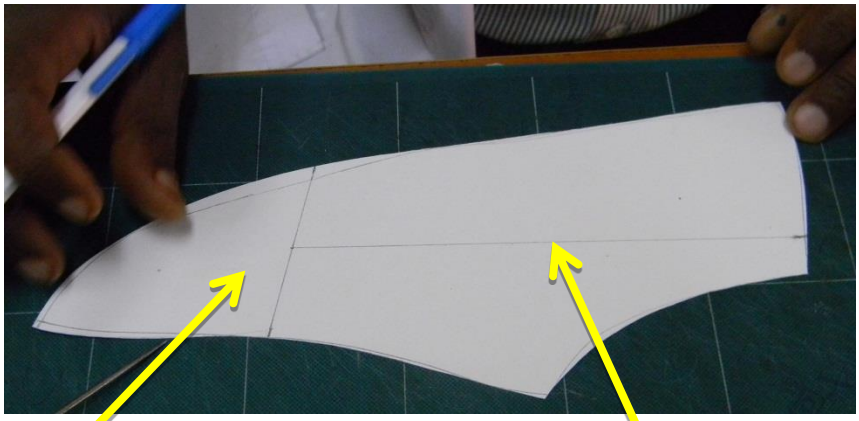


Mark the center of the first principle line



Draw the second principle joining the center of First Principle line and back height point.

Mean form is ready



First Principle Line

Second Principle Line

It is very important to wire the specification on the Mean form. With specification it is easy to identify and can be made traceable, if you are cataloging the means forms for future reference and work.

Write the specification on the Mean form

Last No.:……..

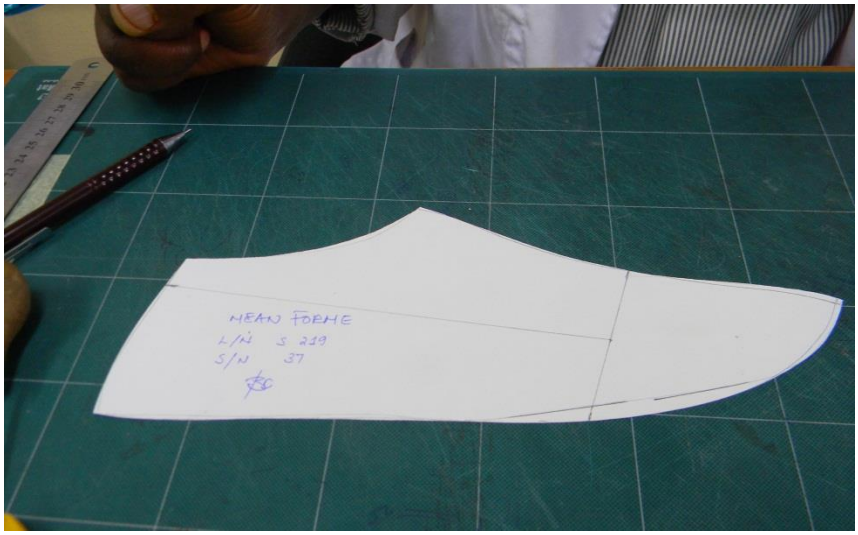
Size:……Fitting…….……..

Date:……..

Developed by/Designer:……

Company:…….

Collection/Range:……



Self-Check 3	Written Test

Name: _____ **Date:** _____

(Total marks:-10)

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

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

1. What is minimum overlapping measurement of masking tape on the last while masking the last? (1 Mark)

2. Which area of last needs maximum care for wrinkles, while masking it? (1Mark)

3. What is the correct direction of pasting the masking tape on the last? (1Mark)

4. Which side of the last is masked first? (1 Mark)

5. Name the tool used to remove extra masking tape from feather edge? (1 Mark)

6. What profile we get from the last after extracting masking tape? (1 Mark)

7. Why we need to draw the center line on the masked last? (1Mark)

8. What is ball point or girt point? (1 Mark)

9. When pasting the extracted half on the paper what should be minimum? (1Mark)

10. What detail needs to be mentioned on the achieved profiles? (1Mark)

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Test I. Short Answer Questions

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

6. _____

_____

7. _____

_____

8. _____

_____

9. _____

_____

10. _____

_____

Information Sheet 4- Digitizing mean form or standard pattern in line with preferred standard pattern

4.1 Understanding of digitization process

What is digitizing? It is referred to the art of taking an image or text and then using high speed sophisticated machines. This image or text is transferred to the program which can edit the data and then the design is recreated. Technically, this term refers to the process of converting analog data into digital information. Digital information is the type of information that is saved in the form of binary digits.

Digitizing is simply capturing an analog signal in digital form. For a document the term means to trace the document image or capture the "corners" where the lines end or change direction.

In the reference of Last copy /standard digitization means tracing a 2D profile of last copy or standard on a paper, digitizing it for the further processing through software. When we digitize any drawing or profile, it is very important that the input must be in 1:1 ratio. If input ratio is not 1:1, it cannot used for product development.

In a simple manner, digitization means transforming the hardcopy information in to the computer via some devices to achieve pre-defined results.

For digitization a set of instructions are followed, which are explained further in this information sheet.

4.2 Parts of digitizer

What is digitizer? Digitizer is an electronic tool. It converts or digitalized hand drawn images into data which computer can access. Images are drawn on paper or put on the working area of digitizer. It locates the position of the stylus/cursor and in this way the graphical information is converted into digital information, which then appears on the monitor screen. It is also used for drawings that exist in paper medium into a graphic or CAD. In this way old drawings are also preserved and recreated. A **stylus and cursor** of a **digitizer** acts like a mouse and the user easily copies the drawing into the existing software. It is also provided with a template sometimes also called as small format ones, this helps to select the CAD type program. Template specialized to a software program is located at the top of it. The

template has specific are for specific function and the user can simply click the area with the stylus or any input device for the desired function

Sizes: The size of the footprint can be found in the specifications section of the brochure for each specific model. Small format is studies as 12" x 12" & 12" x 18". 20" x 24", 24" x 36", 30" x 36", 36" x 48", 44" x 60" are large size ones. The small format are used by the engineers and graphic artists, but most large format ones are used by Estimators and GIS.

Type of digitizer and parts of digitizer

Digitizer

Digitizer with stand

Flexible Roll up digitizer

16 Button cursor

4 Button cursor

Stylus

RS 232 C 9 Pin serial connector

USB (Universal serial bus) connector

Power Adaptor

Hardboard or Roll-Up **Digitizer** Roll-Up ones are very useful as they are portable, this type can be shifted from office to another office or to the jobsite.

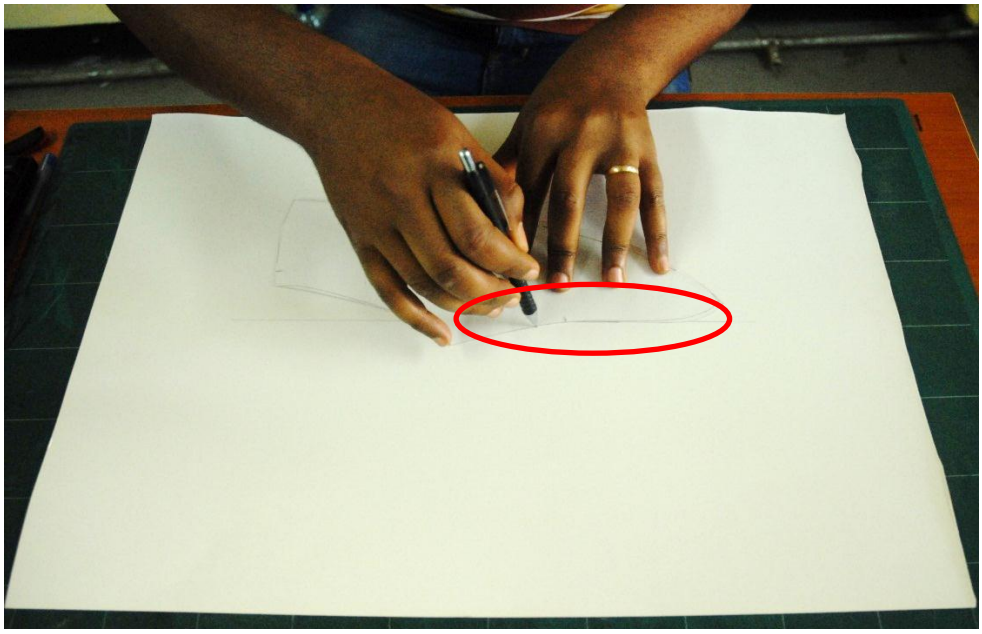
Digitizer comprises a stylus, a pen, a 4 button cursor or a 16 button cursor. Some boards are available with wireless options as well. The buttons on the board or input devices perform specific functions on you **digitized** software.

Table, Pedestal - If your table is not large enough for one of the large sizes one, then purchasing a pedestal is a better option.

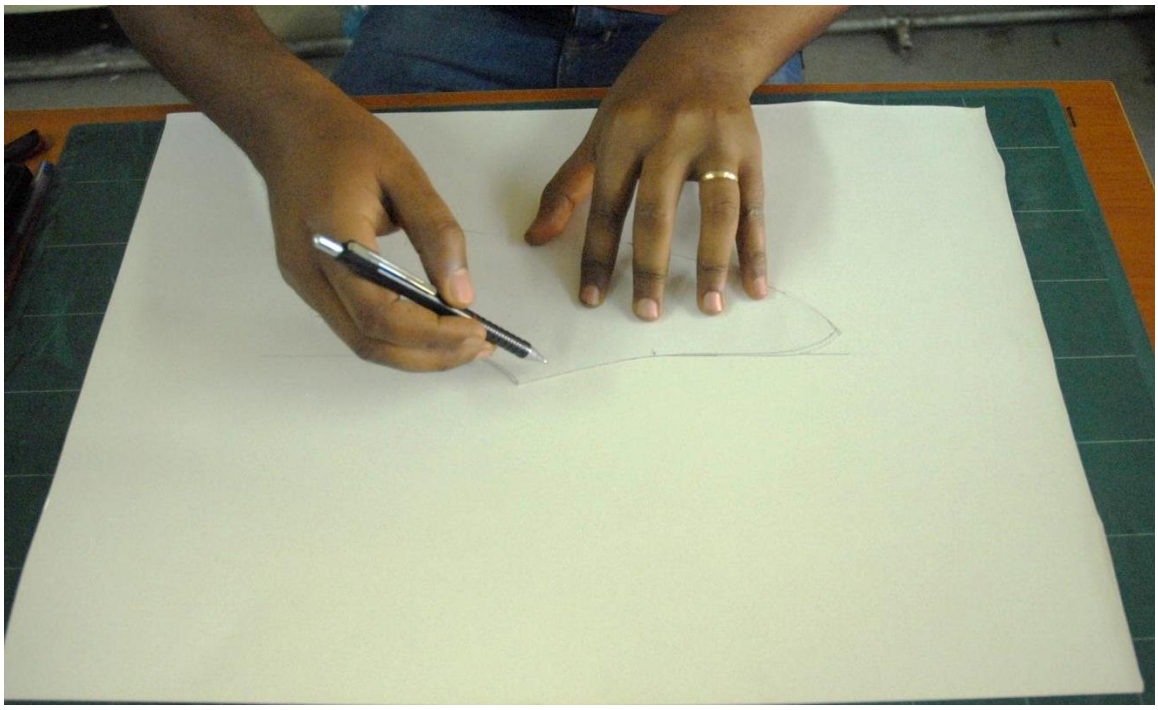
Accuracy: The more accurate a **digitizer** is the more expensive it is. Most of them give accuracy up to o a level of .010 which is more than sufficient for construction. An accuracy level of .005 or .002 is used in mapping and medical devices.

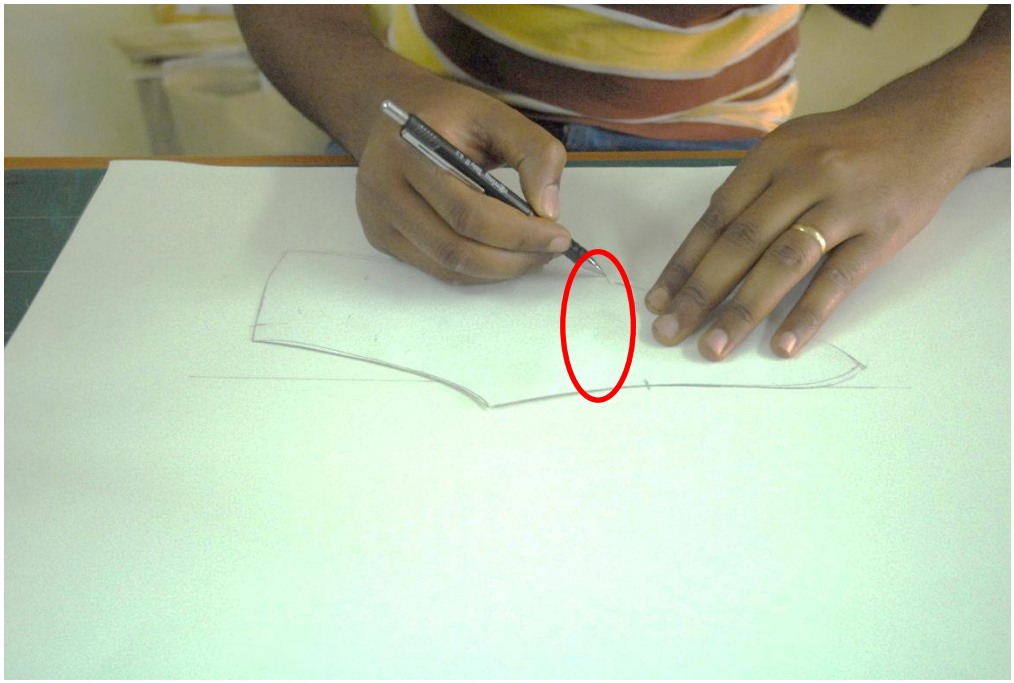
Last copy/ standard digitization process

Take A3 size paper draw a straight line on center of paper.

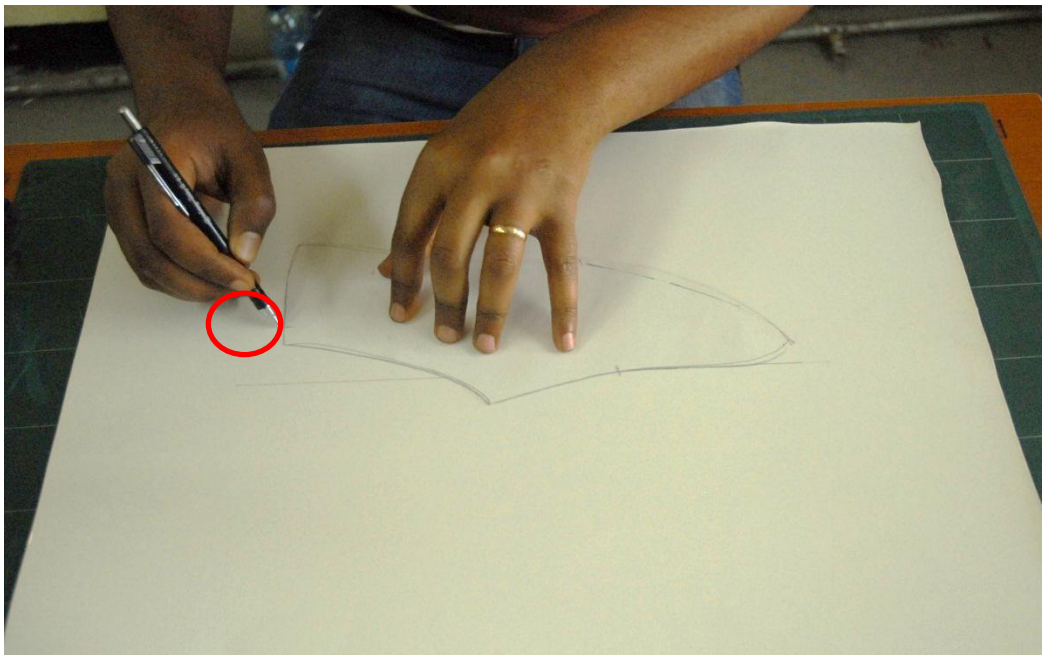


Place the mean form on the drawn line; match the joint girth point to the center of drawn line. Place the mean form in a manner the center line of mean form must touch the drawn straight line.

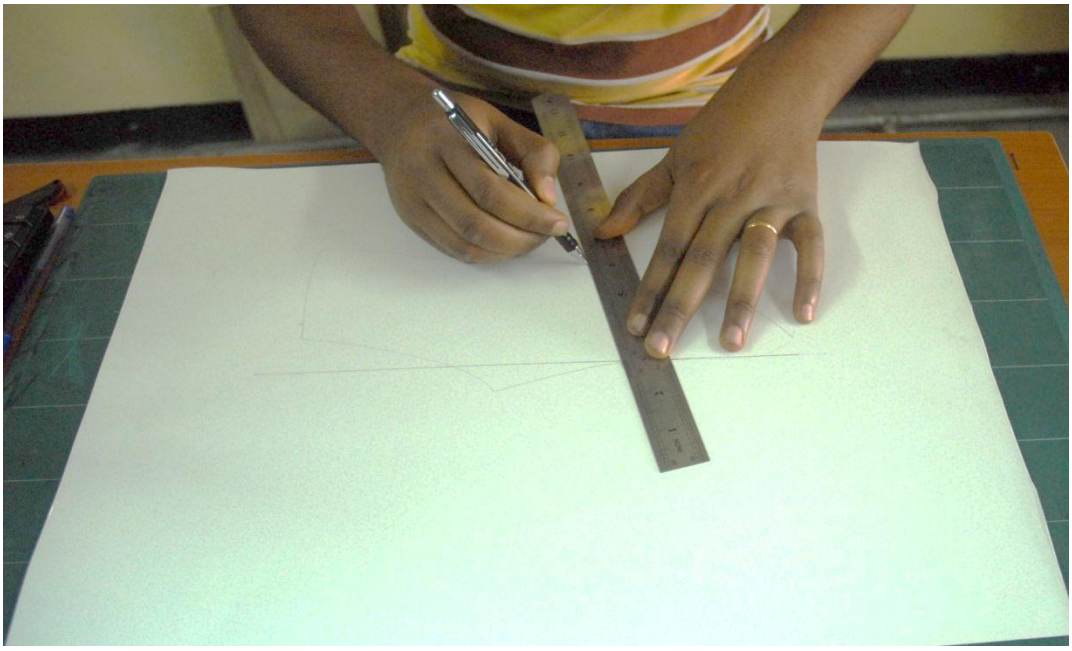




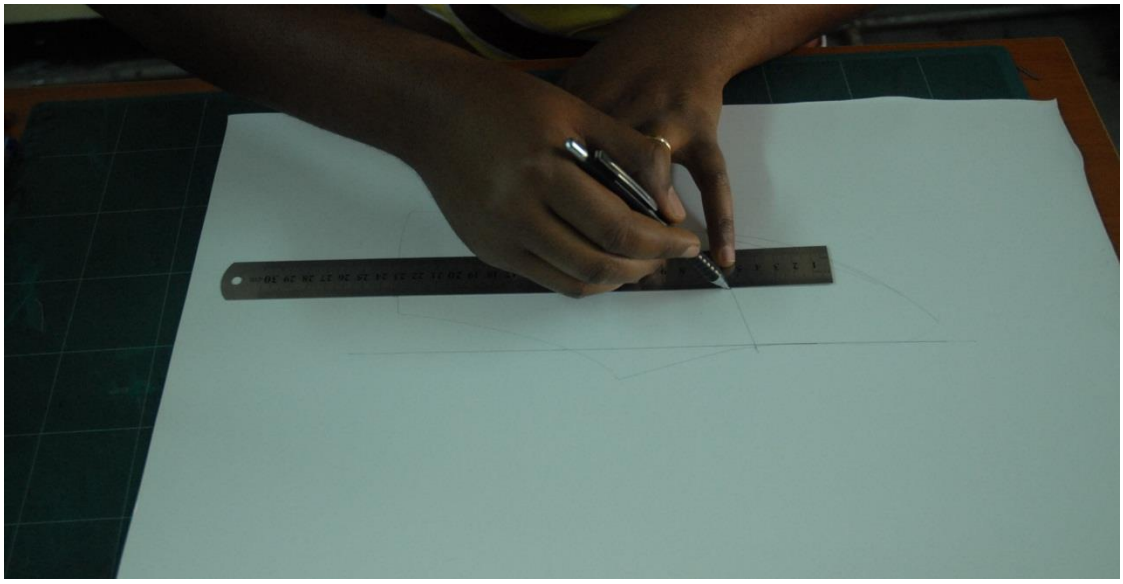
Mark the Ball point and joint girth point. Mar as well the mid the flexing line.



Mark the back height point.

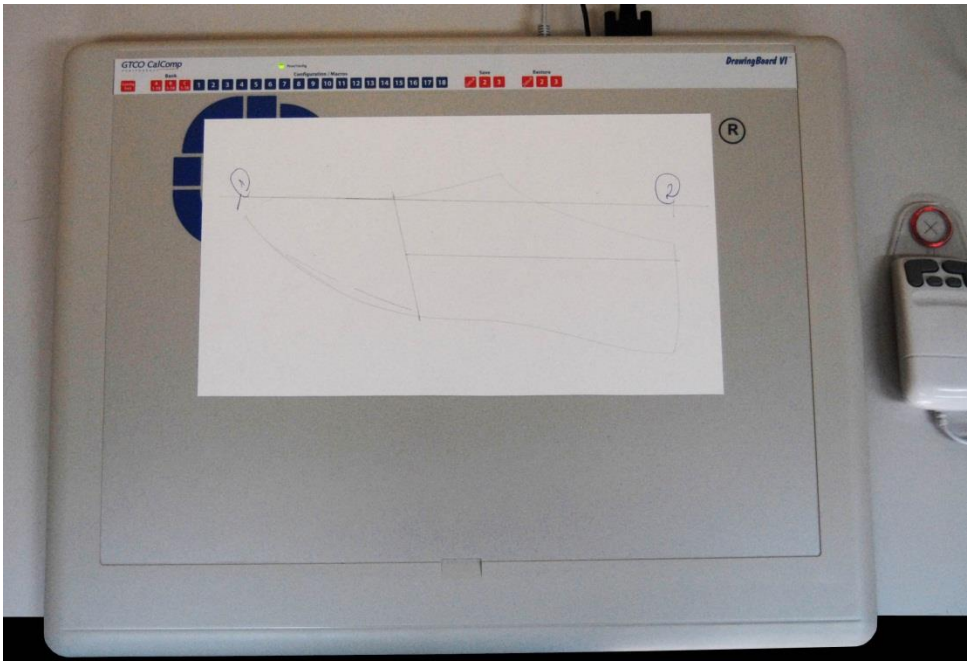


Draw a line joining the ball point and joint girth point.



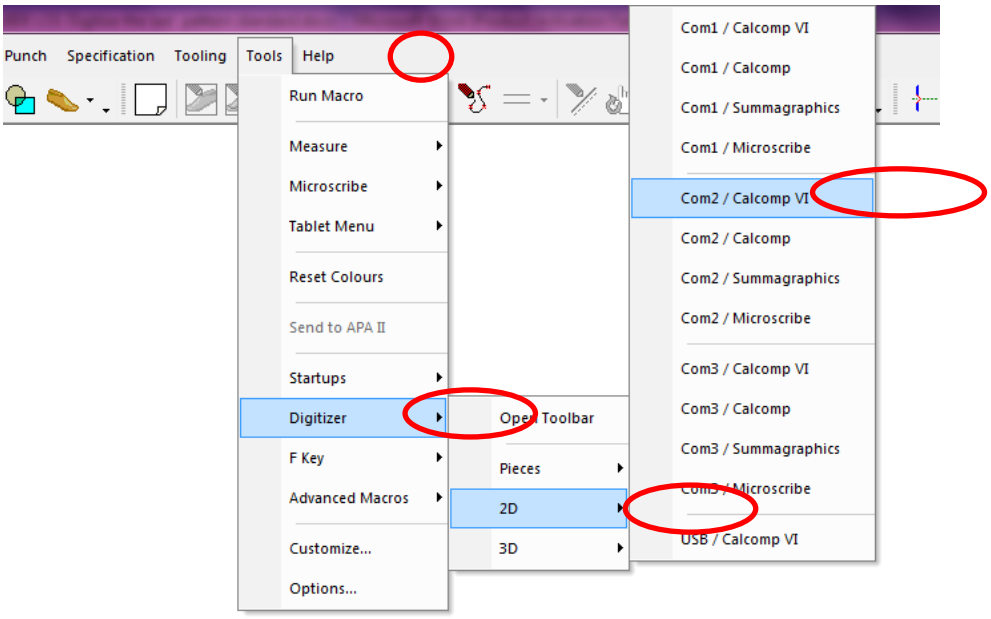
Draw a line joining the mid of flexing line point and back height point.

Mark two points on the drawn straight line. First point on out of net toe point, second point along the straight near back curve approximately.

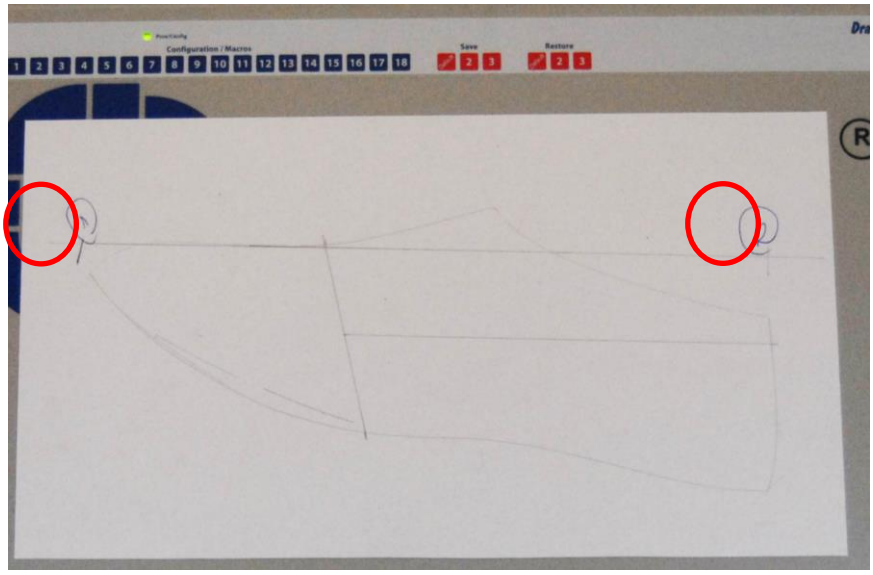


Place the mean form/standard on the digitizer.

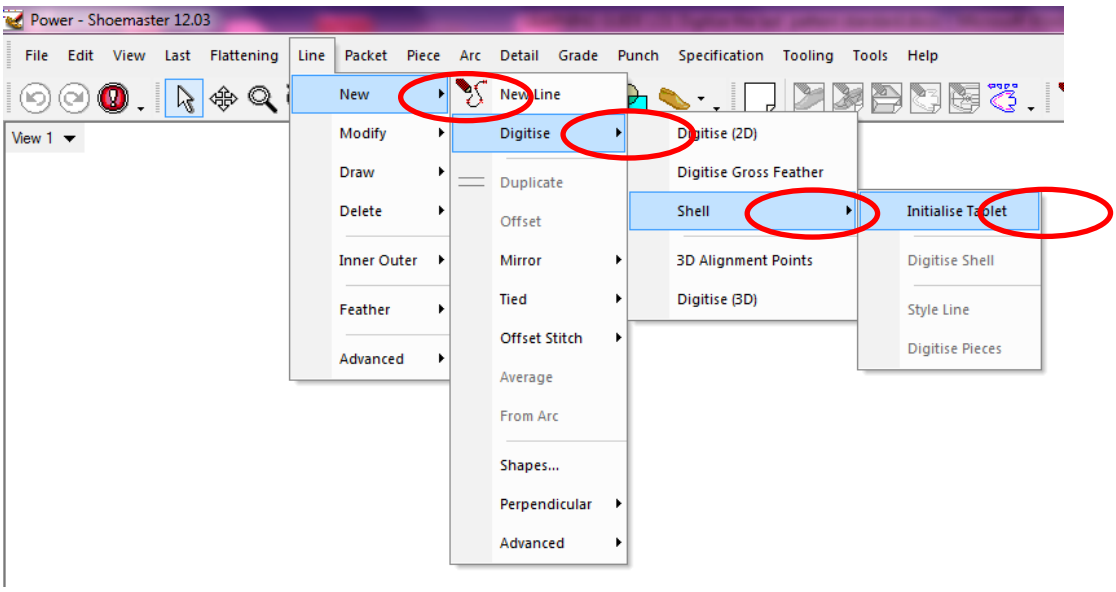
Ensure the digitizer is power on. Go to **Tools** pull down menu select **Digitizer->2D->com2/Calcomp VI** (calcomp vi is name of the digitizer, select the your own digitizer, check your local digitizer.)



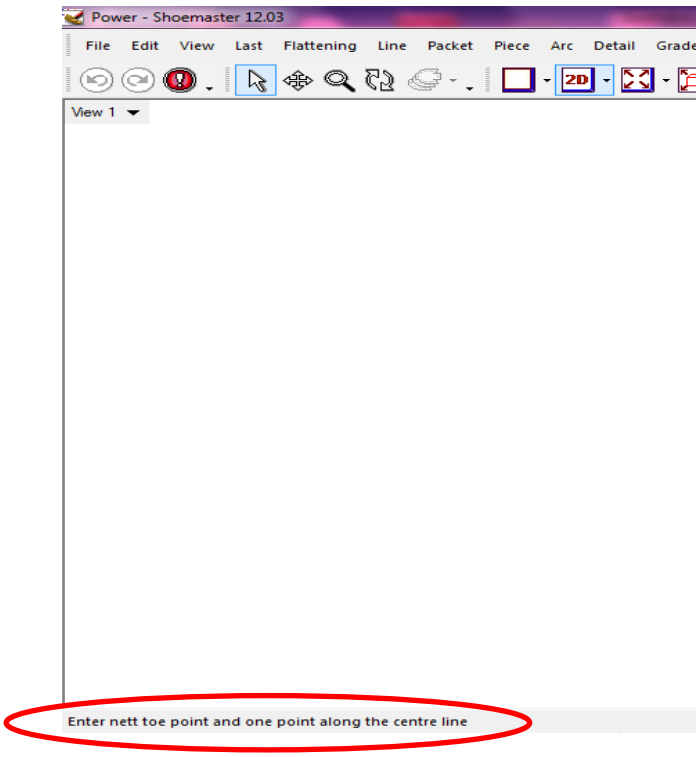
Before using any digitizer you will have to initialize the tablet, in other words, ensure the computer and tablet/digitizer are communicating. To do this, select Initialize tablet from the drop down menu. You will be prompted to *"enter net toe point and one point along the center line"* and you should enter these points by clicking along the relevant lines on your standard. The net toe point and one other point along the center line are shown in the example 1 and 2



Note: User must ensure, the communication port, the digitizer is connected. Select the appropriate com port.

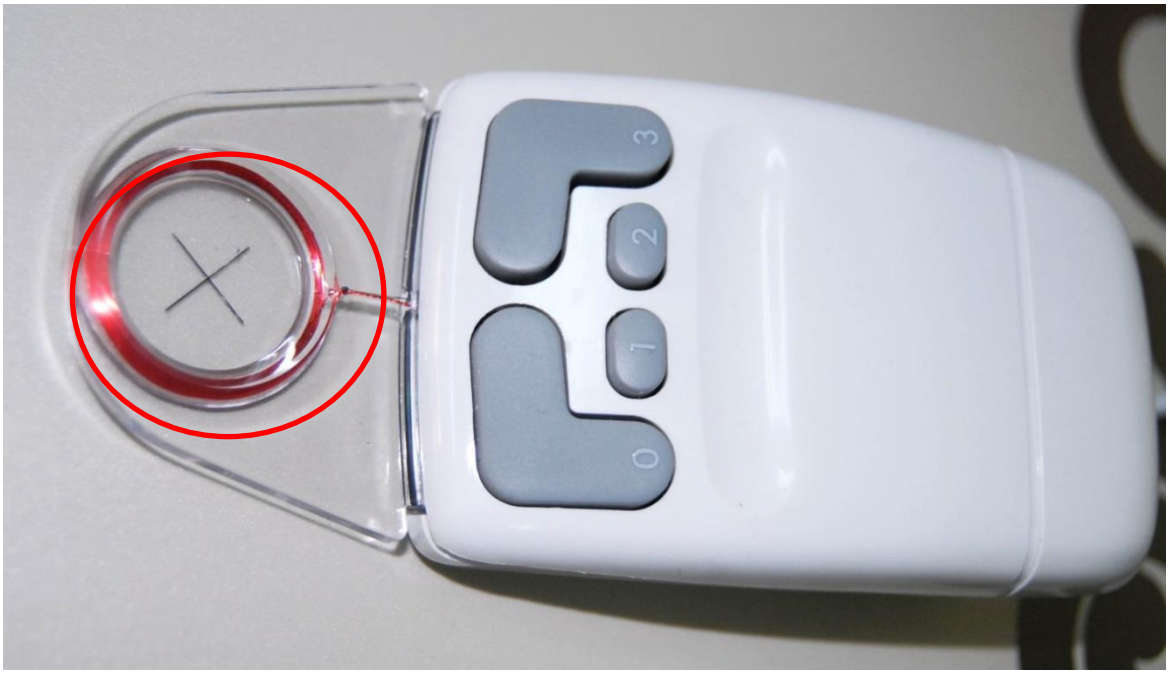


To establish the communication with the digitizer: Go to **Line** pull down menu **New->Digitize->shell->Initialize Tablet**.



To establish communication enter net toe point and one point along the center line. The straight line drawn on the A3 paper is the center line for style. Point No. 1 and point No. 2 needs to be digitized first to establish communication.

Press **0** zero one point No.1 & **0** Zero again on point No.2



In case of the Calcomp iv Drawing Board it is set up as follows:

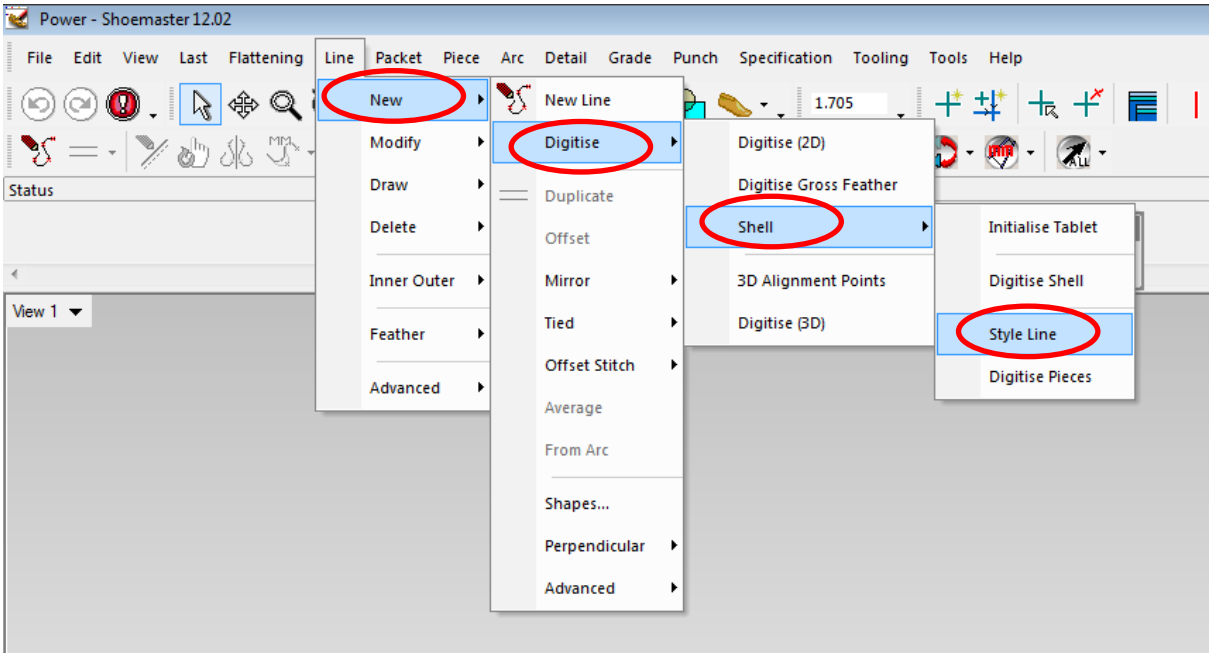
Use button 0 to digitise points (nodes) to create the line,

Use button 1 to quit the new line and allow you to create the next line.

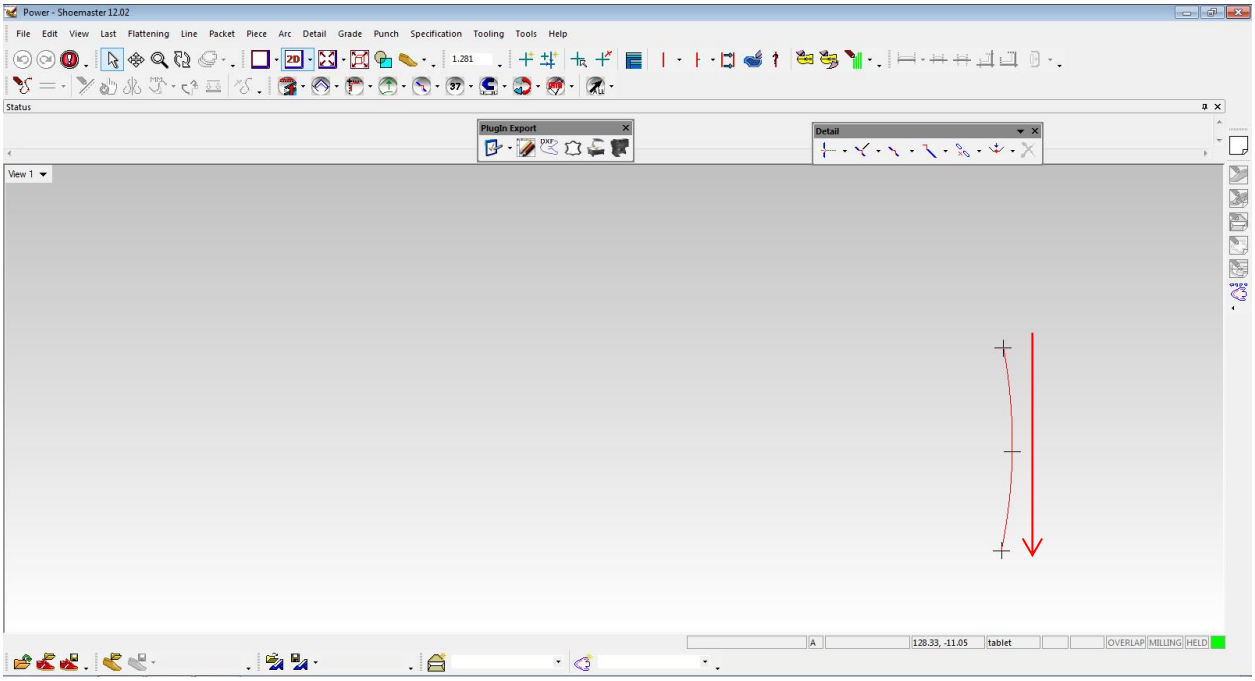
And button 2 to accept the new line and create the next line.

Button 3 to quit and disable the tablet.

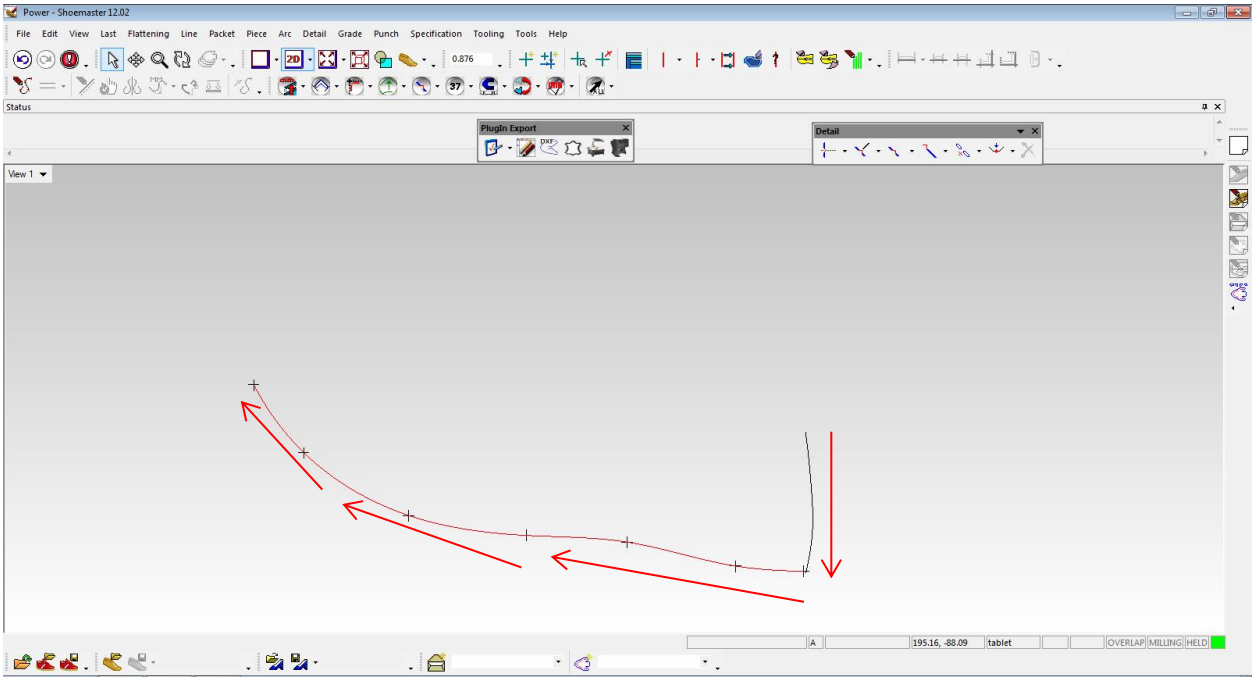
User ensure the cross hair line inside the digitizing dial must follow the drawing , while digitizing.



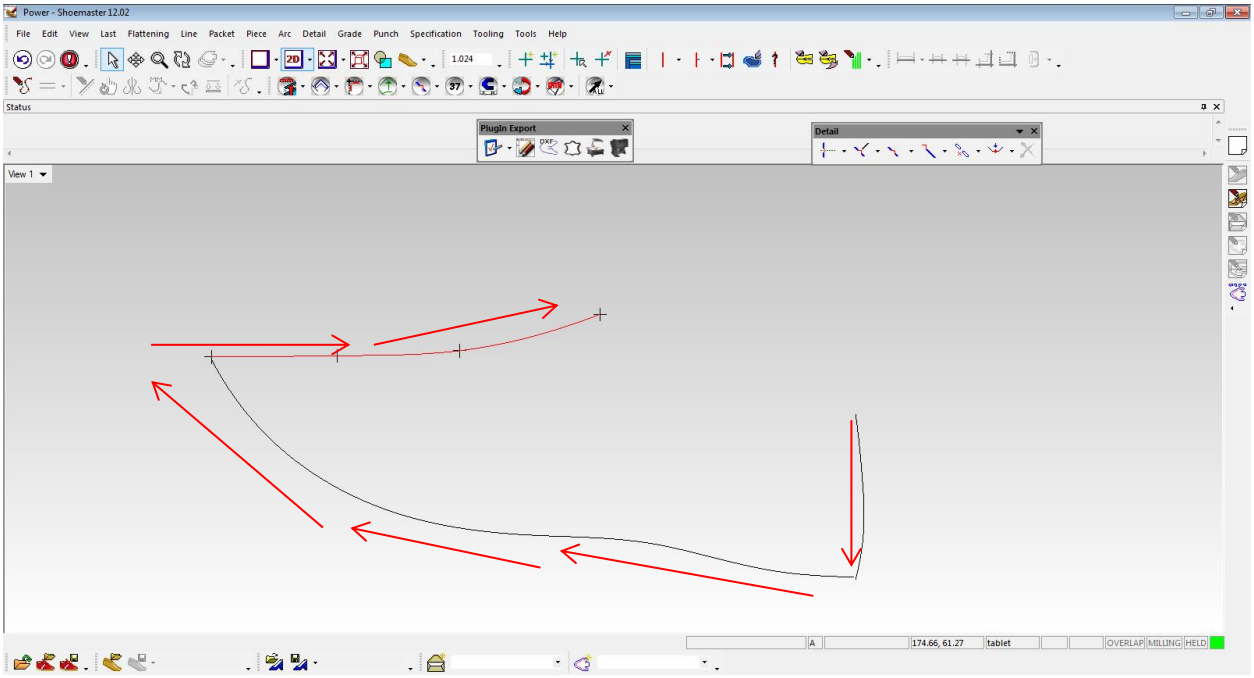
Now start digitizing the lines. Go to **Line** pull down menu **New->Digitise->Shell->Style Line**

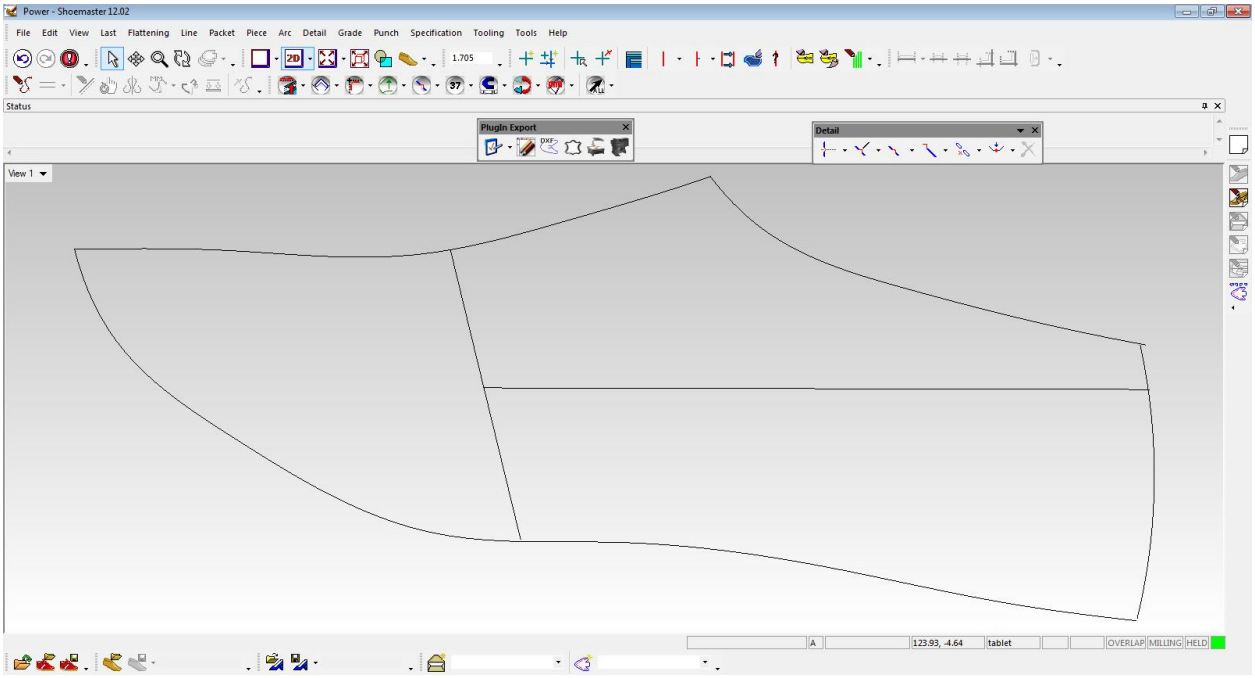


Digitization shall be done in clock wise direction only.

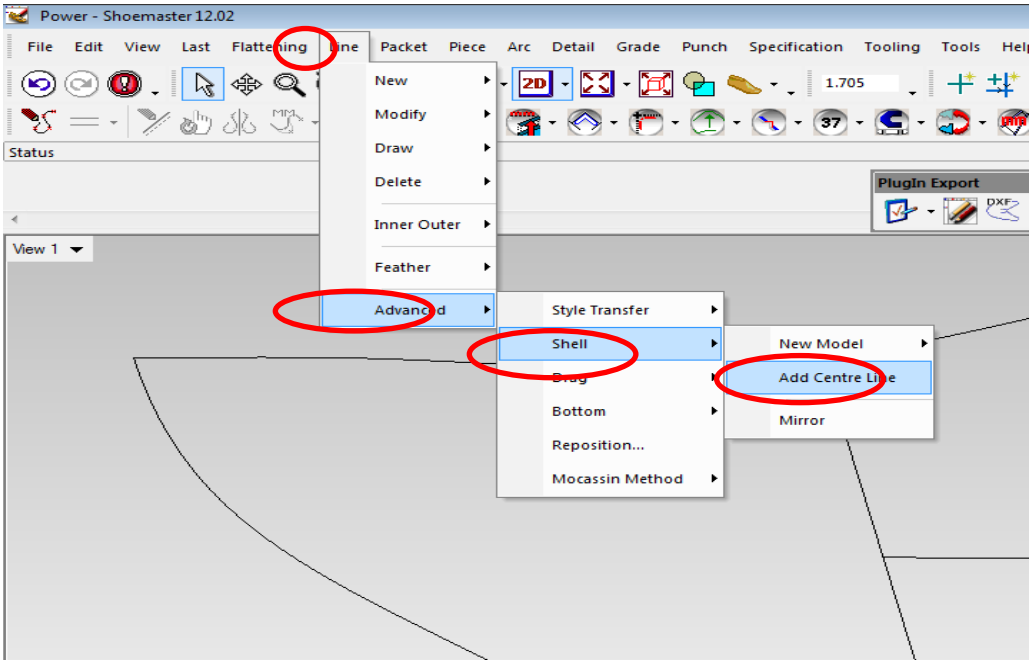


Maintain the clock wise digitization.

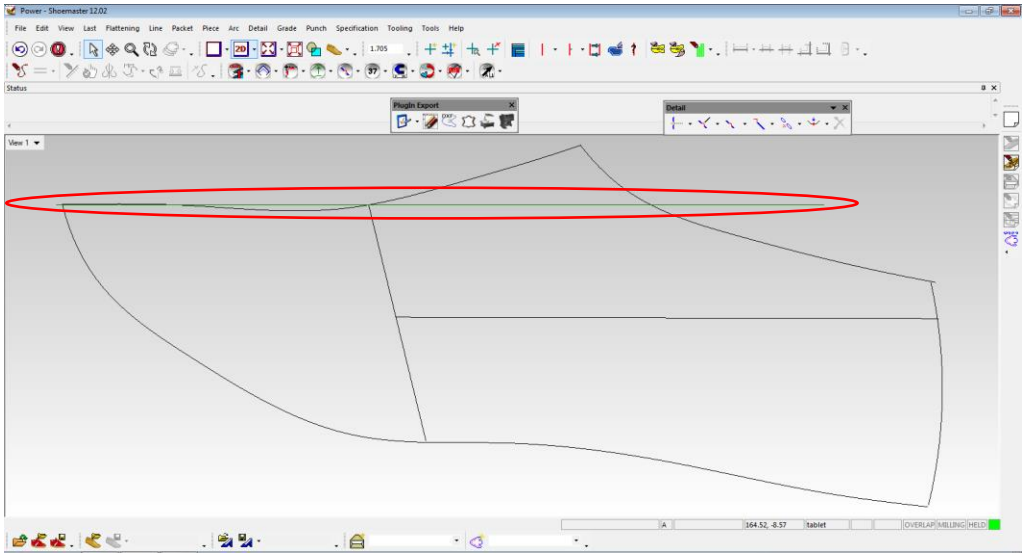

Power - Shoemaster 12.02
File Edit View Last Flattening Line Packet Piece Arc Detail Grade Punch Specification Tooling Tools Help
Status
PlugIn Export
Detail
View 1


Power - Shoemaster 12.02
File Edit View Last Flattening Line Packet Piece Arc Detail Grade Punch Specification Tooling Tools Help
Status
PlugIn Export
Detail
View 1

On completion of digitization disable the communication between the digitizer and computer. If you do no so, you won't be able to use the computer. To disable communication press the button **3** Three on the cursor.



Add Centre Line is process of adding the line straight line, on which the two initial points are digitized to establish communication between digitizer and Computer. By this option line will appear on the mean form or standard whatever has been digitized. To add go to **Line** pull down menu **Advanced->Shell->Add Centre Line**.



Center line will appear green on the screen

Self-Check 3	Written Test

Name: _____ **Date:** _____

(Total marks:-8)

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

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

1. What part of digitizer works as a mouse? (1 Mark)
2. Write down the full form of USB connecter? (1Mark)
3. Write down 9 pin serial connector's technical name? (1Mark)
4. What is the role of straight line drawn on the A-3 paper? (1 Mark)
5. Write down the three important points needs to be marked before digitization? (1 Mark)
6. By joining which two points you will get the top line or second principal line of mean form? (1 Mark)
7. By which button of cursor you will initialize the table or digitizer? (1Mark)
8. What is the right direction of digitization? (1 Mark)

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Test I. Short Answer Questions

1._____

_____

_____

2._____

_____

3._____

_____

4._____

_____

5._____

_____

6._____

_____

7._____

_____

8._____

_____

LG #20	LO #3- Standard pattern making

Instruction sheet

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

- Adjusting style lines properly and smoothing based on working pattern.
- Developing the standard pattern.
- Adding allowances according to the design specification.
- Applying perforations and other features

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

- Adjust style lines properly and smooth based on working pattern.
- Develop the standard pattern.
- Add allowances according to the design specification.
- Apply perforations and other features

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,

8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

LG #21	LO #4- Extract pieces of pattern

Instruction sheet

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

- Extracting upper patterns from the standard
- Extracting lining patterns from the standard
- Extracting bottom components patterns from the standard.

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

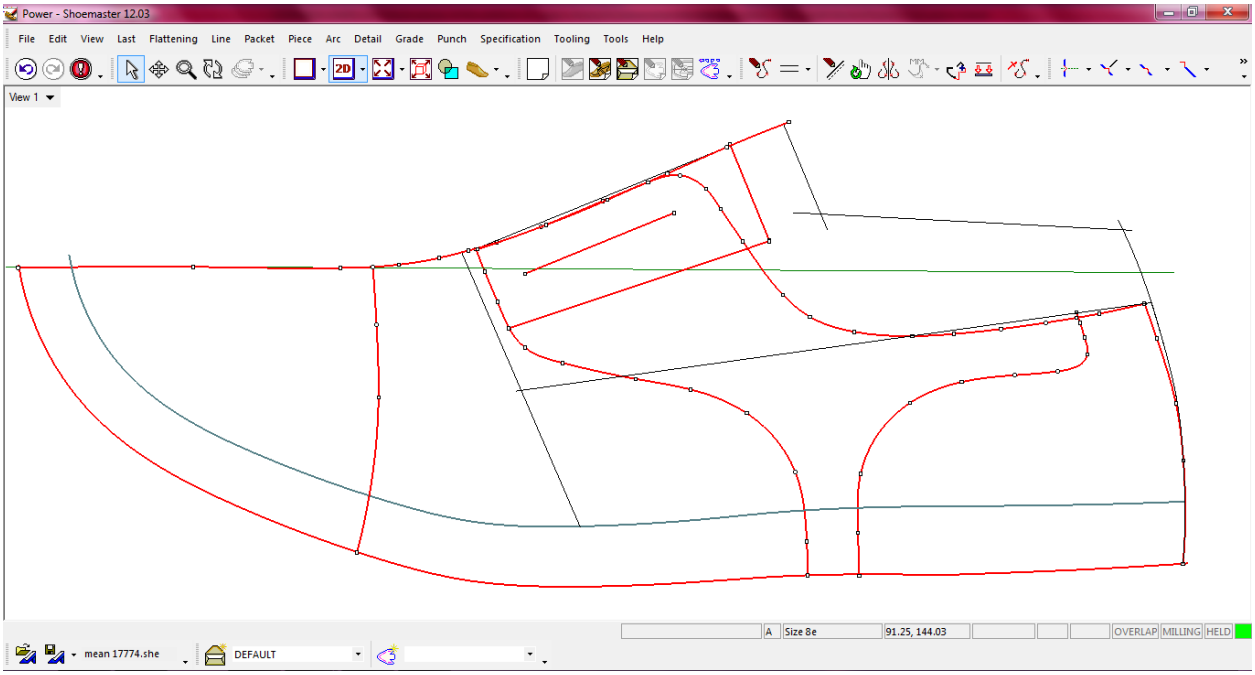
- Extract upper patterns from the standard
- Extract lining patterns from the standard
- Extract bottom components patterns from the standard

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Extracting upper patterns from the standard

Method of extraction of pattern from the standard

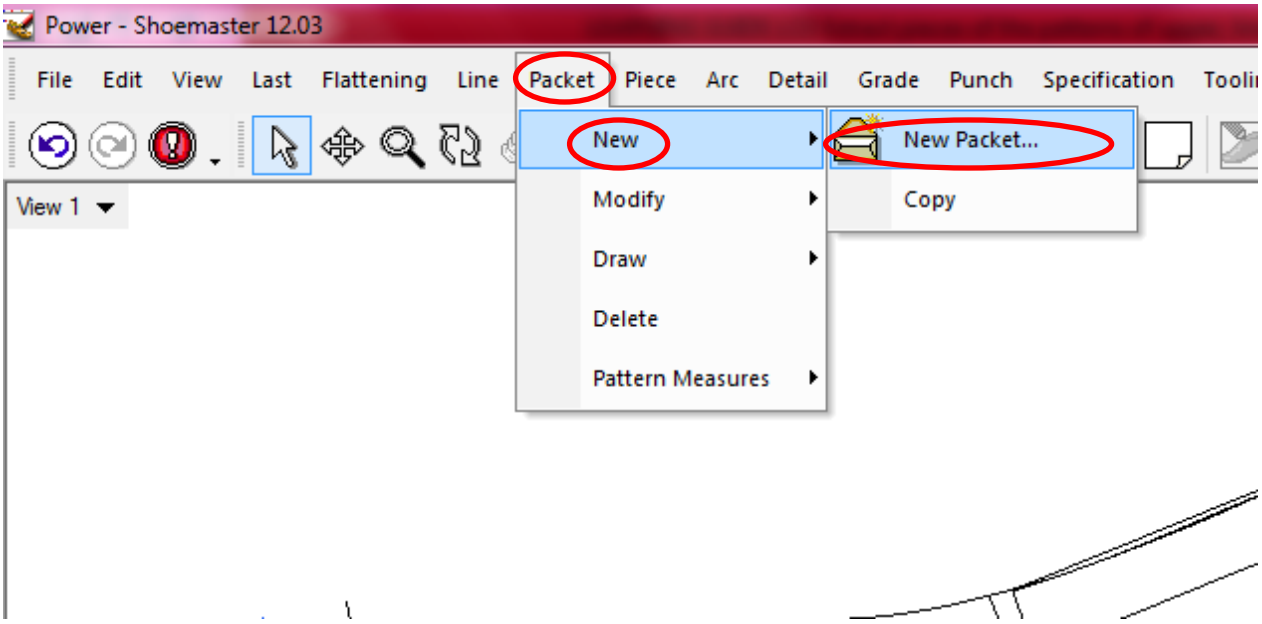


The Diagram of the standard from the patterns to be extracted

The first step for extraction of piece is to create a packet. The **Creating a New Packet**

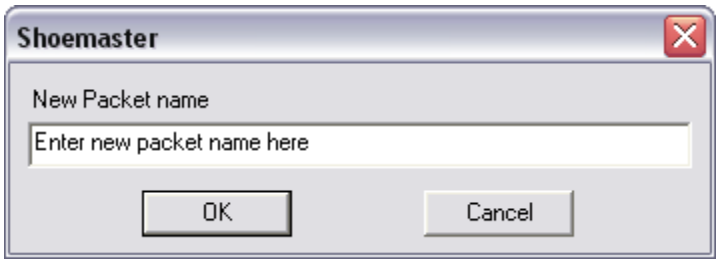
A Packet is an “envelope” that will hold all the pattern pieces you are about to generate. You may create more than one packet per style so you can organize patterns into separate envelopes if you wish.

Creating a Packet is the first step in generating a new set of patterns and is done in the following way:

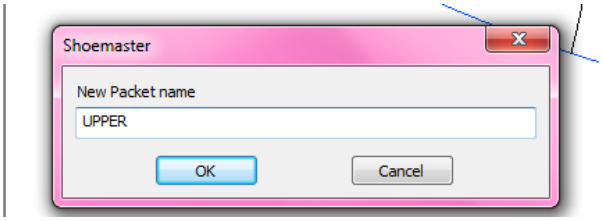


Procedure:

1. Use the Packet dropdown menu
2. Select New
3. Then New Packet
4. This will produce the following dialog box where you will be prompted to enter a name for the new packet.



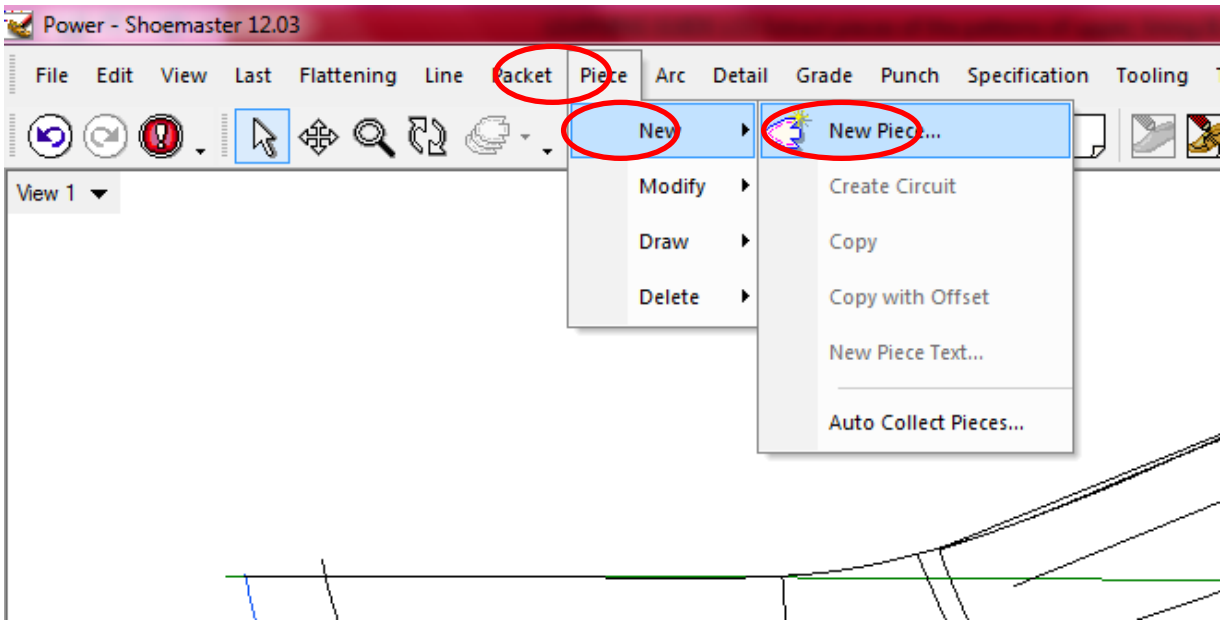
Note: If you do not create a new packet before selecting the New Piece function, an automatic packet will be generated called “Default”



Creating New Pattern Pieces

Now that you have created a new packet you are ready to start generating pattern pieces. You can work in any way you prefer, that is you can create all the net patterns first and then work on the individual pieces to add all the necessary allowances and other technical details. Or, you can work through each piece, finishing it completely before proceeding with the next piece.

To complete a set of simple net patterns, you will need to follow:

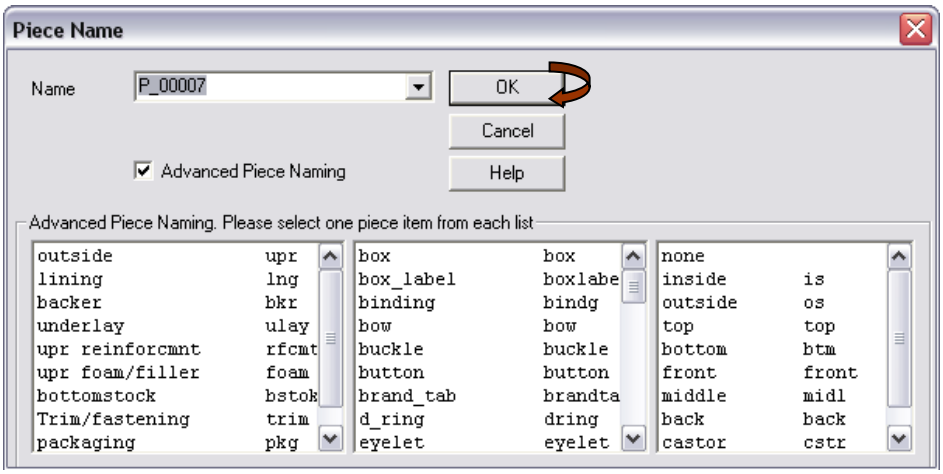


Procedure:

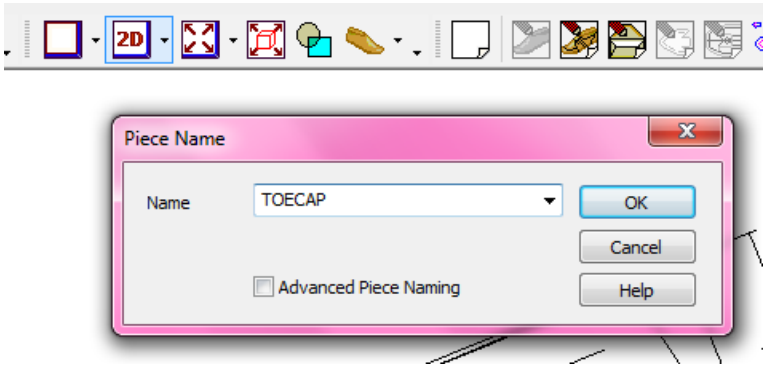
1. Use the **Piece** dropdown menu
2. Select **New**
3. **New Piece**

This produces the following dialog that prompts you to name the piece you are about to create. Pieces can either use the **default name P_00001** and so on, or can use a more

formal shoemaking term from the selection supplied. Checking the **'Advanced Piece Naming'** box will produce the list. Or, can type **your own piece name** in the box.



4. The piece naming dialog with advanced naming on view.
5. Click OK in the Piece Naming dialog
6. Begin selecting each line required to make up the pattern piece.



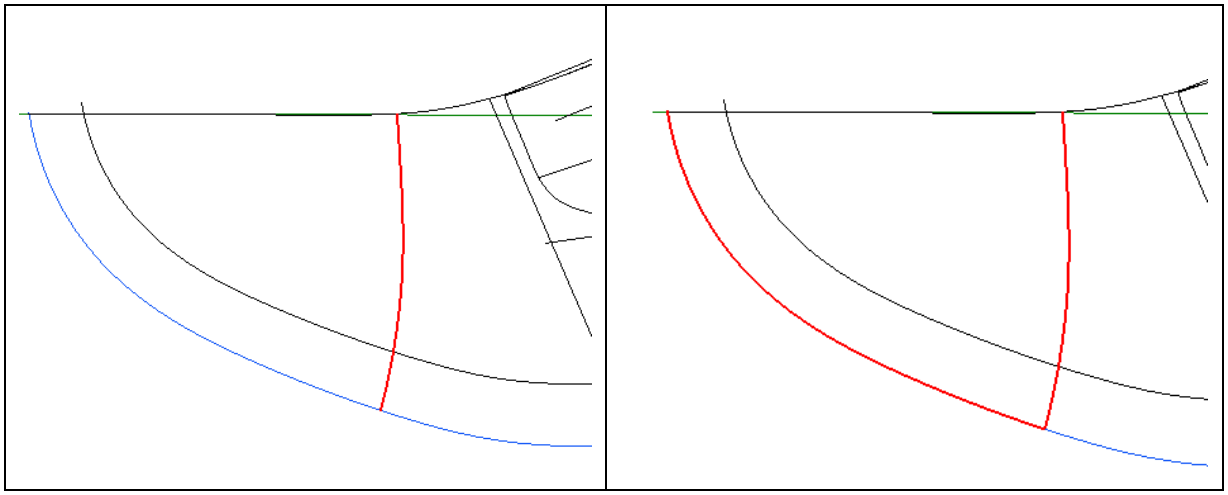
It is very important when you give the piece name of your choice, there should not be any space in name, and if there is any space software will not accept it.

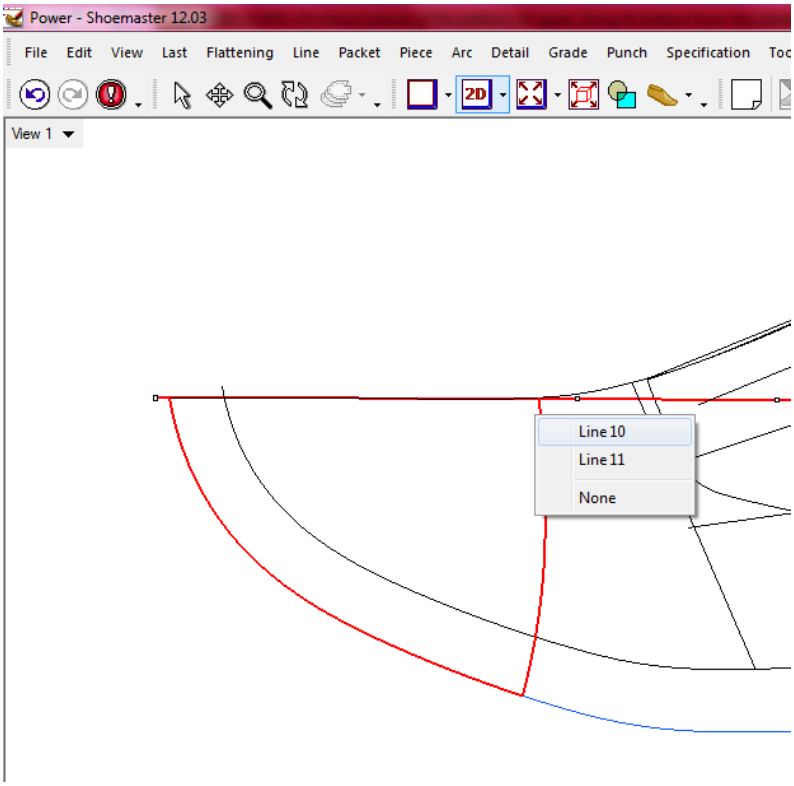
Note: It is important that all lines are selected in a clockwise direction

Any lines that you have selected will be drawn in a thicker red line, as shown in the example below.

Note: Another important factor for piece creation is to note that you must select consecutive lines. In other words, there must be no gaps between the lines that make up the shape.

The example below shows a correct piece collection.



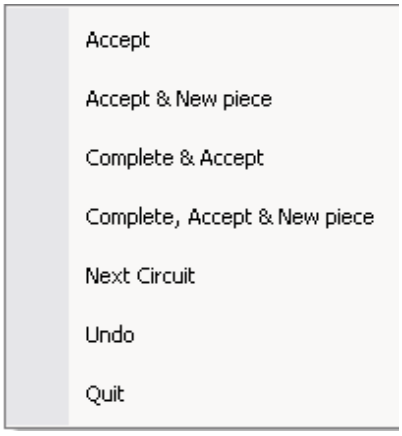


In this illustration you can see the toe cap pattern is under development, it is symmetric piece, no inside and outside is visible. In this can you have to select the center line, which is straight line on the standard, that is the line on which the piece will be unfolded, and center line should be straight line to get the perfect symmetric piece. If you find two lines together at one point, and find difficult to select the line, you will take your cursor to select the line it will

height the line in red color, as well the line number also appears, to make your understand and helps you to select the correct line.

Note: If you make a mistake during the process you must select “undo” until you are able to select the correct lines in the correct order, the program will not allow you to go back and select missed lines out of sequence. See below for an explanation of the Undo feature.

7. When you have collected all lines needed for the pattern, use the right mouse button to show the following menu.



You will need to **‘Complete & Accept’** to finish the piece.

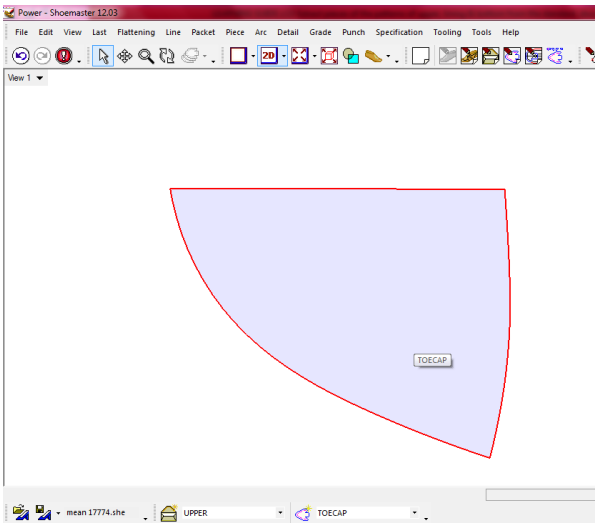
‘Complete, Accept & New Piece’ finishes one piece and immediately starts the process for the next.

‘Next Circuit’ is used when more than one circuit is needed to complete one pattern.

‘Undo’ can be used during the line selection process if you have selected an incorrect line or need to go back a step or number of steps to make a correction.

‘Quit’ can be used to disregard the piece you have just selected.

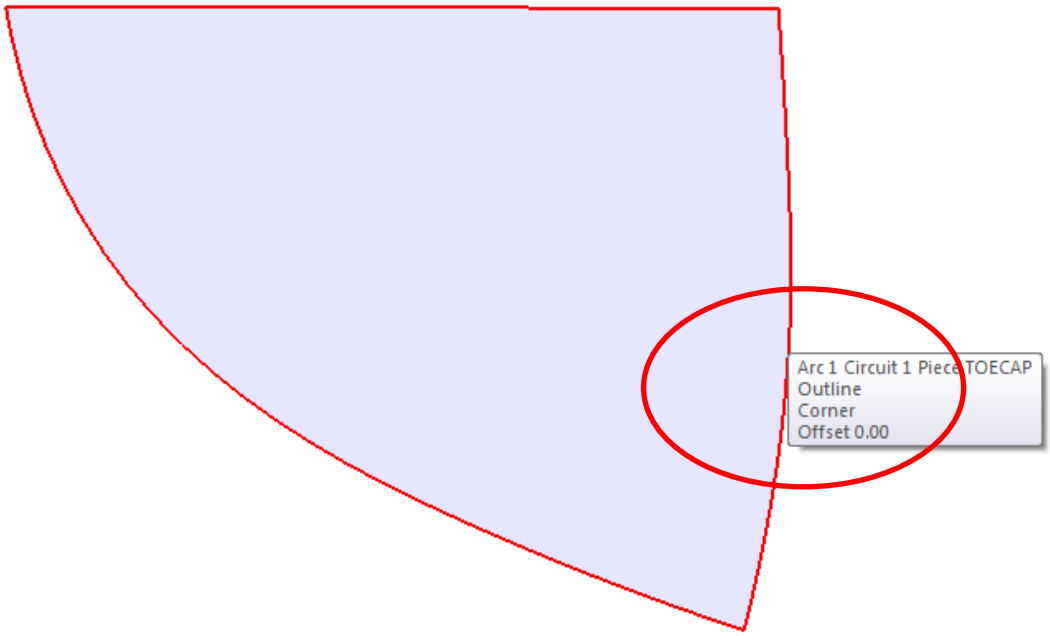
8. Once you have selected to “complete” or “accept” the new piece, it is then shown on the screen.



You have achieved the half toe cap net pattern, When you are generating the symetric pattern, it is necessary you are required to add all the maring, which is the requirement of the desing must be added before unfolding or double the pattern. If you will not add the margins before unfolding, it may give trouble, if you try to add margin after unfolding.

To add the the margin, there are two way one is addiding the margin with user defined vlaue, second is using the predefined vlaue of the software.

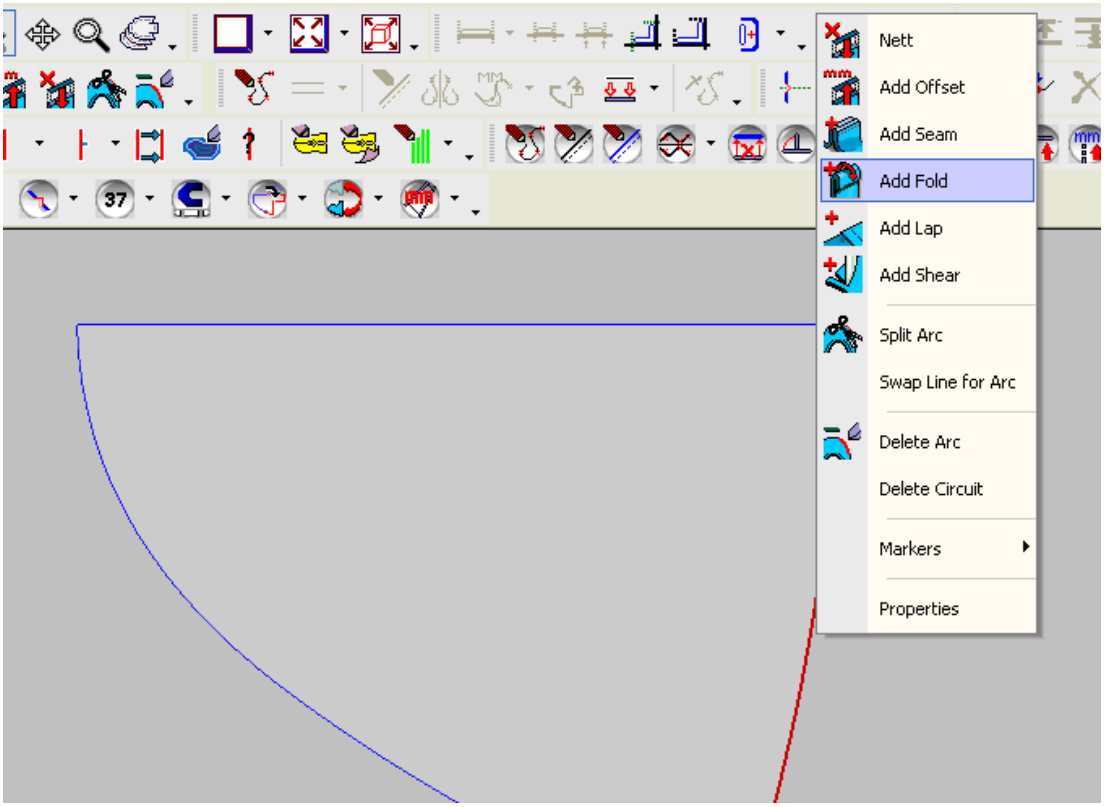
Once we make the piece out of lines, the propertie of the piece lines become the arc. Whe you are adding the margin to the piece you are addiding the value on the arc not line. If you take your coursor to the any boundery of piece it say arc.



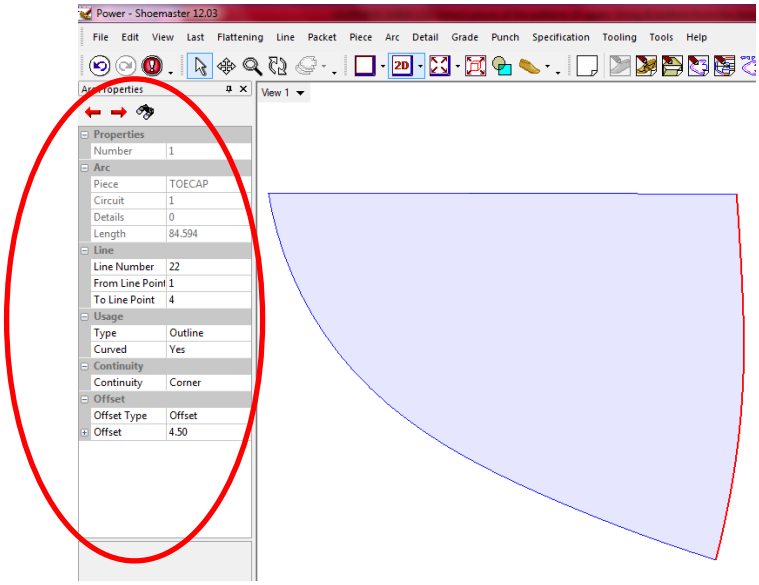
.**Procedure to add the margin to the net pattern**

1. Select the **Arc** on the piece where you need some allowance
2. Right click with the mouse and the following will appear
3. Now select the allowance type from the list
4. E. g. **Add fold** for folding allowance

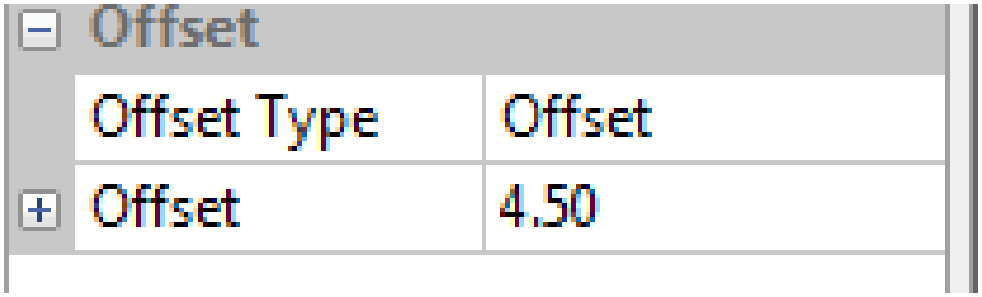
While using the above said option, it means you are using the option of pre define value, the margin will take place of that value.

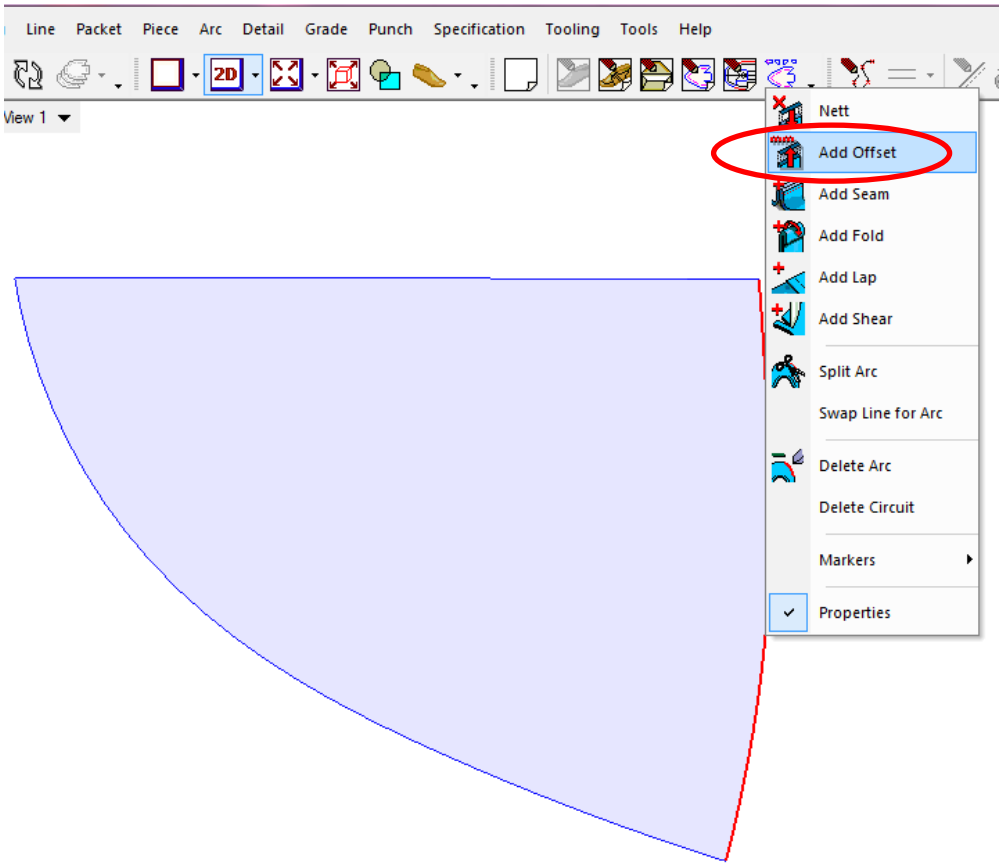


To check the value of margin added select the arc with right click, select the properties, it opens the properties window.

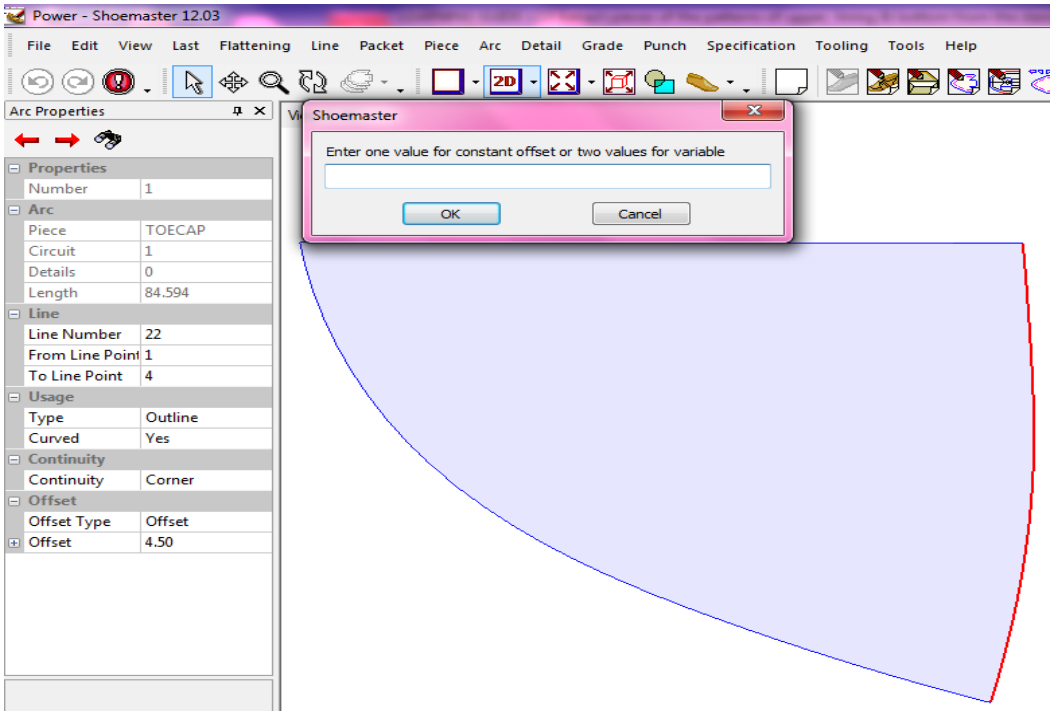


Under the properties windows you can see all the detail pertaining to the active arc or selected arc. You can see the offset option under offset you can see the offset value. This is a value added on the arch or you can say the fodling margin added to the margin.

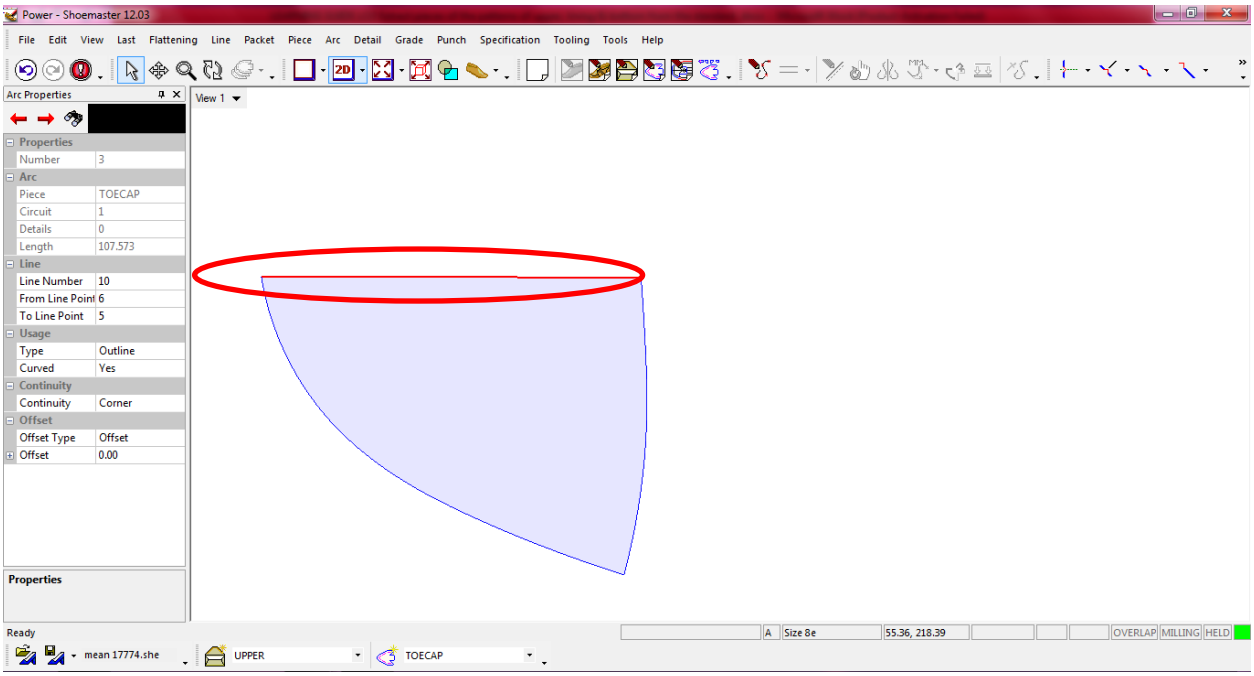


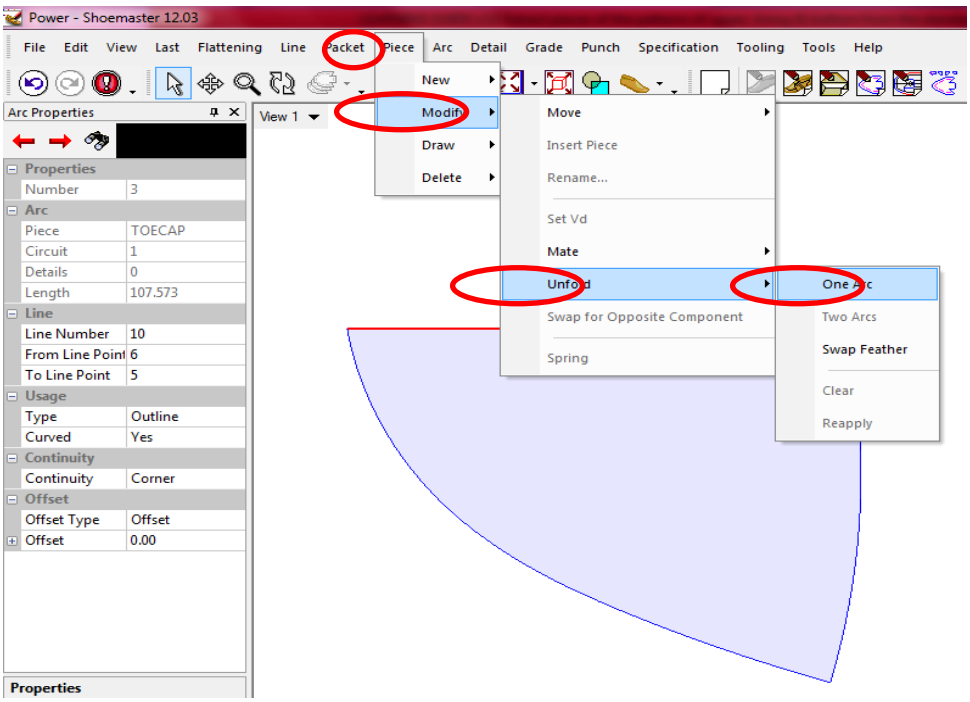


The second option is to add margin or allowance to any arc is **Add Offset**, this option given you liberty to add value of your choice.



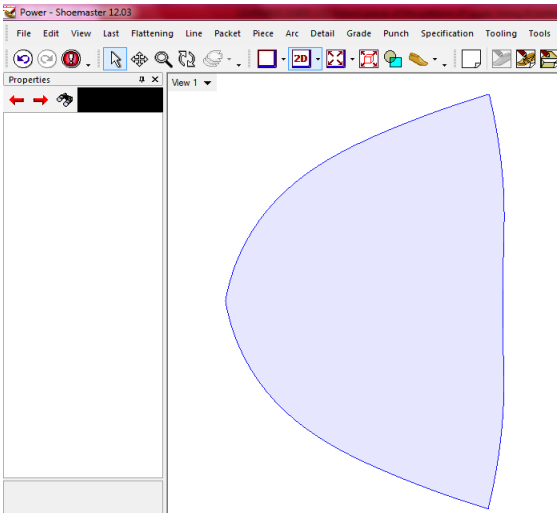
To unfold or double the piece select the arc on which piece needs to be doubled or unfolded





Procedure to unfold the pattern

1. Select the **Arc** on the piece where you need unfold it
2. Go to **Piece** drop down menu
3. Now select the **Modify** from the list
4. Now select the Unfold from the list
5. Select **One Arc**

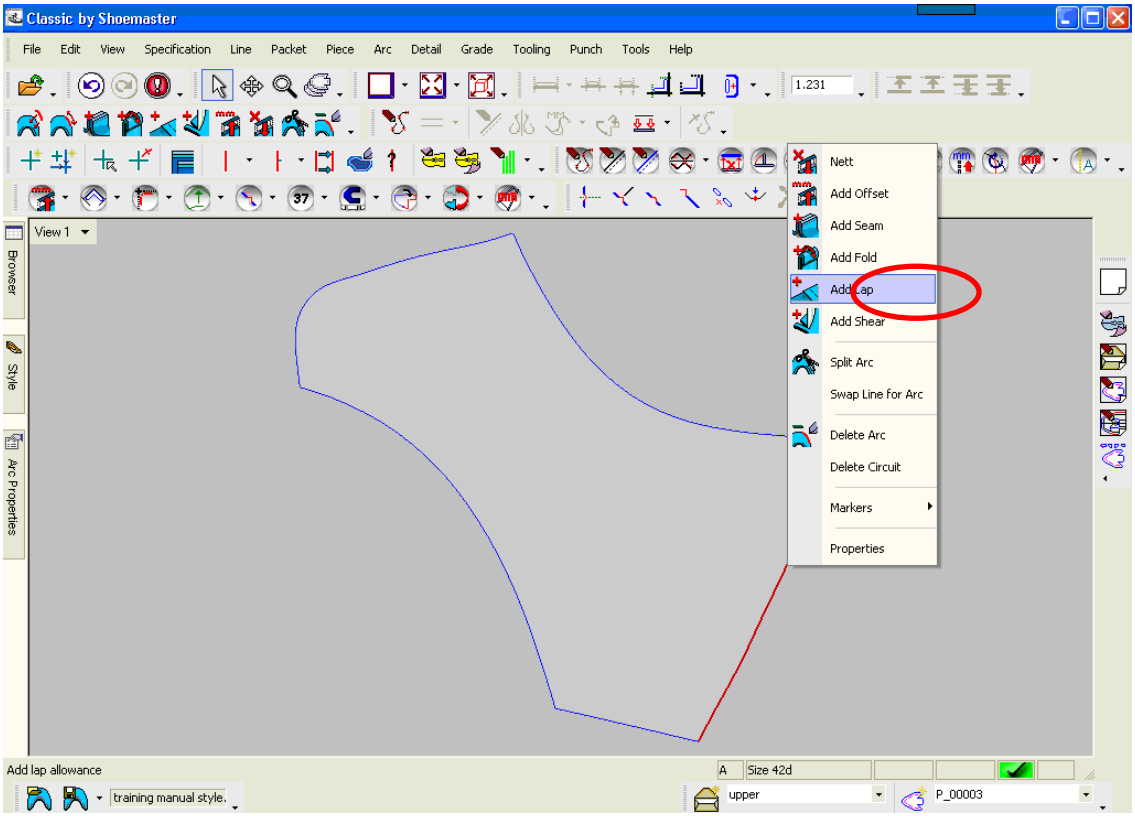


You have achieved unfolded pattern.

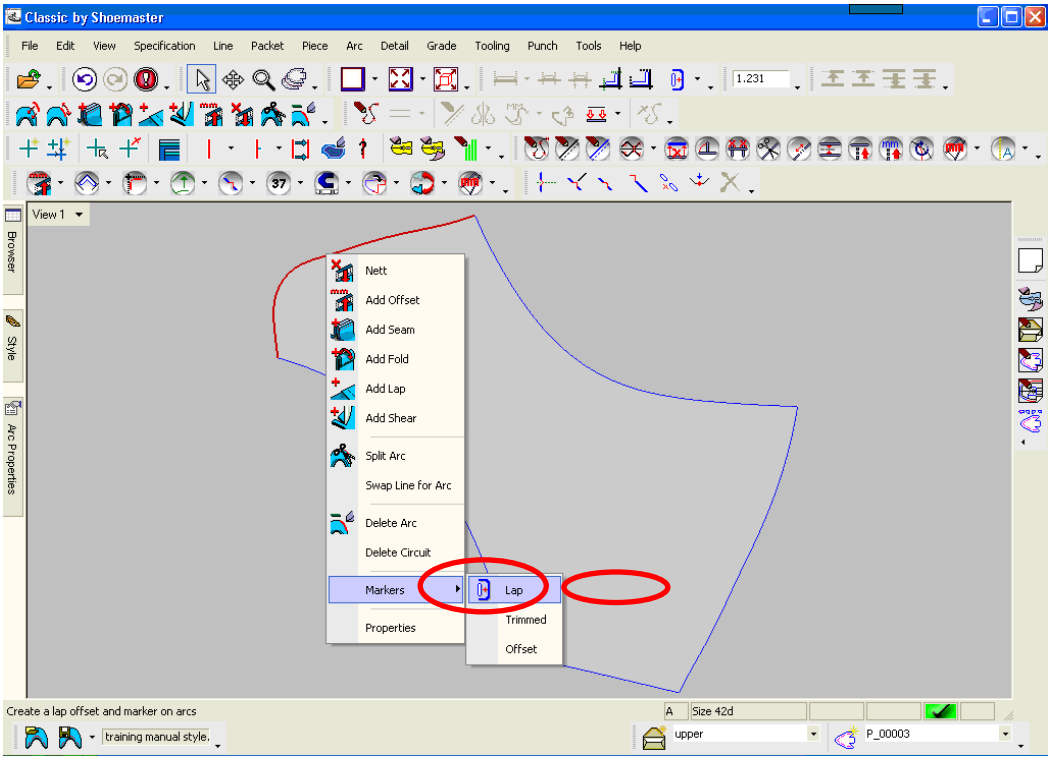
When the net pattern has been made, you have to add the technological allowances for assembling the upper.

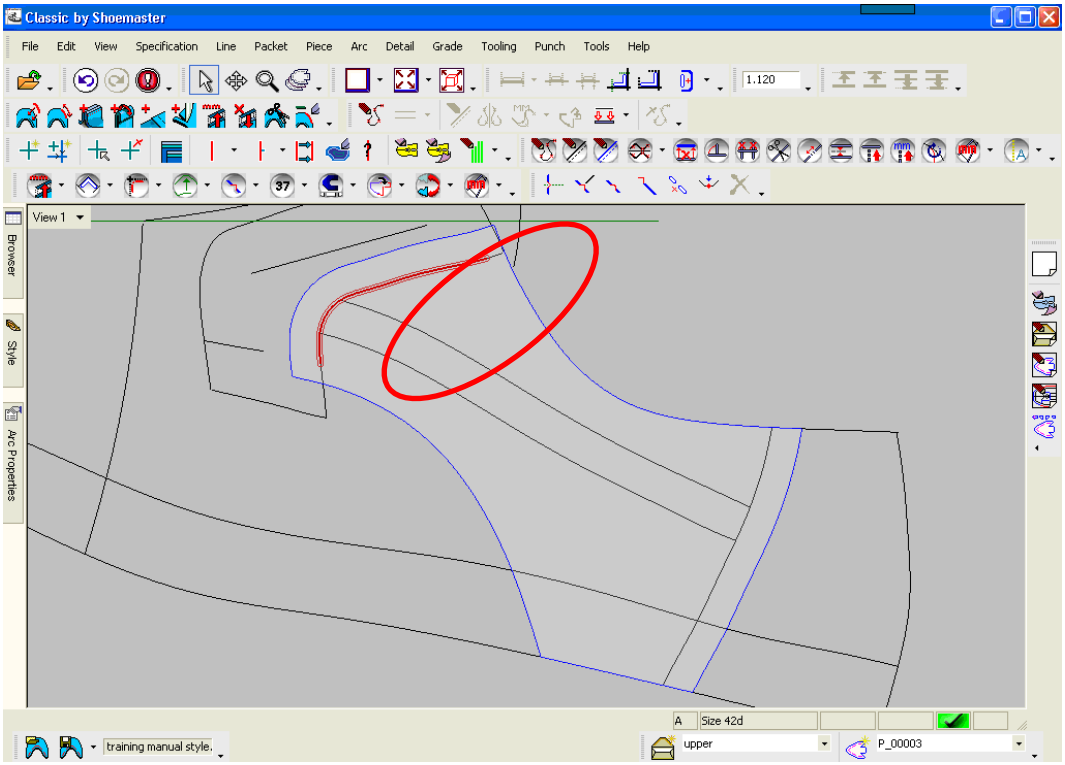
Procedure:

1. Select the **Arc** on the piece where you need some allowance
2. Right click with the mouse and the following will appear
3. Now select the allowance type from the list
4. or **Add lap** for underlay margin
5. Or Select **Markers** and then **Lap**



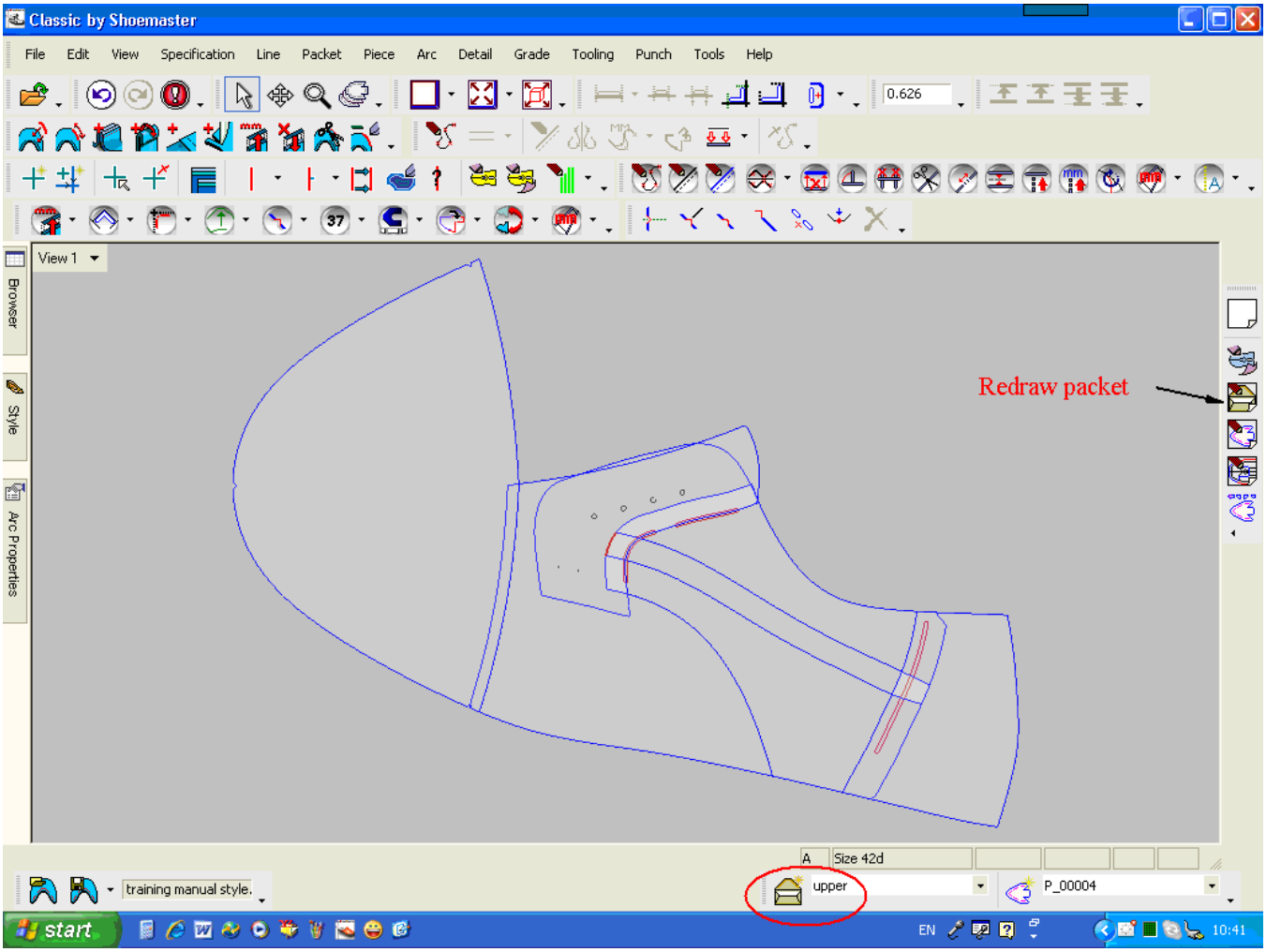
1. Or Select **Markers** and then **Lap**
2. With this option Margin/allowance will be added to the piece as well marking slot will open**.**


Classic by Shoemaster
File Edit View Specification Line Packet Piece Arc Detail Grade Tooling Punch Tools Help
View 1
Browser
Style
Arc Properties
Nett
Add Offset
Add Seam
Add Fold
Add Lap
Add Shear
Split Arc
Swap Line for Arc
Delete Arc
Delete Circuit
Markers
Properties
Lap
Trimmed
Offset
Create a lap offset and marker on arcs
training manual style.
Size 42d
upper
P_00003



Drawing a Packet

It is possible to have several packets made from one single style. By selecting the individual packet at the bottom of the screen, you can easily identify which packet you are working with and you will have only those pieces on the screen once you select the Redraw Packet function:


Classic by Shoemaster
File Edit View Specification Line Packet Piece Arc Detail Grade Tooling Punch Tools Help
0.626
View 1
Browser
Style
Arc Properties
Redraw packet
Size 42d
upper
P_00004
training manual style.
start
EN
10:41

Adding Technical Details to Pieces

Adding Stitch Markers to Pieces

Adding markers from lines

The term Marker is used for lines which form of ‘slot’ large enough to draw a pencil line through. This is used in production to mark a line on the material to indicate, for example, a stitching line or lap line.

There are different ways of adding markers to the style. You have to understand the individual options to be able to select the correct ones in every individual case.

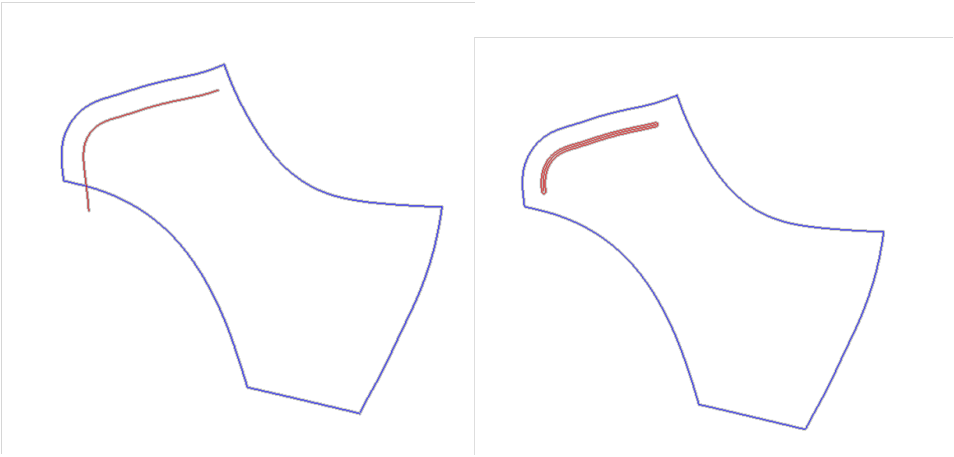
Procedure:

1. You will need to draw the Style on screen.
2. First, click on a Piece to select it. This will now draw the current piece on top of the style.
3. Next you must click on the style line that is to provide the marker,
4. Right click to shown the following options
5. Select As Line

As line

This function should be used when the complete line is used to add the marker to the piece.

This will now add a *Marker* along the whole line that you selected within the piece, as shown in the example below. This would be a serious concern, when the piece is cut. Therefore you cannot always use this option. As you can see, in this case the line is “going out” of the piece.

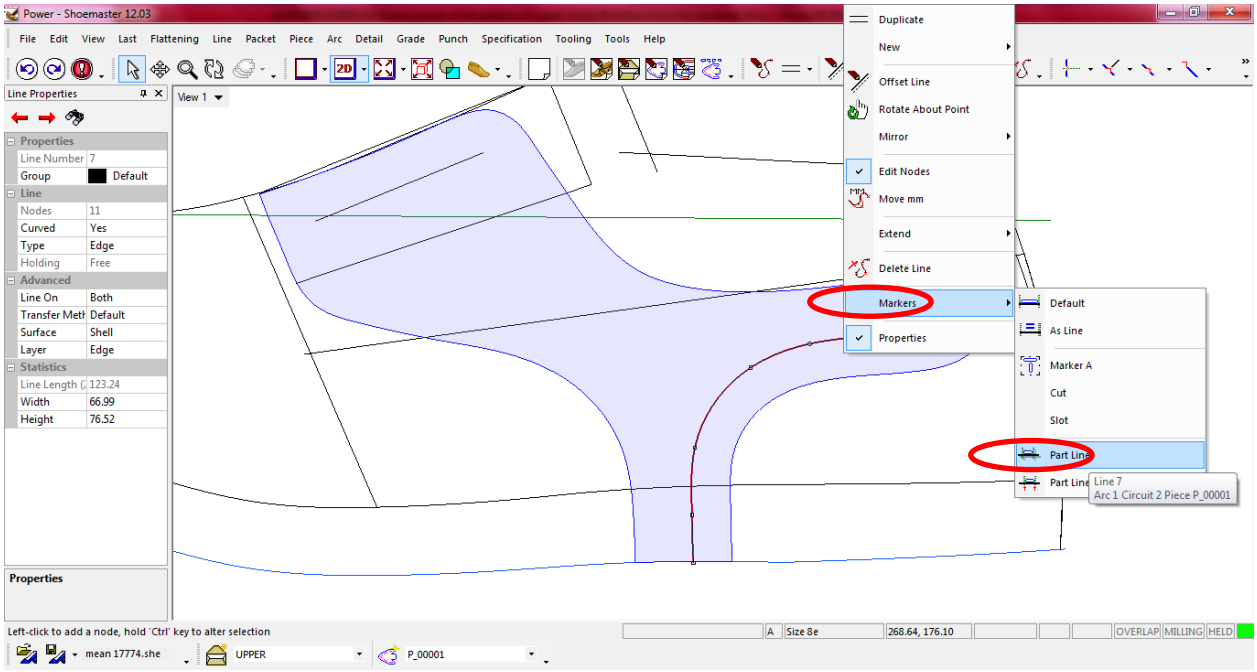


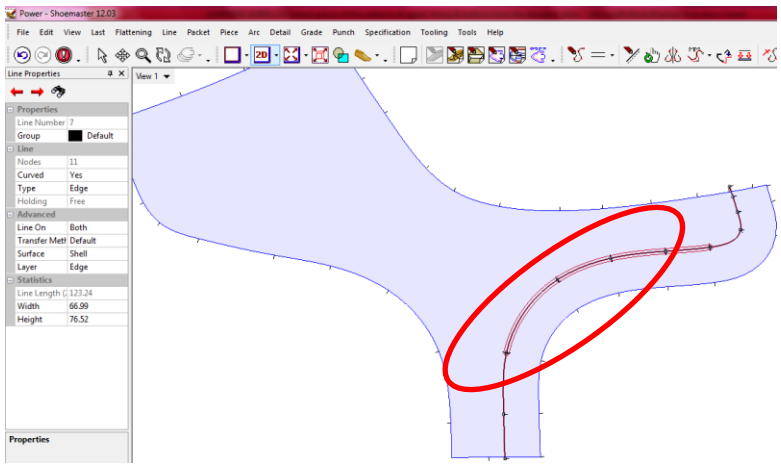
Incorrect **Correct**

Adding markers to a part of a line

This function enables you to add a marker along a line but this time between two existing nodes that you can freely select:

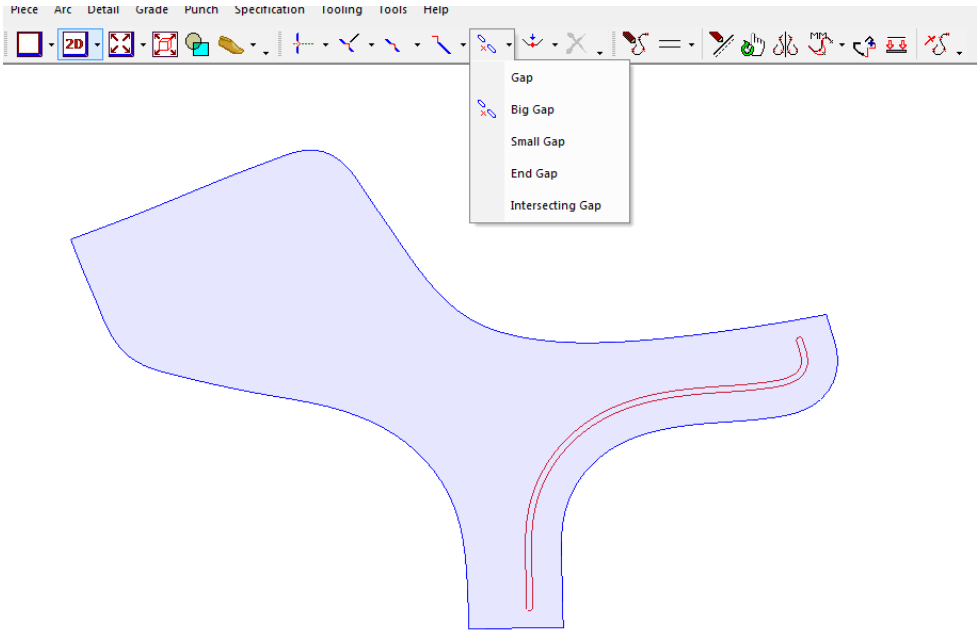
1. As before, you will need to select the **piece**
2. Then select the **style line**
3. Then navigate to the ***Part Line*** function.
4. Once selected, the piece will be redrawn with the line you have selected, turning on the nodes that make up the lines. (These were the digitized nodes)
5. You can now click on two nodes that you wish the marker to use.





Gap

The gap is used to divide the stitch marker into smaller segments. Depending on the size and shape of the marker one can use smaller or bigger gaps.

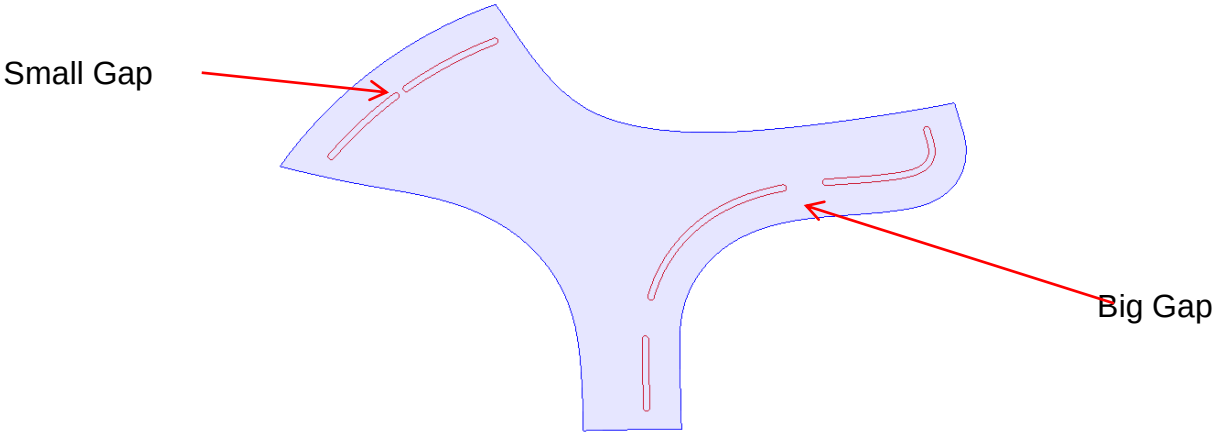


Big Gap

This works in the same way as adding a gap, but this time the gap is much bigger than the standard. This is useful when applying to larger markers.

Small Gap

Again, this works as usual but adds a very small gap, useful on smaller markers.



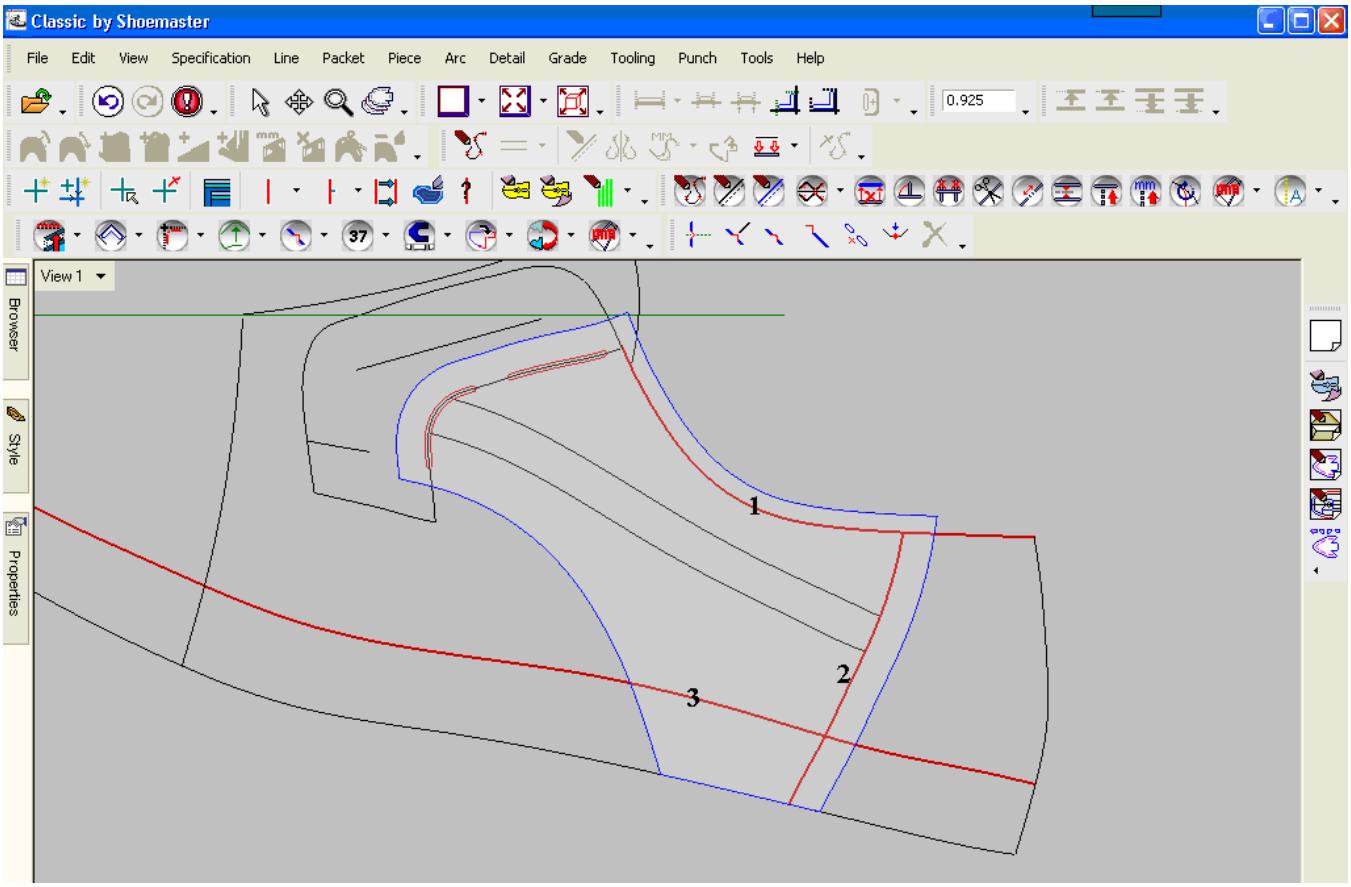
Procedure:

1. Selecting *Gap* will prompt you to

2. ‘Click *near the arc to start inserting a gap’*
3. Once you have selected the arc
4. You will be able to slide the gap along the arc and place where required by clicking the mouse.

Stringed marker

Stringed marker is created on a line(s) that is sandwiched between two others. For example, if you wish to create a marker on the line as shown in the example below, the lines must be collected in the correct order, starting with line 1 (Start line) and finishing with line 3 (End line). Remember, the start and end lines will not have markers on them.

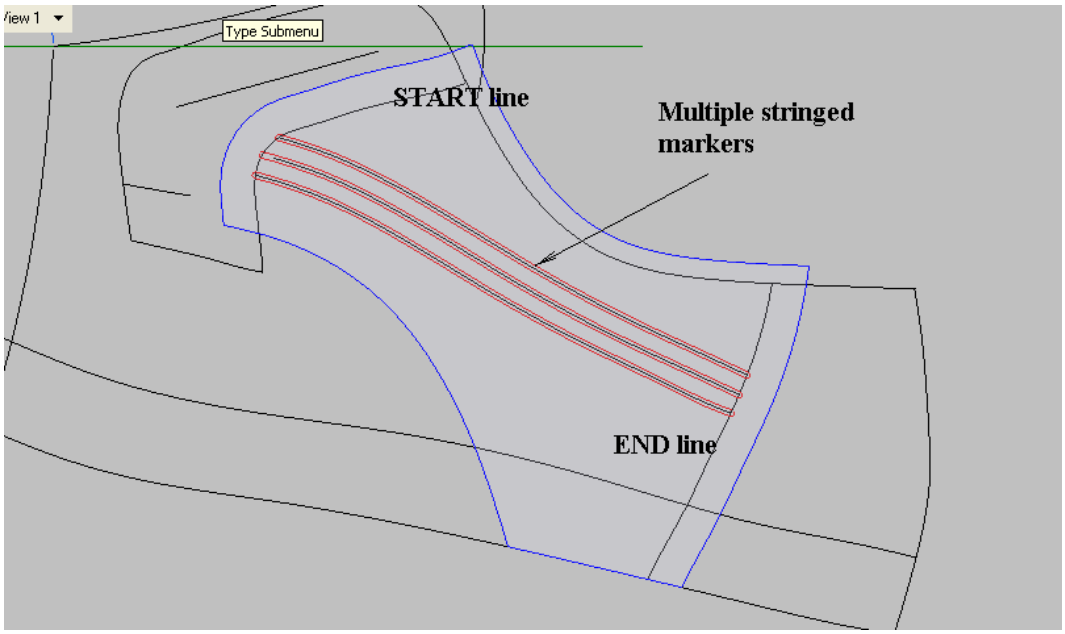


Please note that once the stringed marker is created using the example above, construction arcs are created that can be turned on or off using the **Layer Visibility** menu. This is

necessary if you needed to lengthen or shorten the actual marker by offsetting the construction arcs.

Multiple stringed

This is very similar to the function explained above, but this time will allow you to select more than one arc to be the marker

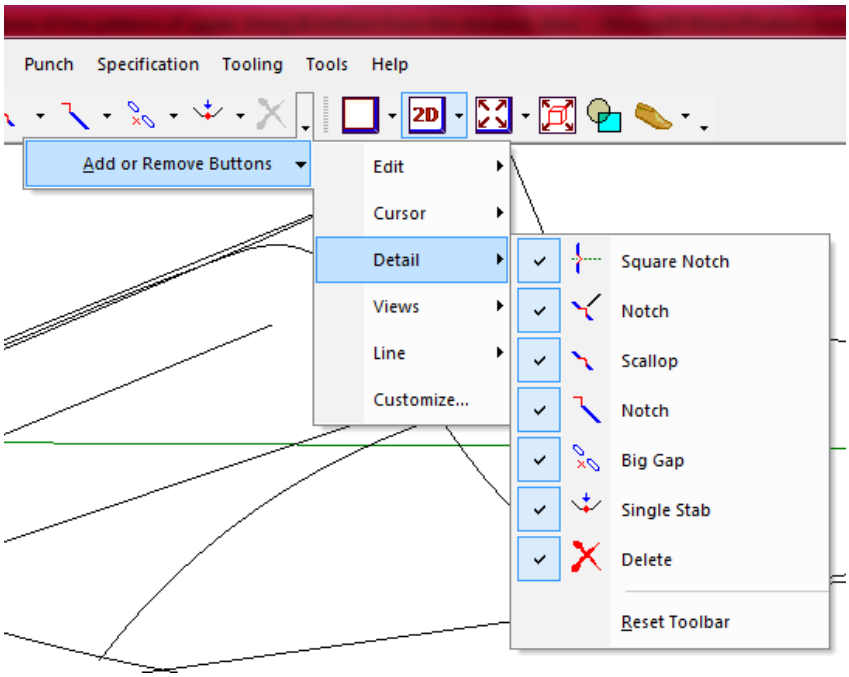


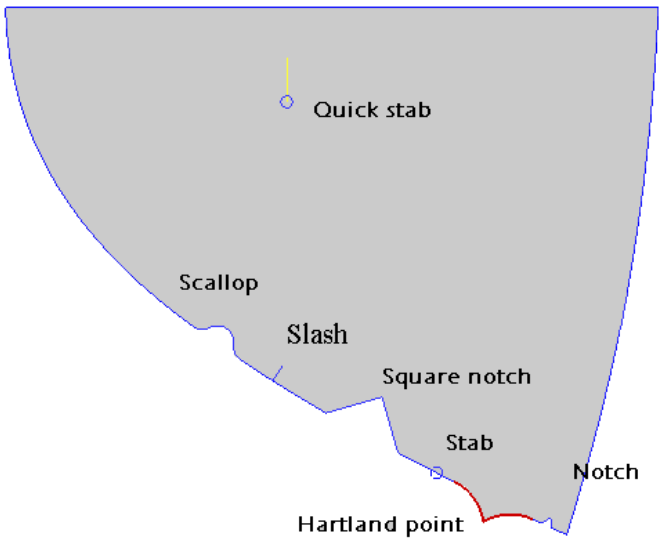
Using Notches

Just like markers, different so-called details are used for identifying and marking certain things and the position or placement of the individual pieces so a proper upper can be made of the pieces.

The shape and size of these details can be changed to suit your requirements. Even the position of some of these details can be modified by adjusting them to the slope of the line they are positioned on.

The following options are available with this function allowing you to add a variety of details to your work.

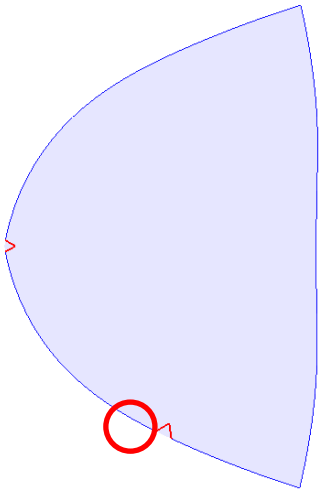




Each option is described below.

Notch

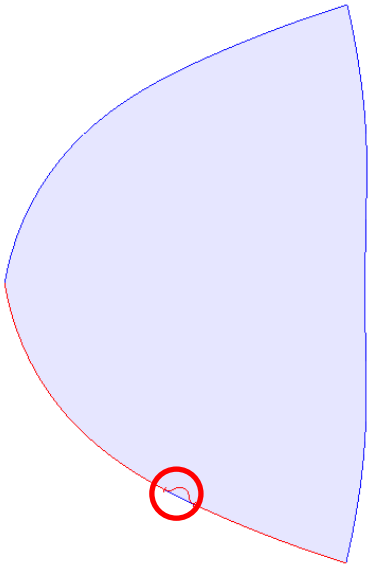
When selecting *Notch* you will be prompted to "*Click near the arc to start inserting a notch*". This will place a new default notch on an arc of the current piece and allow you to slide it along until you place it by clicking with the mouse.



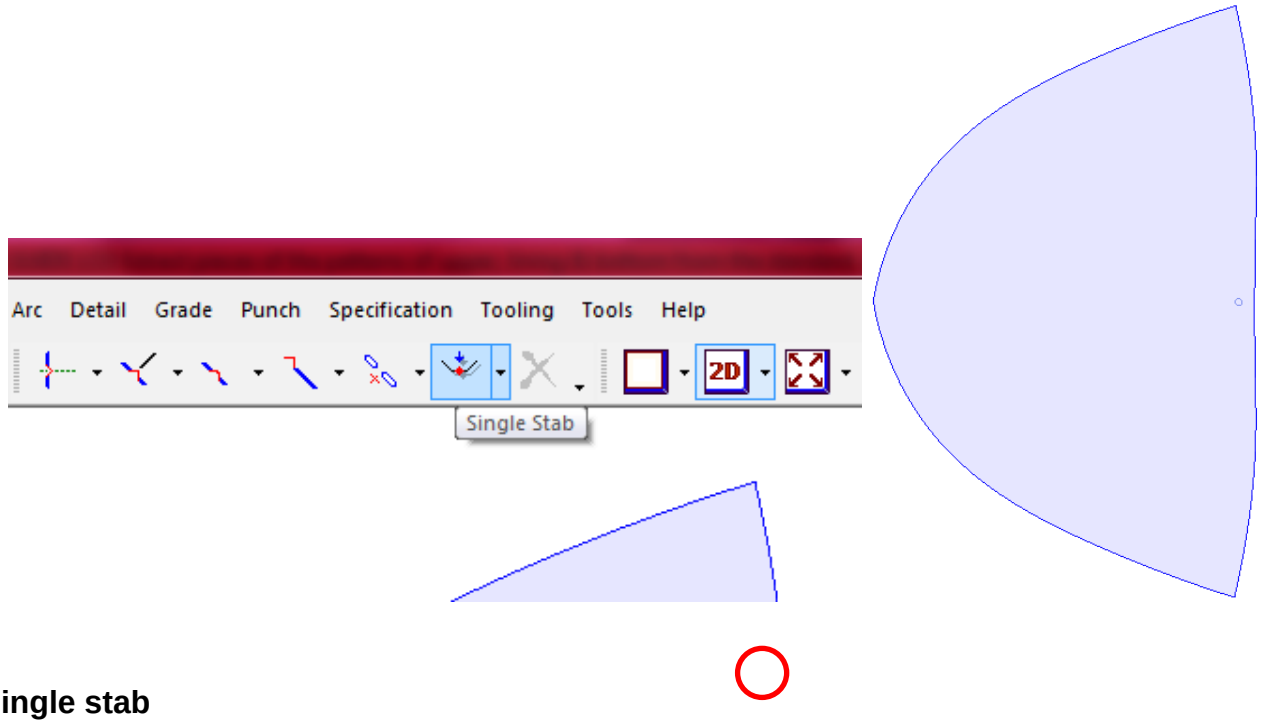
A new Notch added to an arc

Scallop

Once selected, you will be prompted to '*Click near the arc to start inserting a scallop'*. When you have selected the arc you will be able to slide the scallop along the arc of the current piece and place it where necessary by clicking the mouse.



Scallop added on arc



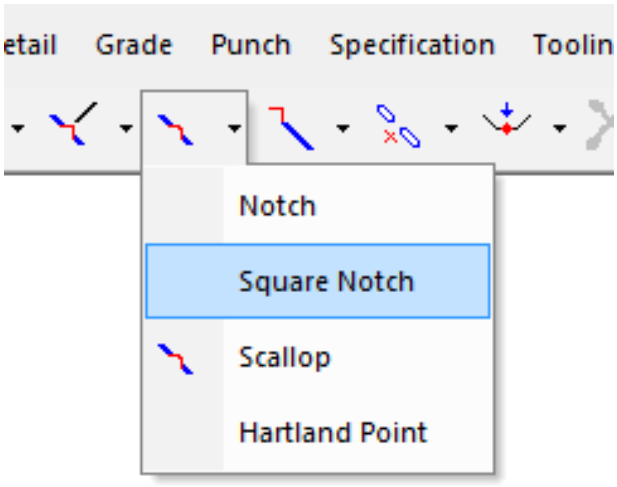
Single stab

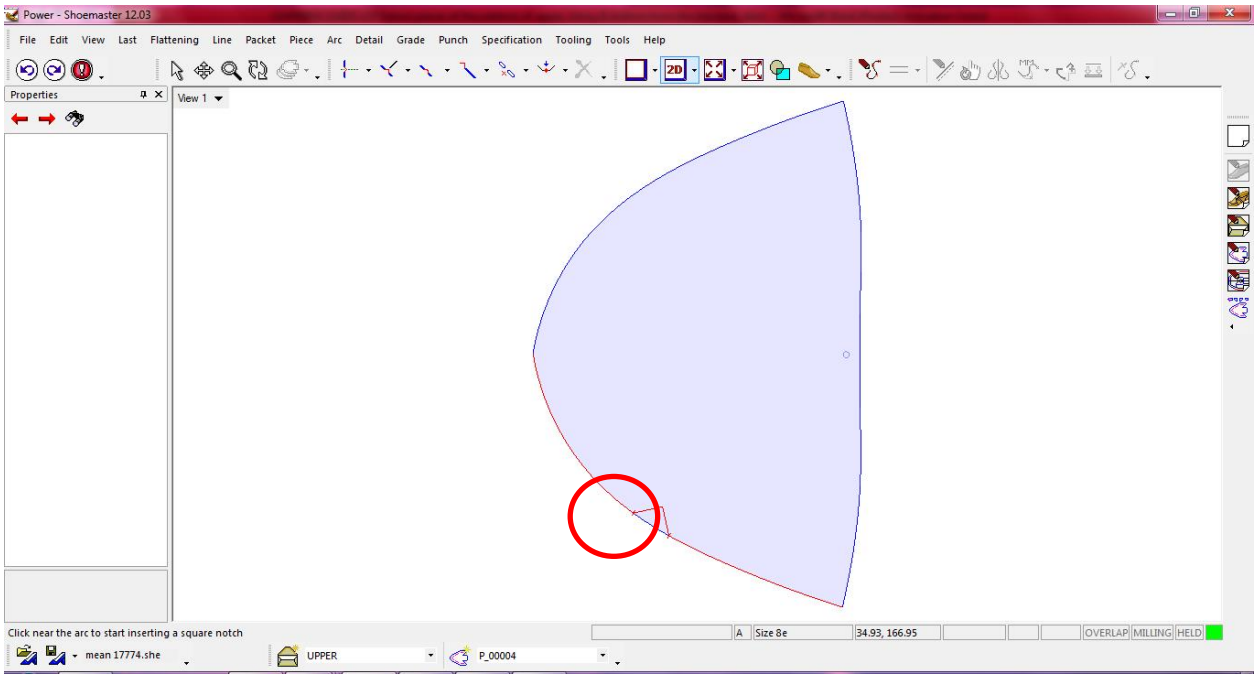
As above this function will allow you to add a stab. However, on this occasion the stab does not have to be attached to an arc. You are prompted to '*Point to the stab position'* and wherever you click a new stab will be added.

Please note that although the stab is not attached to an arc, a new 'hidden' line is created where the stab is on which stab is placed. The example above shows where stabs have been added into a piece and the line is not visible.

Square notch

A square notch is bigger than the default notch and has an angle of 90 degrees. In the example the smaller notch is the default notch and the bigger the square notch. When selected, you will be prompted to '*Click near the arc to start inserting a square notch'*.

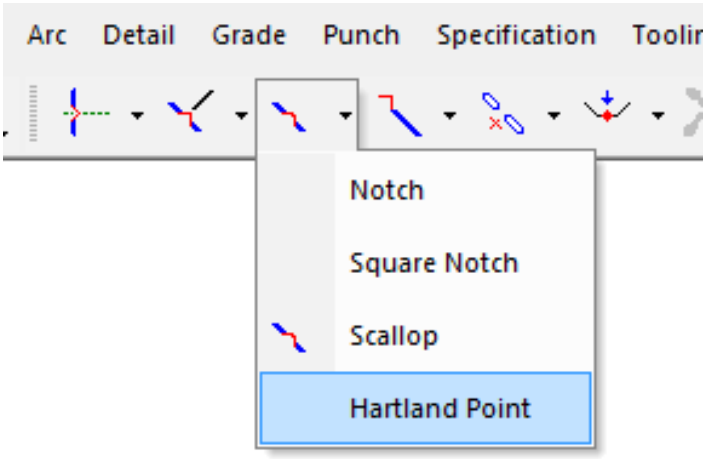


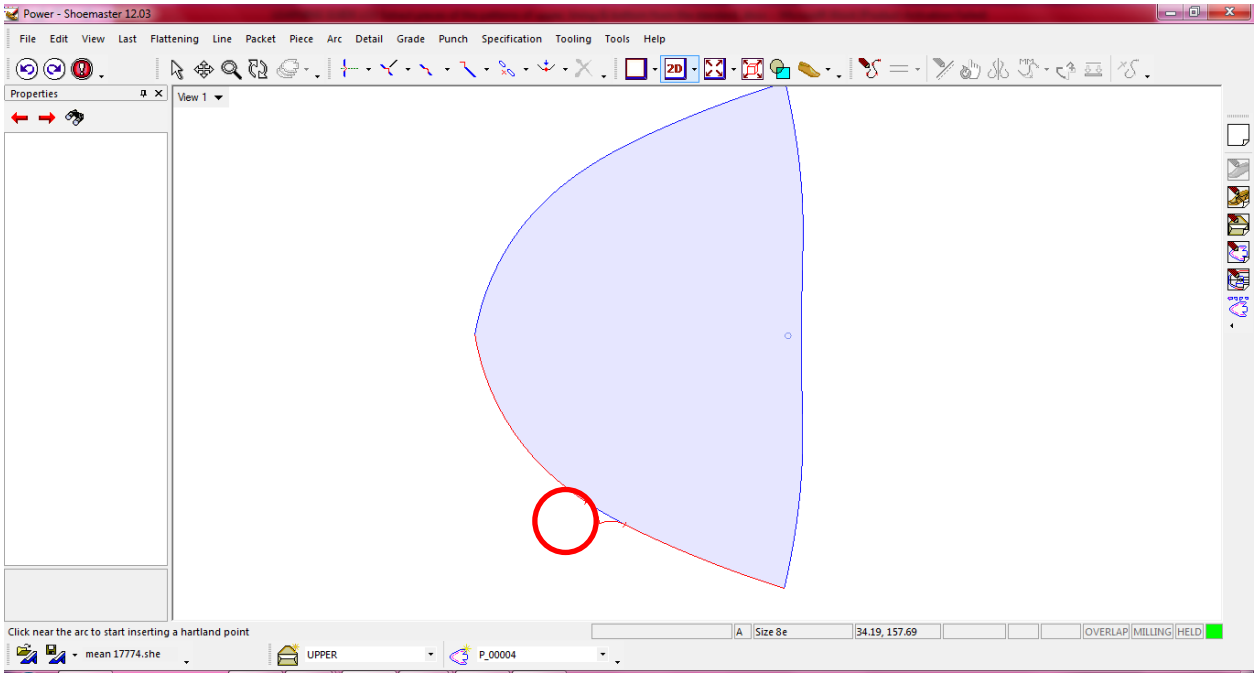


This places a square notch on the arc and you are able to slide it to the required position and attach by clicking the mouse

Hartland point

A Hartland point is another form of notch and can be added using the above options. When selected, you will be prompted to '*Click near the arc to start inserting a Hartland Point'*. This places a Hartland Point on the arc and you are able to slide it to the required position and attach by clicking the mouse.



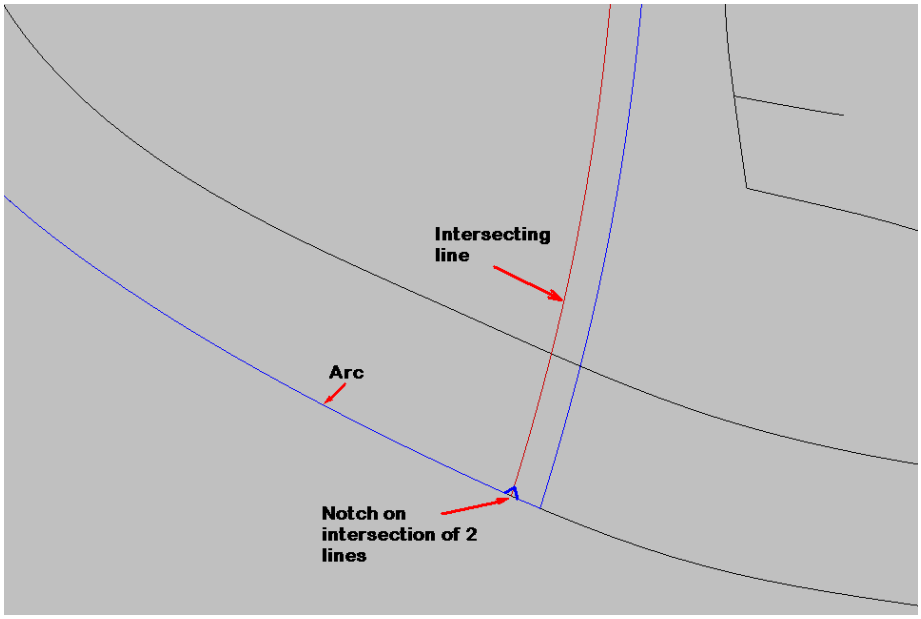


Adding an intersecting notch

The following options will place a chosen detail on an arc at a point where another line intersects. All options work in the same way.

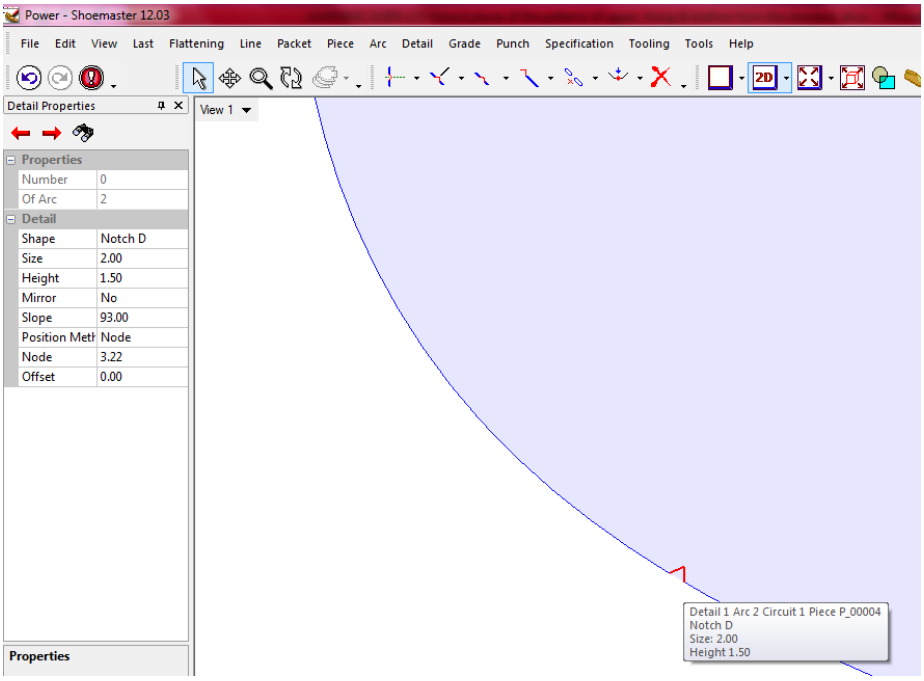
Procedure:

1. select the piece that you wish to apply the detail to
2. and then the function.
3. You are first prompted to *'select the arc'* and then
4. *'Select the intersecting line'*.
5. When you have selected both, a new detail will be created on the arc, at the intersection of the style line.



Modifying details

Once applied to a style, details can be modified by changing the value. Values can be change by activating the property window of detail.

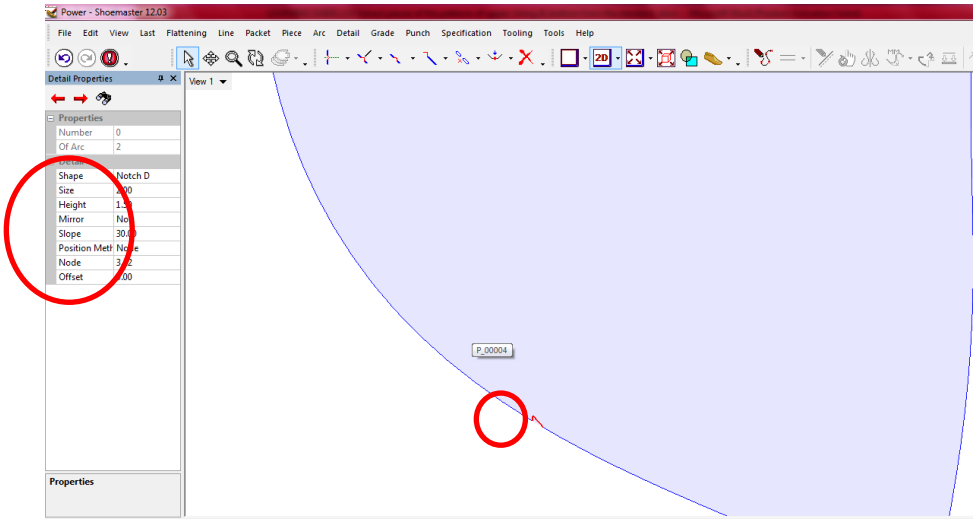


Slope

This function can amend the 'slope' of the default notch and change its appearance. You will be prompted to enter a figure in the dialog box and then select the notch.

Please note that the center of the default notch lie at 90 degrees to the line

The figure that you type, i.e. 30 will represent the new angle at which the notch is presented on the line.



Slope on line

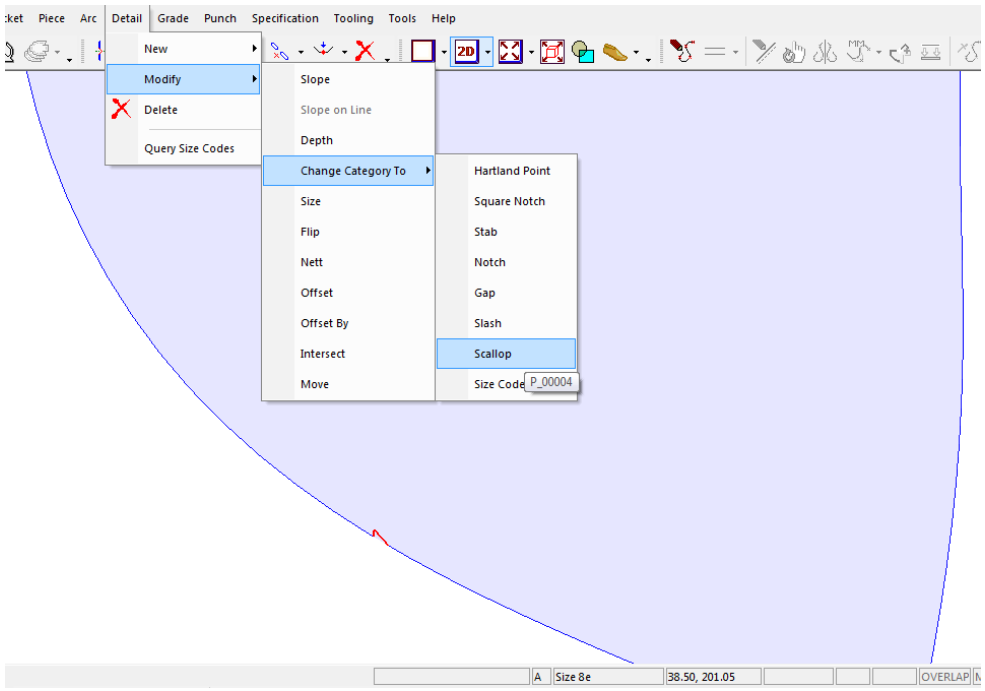
Using the same principle as above this will slope the notch according to an intersecting line.

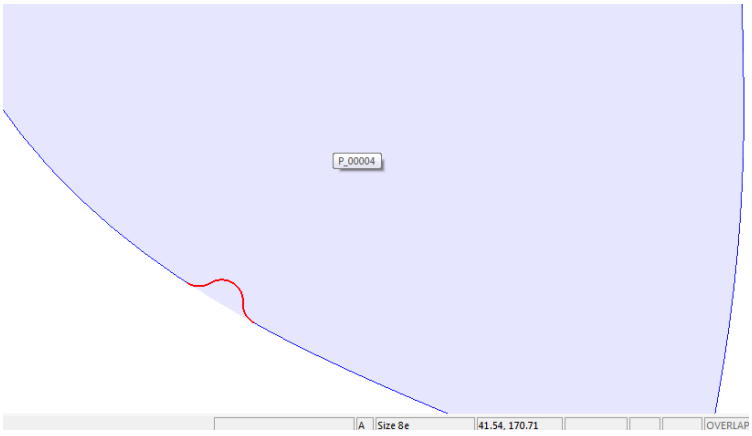
You will be prompted to *'Point to the notches required to lie on the intersecting line'*

Depth

Selecting "Depth" will produce a dialog prompting you to enter a new scallop depth.You will then be prompted to point to the scallop you want to have the new depth which will then apply the change.

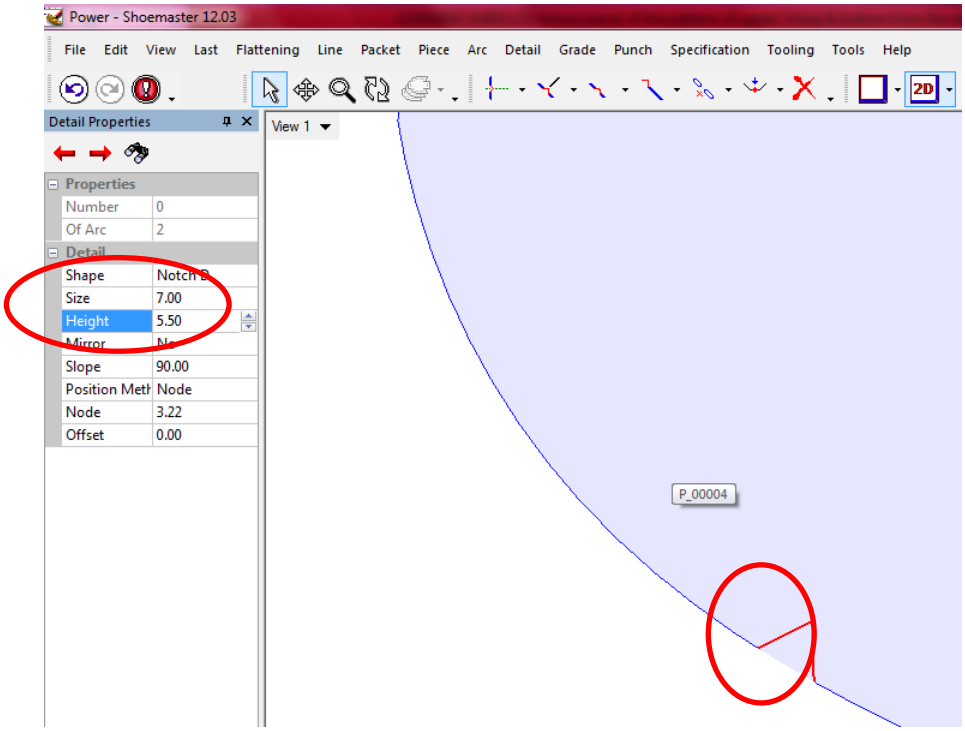
Change category to





This function will allow you to select a current detail and change its category as the above shows.

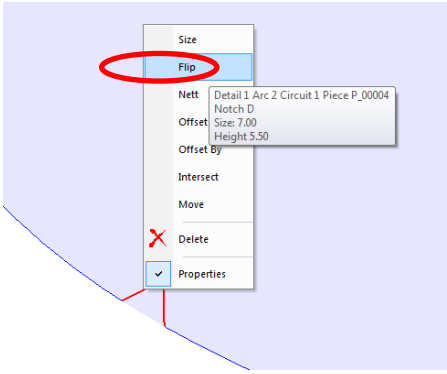
When adding details the default size will always be used. If you wish to change the size you can do so by first selecting the detail and then choosing Size. The following dialog is produced.



The detail that have selected will then update to your chosen size.

Flip

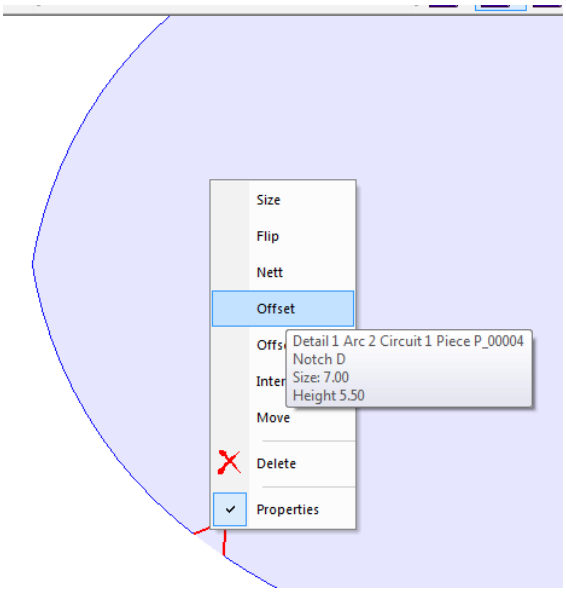
If you wish to change the direction of a detail, for example change it from an inside notch to an outside, you are able to do so by selecting flip.

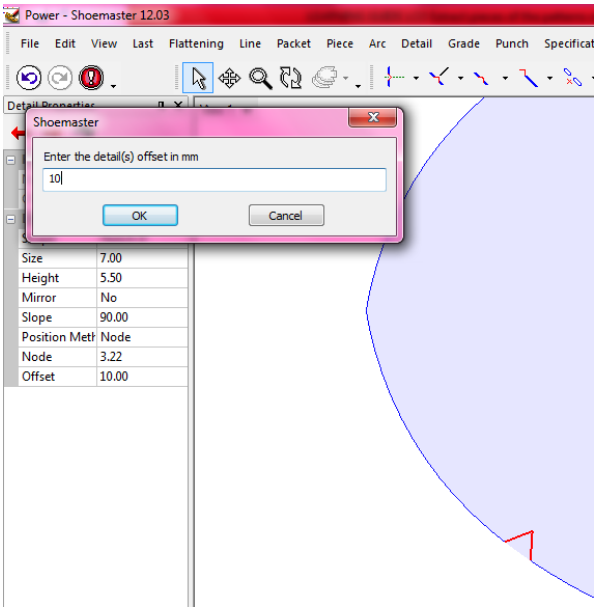


Once selected you are simply prompted to *'Point to the details to flip'*.

Offset

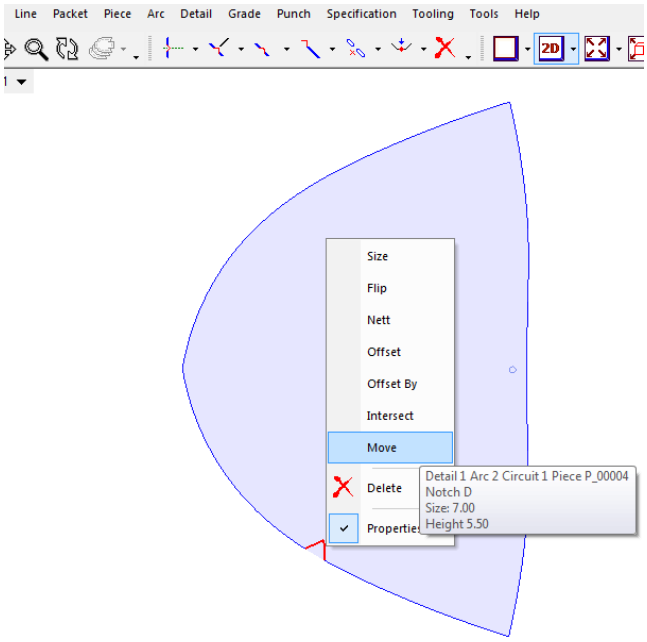
Again this is used on an intersecting detail and moves the detail by a specific amount along the arc. Select the detail first and then the command. When selected a dialog is produced requiring you to enter a value. The detail is then moved accordingly.

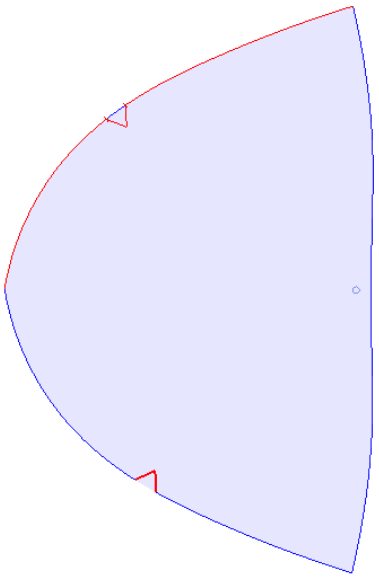




Move

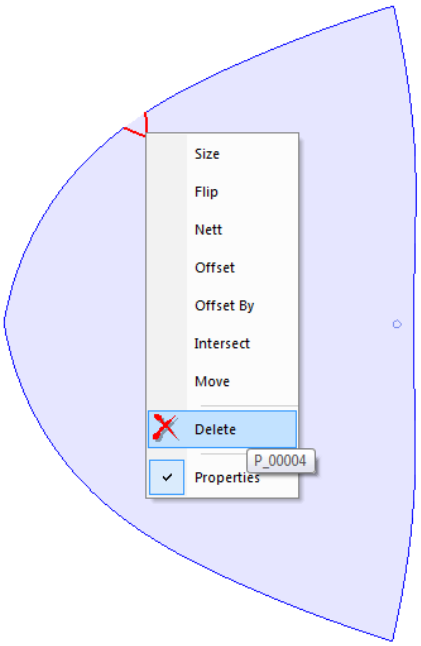
This function allows you to move a detail from one position to another. Select the detail first and then the function. You will be prompted to *'Point to the detail(s) and new position(s) alternately'* and can then click and place the detail as required.





Deleting details

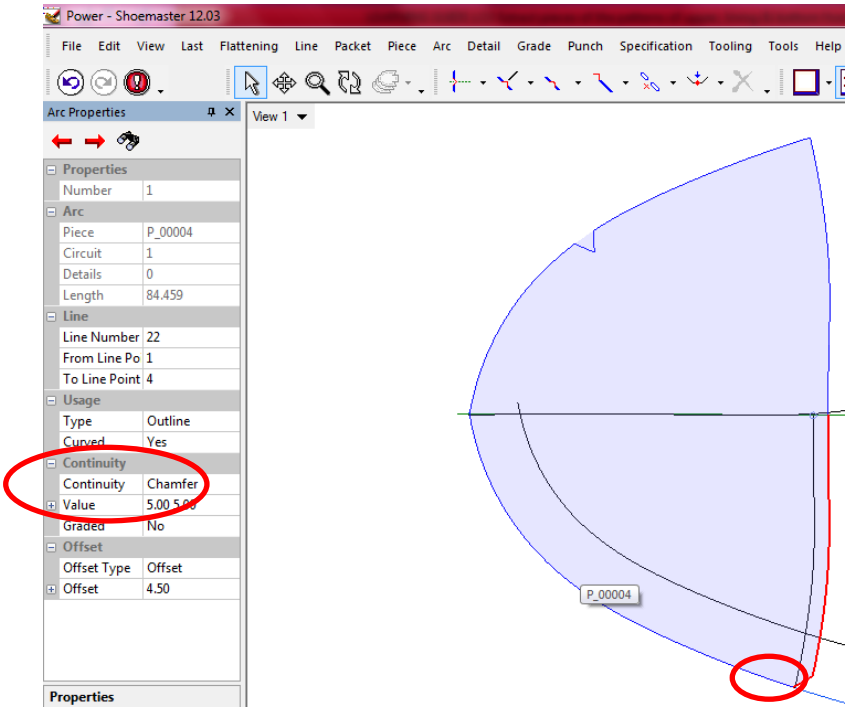
First select the detail you wish you delete and then the function. This will automatically delete the detail you have selected.

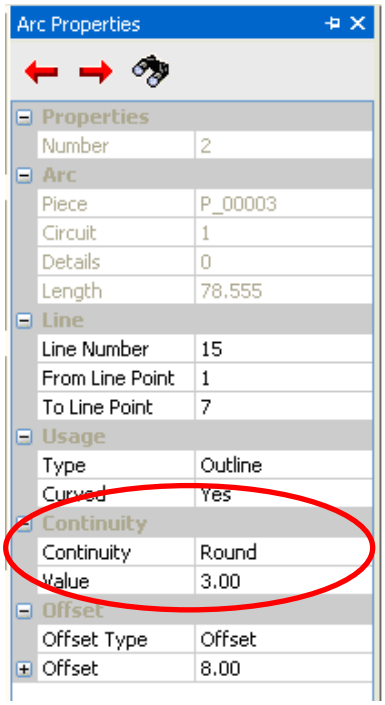


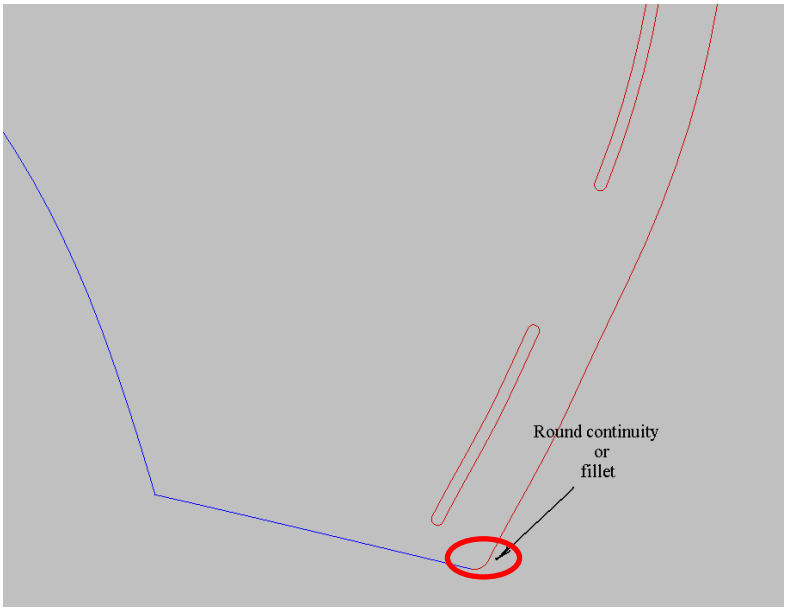
Adding Chamfers, fillets

Procedure:

1. Select the **Arc** on which you want to have a chamfer
2. Select **Arc Properties**
3. Click on **Continuity**
4. Select **Chamfer** (or Round)
5. You will have a **default** value added.
6. By selecting the Arc properties, you can check and change the value of the chamfer if necessary.

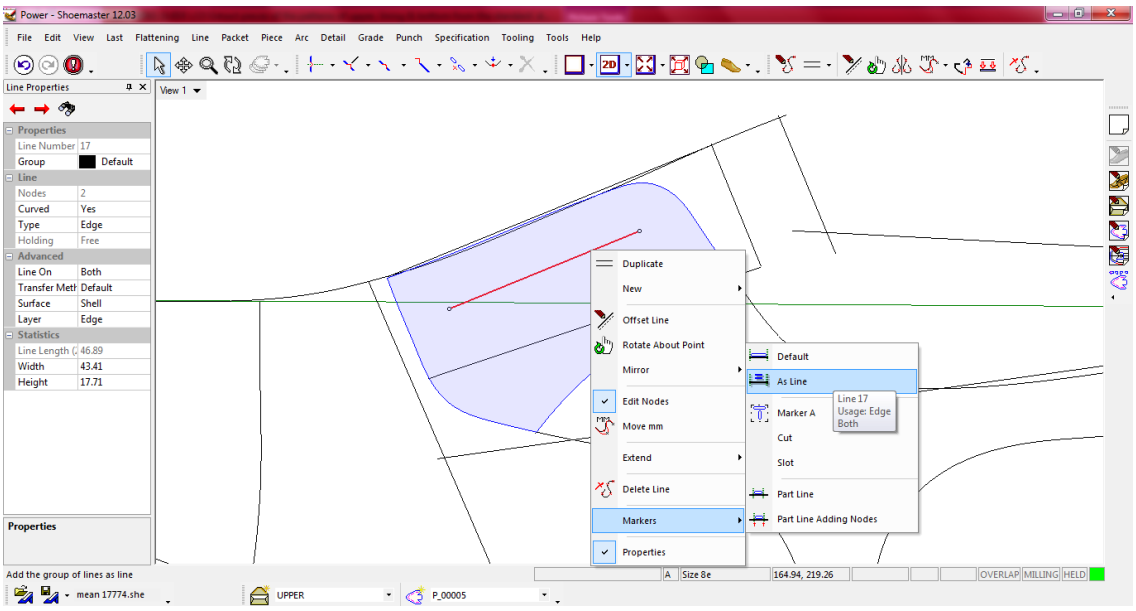






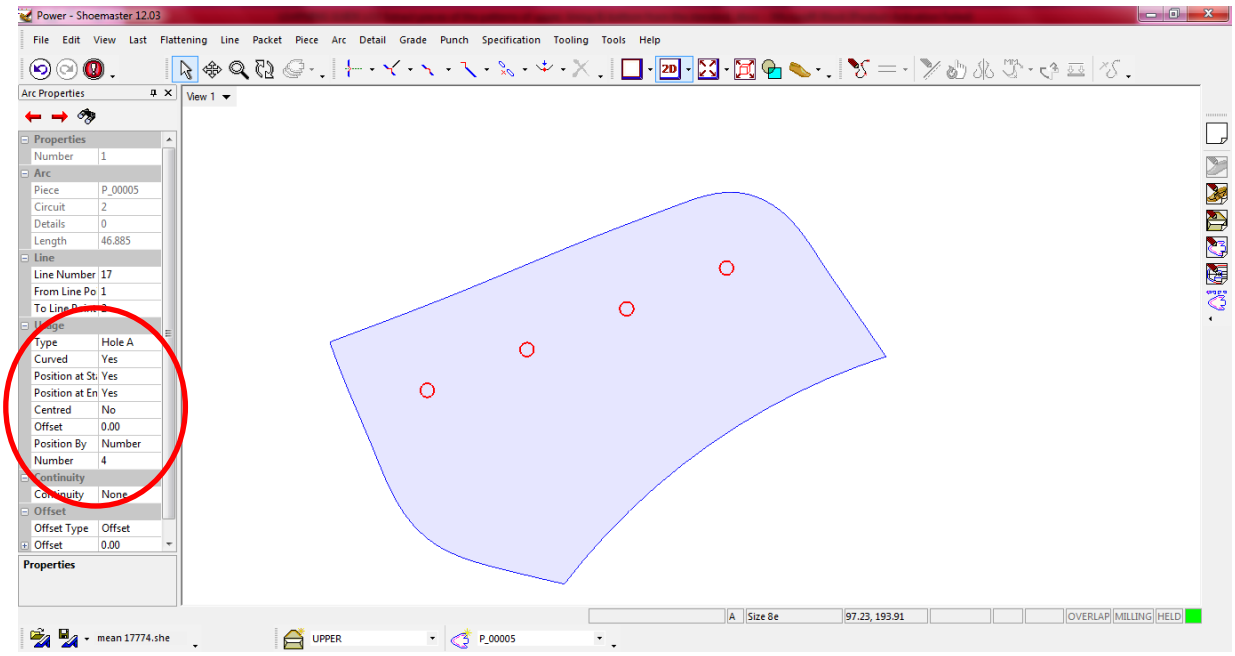
Adding holes to pieces

As you have seen before during the stitch marker definition, you can change the lines once you have added them to the individual pieces into different “technical” lines. Now, we are going to work with holes.



Procedure:

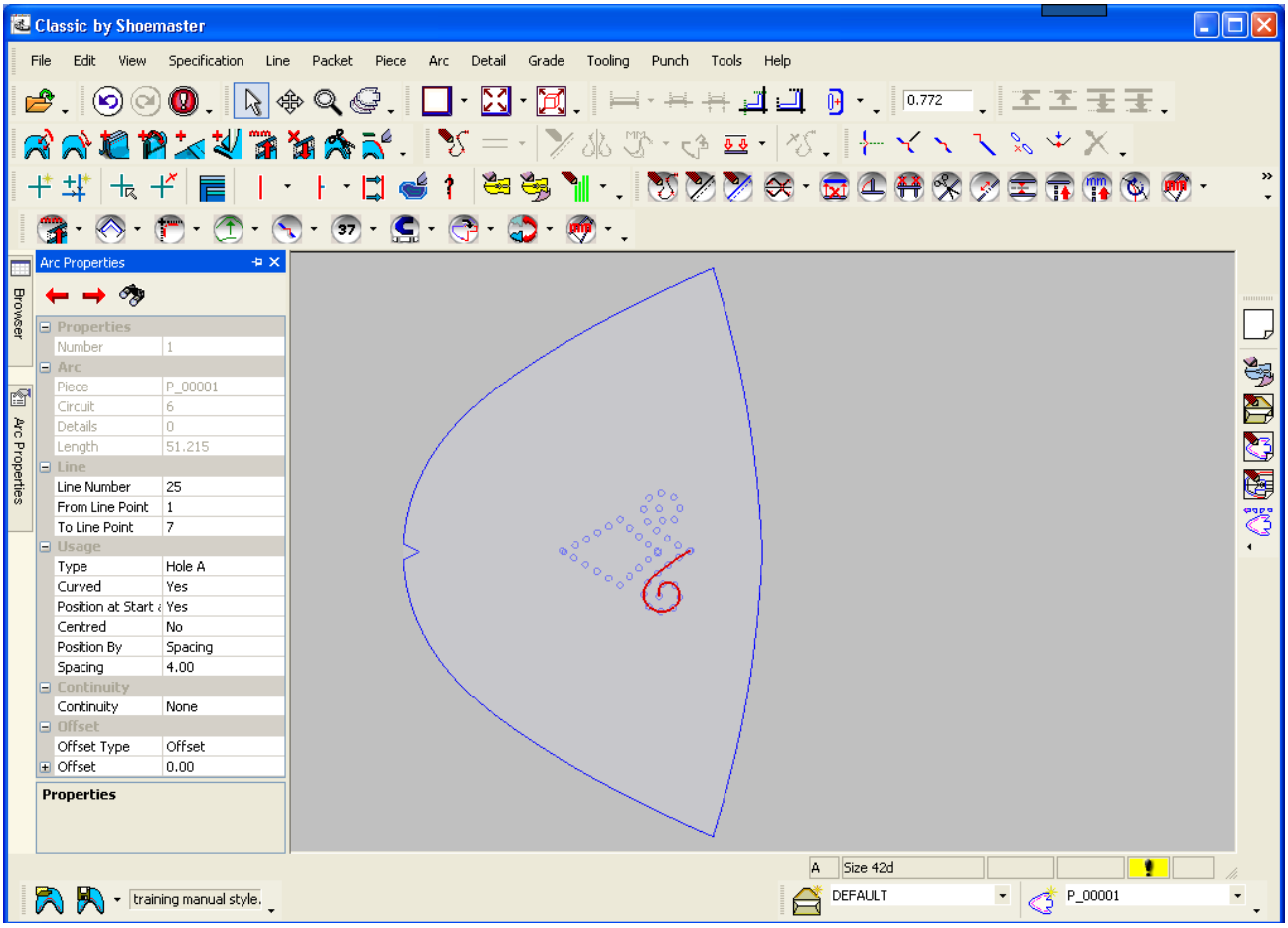
1. You will need to **Draw** the Style on screen.
2. Firstly, click on a **Piece** to select it. This will now draw the current piece on top of the style.
3. Next you must click on the **style line** that is to provide the marker,
4. Right click to shown the following options
5. Select **As Line**
6. Then select the **Line**
7. And turn on the **Arc Properties**
8. Click on **Type**
9. Select **Hole A**
10. Select **Number**
11. And **set the number** (e.g.4) for the holes as per your requirement for eyelets.

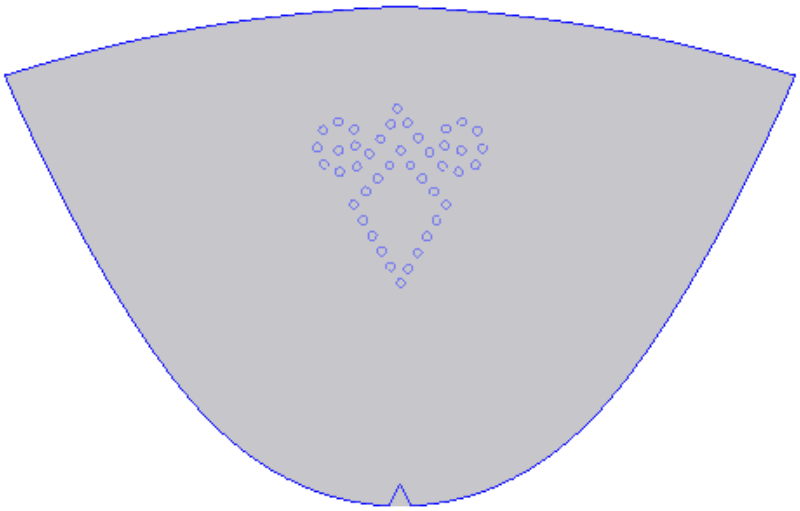


This function can also be used for making decorative holes on a toecap, wing cap, etc.

Procedure:

1. You will need to **Draw** the Style on screen.
2. First, click on a **Piece** to select it. This will now draw the current piece on top of the style.
3. Next you must click on the **style line** that is to provide the marker. In this case several lines need to be selected by holding down the Ctrl key and selecting the lines individually.
4. Right click and select **Markers**
5. Select **As Line**
6. Then select the **Line** one after the other
7. And turn on the **Arc Properties**
8. Click on **Type**
9. Select **Hole A**
10. Select **Spacing**
11. And **set the spacing you require** (e.g.4) for the holes as seen below in the example.

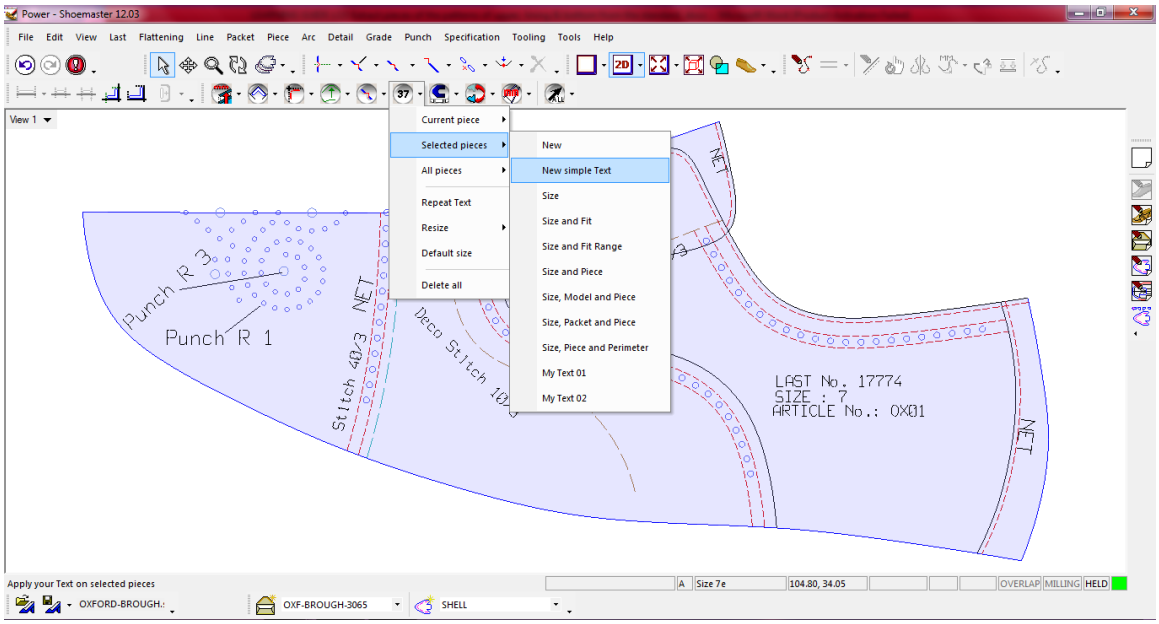

Classic by Shoemaster
File Edit View Specification Line Packet Piece Arc Detail Grade Tooling Punch Tools Help
Arc Properties
Properties
Number 1
Arc
Piece P_00001
Circuit 6
Details 0
Length 51.215
Line
Line Number 25
From Line Point 1
To Line Point 7
Usage
Type Hole A
Curved Yes
Position at Start Yes
Centred No
Position By Spacing
Spacing 4.00
Continuity
Continuity None
Offset
Offset Type Offset
Offset 0.00
Properties
Browser
Arc Properties
training manual style.
Size 42d
DEFAULT
P_00001



The result

Adding information on the pattern/piece

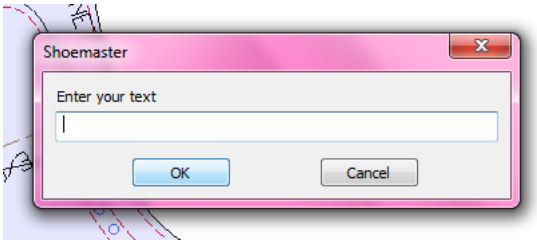
With this option user can add the text detail on the pattern/piece. Detail can be information about the margin or information about the area of pattern or any customizer information, which needs to go on the pattern to the prototype developer or production.



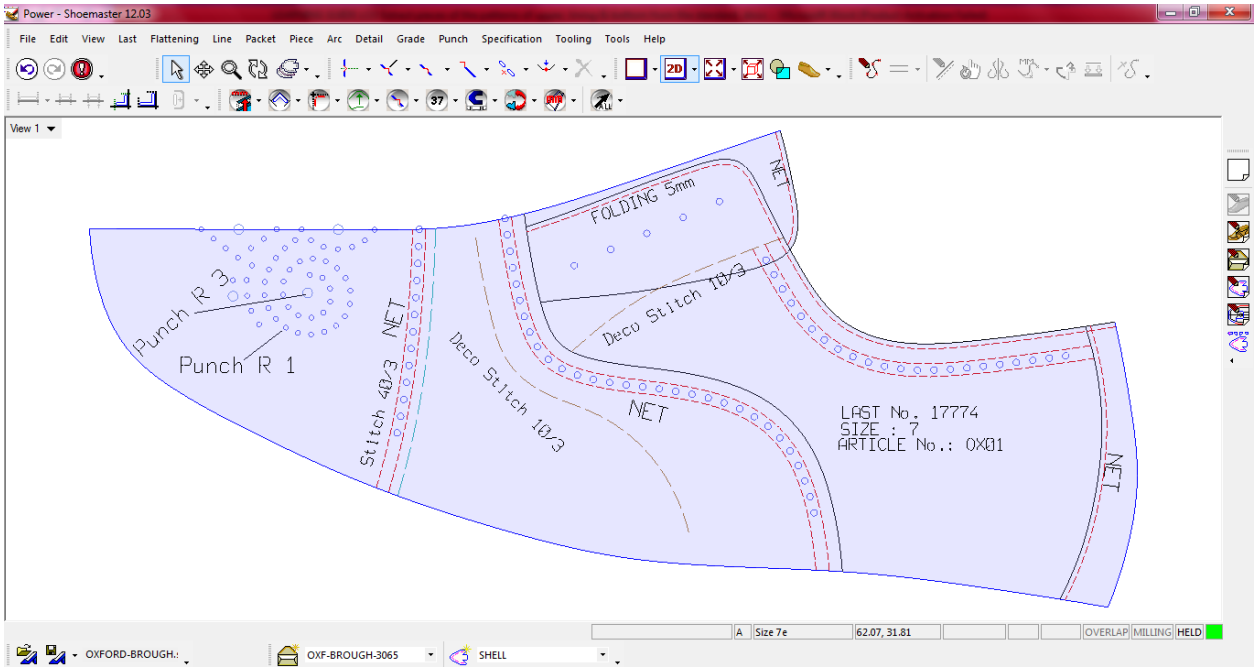
To add simple text procedure is as below”

Procedure:

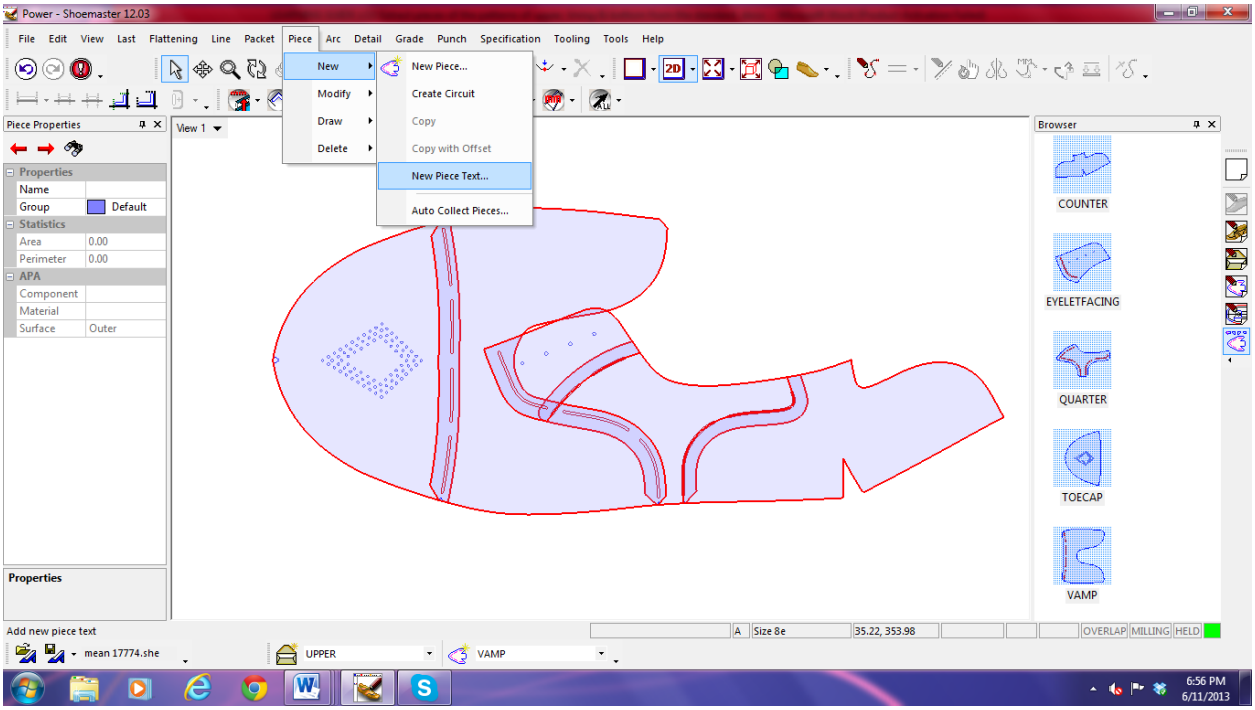
1. You need to **Draw** the piece on screen.
2. First, click on a **Piece** to select it.
3. Next you must click on the **Text sub menu** that is under plugin pattern icon group.
4. Go to selected pieces.
5. A window pop up



Enter the text your wants to add

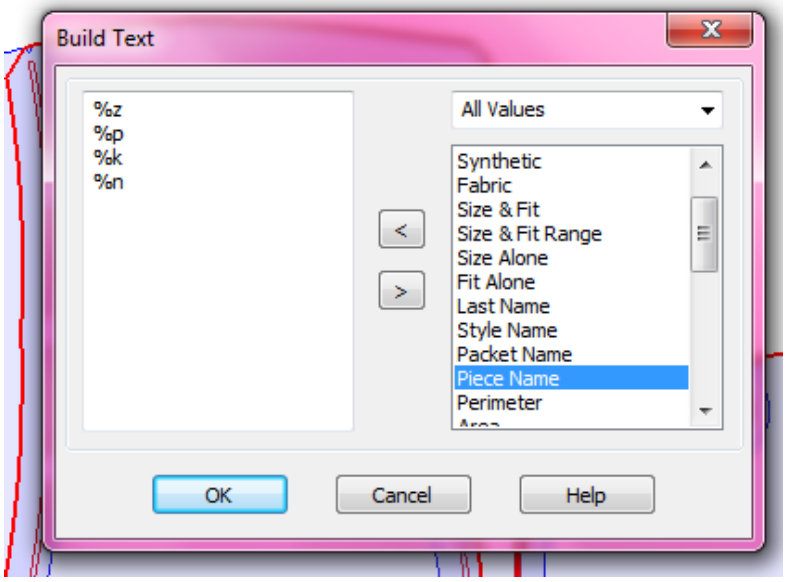


Second Procedure to enter the text information on all the patterns togather:

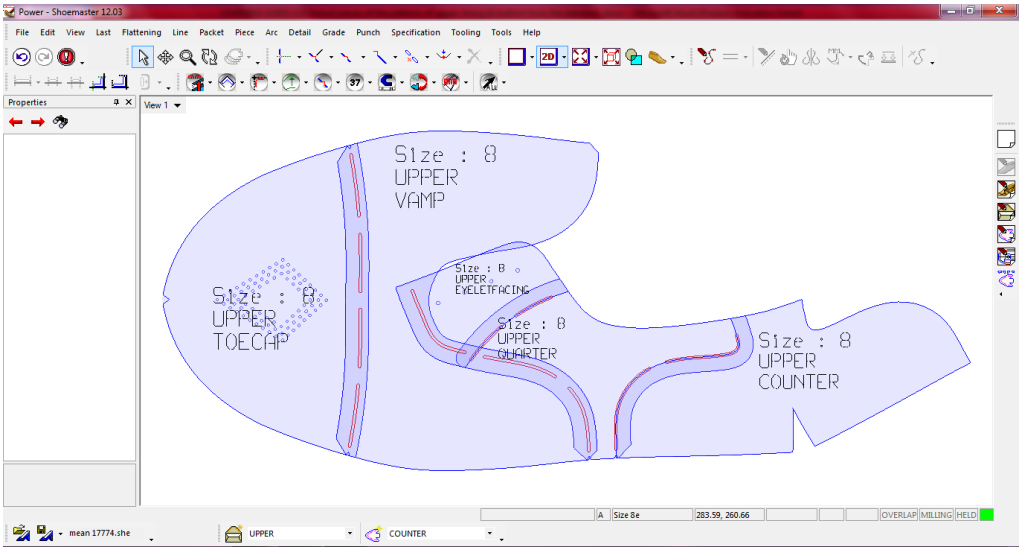


Procedure:

1. You need to open browser window to view all the piece on screen.
2. Select all the patterns by
3. Next you must click on the **Piece drop down menu, Select new from the list, Select New Piece Text.**



4. A window pops up Build Text as shown above, right hand side type of information is list you are required to select the information you want to put on your patterns.



The information is on the patterns.

WORKING WITH PUNCHES

Using Punches

Designing your punches means to *generate a database* that can be used at any time during the pattern engineering process. This database can be up-dated continuously; new punches can be added to it which makes it a useful tool for working. Please note, that to make your work as easy as possible, it is necessary to create the punches database accurately. The shapes then can be used with varying sizes, with a combination of different punch shapes, the values can be changed for punches as well as for the different spacing. Particular punches can be positioned at different angles (orientation) thus giving a different “result”.

The process of working with punches consists of the following steps:

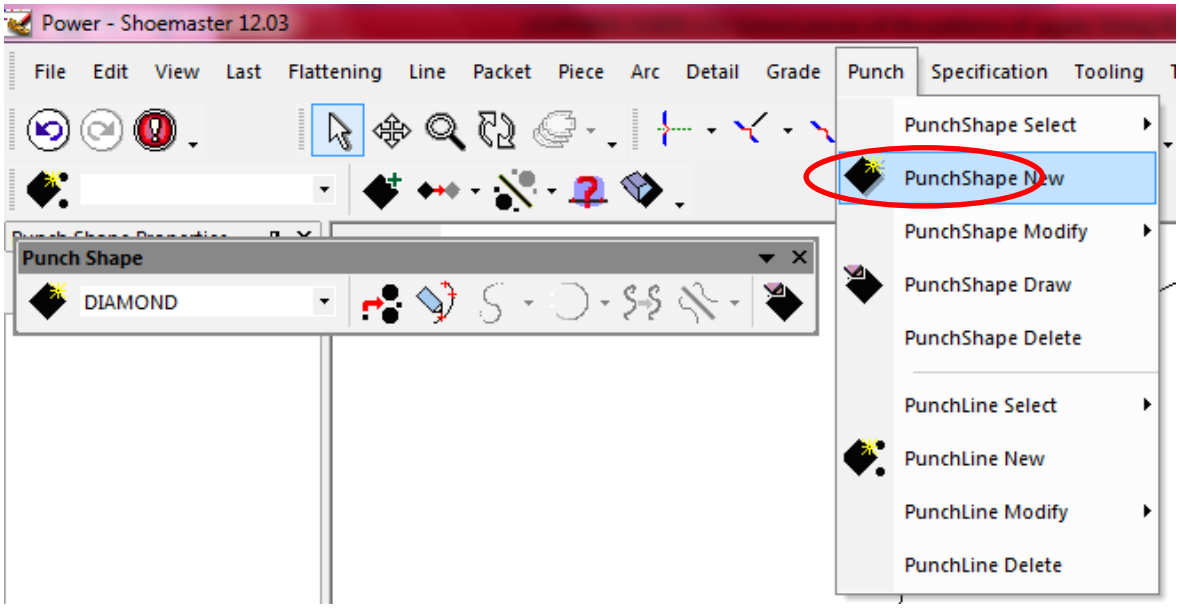
- Design your punch shapes
- Design your punch lines
- Apply the punches to your own style on the lines required

Creating Punch Shapes

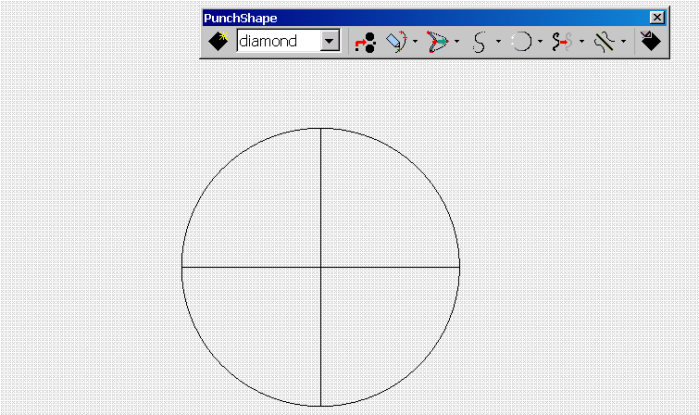
At the very beginning you must generate (design) punches, which then have to be saved as a **punch file.**

Procedure:

1. *Select* ***punch shape new (icon or menu)***
2. *Enter* **Punch name (example: diamond)**

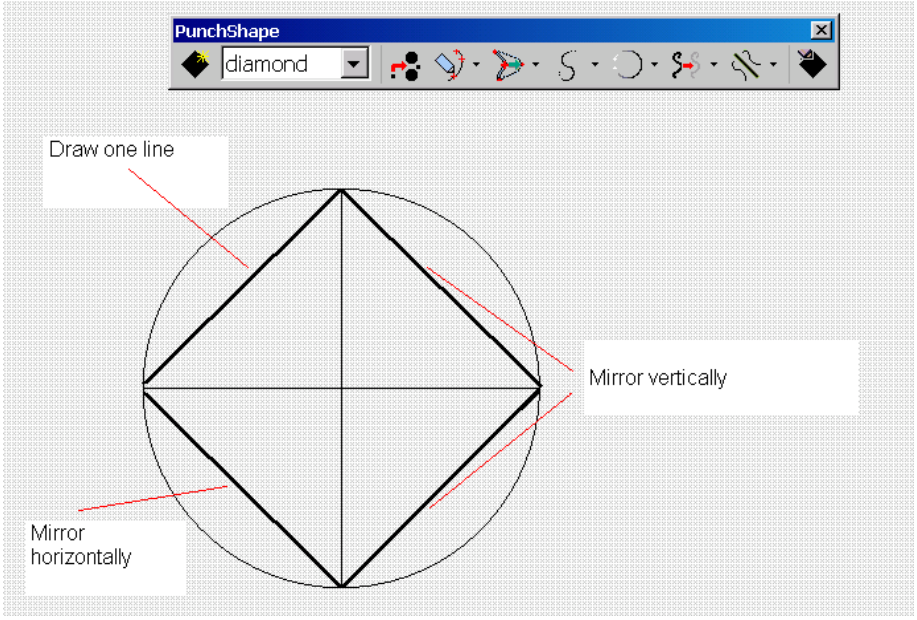


3. The following “working area” will appear:



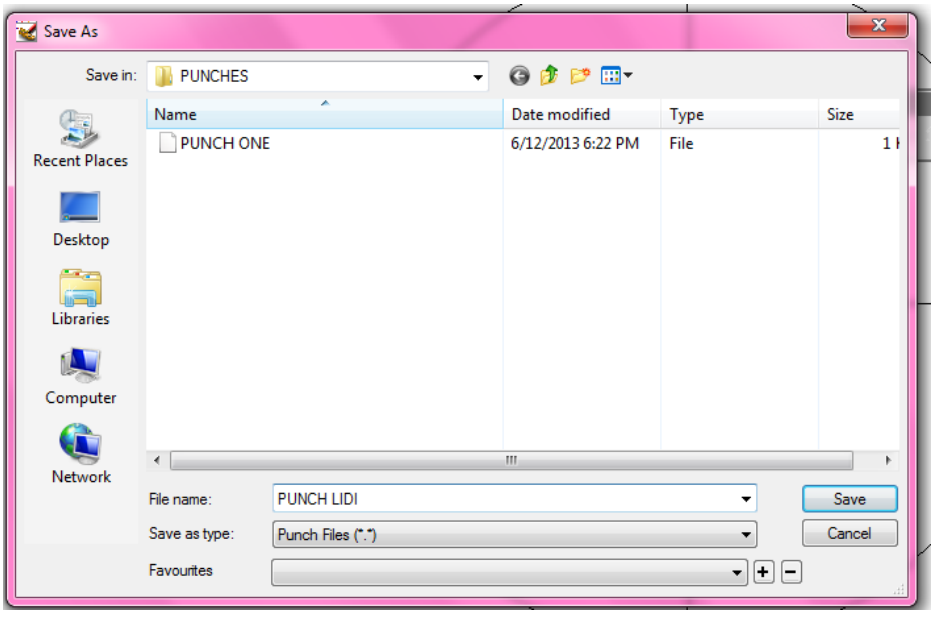
4. *Using* the above shown menu items (**add existing punch shape, draw 2D line, move nodes**, etc.) you can design your own shape.
5. If you are drawing a symmetrical pattern, only one half or one fourth needs to be designed (depending on the shape) and the lines can be mirrored to achieve the best result.

One example:



Saving Punch File

*Save **Punch file*** by selecting ***File*, Save as, Punch file (example: Punch LIDI)** in the *Punches* folder as shown below:



Having saved the first punch shape in the Punch file, you can carry on designing as many punch shapes as you wish, giving the shapes individual names and saving them under the same file name (e.g. PUNCH LIDI), so as to develop a database.

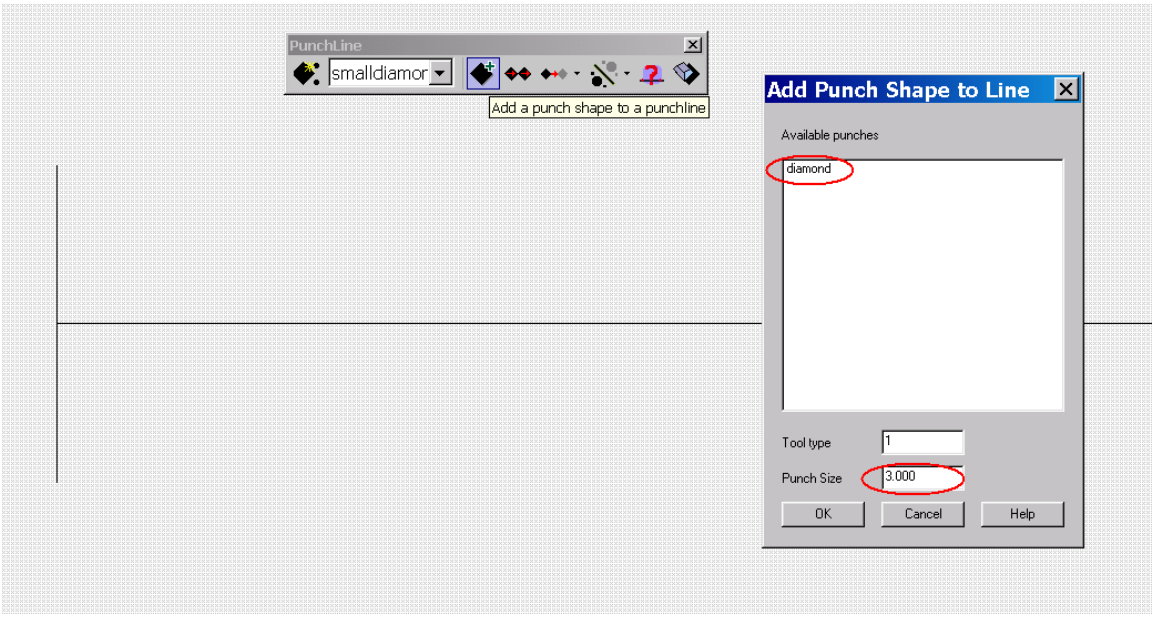
Please note that the design functions used are similar to the ones used in other Shoemaster applications, therefore it is not being described here.

Creating Punch Lines

After designing your punch shapes it is necessary to define how the shapes are to be positioned on a line (the size of the shapes, the distance between them, and the combination of different shapes to make up the *punch line*).

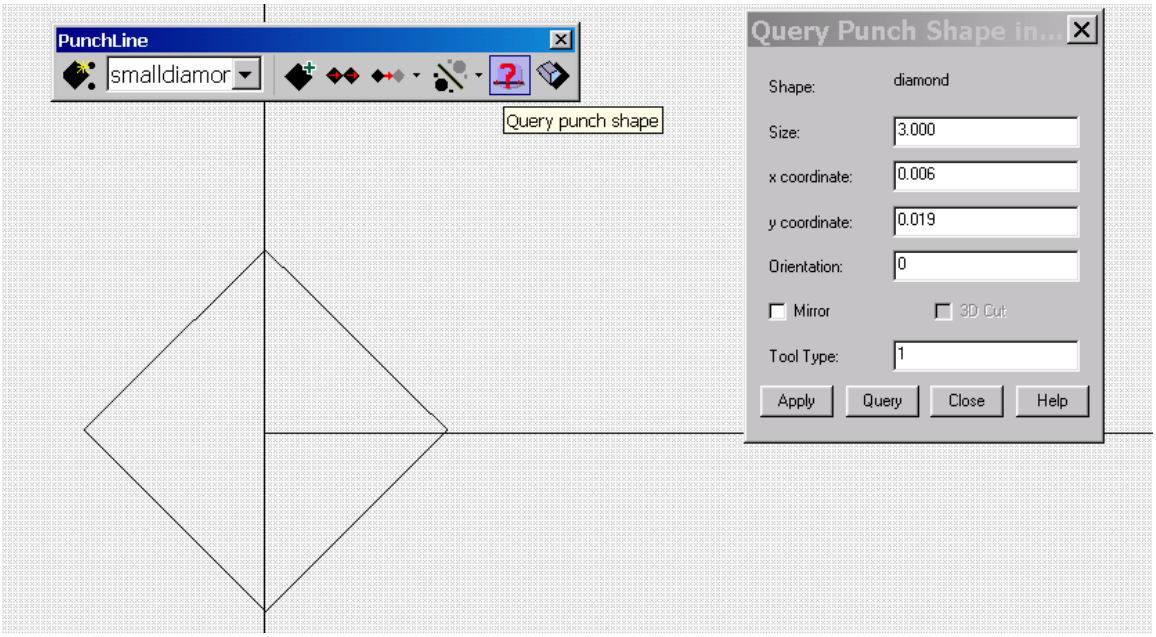
Procedure:

1. *Select* ***Create a new punch line (icon or the menu)***
2. *Enter* **Punch line name (example: smalldiamond)** and the following "working area" appears

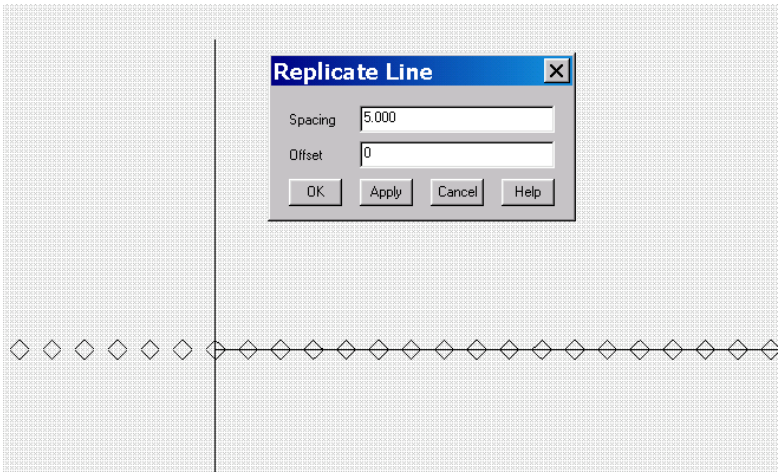


3. *Select* ***Add a punch shape to a punch line (icon or the menu))***
6. *The available* ***Punches*** **(example: diamond)** are shown
7. *Define the* ***punch size***

8. *Position it along the line as shown below*
9. *Select* ***Query punch shape*** to see and correct the x and y coordinates of the punch. You can also adjust the orientation (angle) of the punch as well as the size.



10. When all the details have been set *Select* ***Repeat punch shape (replicate line)*** to see the result.
11. *Select* ***File, Save as,*** and save your punch file under the previous name.



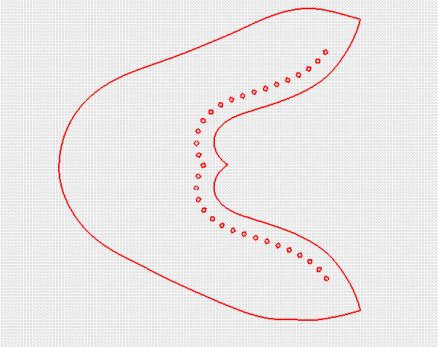
Please note, that the various functions to rotate, mirror, modify punches, etc. are not described here since the principle is the same as in other Shoemaster functions.

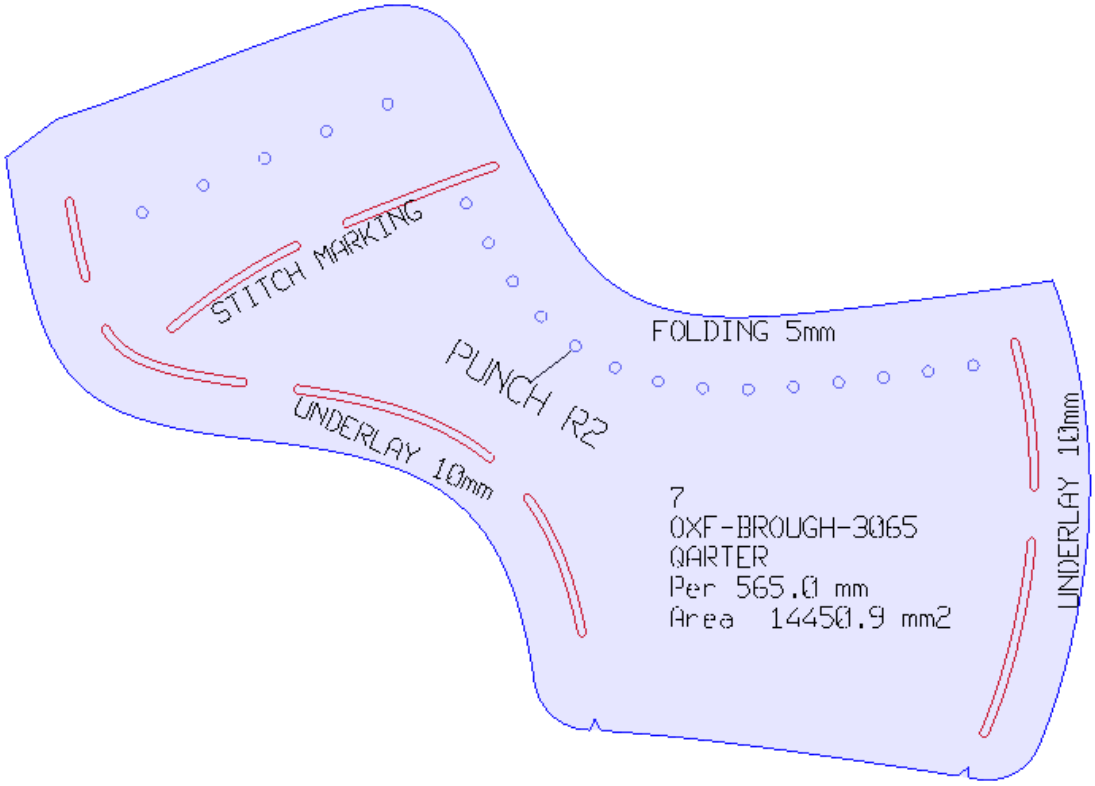
Applying the Punches in Your Own Style

The final step is to apply the defined punch shapes, punch lines to the style of your own.

Procedure:

1. *Create a line or lines you wish to have punches on*
2. Use the functions of adding markers to a piece (**Markers as line, Stringed markers, etc.)**
3. *Use the right mouse button to select* **Properties, Type** and change to **Punch (when several punch lines are available, you have to select the one you wish to use)**
4. Your result should look similar to the one shown below as an example.





Above shown the example of a complete pattern, with all necessary details and information needs to be created by the user.

Self-Check 1	Written Test

Name: _____ Date: _____

(Total marks:-10)

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

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

Test I: Fill in the blanks:

1. What is use of Packet? (Mark 1)
2. What will went wrong if give the space in the name of piece? (Mark 1)
3. What is the correct direction of selection the lines, while making circuit of the piece? (Mark 1)
4. If you have to add the underlay margin of 14mm, which option you will use? (Mark 1)
5. Write the option to double the symmetric half piece? (Mark 1)
6. Write the option to add the margin along with marking slot? (Mark 1)
7. What is use of Gap? (Mark 1)
8. What is stringed marker? (Mark 1)
9. What option is used to add the holes on a pattern? (Mark 1)
10. To apply a punch what option you will use? (Mark 1)

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Test I. Short Answer Questions

1. _____

_____

_____

2. _____

_____

3. _____

_____

4. _____

5. _____

_____

_____

6. _____

_____

7. _____

_____

8. _____

9. _____

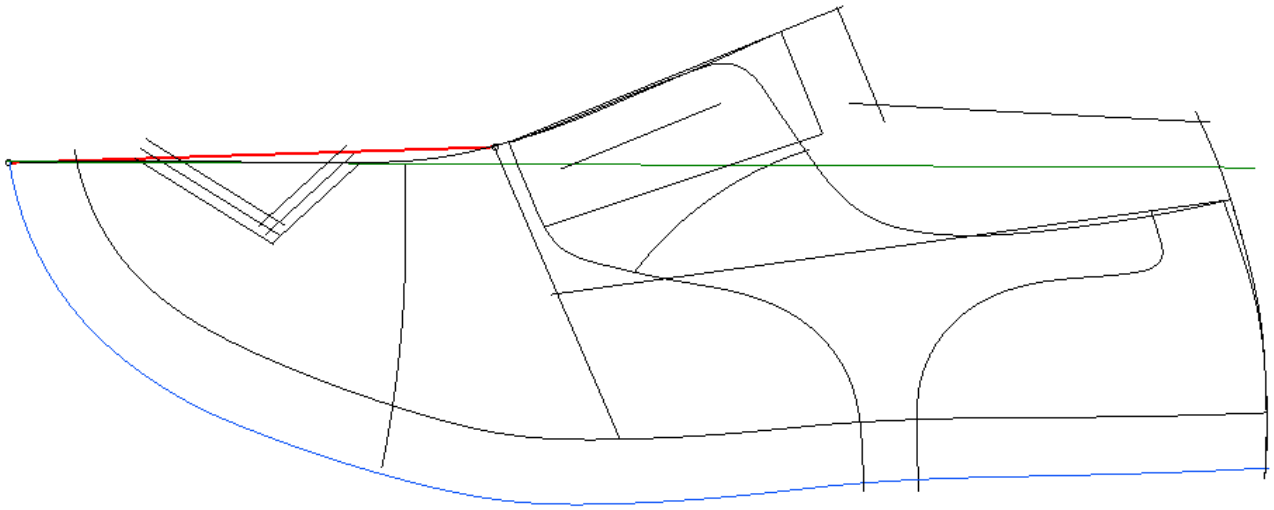
_____

10. _____

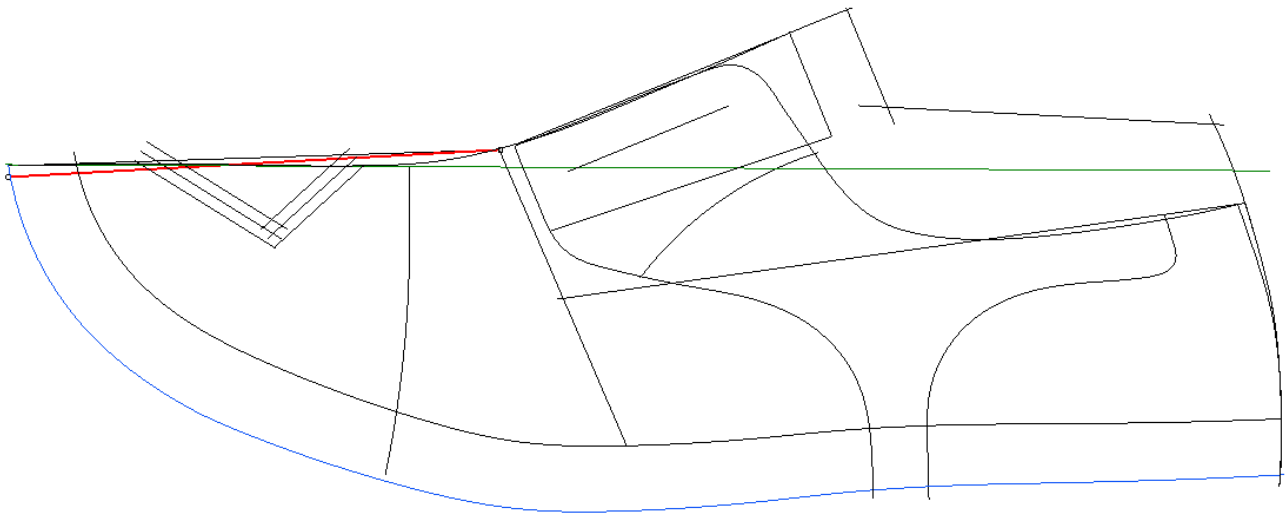
_____

Information Sheet 2- Extracting lining patterns from the standard

For making the lining patterns you are required to draw lining pattern style lines on the existing shell or standard you have developed. When we work on manual method of designing separate standards are developed for upper and lining, while working on cad only style lines are required to drawn on exiting Upper standard, with which you can extract the lining patterns.

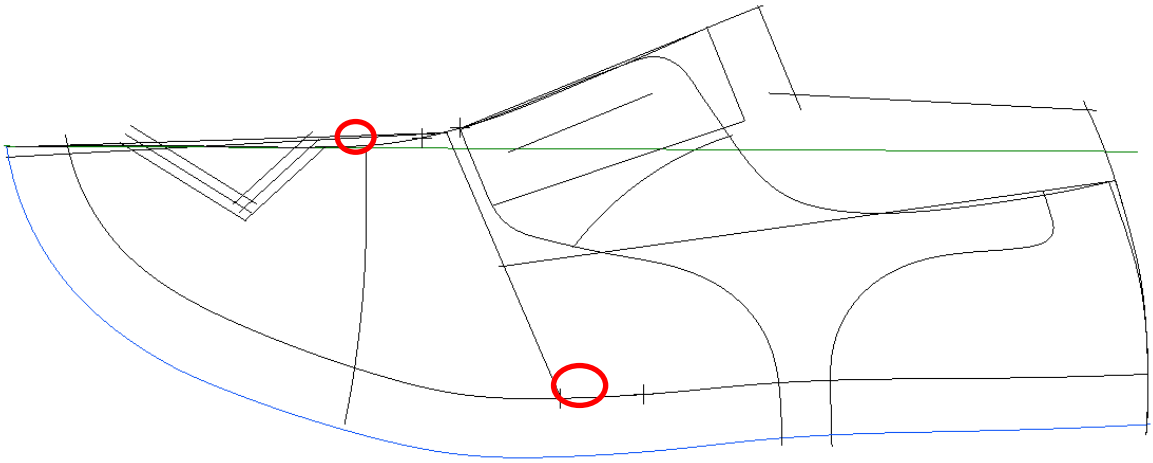


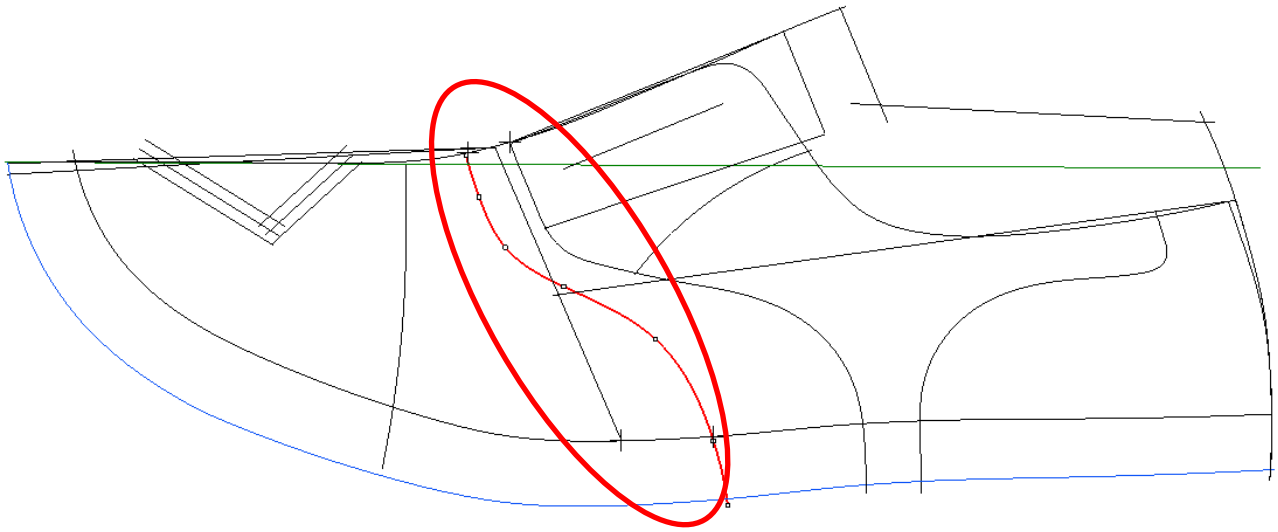
Draw a straight line form Vamp Point to Toe Point.



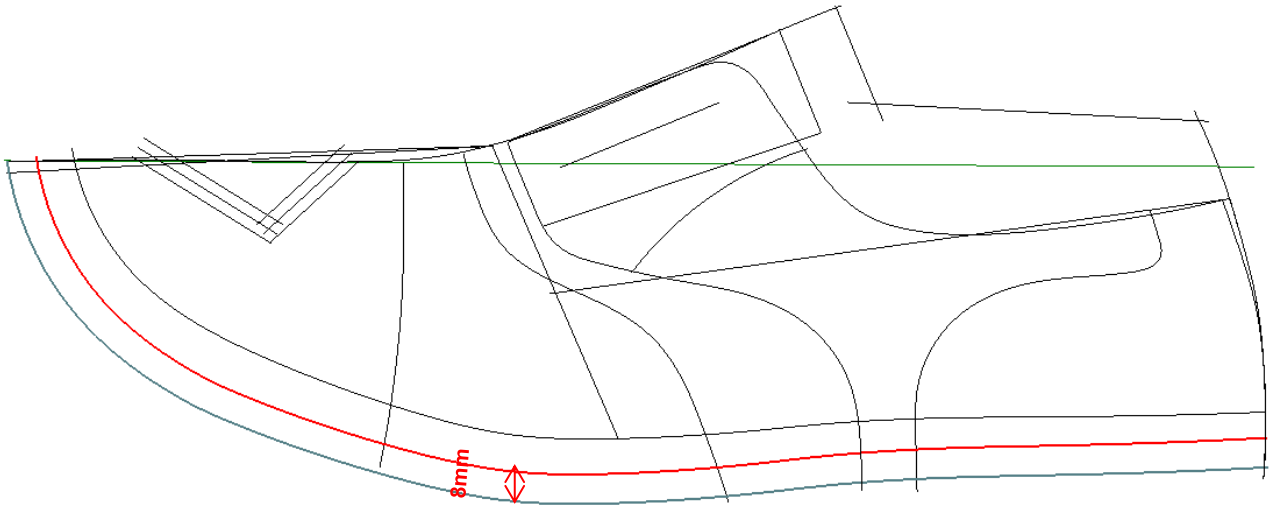
Create offset line from the drawn line with value of 0mm at vamp point and 3 mm at toe point.

Take 12mm from the opening point towards the toe cap. Take another 25mm from the all point backwards towards the heel point and join both points with s curve.

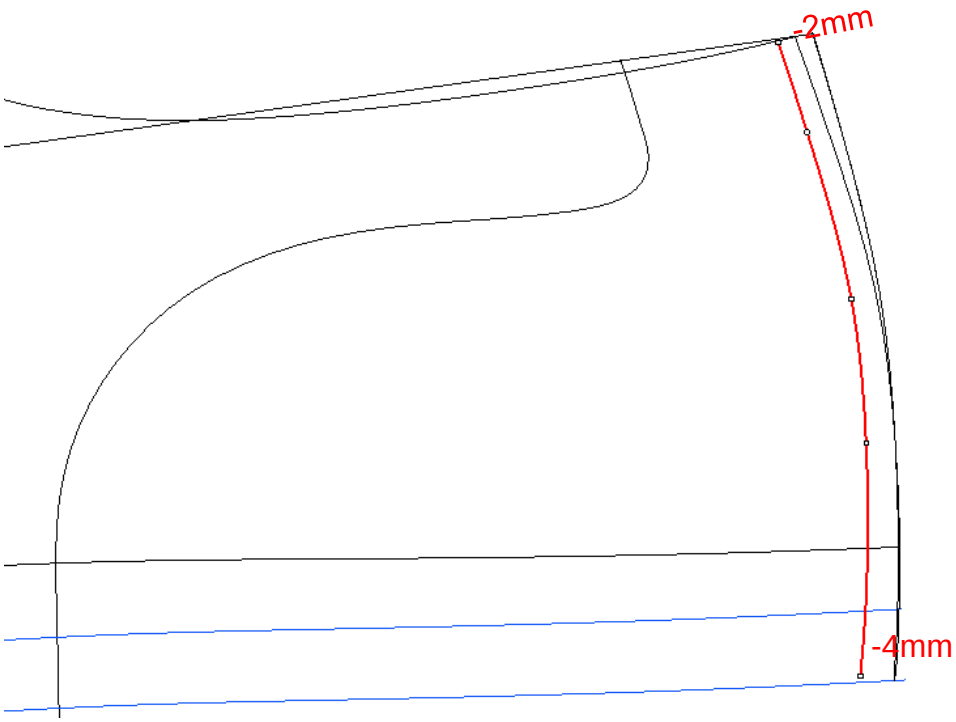




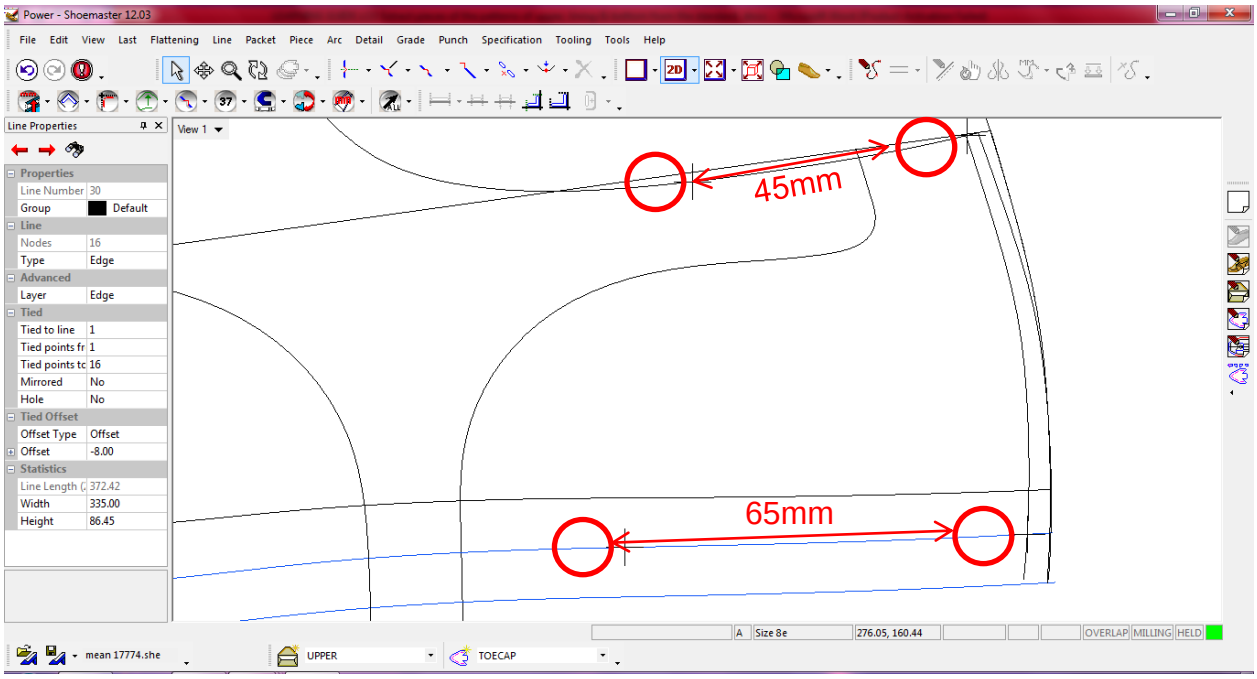
Reduce the lasting allowance 8mm from the upper standard.

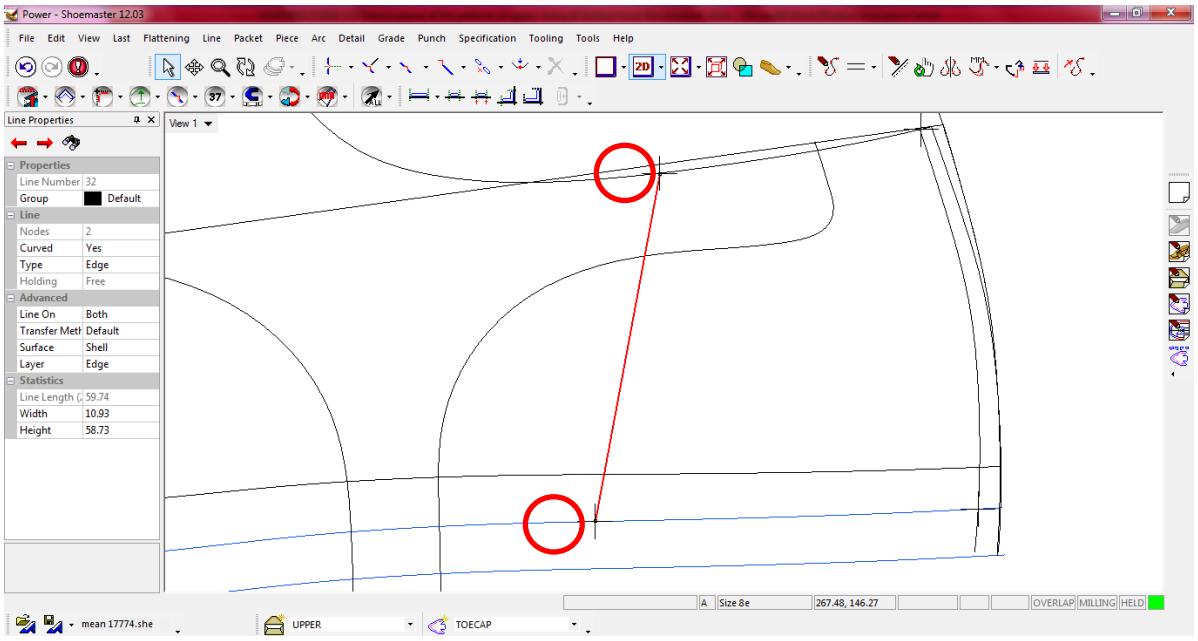


Reduce 2mm at back height point, and reduce 4mm at the bottom (heel point) and create a new offset line inside the standard. This is new back curve line for lining.

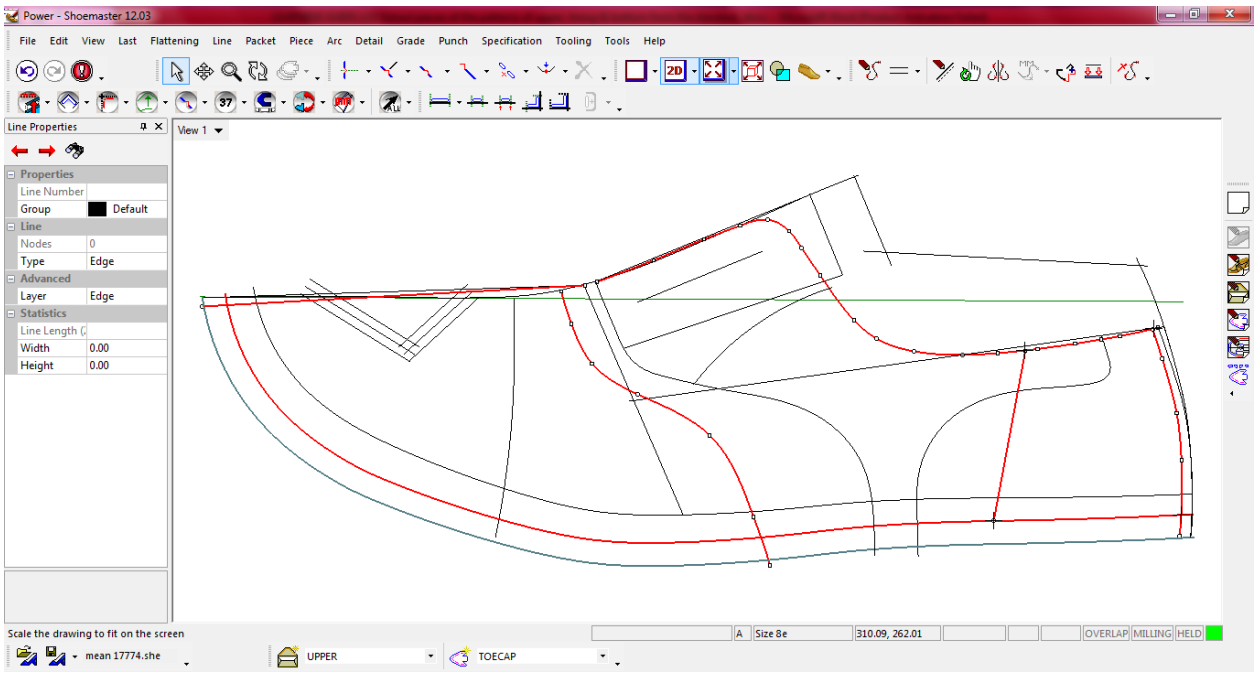


Find 45mm point from the top point of back curve inside the standard and 65mm point from heel point inside the standard.

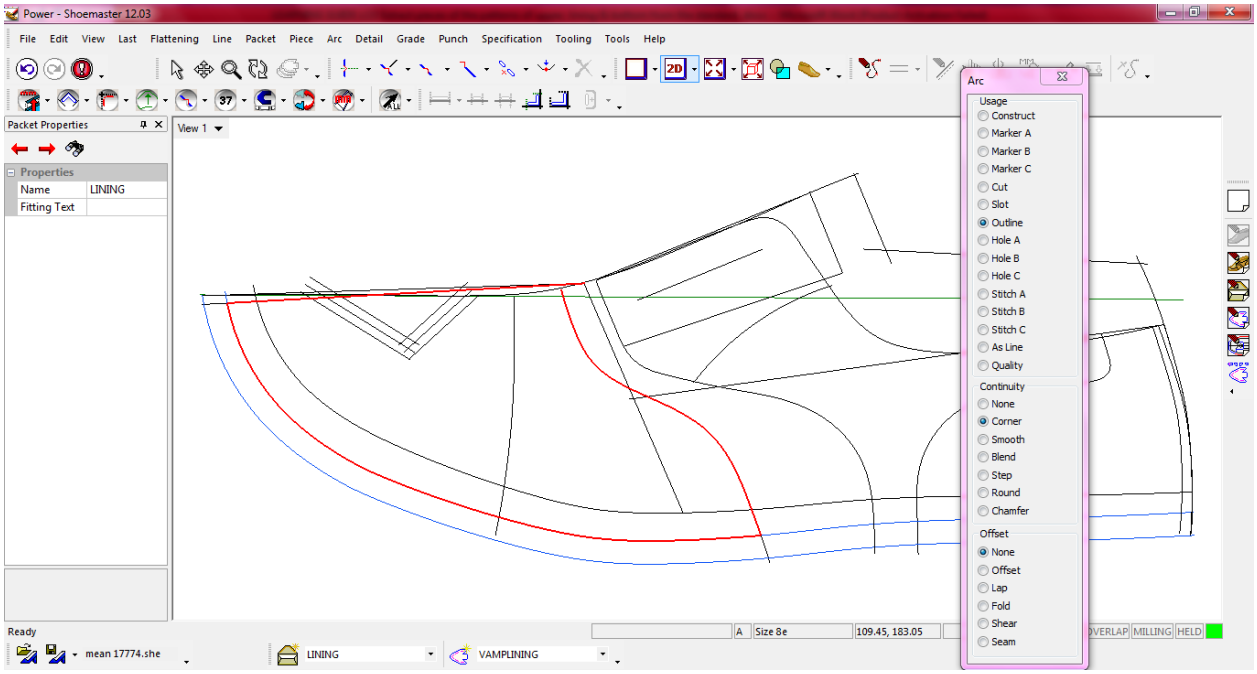




Draw a straight line joining both the points.



All the style lines are generated, with which you can extract the lining patterns. To extract the vamp lining pattern, select the lines as illustrated in below. To create the lining pattern you are suggested to create the lining packet. This is a good practice to create packet for different set of patterns, which make the output process easy.


Power - Shoemaster 12.03
File Edit View Last Flattening Line Packet Piece Arc Detail Grade Punch Specification Tooling Tools Help
Packet Properties
Properties
Name LINING
Fitting Text
View 1
Arc
Usage
Construct
Marker A
Marker B
Marker C
Cut
Slot
Outline
Hole A
Hole B
Hole C
Stitch A
Stitch B
Stitch C
As Line
Quality
Continuity
None
Corner
Smooth
Blend
Step
Round
Chamfer
Offset
None
Offset
Lap
Fold
Shear
Seam
Ready
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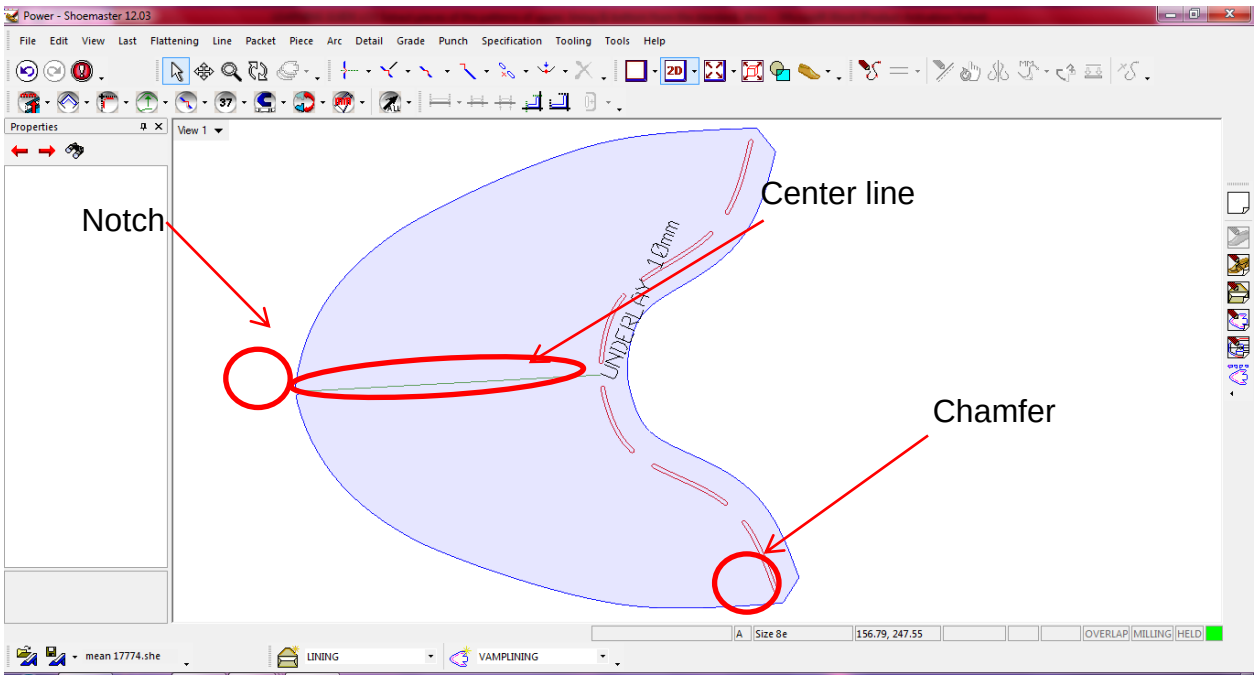
LINING
VAMPLINING


Power - Shoemaster 12.03
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Properties
View 1
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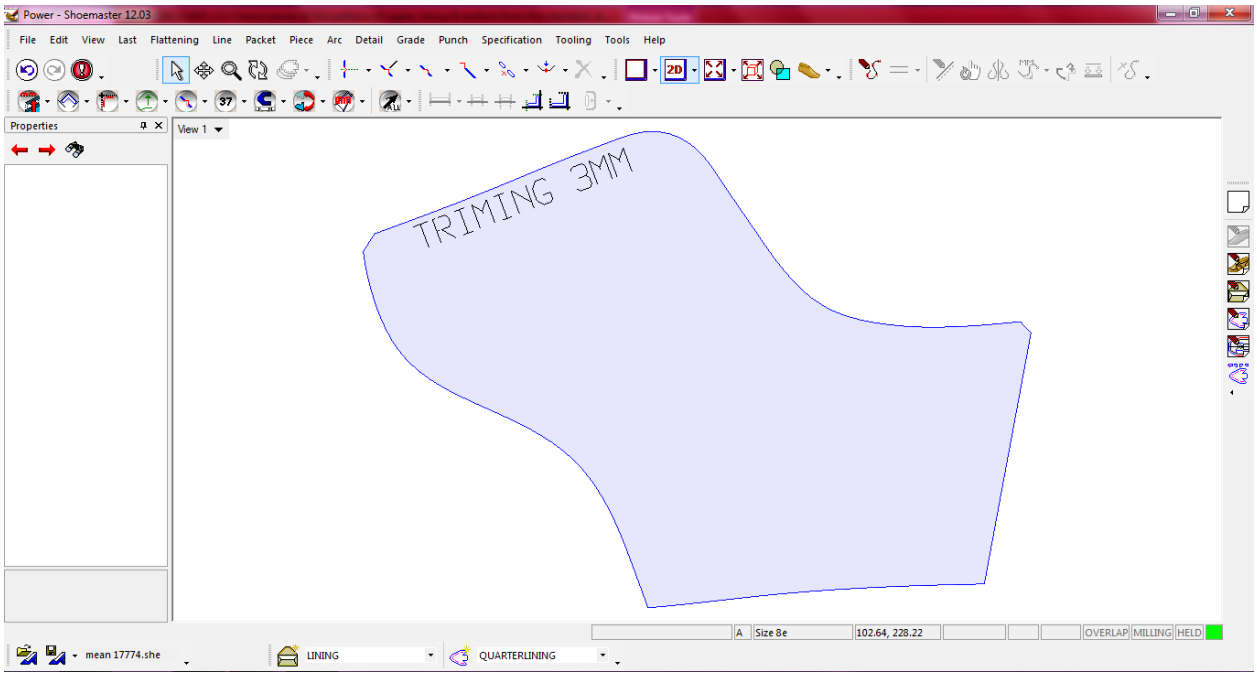
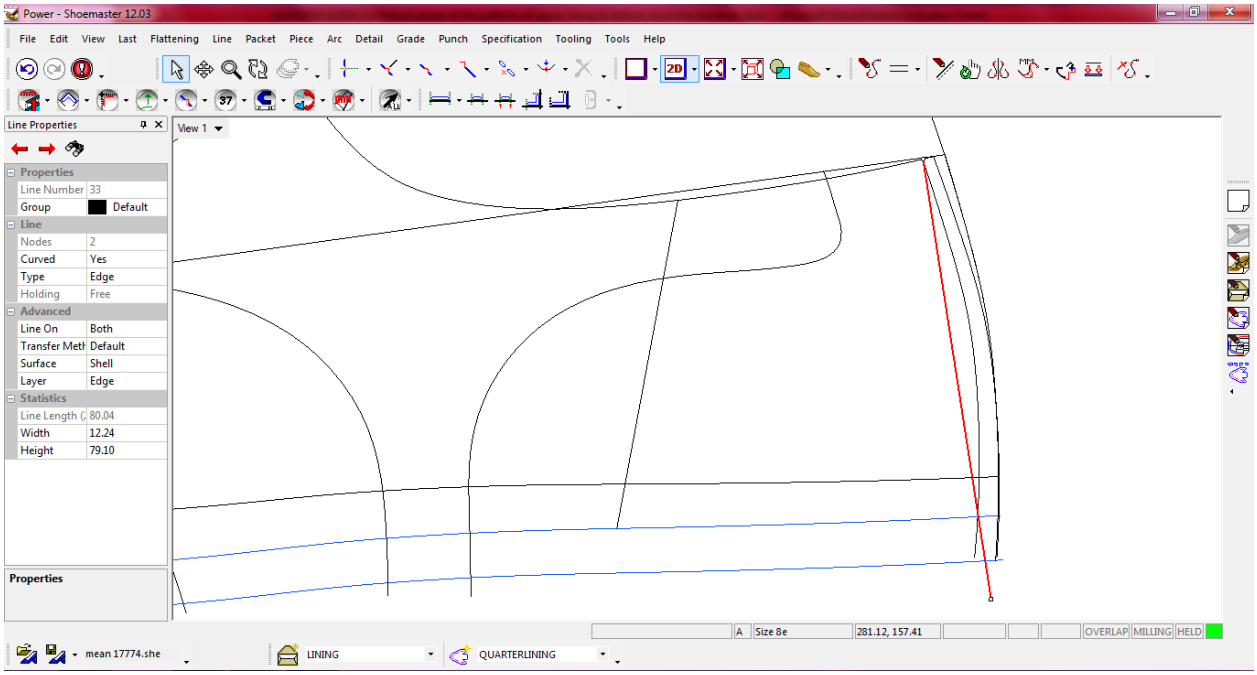
mean 17774.she
LINING
VAMPLINING

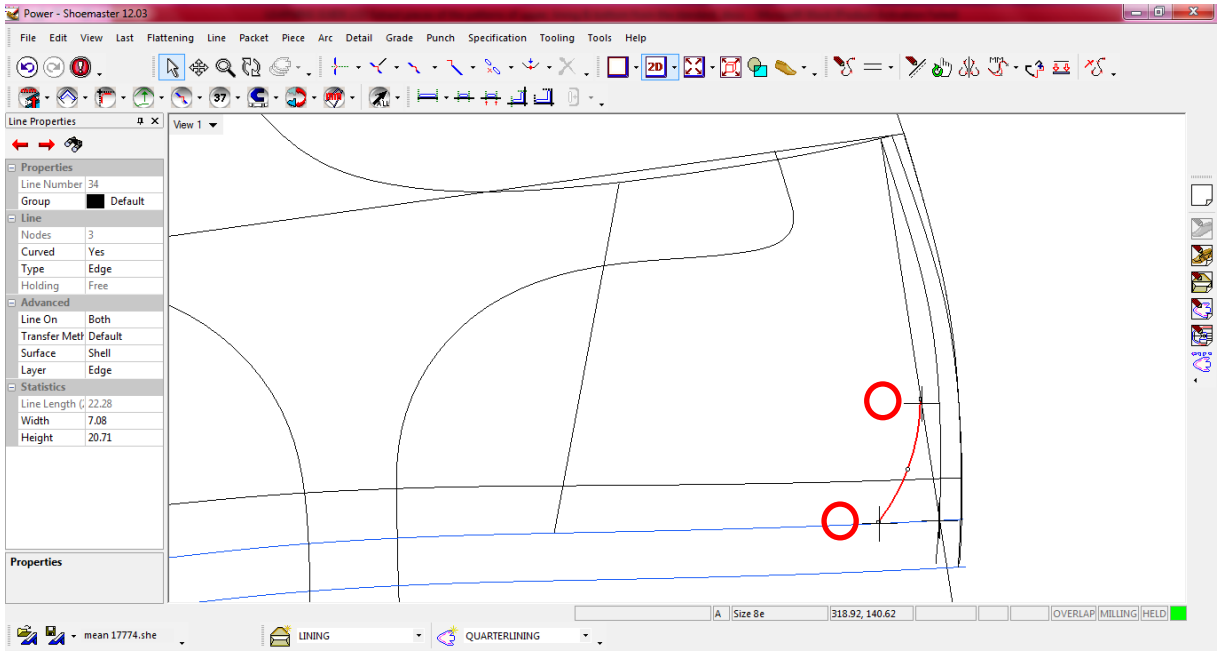
Piece construction method remains the same as described in LO -01 upper pattern extraction. The details needs be added in the pattern as shown above, it is very important to add detail to get perfect technical pattern. After adding these details pattern becomes self-explanatory.



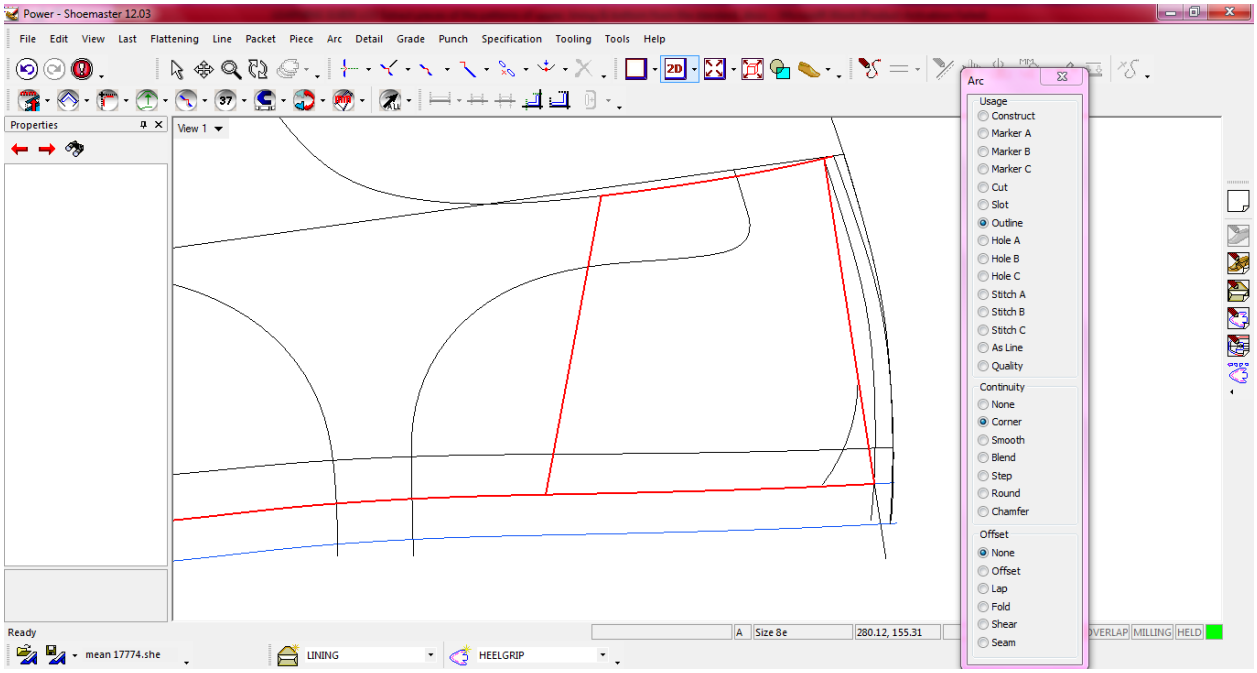
To extract the heel grip pattern, you are required to draw a tangent line from lining back height point to lining seat point.

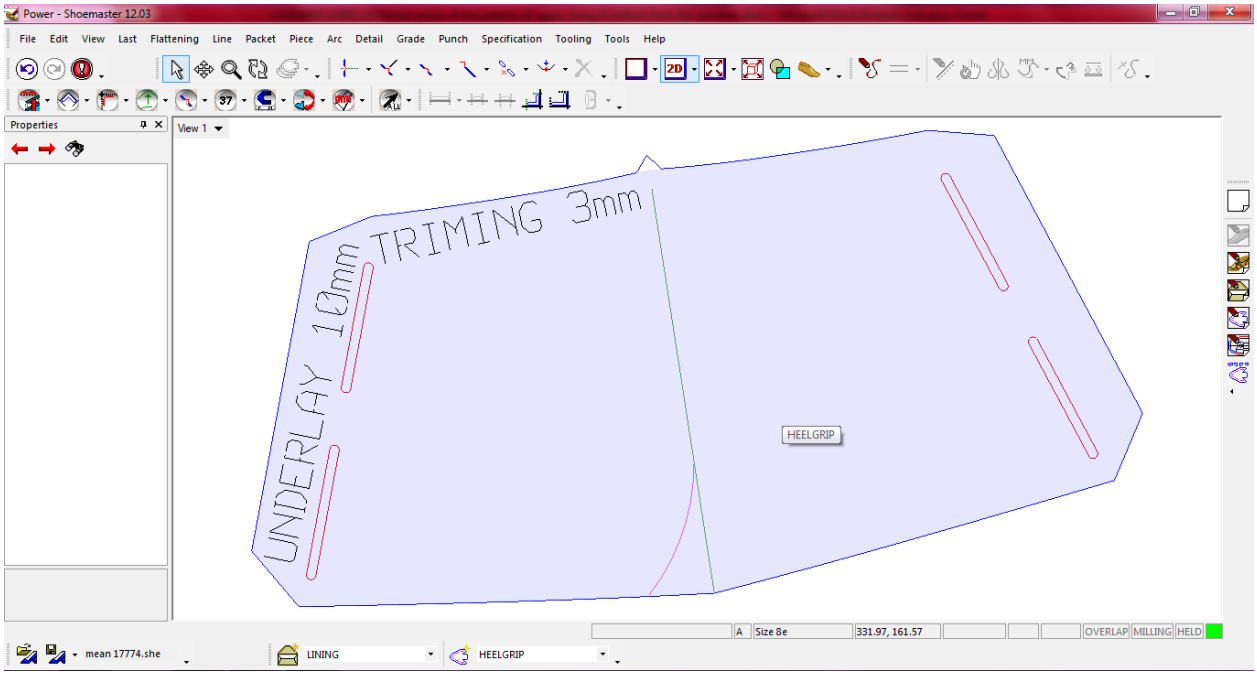


Draw a curve line starting 10mm away from the seat point on lining margin line and 20mm on the tangent line from seat point.

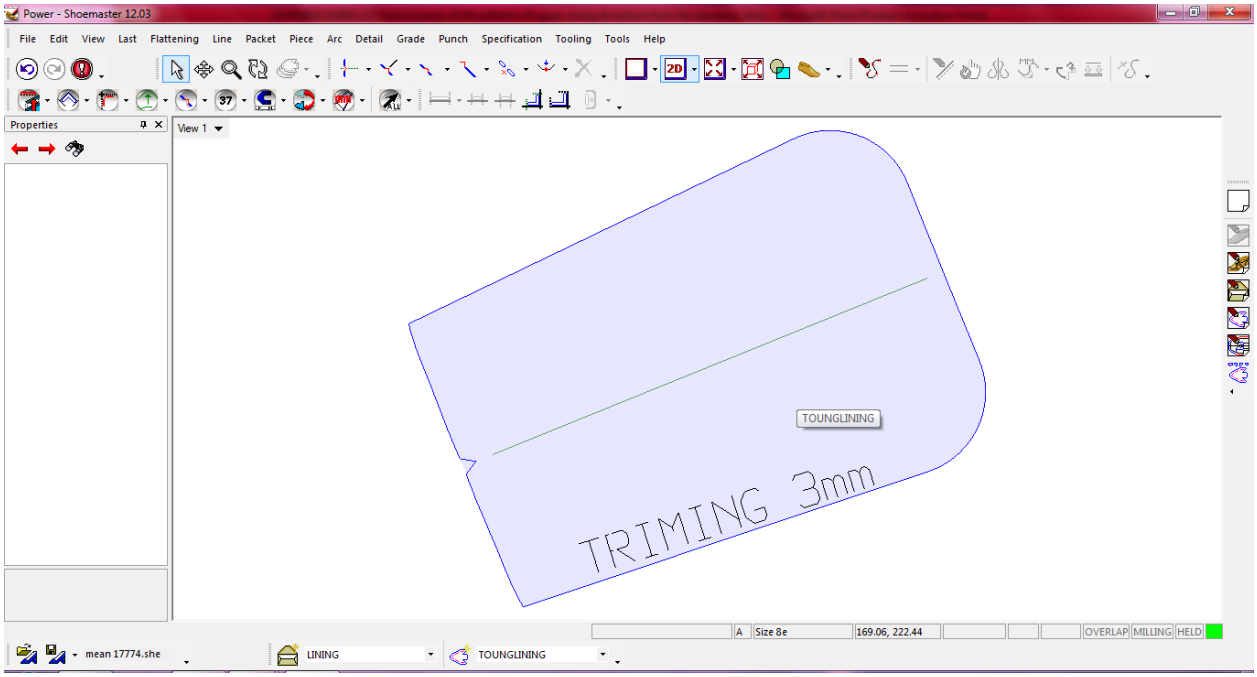


To construct the heel grip piece, make the circuit as shown below.

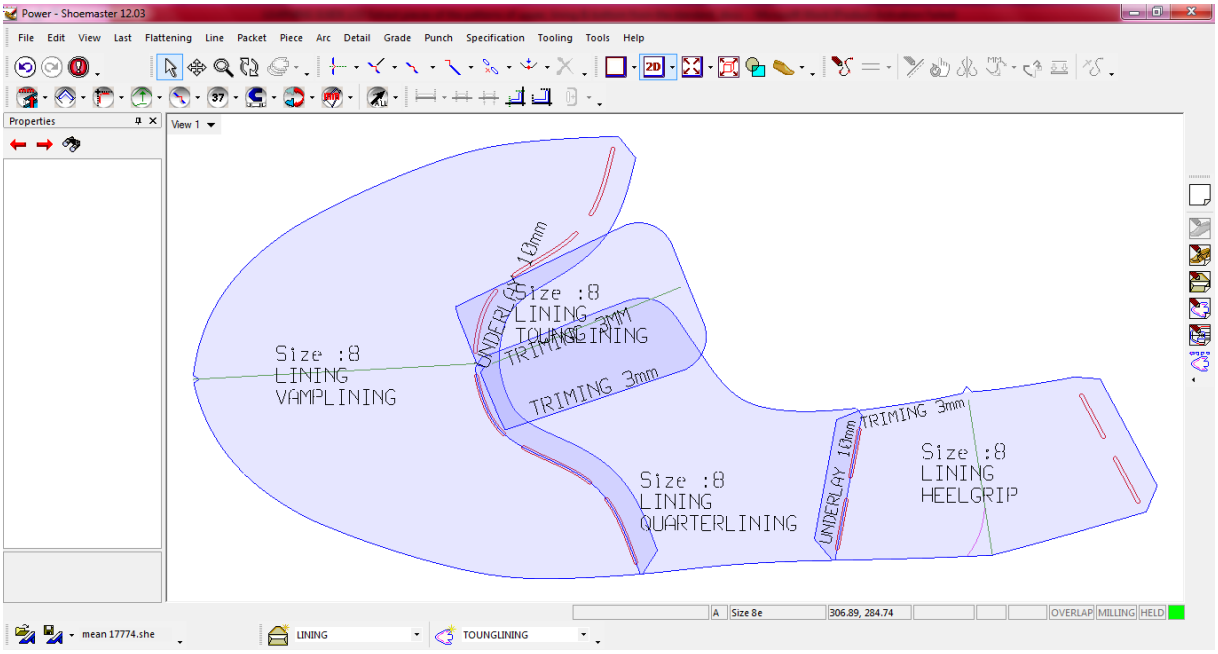




You have achieved heel grip pattern.



To extract toung lining pattern construct the tough with toung upper style lines and add trimming allowance as shown above.



Complete Lining patterns achieved.

Self-Check 2	Written Test

Name: _____ **Date:** _____

(Total marks:-8)

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

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

1. How much value is reduced on center line from the upper standard at the toe point to get the Lining standard line? (Mark 2)

2. How much value is reduced from the upper standard at the lasting area for the lining standard? (Mark 2)

3. How much value is reduced on the back curve of the upper standard to get the lining standard back curve? (Mark 2)

4. To get the heel grip line, which connects to quarter lining what value is used?

(Mark 2)

Answer Sheet

Name: _____ Date: _____

Test II. Short Answer Questions

1. _____

_____

_____

_____

2. _____

_____

_____

_____

3. _____

_____

_____

_____

_____

4. _____

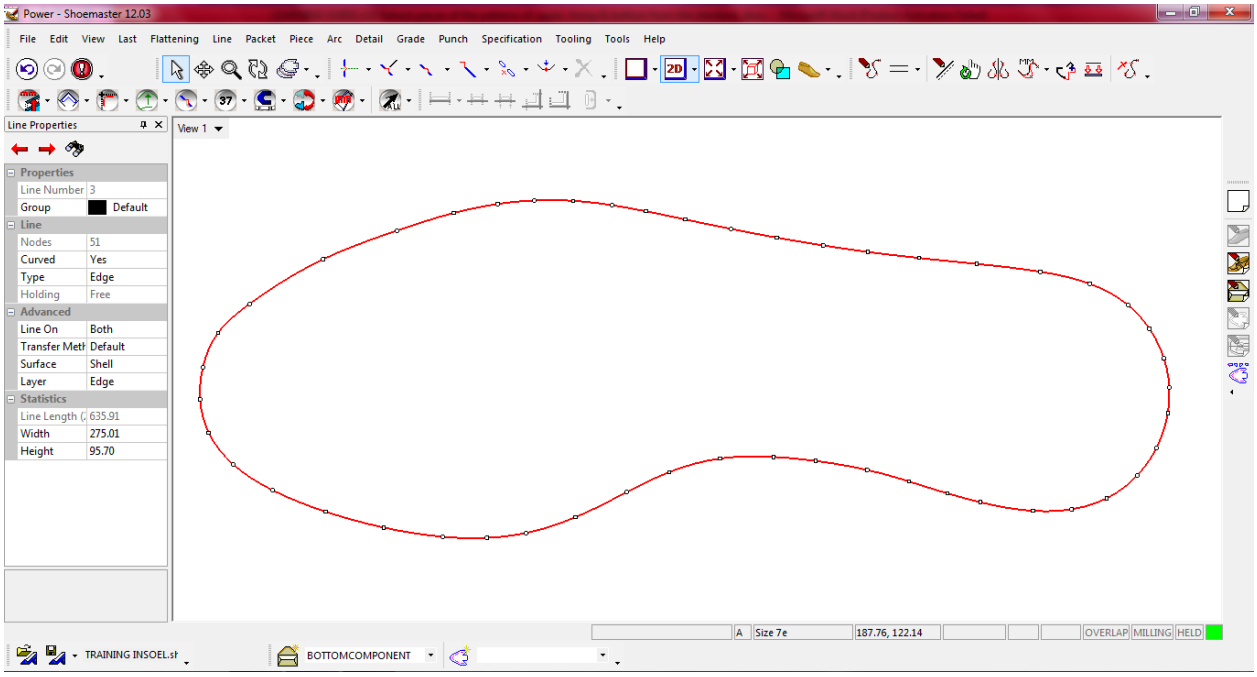
_____

Information Sheet 3- Extracting bottom components patterns from the standard

Bottom pattern components are the set of component; on assembling them all together a bottom unit is generated. In this information sheet the method of extracting the different bottom component is explained.

For detailed process you are advised to refer the **UOC: IND FWP2 05 0112 Perform Bottom Components Operations of Level - II**

Under mentioned explanation is for English size 7 and the measurement defined are for the size 7. It is advised to always use English size 7 or French size 41 as model size.



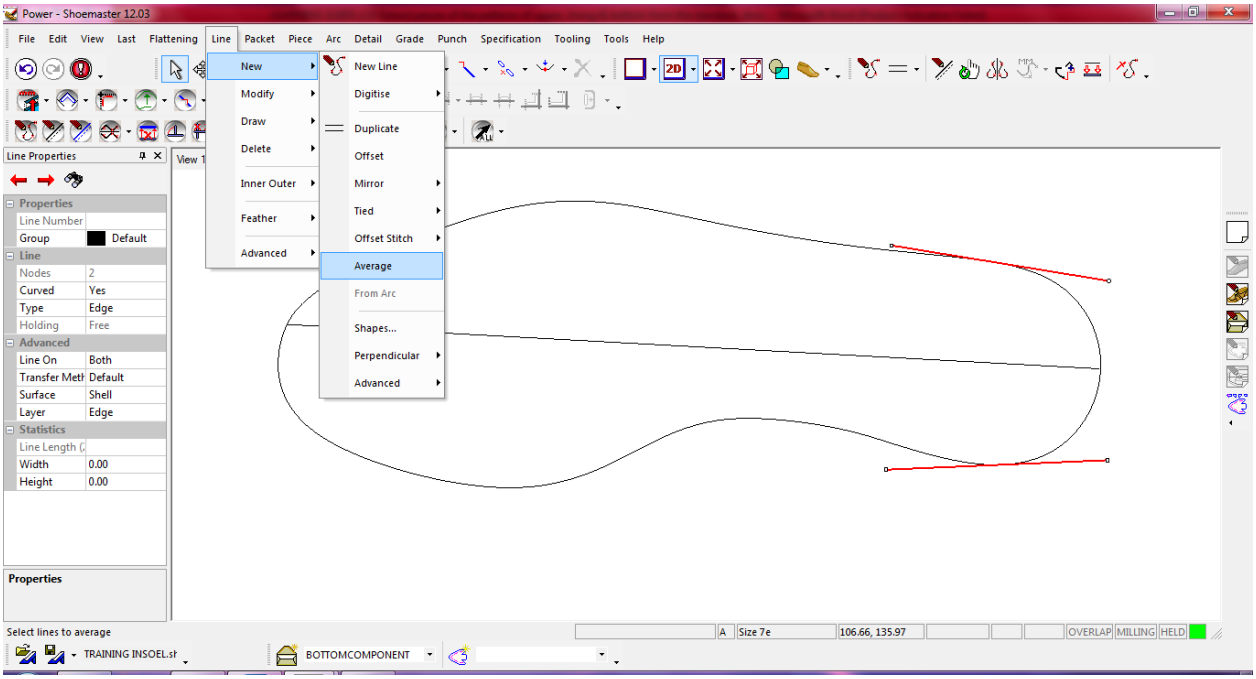
Load insole, insole is a base of bottom components, all the component of the bottom will be extracted from the insole.

Identify the mid of the seat position and draw a straight line from seat position to toe area, as shown below.

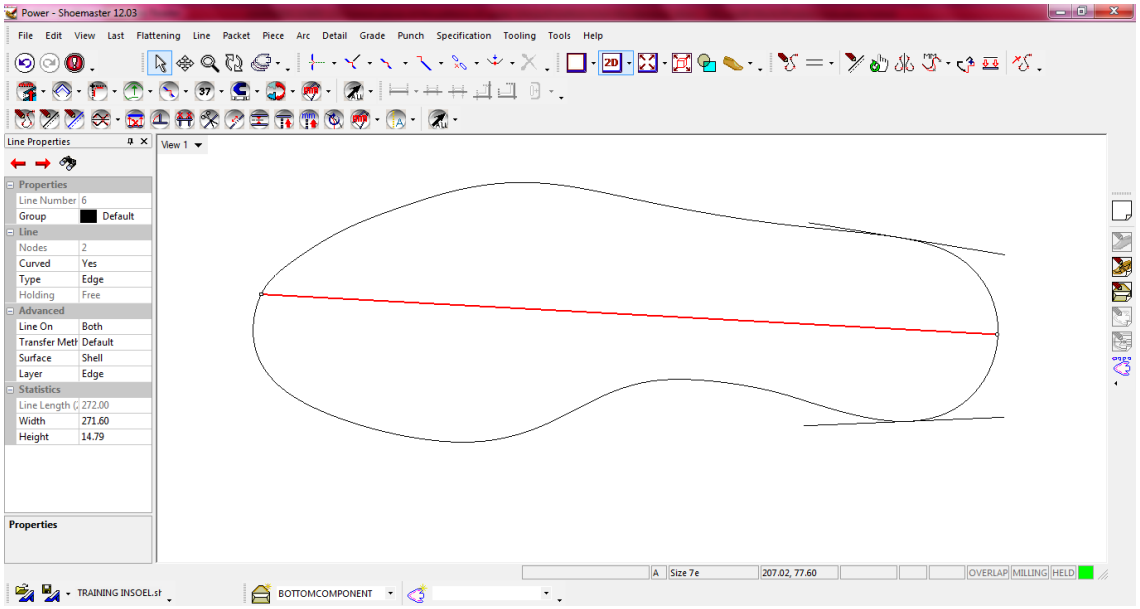
Procedure:

1. Draw two straight lines touch the seat area of insole on inside and outside part.

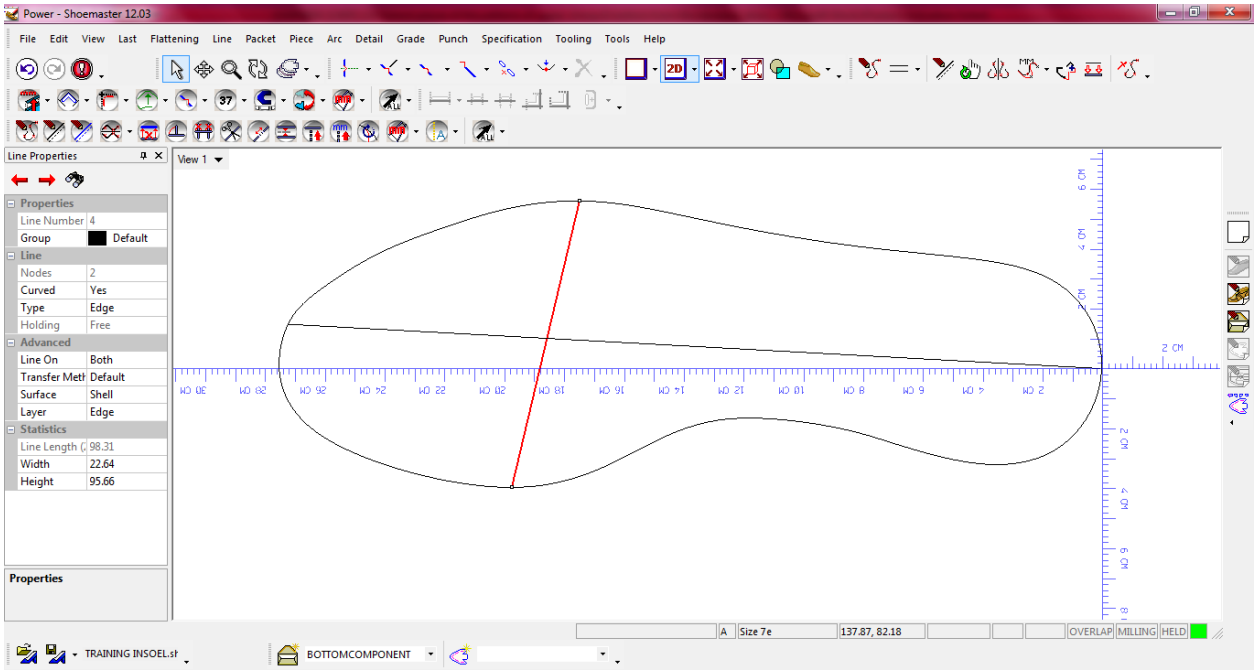
2. Select bot the straight lines; go to Line pull down menu, new select average from the list.



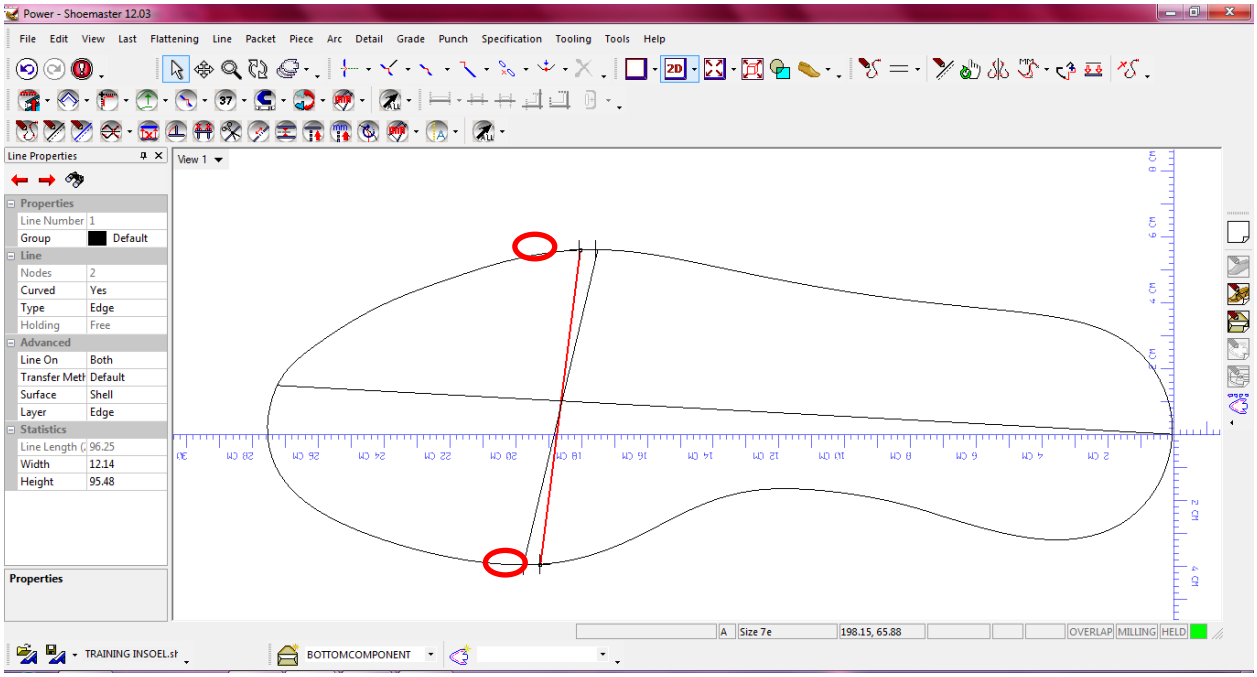
3.A mid lines will appear on center, pull the line up to the front area of insole and touch with the boundary of insole. This line is also used for steel shank allignment. It is called golden line.



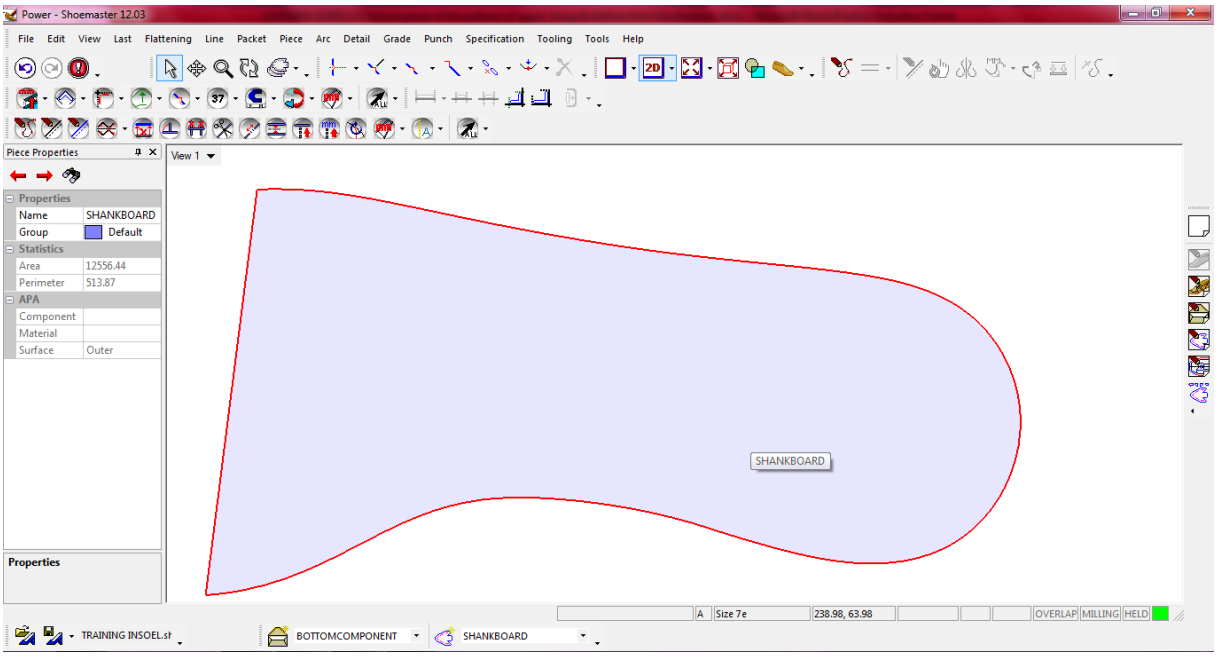
Draw the ball point line by joining the inside and outside ball points of the insole.



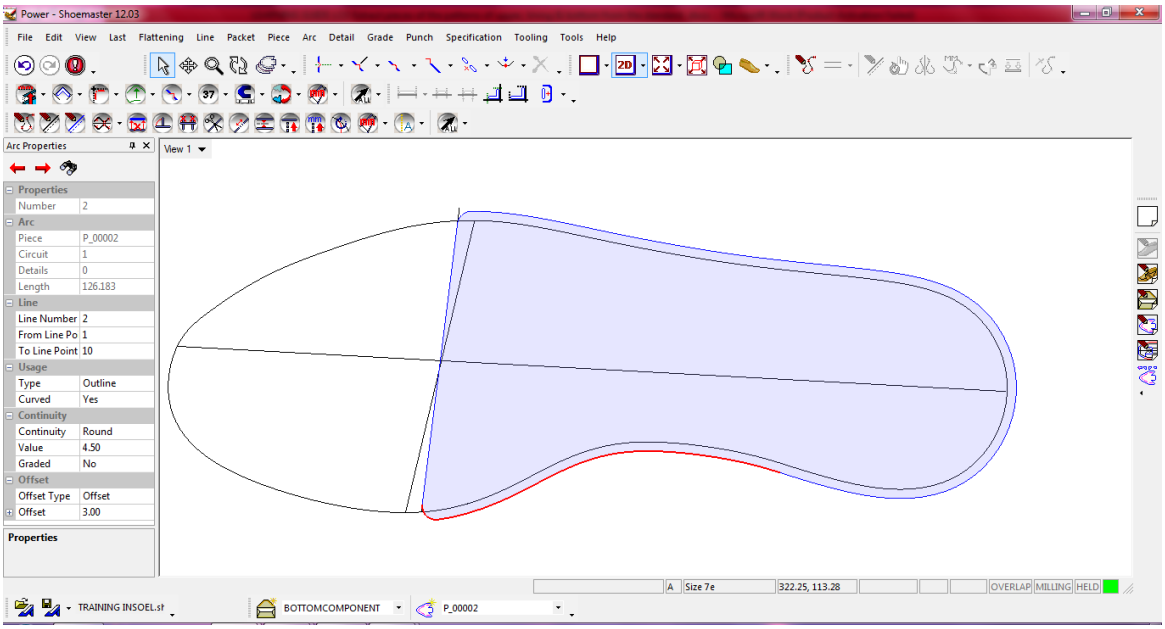
Find the point on insole at outside ball point 5mm towards the toe and 5mm point on inside ball point towards the heel. Join both the points with a straight line. This line is flexing line.



Now make the circuit by joining flexing line and the boundary of insole the pattern for shank board is ready.



To make the half socks pattern you are required to make the copy of the shank board pattern and add 3mm margin on the insole boundary area only. You will get the half socks pattern; joining corner to the flexing lines must be given the round continuity for easy insertion.

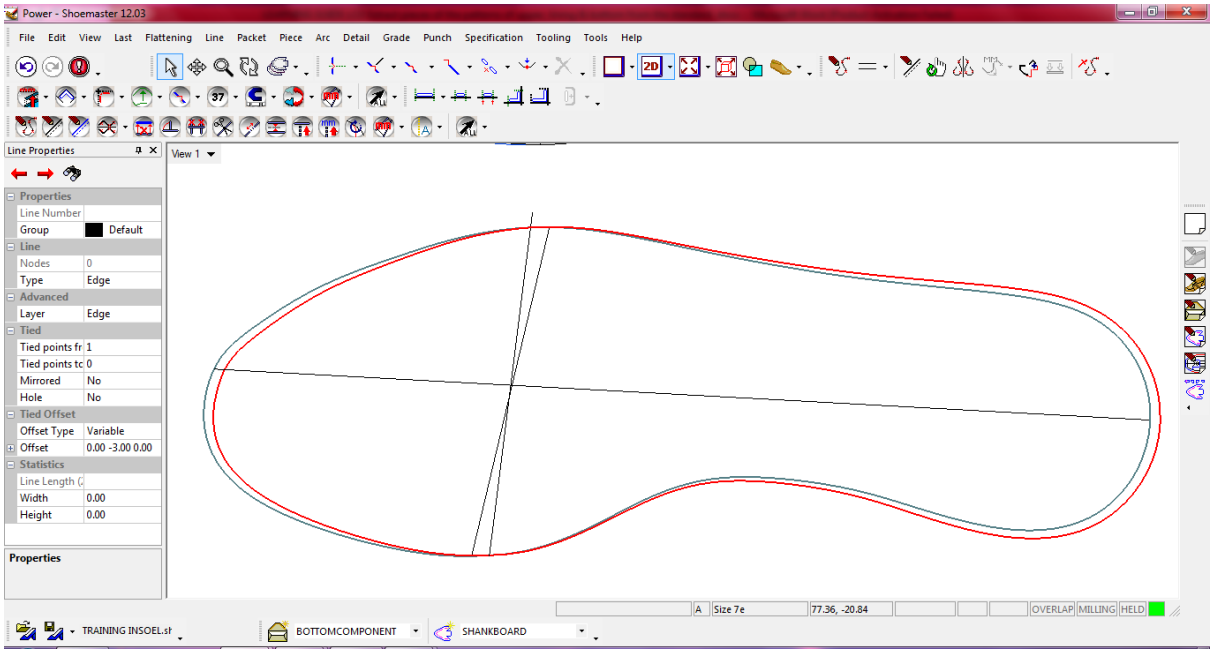


To make full socks pattern split the insole boundary line at joining point of flexing line, both inside and outside. Now reduce the forepart area up to flexing point by 3mm and increase the back part area from flexing by 3mm.

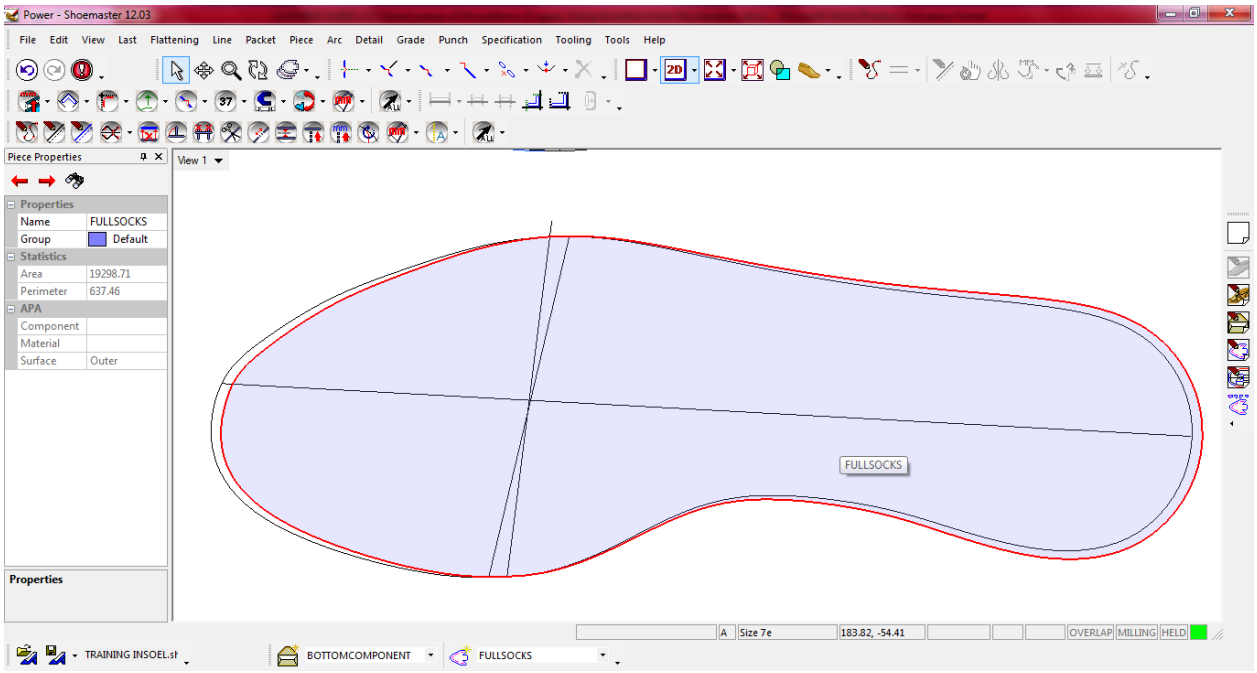
Procedure:

1. Select the forepart line, Right click a menu appears, select new form the list, select new from the next list and tide from the next list. Enter the value 0 3 0, click inside the boundary of insole. You will get new tide line which is reduce by 3mm on forepart area.

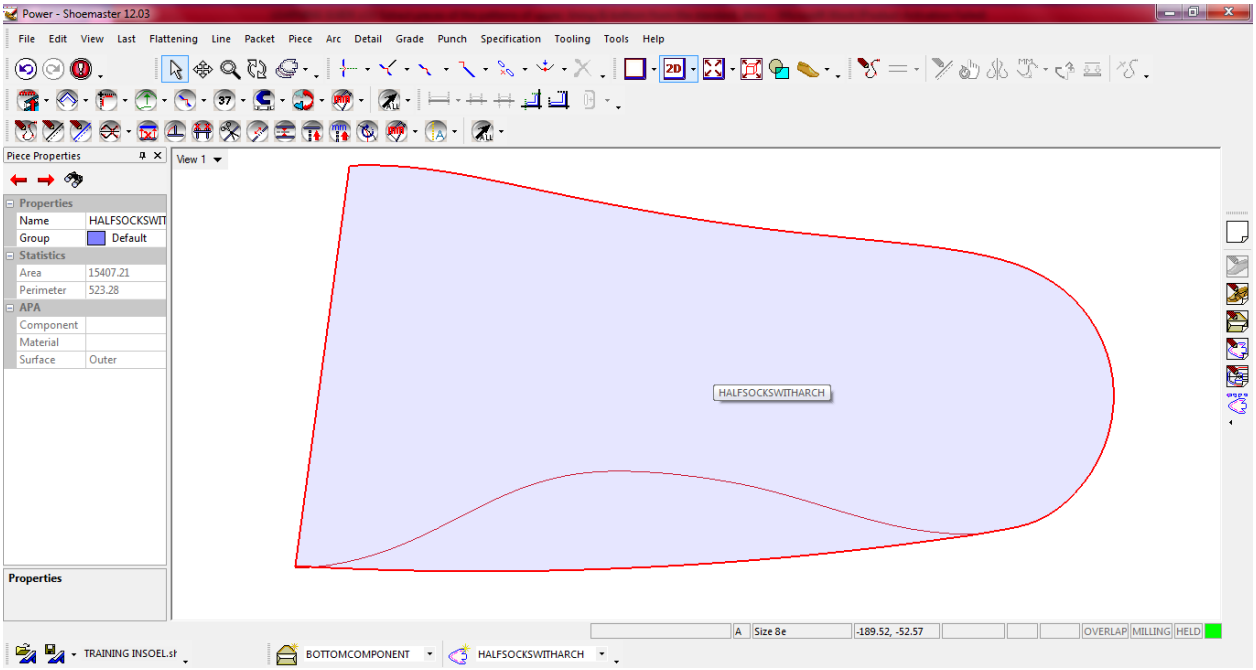
2. Select the backpart line, Right click a menu appears, select new form the list, select new from the next list and tide from the next list. Enter the value 0 3 0 click outside the insole boundary line. You will get new tide line which is increased by 3mm on backpart area.



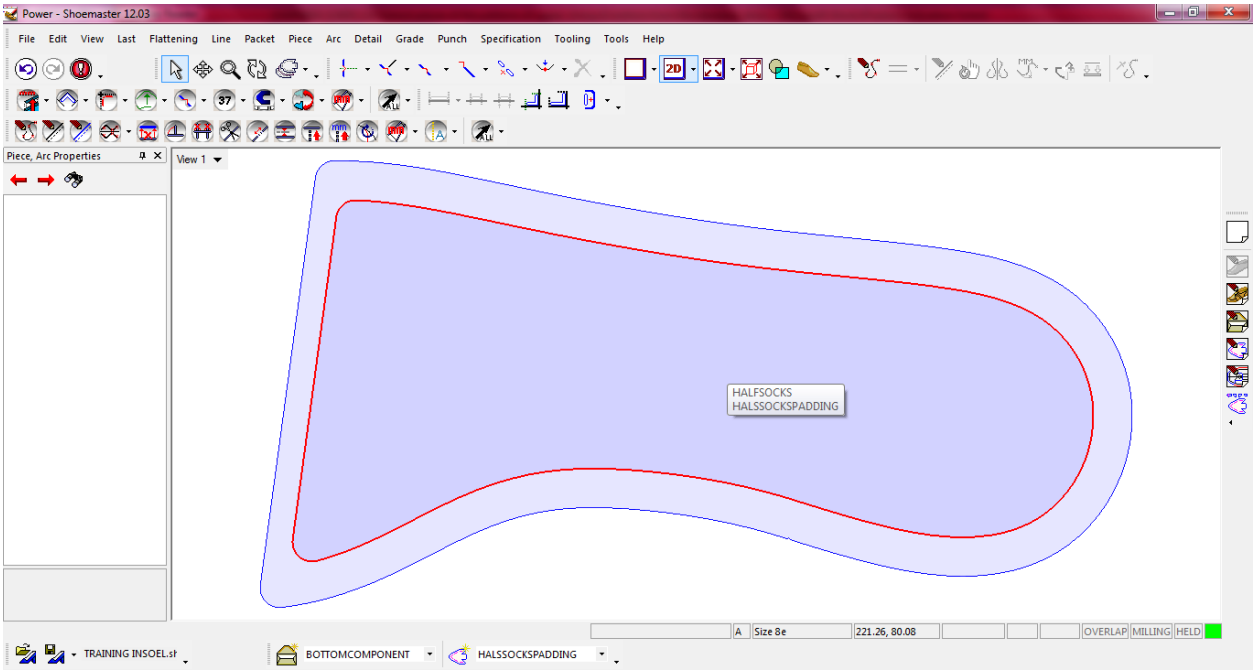
By joining these two lines construct the circuit, you have achieved the full socks pattern.



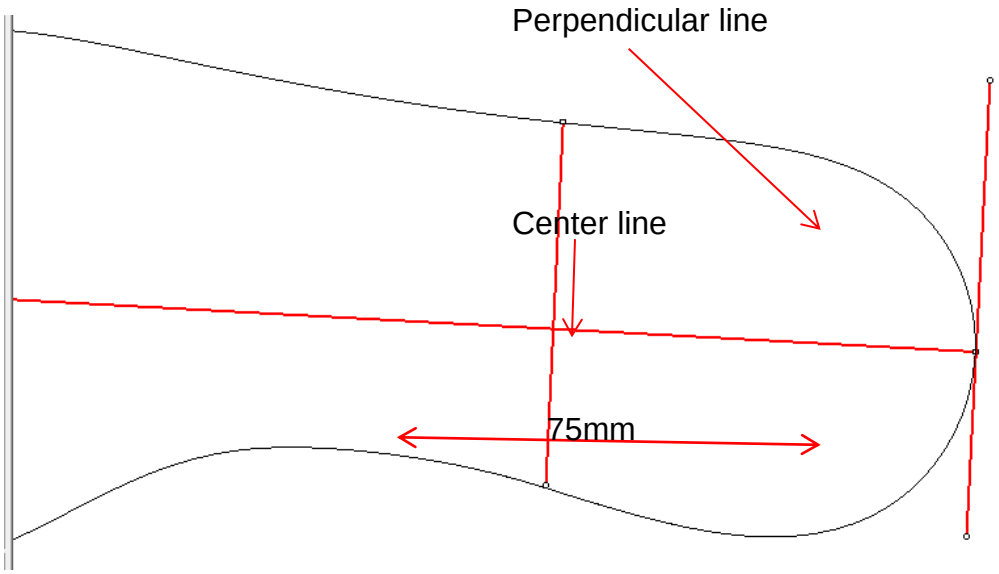
Half socks pattern with arch support, draw a curve starting from inside point of flexing line to the inside seat point. Now construct the circuit with this new line as you constructed before for half socks pattern. You have achieve the half sock pattern with arch support.



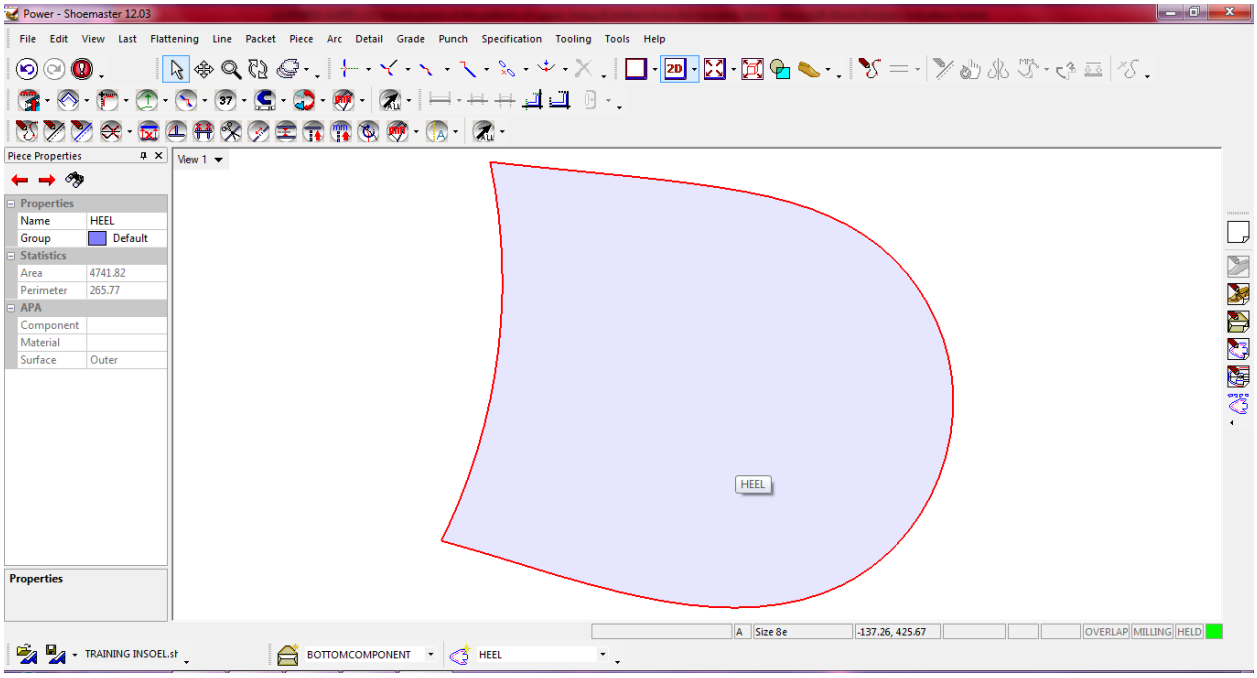
Half socks padding pattern. Copy the half socks pattern and rename it half socks padding pattern. Now reduce it all around by 6mm. You achieve the padding pattern.



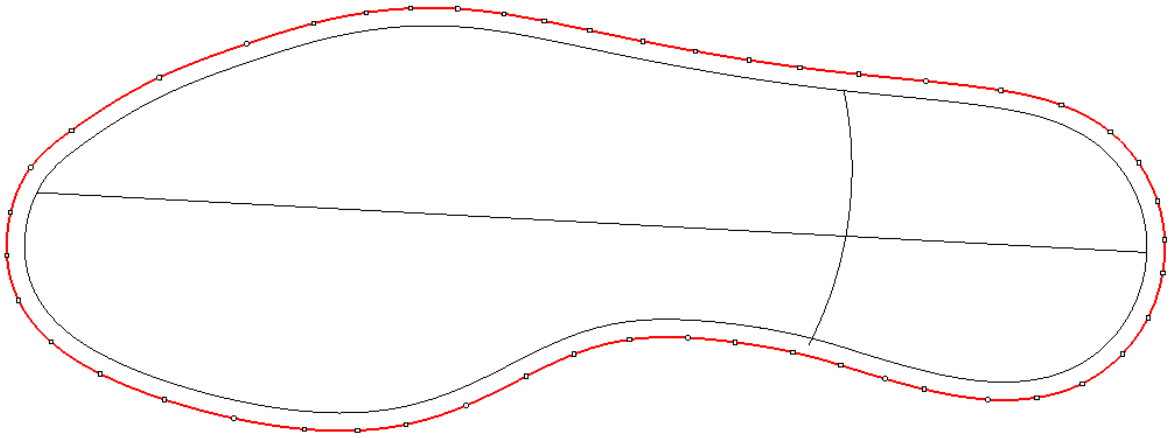
Heel pattern: Draw a perpendicular line on the center line of insole. Take the offset of this line by 75mm inside the insole



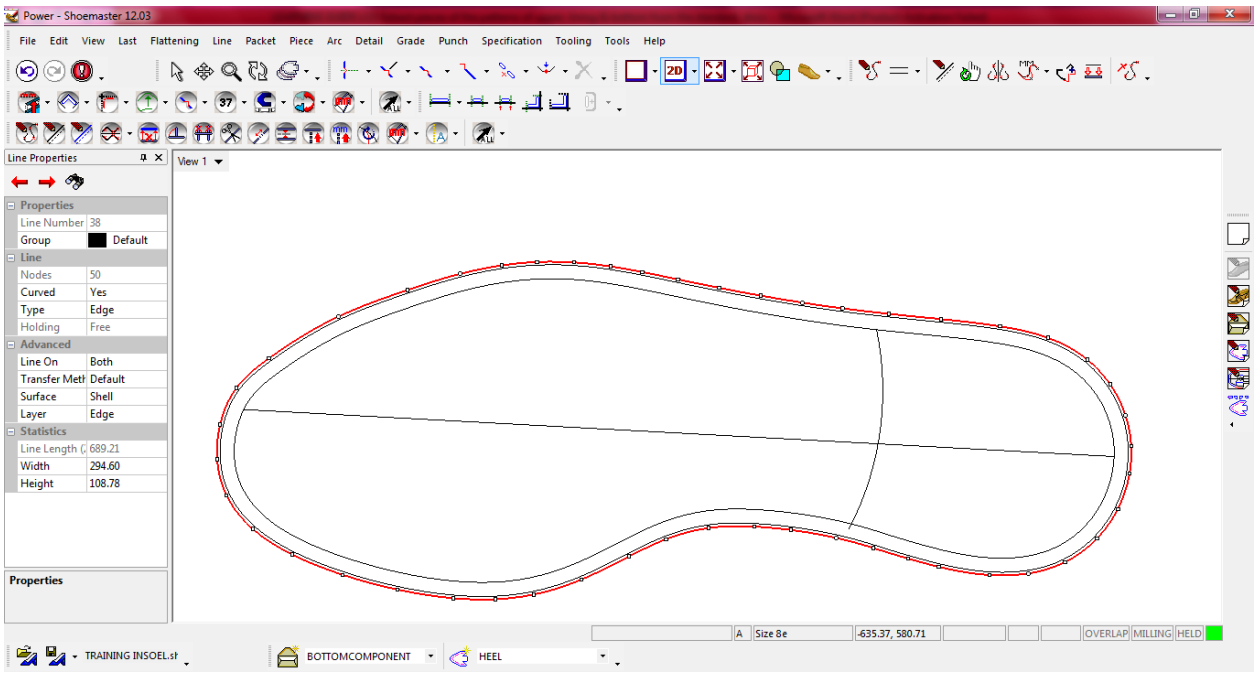
Create a new tide offset from the 75mm line with value of 5 0 5mm, to achieve the breast curve of heel. Construct the circuit with new curve line and boundary of insole you achieve the heel pattern. Height of heel will determine on the last heel height and toe spring.



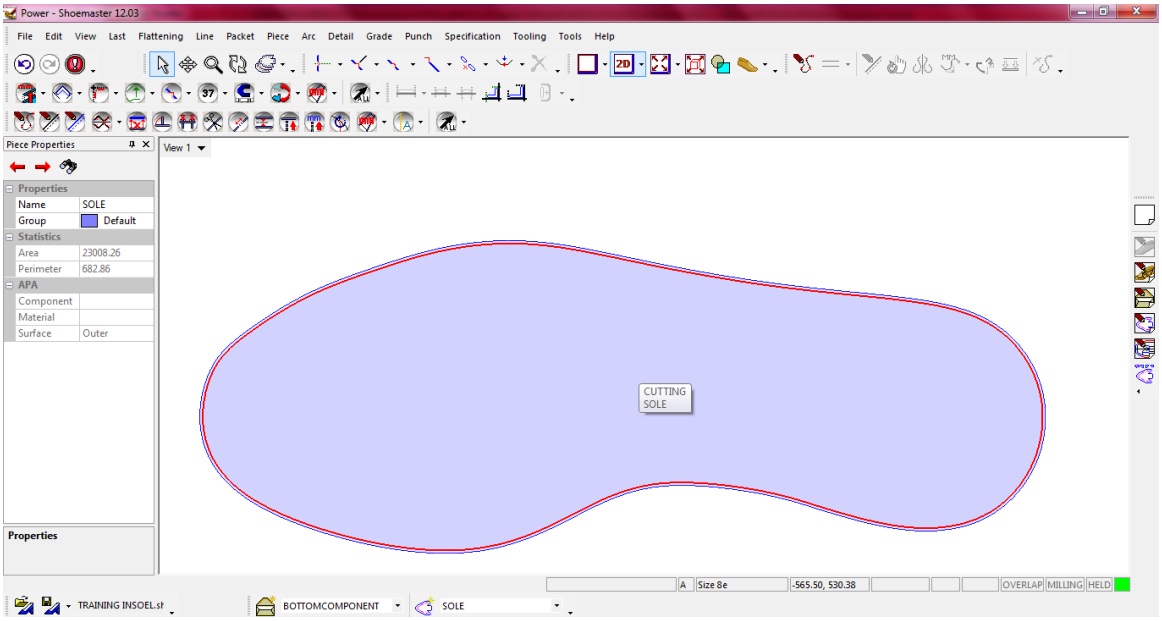
Sole Pattern: For making a sole you needs two pattern 1) Pattern with extension outside the last 2) Pattern with extension +roughing margin. Take insole pattern line, create a offset line outside the boundary line with 4.5 mm.



Now from this list create another line with 1mm offset, which will be roughing margin to smooth the edge of sole. This pattern is called cut pattern.



You achieved the pattern for sole. For heel also a cutting pattern is required to generate for roughing. Process for heel pattern extraction has already been described above.


Power - Shoemaster 12.03
File Edit View Last Flattening Line Packet Piece Arc Detail Grade Punch Specification Tooling Tools Help
Piece Properties
Properties
Name SOLE
Group Default
Statistics
Area 23008.26
Perimeter 682.86
APA
Component
Material
Surface Outer
Properties
View 1
CUTTING SOLE
TRAINING INSOEL.st
BOTTOMCOMPONENT
SOLE
Size 8e
-565.50, 530.38
OVERLAP MILLING HELD

Self-Check 3	Written Test

Name: _____ **Date:** _____

(Total marks:-8)

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

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

1. Which component of bottom part is key component for development of all bottom components? (Mark 2)

2. Which line is for steel shank alignment & what it is called? (Mark 2)

3. Which line is flexing line? (Mark 2)

4. To get half socks pattern, what you will do? (Mark 2)

5. To extract the half sock padding pattern , what you will do? (Mark 2)

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Test II. Short Answer Questions

1_____

_____

_____

2_____

_____

_____

3_____

_____

_____

4_____

_____

_____

5_____

_____

_____

LG #22 LO #5- Grade extracted pieces of pattern

Instruction sheet

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

- Identifying grading allowance
- Grading pattern by the CAD machine
- Checking graded patterns by alignment

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

- Identify grading allowance
- Grade pattern by the CAD machine
- Check graded patterns by alignment

Learning Instructions:

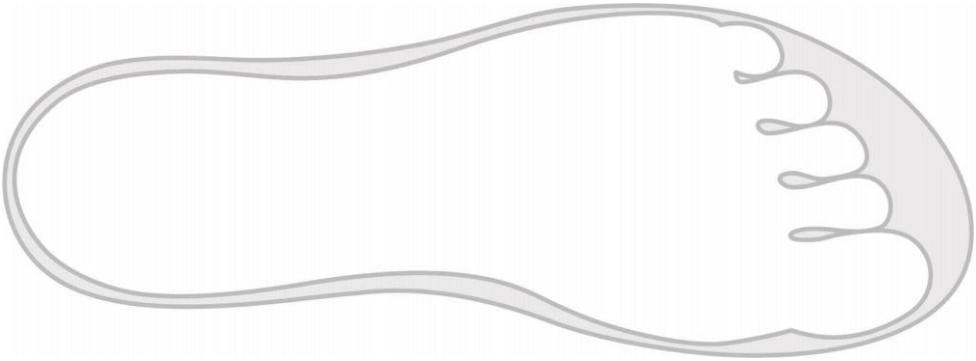
1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Identifying grading allowance

1.1 Grading

Grading is a process of producing a size range of patterns from an original model size that is increased or decreased proportionally to the original model size. When we talk about grading most people tend to associate this with only the upper but we also need to grade the bottom tooling area as well. If done correctly we can combine many components which in turn saves capital cost for tooling equipment and makes manufacturing much easier by reducing the number of sizes needed to cover the overall size range.

A shoe size is a numerical indication of the fitting size of a shoe for a person. Shoe size is represented by length and ball girth.



The length of a foot is commonly defined as the distance between two parallel lines that are perpendicular to the foot and in contact with the most prominent toe and the most prominent part of the heel. Foot length is measured with the subject standing barefoot and the weight of the body equally distributed on both feet.

1.2 Standard grading:

'Standard Grading' is the term applied to the proportional enlargement or reduction of a last or patterns to accommodate the different sizes in a range. Since the last is the basis for shoemaking, the way that the patterns are graded must follow the last grade. In standard grading incremental value are applied as per sizing system. For example if, you selected the grading needed in English sizing system, the incremental value will be 8.46mm in length.

Restricted Grading & Customized Grading

One common use of restrictions is for allowances (say, for seams or folding), where no increases are applied across the size range. The patterns for certain components such as trims or straps may also be restricted.

Making a complete set of patterns for full and half sizes (normal grading), perhaps in two or more width fittings, together with the corresponding press knives and stitch-making templates, is so expensive as to be rarely practical today. Rather, systems such as ‘group’, ‘co-ordinated’ and ‘center grading’ are applied. The effectiveness of these methods will depend to a large extent on the way the lasts have been graded and we’ll cover this topic in a future article.

Group and centre grading, for example, uses one set of press dies for a range of sizes, so English sizes 6-8 might use a size 7 die, sizes 9-11 a size 10 die, and sizes 12-14 a size 13 die.

Today, group and center grading are commonly used, reducing both the number of press knives and the amount of material usage. However, this does mean that, for example, the size 9 will fit loose and the size 11 will fit tight on the last.

Counter or stiffener patterns are taken from the model pattern, with allowances removed to accommodate insertion into, for example, pockets. Counter patterns will always be smaller than the corresponding part of the upper pattern. Again, for box toes, the shape will derive from the vamp pattern, but will be set or cut back from the edge. Counters and box toes are often group graded.

For a detailed information on shoe sizing system,

You can refer to LEVEL I (basic footwear production) under unit of competency (identify footwear as product and materials).

Self-Check 1	Written Test

Name: _____ Date: _____

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

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

Test I: Fill in the blanks:

1. What is pattern grading?
2. What are the uses of grading?

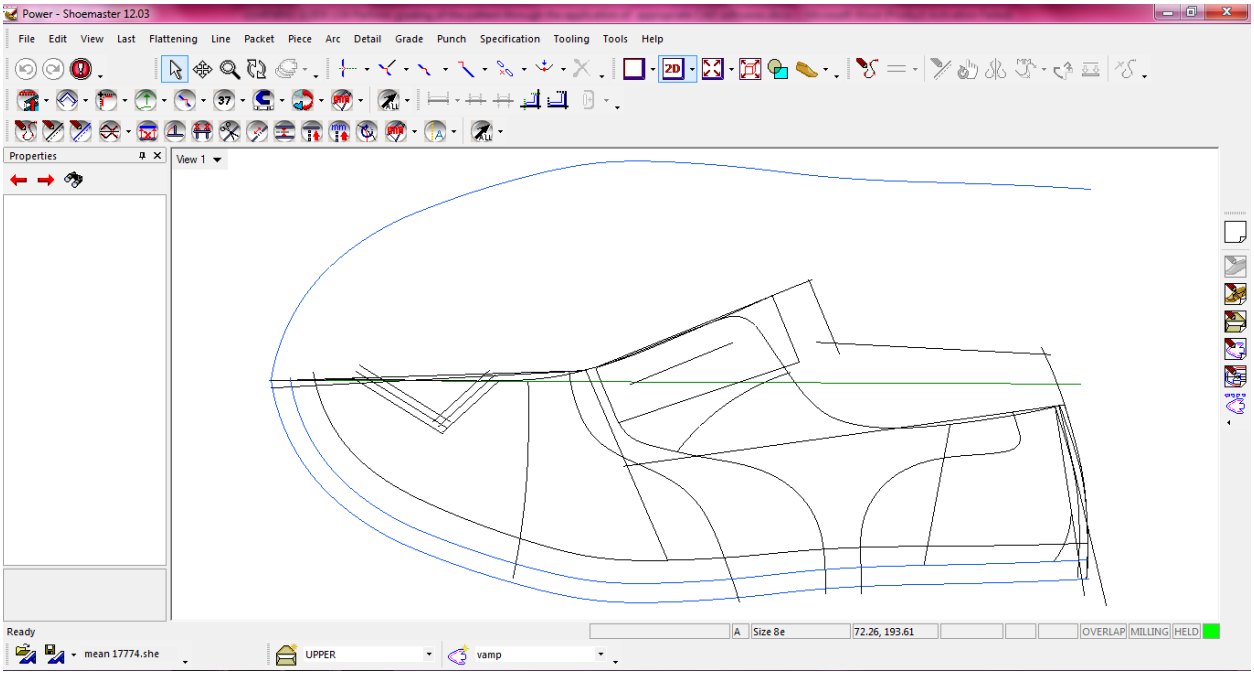
Information Sheet 2- Grading pattern by the CAD machine

2.1 Grading with CAD

Pattern grading is vitally important to ensure that all sizes of a given style look the same. Today, grading is often carried out by CAD-CAM systems. The CAD-CAM system uses the methods briefly explained blow.

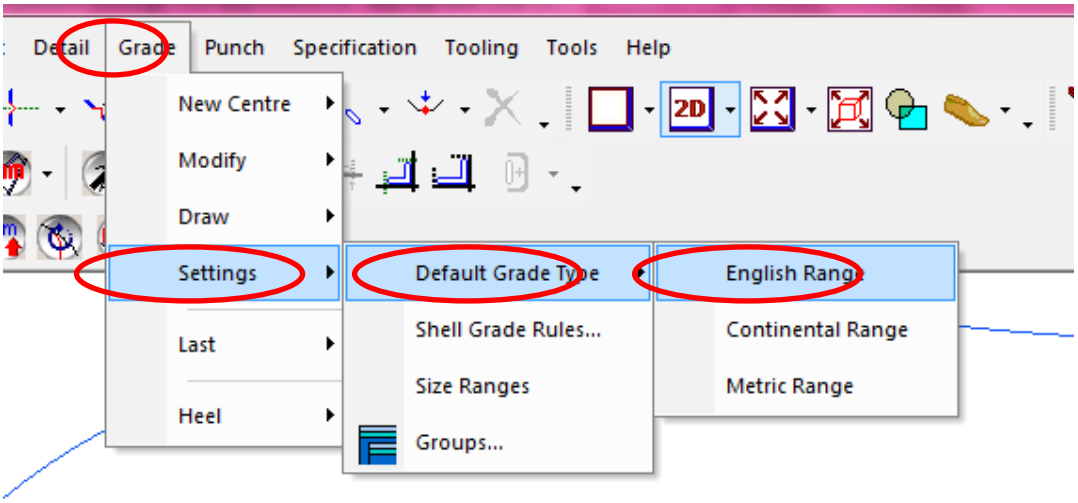
For grading the patterns rules needs to be applied on the shell. It is suggest keep the inside and outside line visible of lasting margin to mark the heights girth point of upper.

Upper grading is explained below

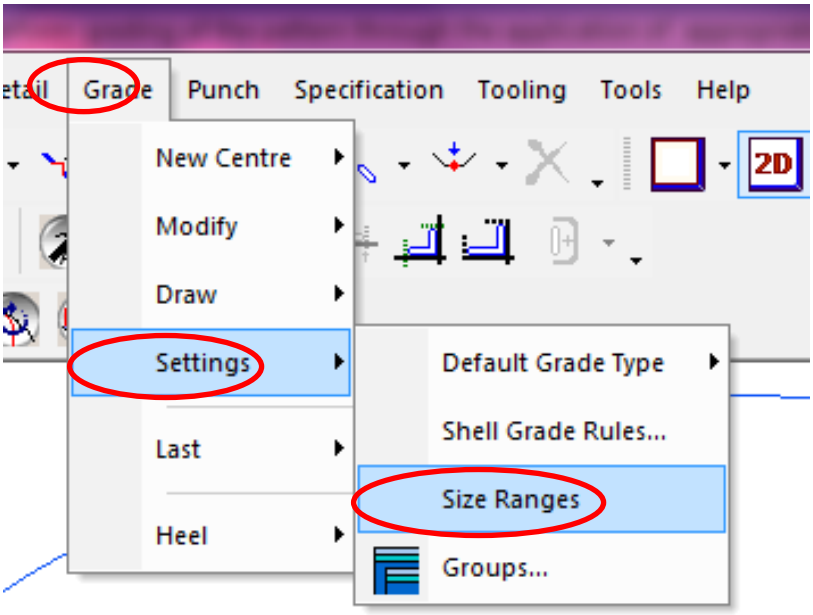


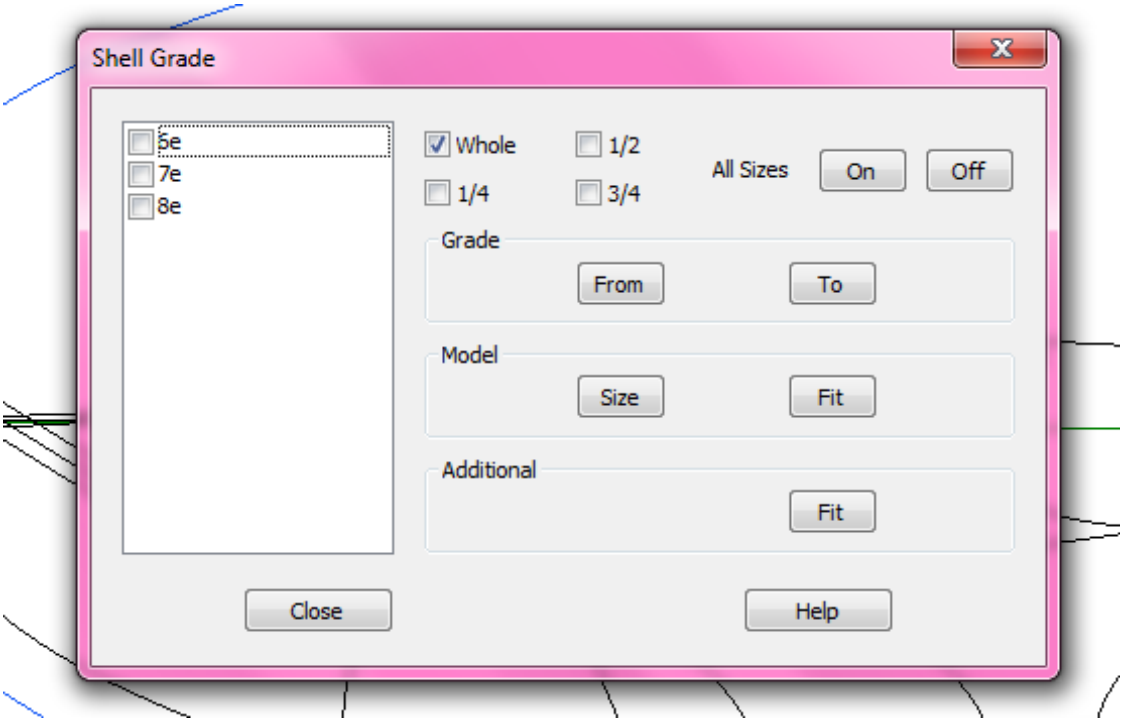
Procedure:

1) Go to Grade pull down menu
2) Select settings from the list
3) Select default grade type form the list
4) Select the type of sizing system you are about to apply

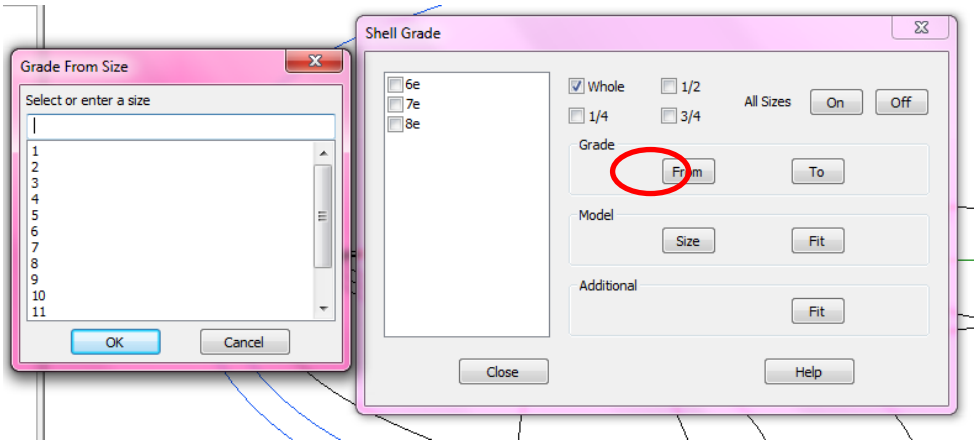


1. Select Grade pull donw menu
2. Select Settings fomr the list
3. Select Size Ranges from the list (This is where you have to define grading range)

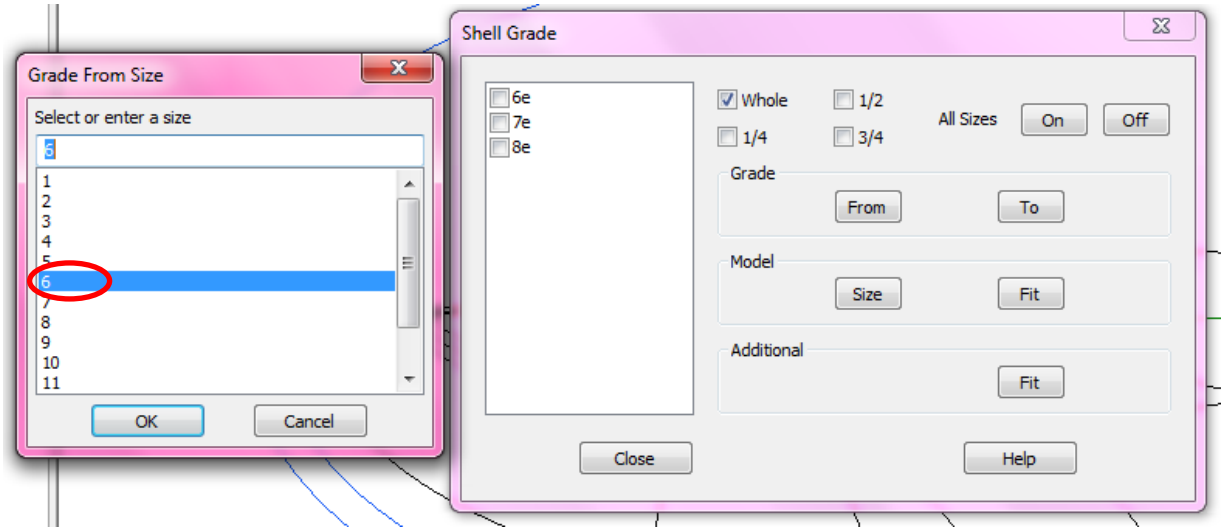




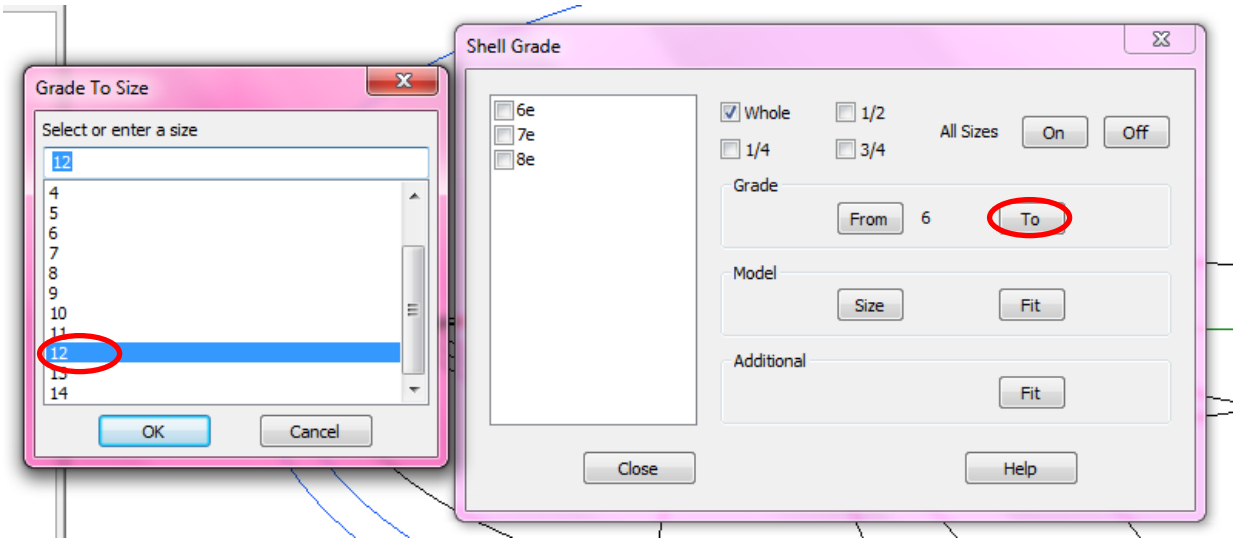
A window shell grade pop up, you are required to fill all necessary information. On top there are four options Whole, ½, ¼, ¾, this option works to get the size you are looking forward in grading, if you are looking forward the full sizes only you will check While, if you needs half sizes also you will check ½ and so on you will check the boxes as per your requirement.



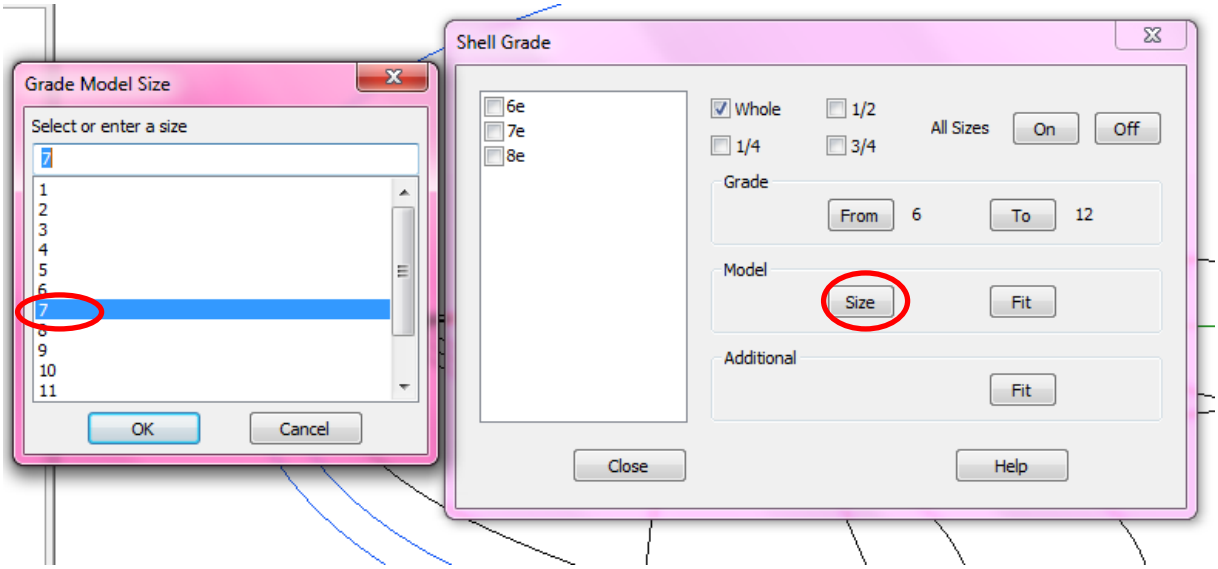
Select the From button another window Grade From size pops up, from the list select smallest size of your grading range.



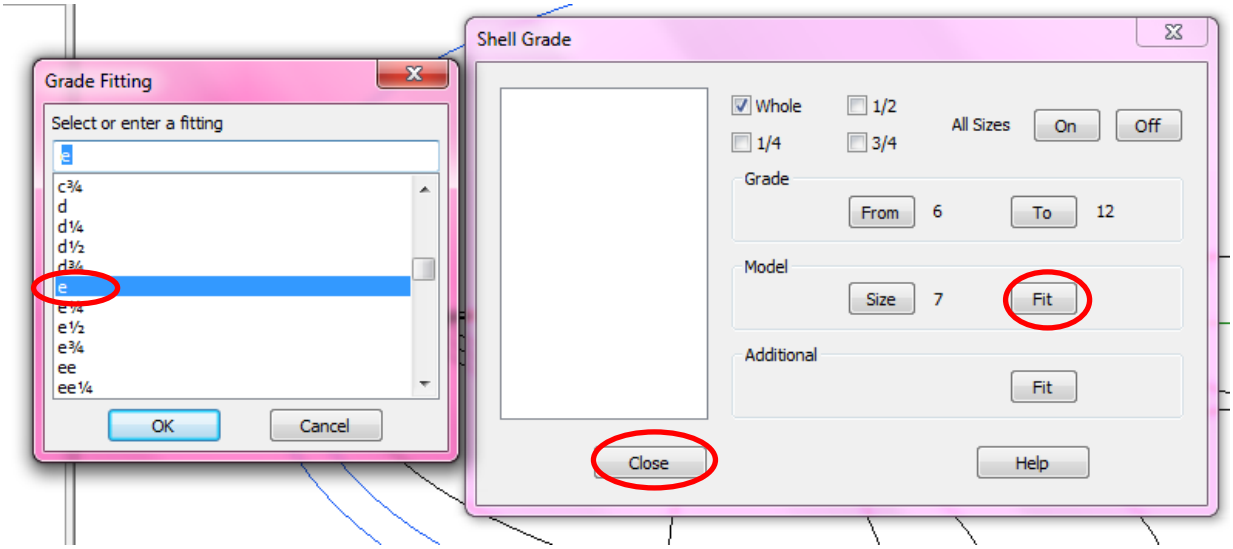
Following the above define process select the To button, a window Grade to size pops up, select the heights size of your grading range from the list.



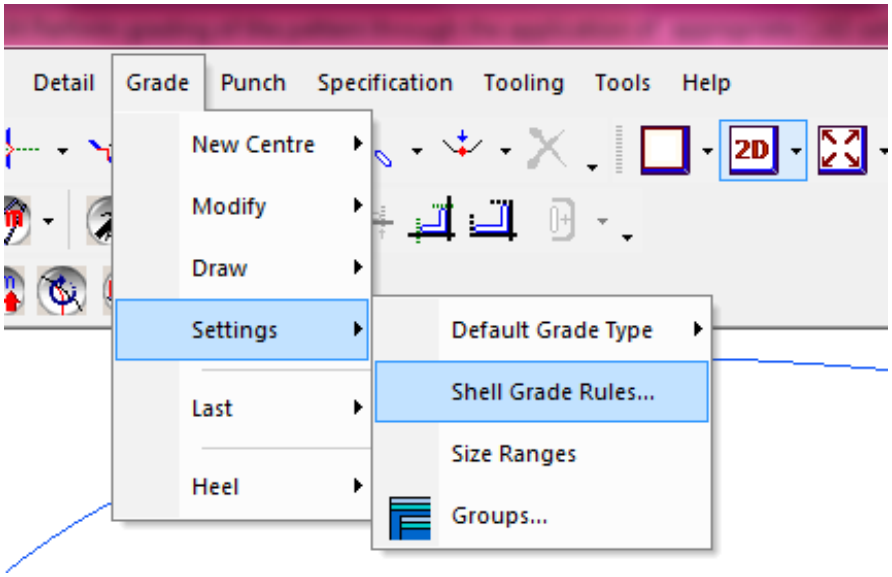
Select the Size button under the model, a windows appear from the list select the size, which you have digitize, this size is model size.



Select the Fit button next to Size, a window Grade fitting appear on the screen, selec the fitting of the last you are using, this information you can check from the last. It is important to get the information about the fitting of the last you are using to get the perfect grading.



After entering the information close the window select the close button in the window.

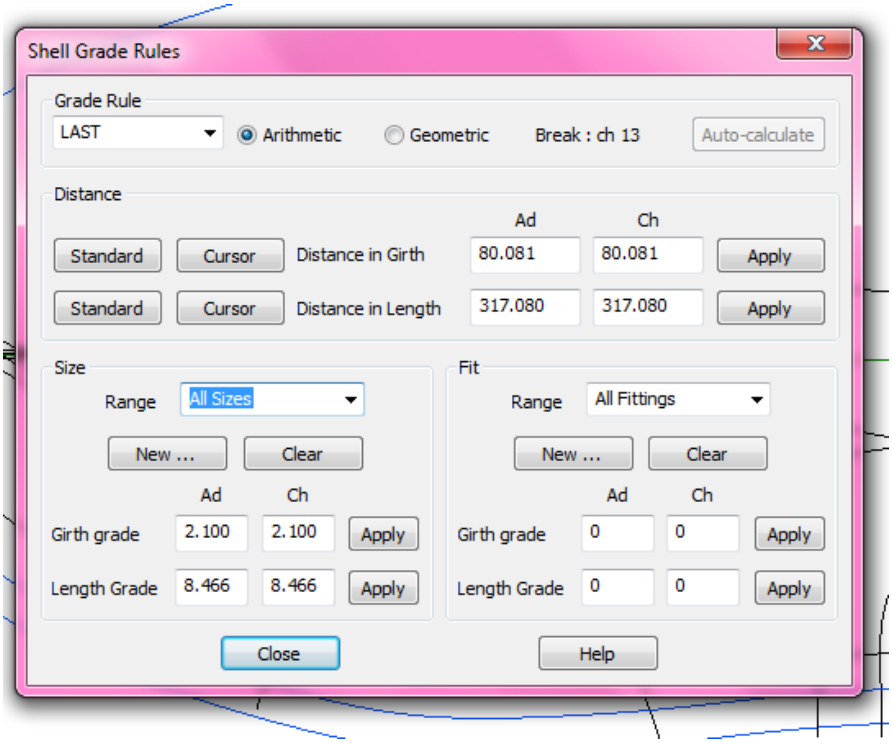


To feed the Length, girth and incremental value

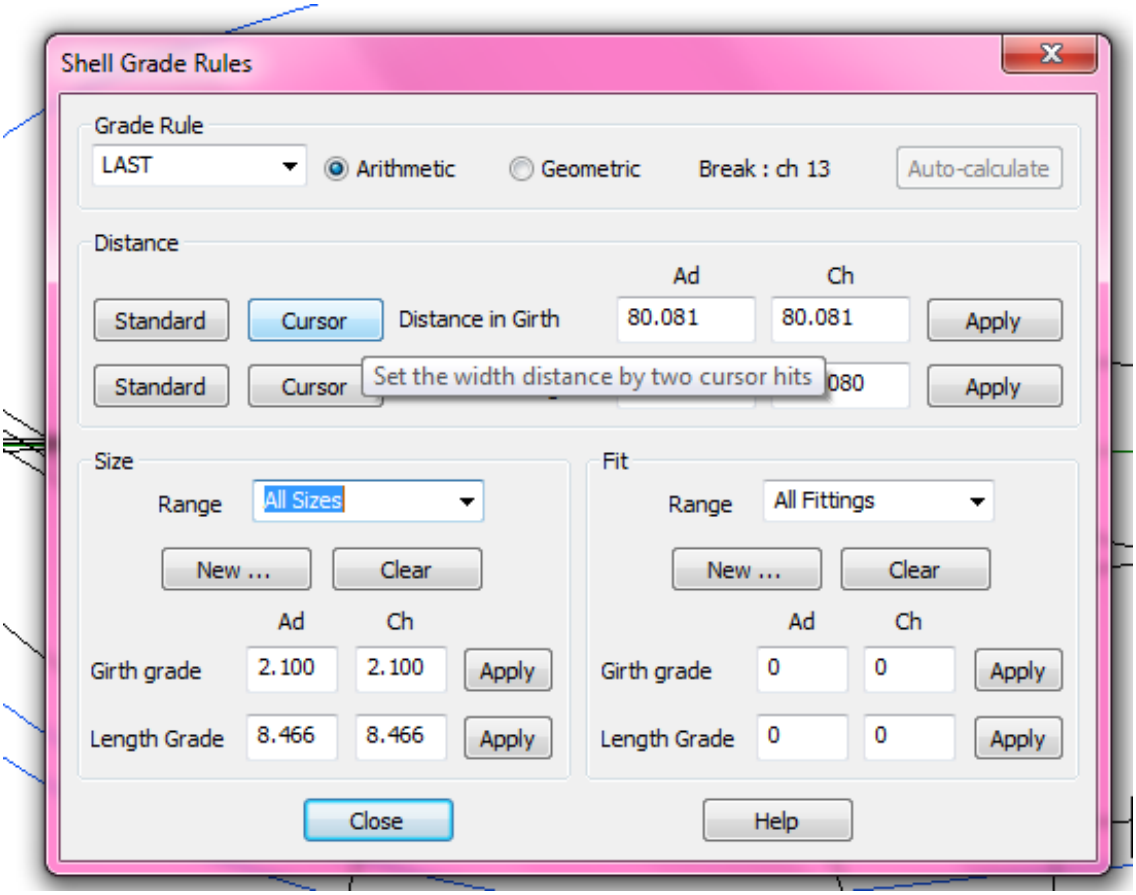
Select Grade Pull down menu

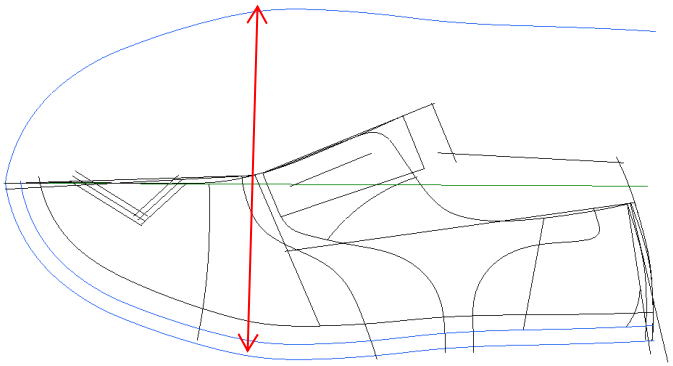
Select Settings from the list.

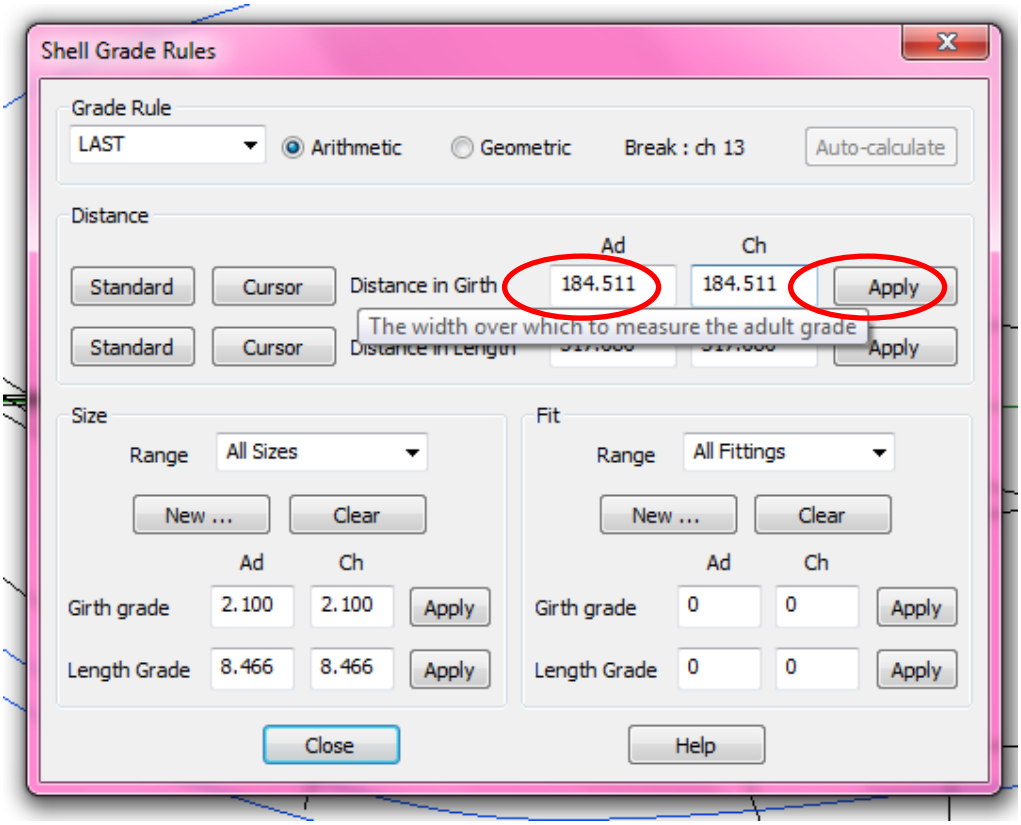
Select the Shell Grade Rules from the list.



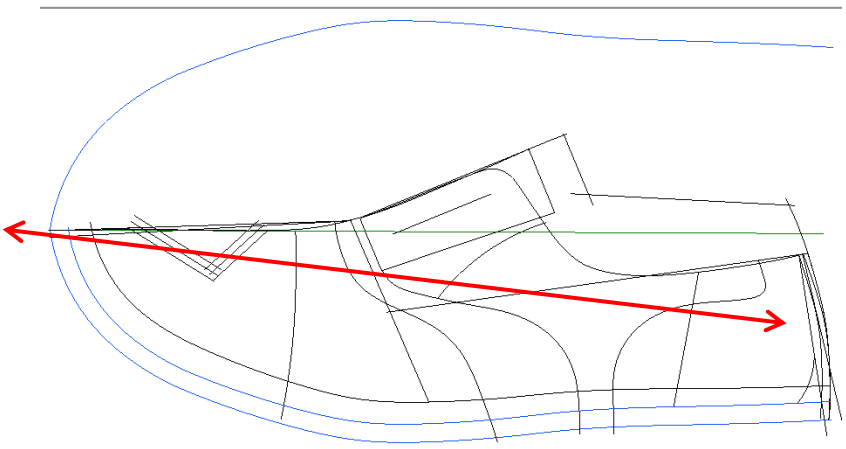
Keep the check on the Arithmetic, to enter the girth of standard select the Cursor, button, before the Distance in Girth, the window will disappear and you are on standard, a cross hair moue will appear you are required to click on inside and outside heights point to capture the girth distance.


Shell Grade Rules
Grade Rule
LAST
Arithmetic
Geometric
Break : ch 13
Auto-calculate
Distance
Ad
Ch
Standard
Cursor
Distance in Girth
80.081
80.081
Apply
Standard
Cursor
Set the width distance by two cursor hits
080
Apply
Size
Range
All Sizes
New ...
Clear
Ad
Ch
Girth grade
2.100
2.100
Apply
Length Grade
8.466
8.466
Apply
Fit
Range
All Fittings
New ...
Clear
Ad
Ch
Girth grade
0
0
Apply
Length Grade
0
0
Apply
Close
Help

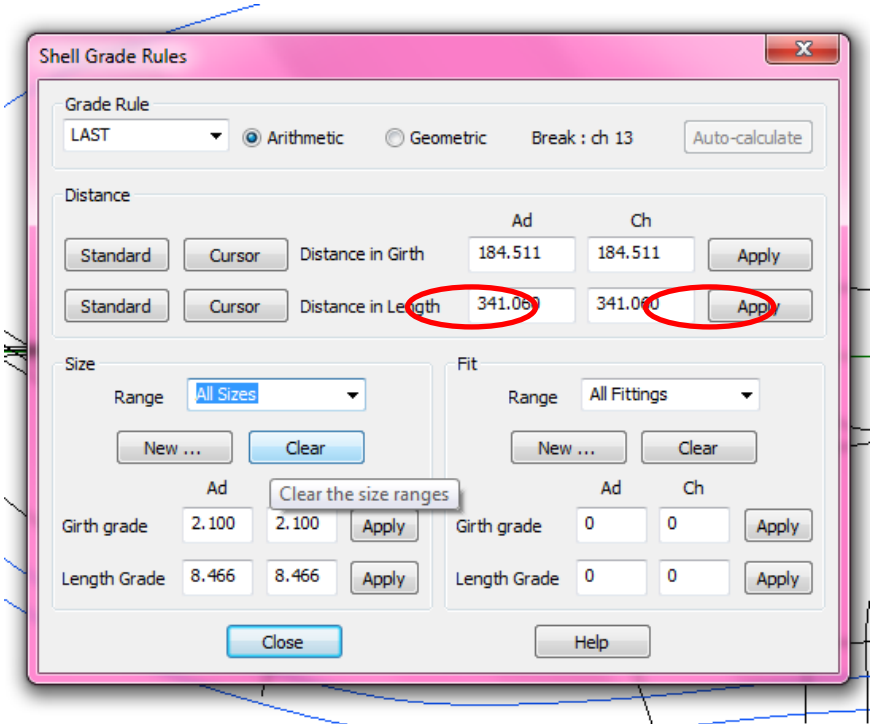




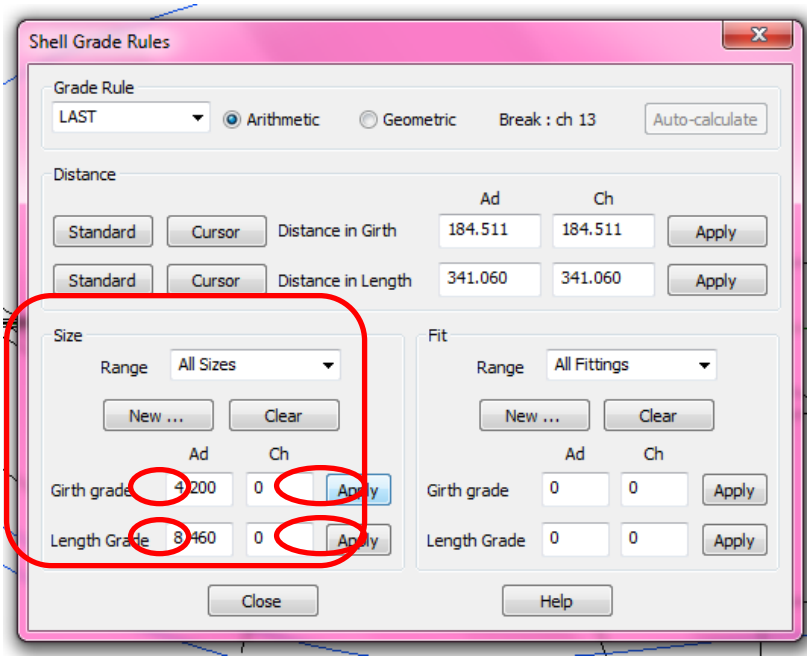
The window Shell Grade Rules will re appear and value captured will appear in the box, you are required to select Apply button to apply this value for grading.



To capture the length of standard process remains same as described only points you have to take from net to toe point to back curve heights point.



Value appears in the box of length, select the apply button to apply the value on the standard.



Under the Size Range Colum, you are required to put the increment value of grading. This value is in Girth and Length. Next to Girth grade you are required to enter the per size incremental value in girth. Next to Length Grade you are required to enter the per size incremental value of length.

In English sizing system, incremental value of Girth per size is 4.2mm

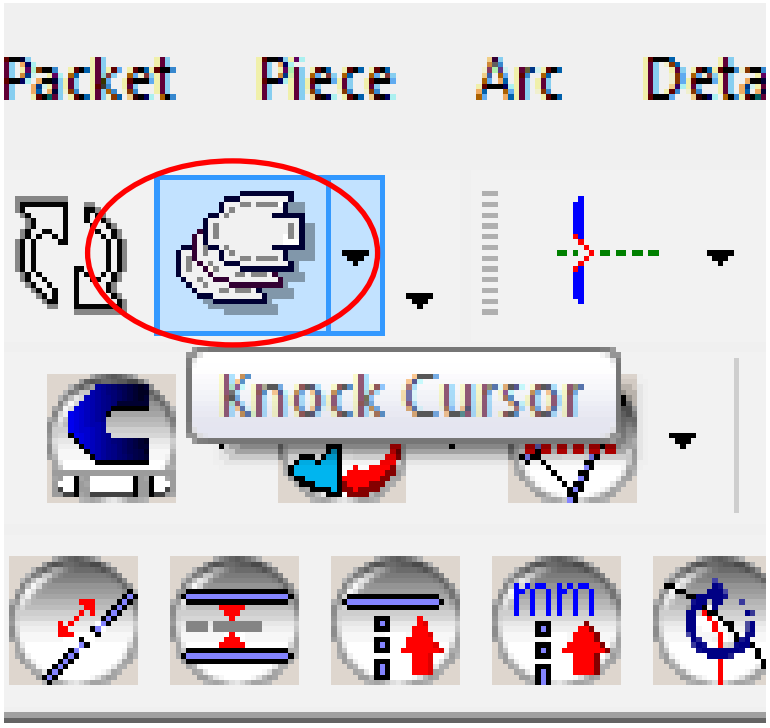
In English sizing system, incremental value of Length per size is 8.46mm

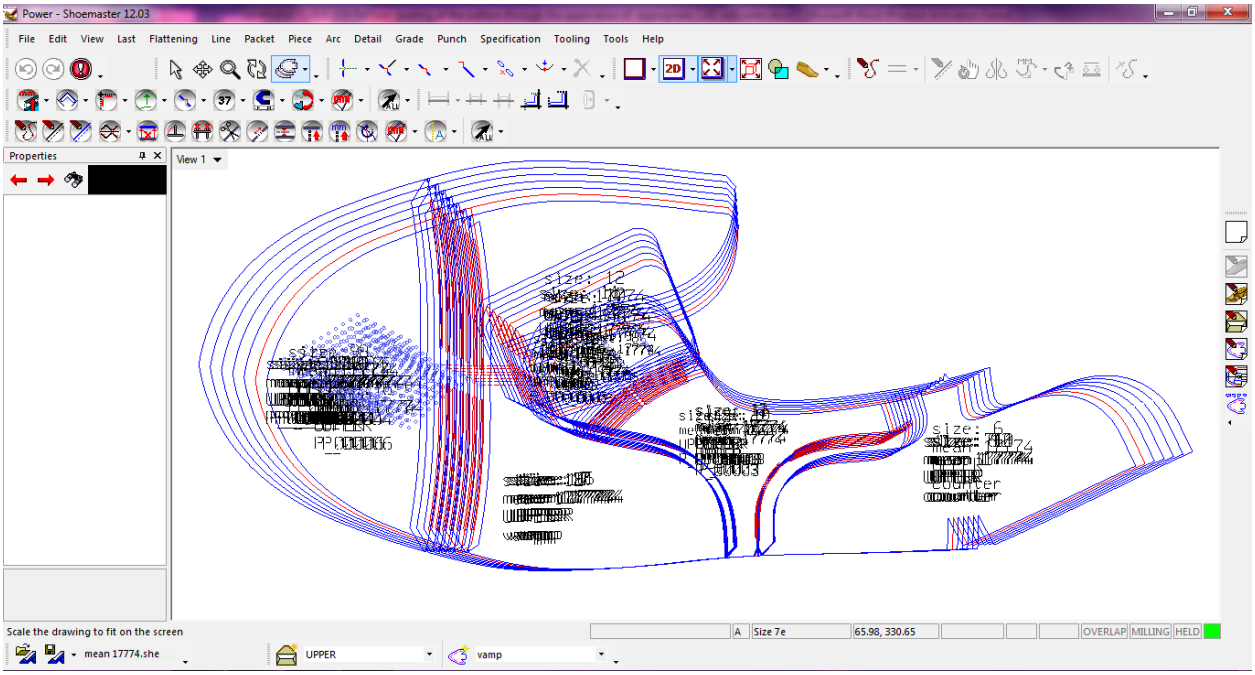
In continental or French sizing system incremental value of Girth per size is 3.00mm

In continental or French sizing system incremental value of Girth per size is 6.66mm

Once you enter the value of increments.

Go to Knock Cursor, you will get the graded view.




Power - Shoemaster 12.03
File Edit View Last Flattening Line Packet Piece Arc Detail Grade Punch Specification Tooling Tools Help
Properties
View 1
size: 12
size: 6
Scale the drawing to fit on the screen
mean 17774.she
UPPER
vamp
A
Size 7e
65.98, 330.65
OVERLAP
MILLING
HELD

Self-Check 2	Written Test

Name: _____ Date: _____

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

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

Test I: Short answers

1. What is incremental value in English sizing system for length grading? (Mark 1)
2. Which icon is used for run the grading on style after entering the value? (Mark 1)
3. What is fitting? (Mark 1)
4. What is incremental value in French Sizing system? (Mark 1)
5. In which window you enter the Length & Girth of standard or shell? (Mark 1)
6. If you want to see graded pattern only, which icon you will use? (Mark 1)

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Test II. Short Answer Questions

1. _____

_____

_____

2. _____

_____

3. _____

_____

4. _____

5. _____

_____

_____

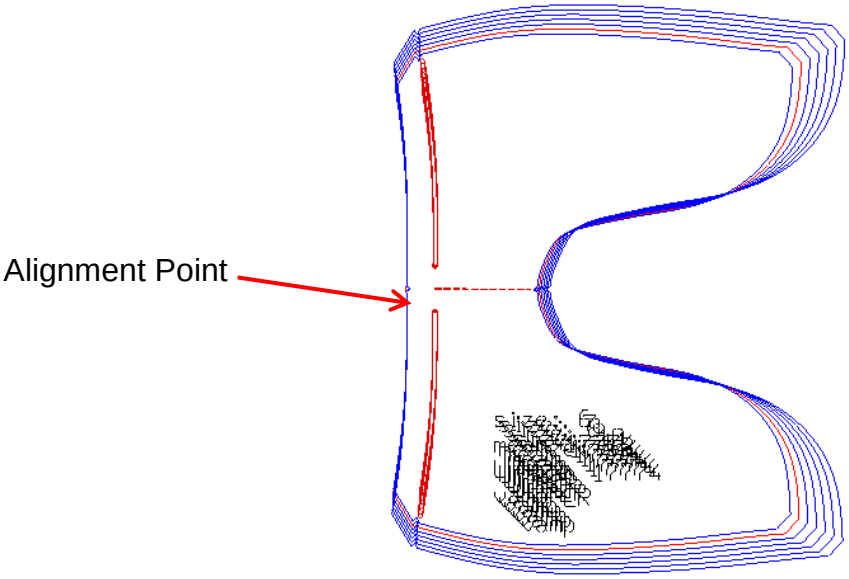
6. _____

_____

Information Sheet 3- Checking graded patterns by alignment

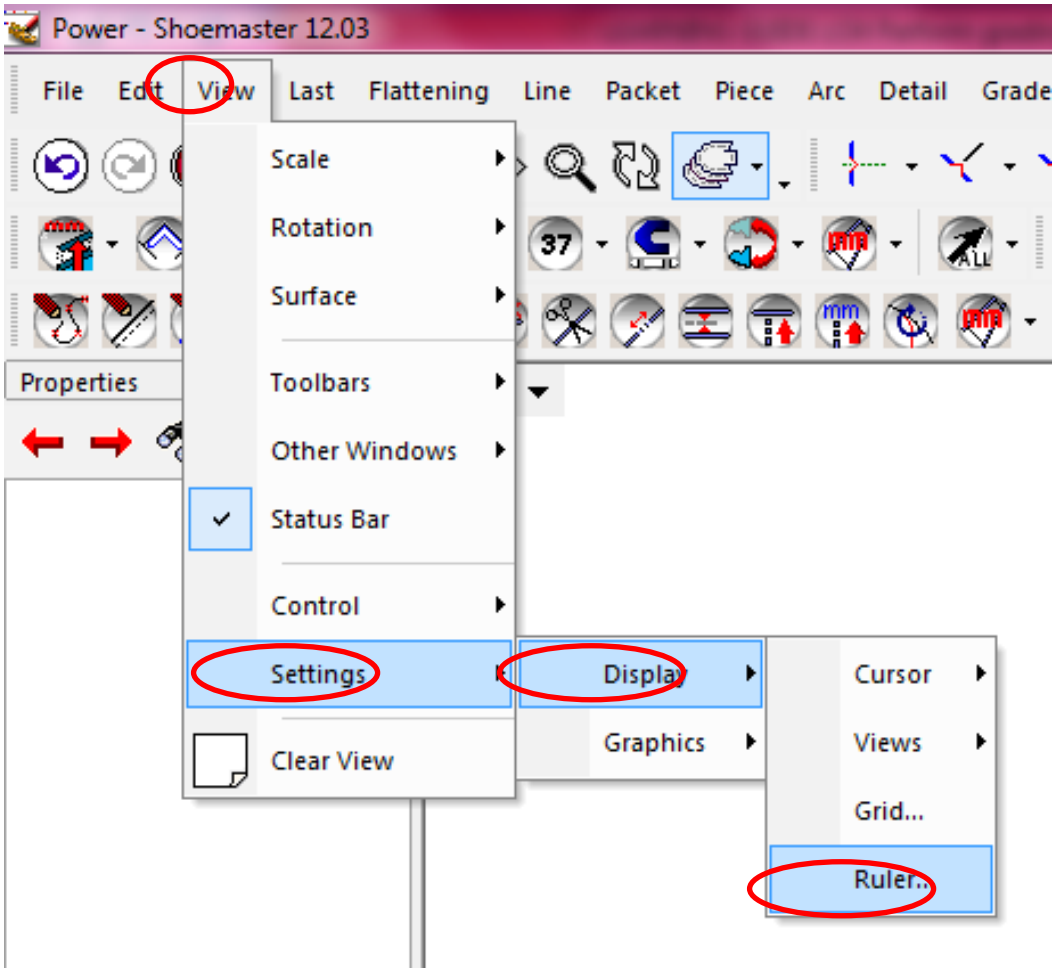
Verification of grading is carried out by knocking on a piece of full standard & then measure by measuring tools.

Alignment by knocking



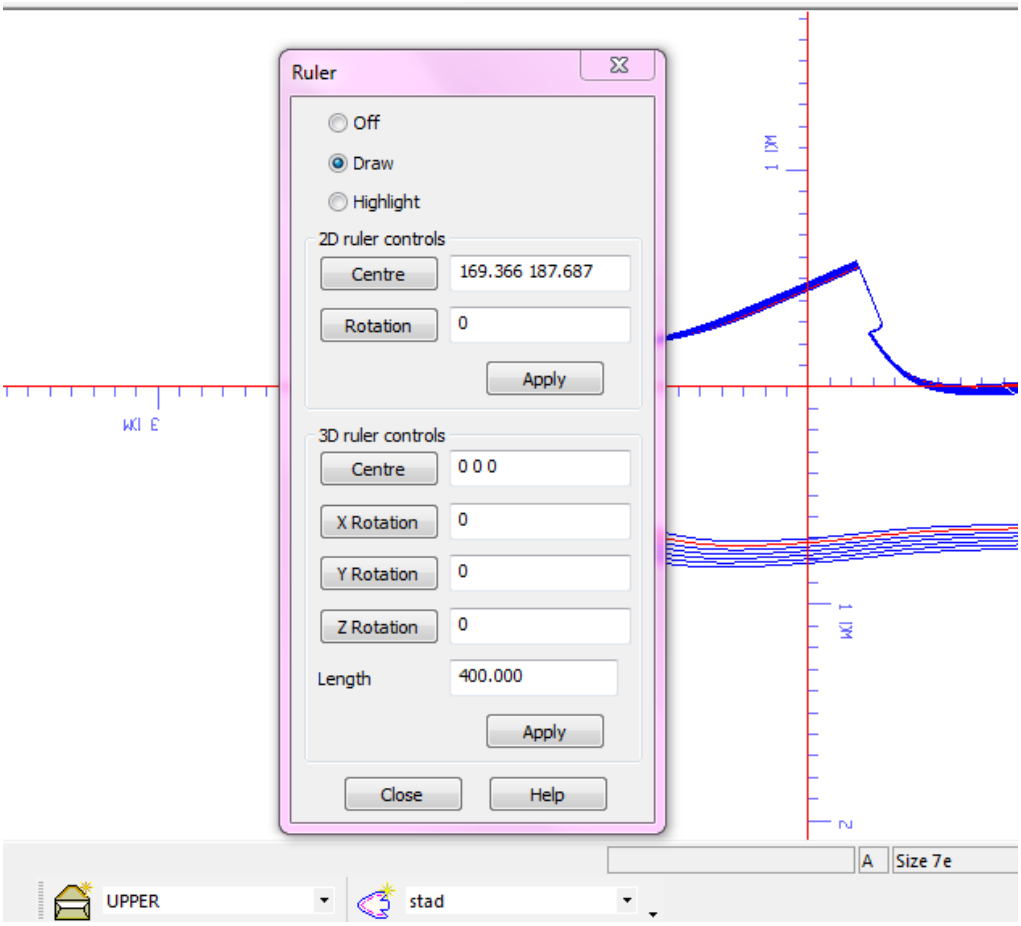
To measure the increment of pattern or standard

Turn on the ruler and measure the increment between tow graded pattern or standard



Procedure:

1. Select View Pull down menu
2. Select Settings from the list
3. Select Display from the list
4. Select Ruler…



A window of Ruler pops on select the Draw A ruler will appear on your screen. You can control the ruler by 2D ruler controls. By selecting Centre you will hold the 0 0 axis in your control and you can position the ruler at desired position.

To rotate the ruler select the Rotation button, you can rotate the ruler in any direction.

Self-Check 3	Written Test

Name: _____ Date: _____

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

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

Test I: Short answers

1. Why do you undertake verification of grading? (Mark 3)

2. Write procedures to measure the increment of pattern or standard. (Mark 3)

LG #23	LO #6- Nest and calculate consumption of the model

Instruction sheet

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

- Nesting graded patterns to have the minimum waste
- Calculating material consumption of the pattern
- Calculating allowance for wastage of material

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

- Nest graded patterns to have the minimum waste
- Calculate material consumption of the pattern
- Calculate allowance for wastage of material

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

LG #24	LO #7- Cut-out graded patterns by CAM machine

Instruction sheet

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

- Adjusting the CAM machine
- Inserting cardboard machine
- Cutting the patterns machine in line with standard
- Measuring and observing OHS throughout the operation

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

- Adjust the CAM machine.
- Insert cardboard machine
- Cut the patterns machine in line with standard
- Measure and observe OHS throughout the operation

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

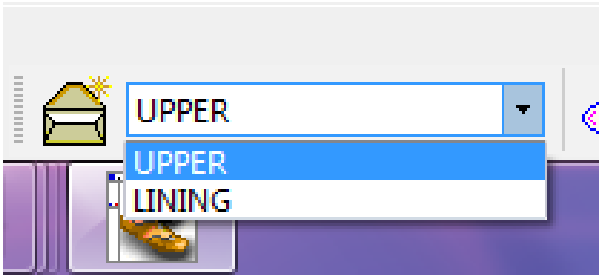
Information Sheet 1- Adjusting the CAM machine

1.1 Introduction

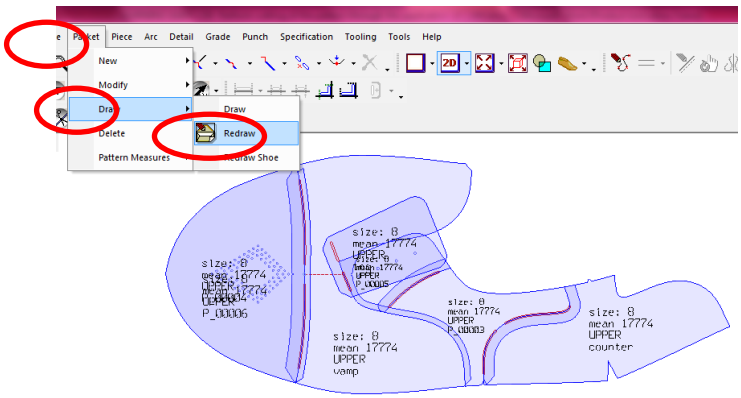
CAM stand for computer aided manufacturing, in this process machines received data in from of signal from the designing or processing computer. Before you start the CAM machine, you must generate the data for output from the source i.e. Shoemaster Power. It very important to understand the data you need to feed the machine. The 2D output will be patterns of the design. In previous LO you learned the process of extraction of pattern from the standard and these extracted patterns are going to the designated packet. Packet is the source of output.

1.2 Procedure to generate the output data.

1. Select the packet from the packet icon drop down form the downward arrow and activate the packet for which you wish to take the output.



2. Select the Packet pull down menu, select Draw from the list, select Redraw from the list.

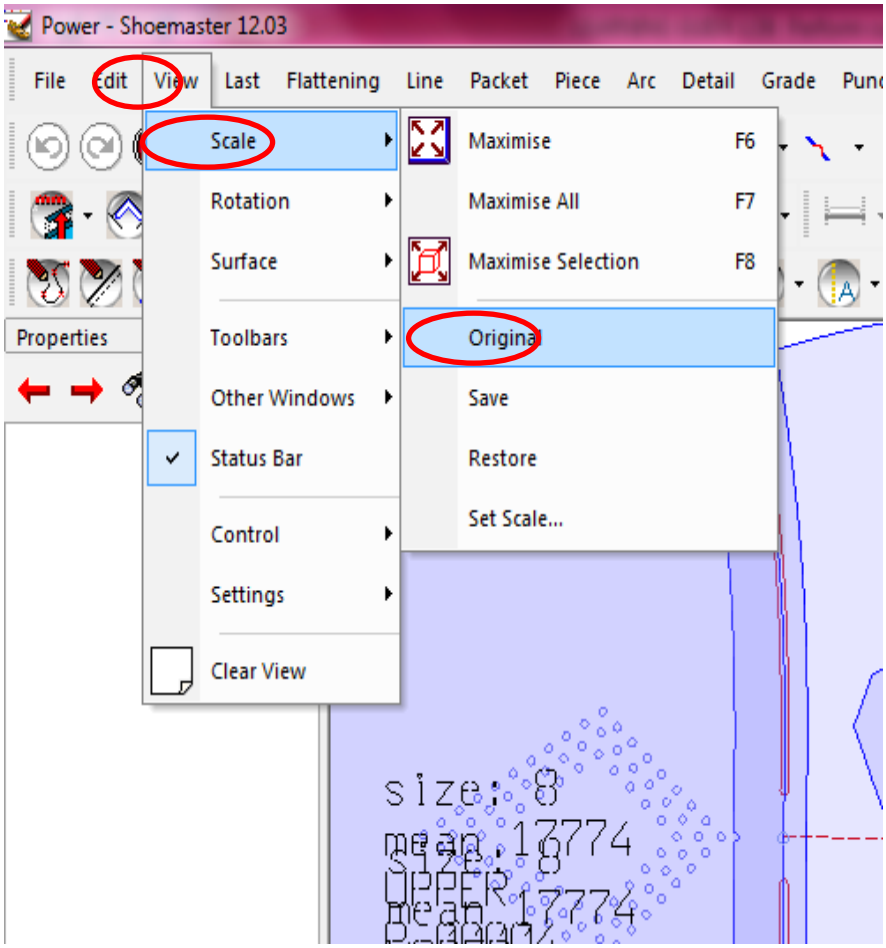


Patterns of active packet will be visible on screen.

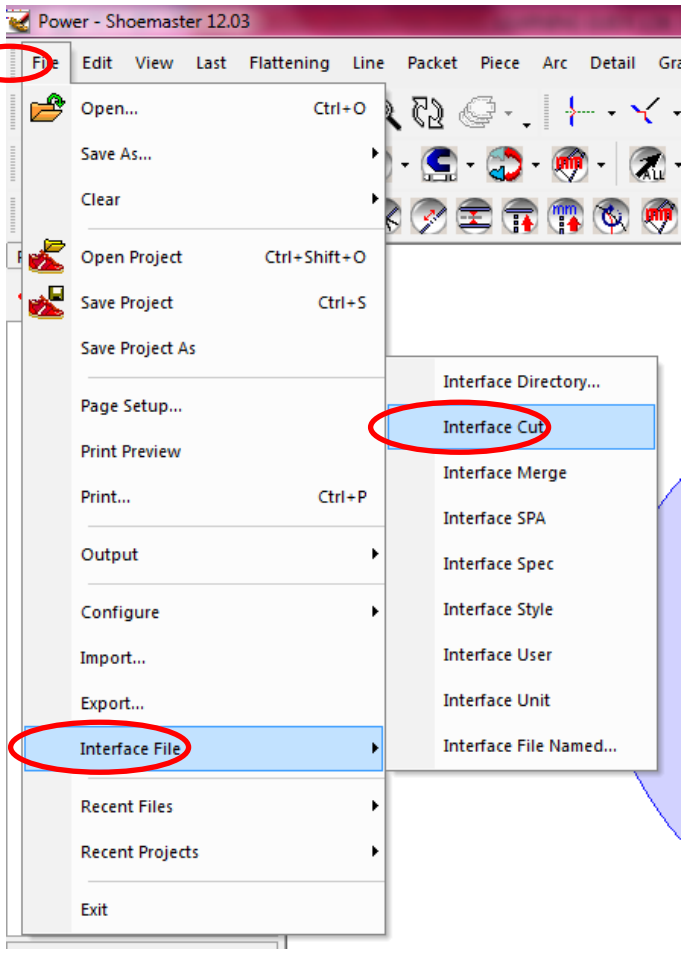
Note: Always generate the output of packet only, never generate the output from style lines you will junk in the output file.

3. Select the View pull down menu, select scale form the list, select original from the list. It is very important user generate the output from the original scale. Here original sale means the 1:1 scale.

Note: If user does not generate the original sale output, output may be out of proportion and would be of no use.



4. Select the File pull down menu, select interface file from the list , select interface cut. In this process user is generating the output file, which is called a interface file. It is called interface file because, the interface file will used by next application or software, which is Shoemaster Interface, it is dedicated software to work as an interface.



Interface file goes to a designated folder c:\interface_files\interface\

The next step is launch Shoemaster Interface software. This software works as an interface between CAM machine and output file.

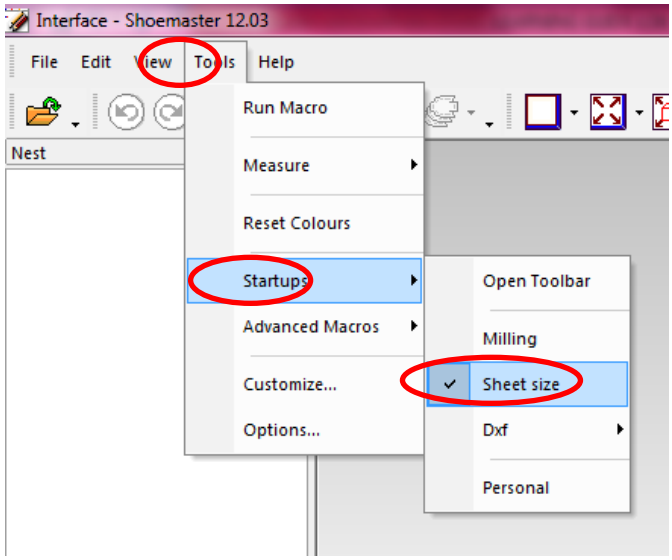
1.3 Calibration

Before sending any output to the machine make machine ready and run the calibration. To calibrate the machine, a simple method is applied. It is suggested to run the calibration once in 1 month. Draw a 100mmx100mm square on a paper, digitize it, after digitization measure in through measuring tolls in the software, it should be 100mmx100mm. Generate the pattern out of 100mmx100mm square, generate the output or cut file, and send it to the machine cut the pattern and measure it with ruler. All three measurements i.e. (Drawing of 100mmx100mm square, Digitize 100mmx100mm square and the output patter of

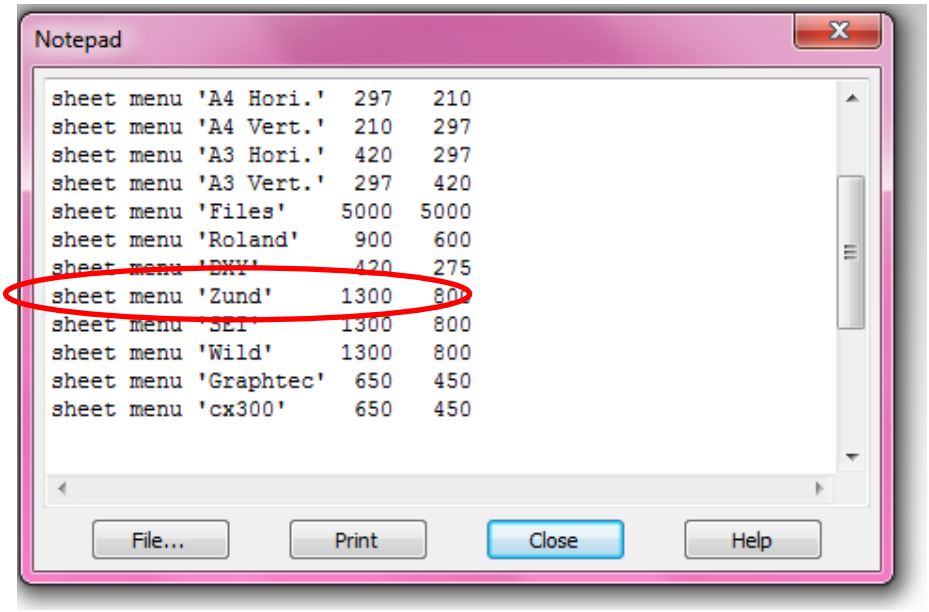
100mmx100m) must match. If there is any deviation in results must contact to the customer support.

Orientation check

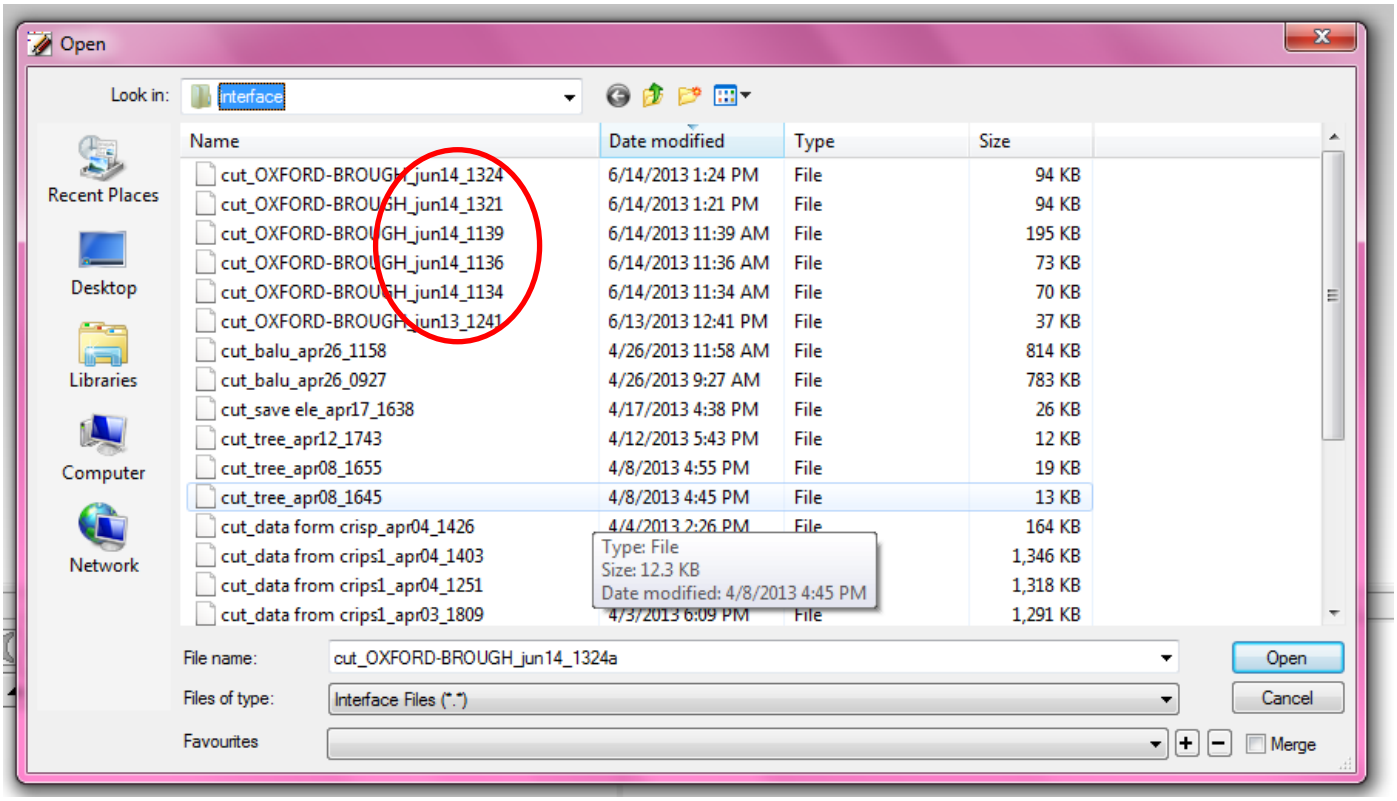
Pattern cutting paper is placed on the machine bed, the standard bed size of the machine can be 700mm x 700mm or as per machine's individual specification. User is required to check the size of pattern cutting paper or board is available with them. Follow the X and Y axis of machine marked on the machine. Measure the X and Y length of sheet and feed it to the software as shown below. This is one time process, once, it is feed it will remain with the software.



A window pops up of Notepad; you select your output device and change the sheet size as per your specification.

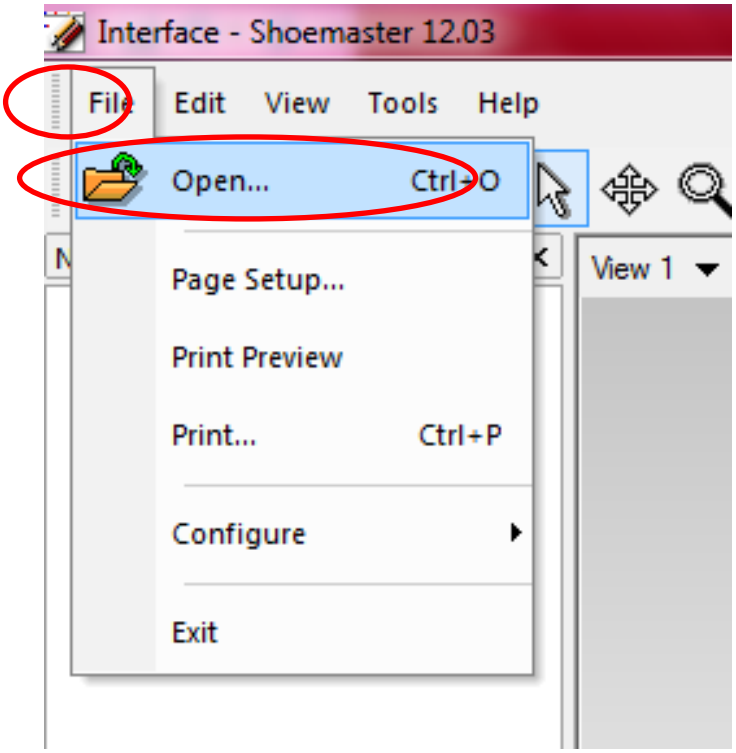


The output generated by the power software is cut file, the file always be as **cut_filename "date & time**" of file generated. If you generate more than one cut file of one file with date and time you can identify the latest version of the same cut file.

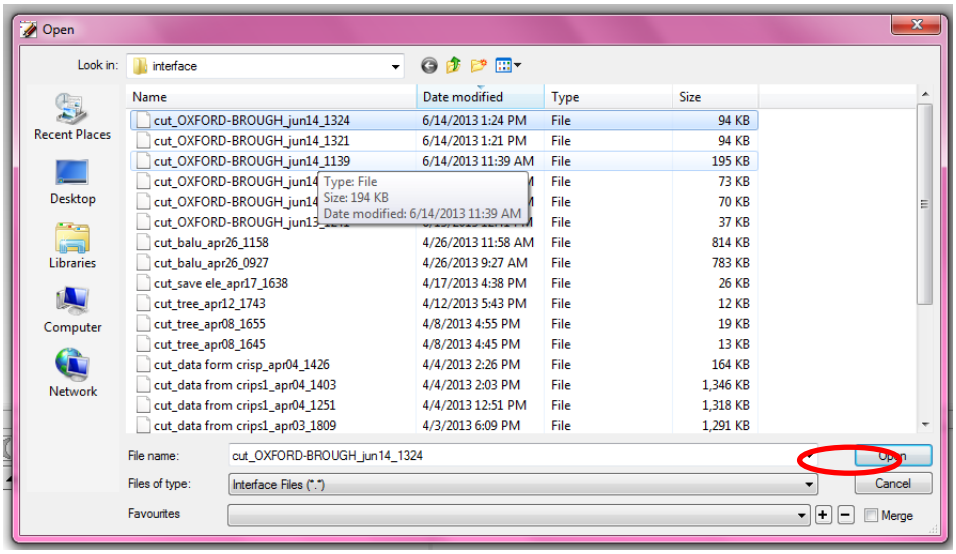


Procedures to send the output to the machines:

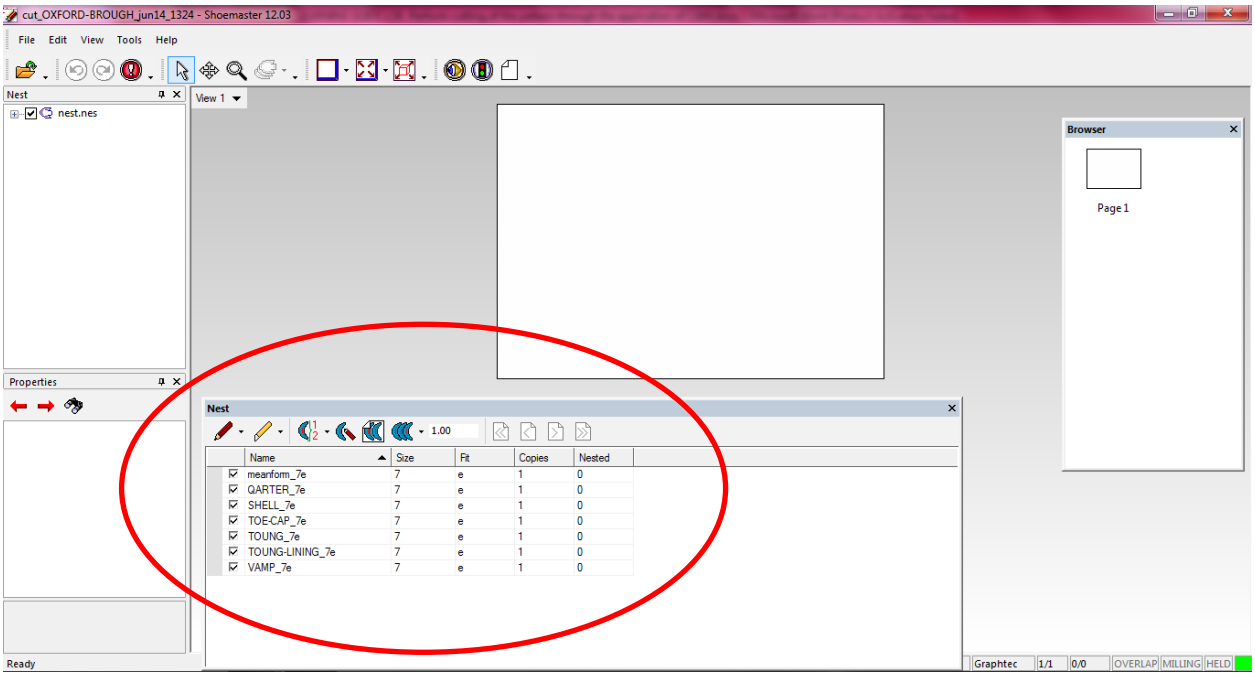
1. Go to file pull down menu
2. Select Open from the list.



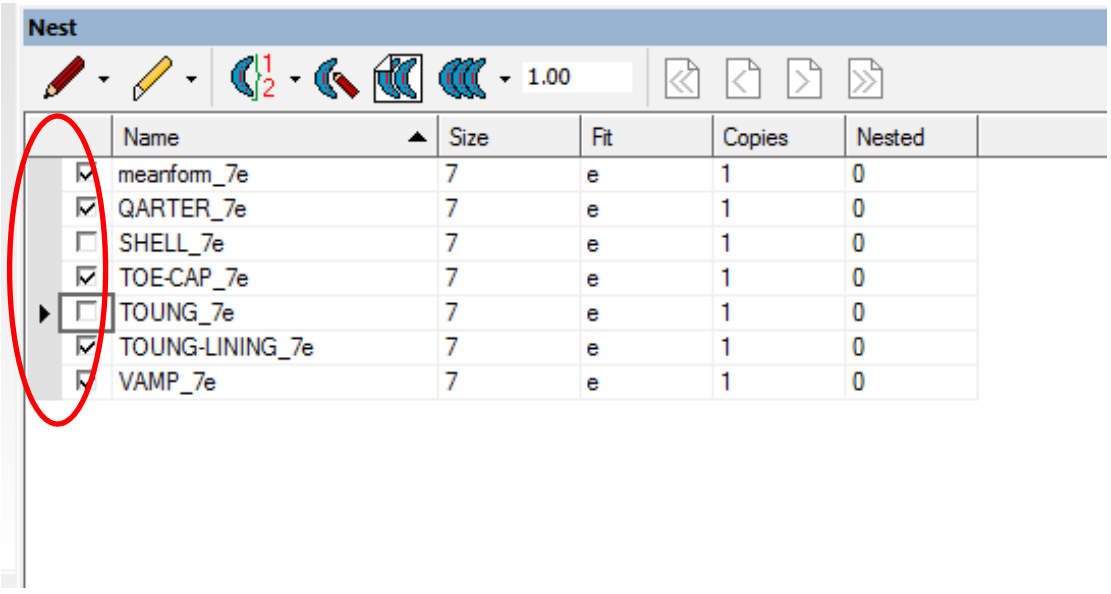
3. A windows pops on, select the file, which you want to feed to the CAM Machine. Select the file and open it.



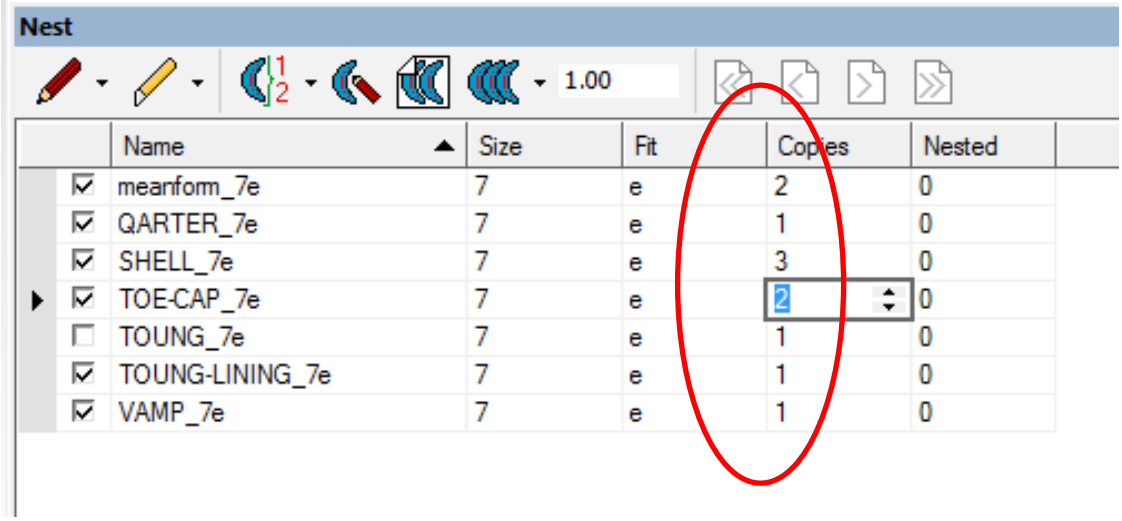
All the patterns in the file which are ready to cut are listed in the Nest window. Each pattern has a check box and is enable



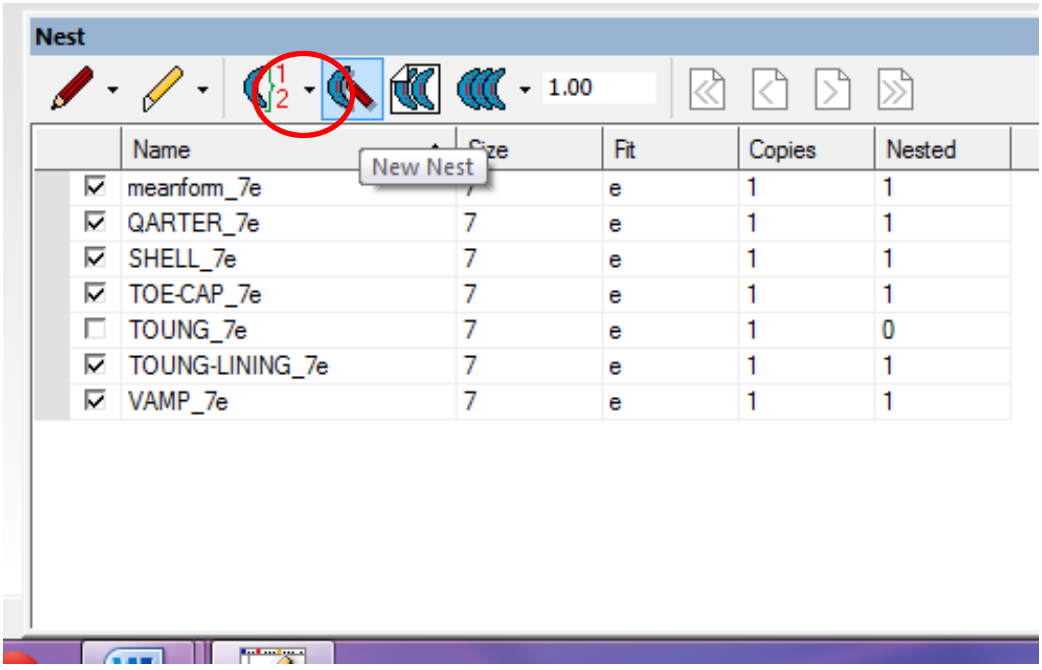
If you do not want to send any pattern to the CAM machine uncheck the box to the corresponding pattern



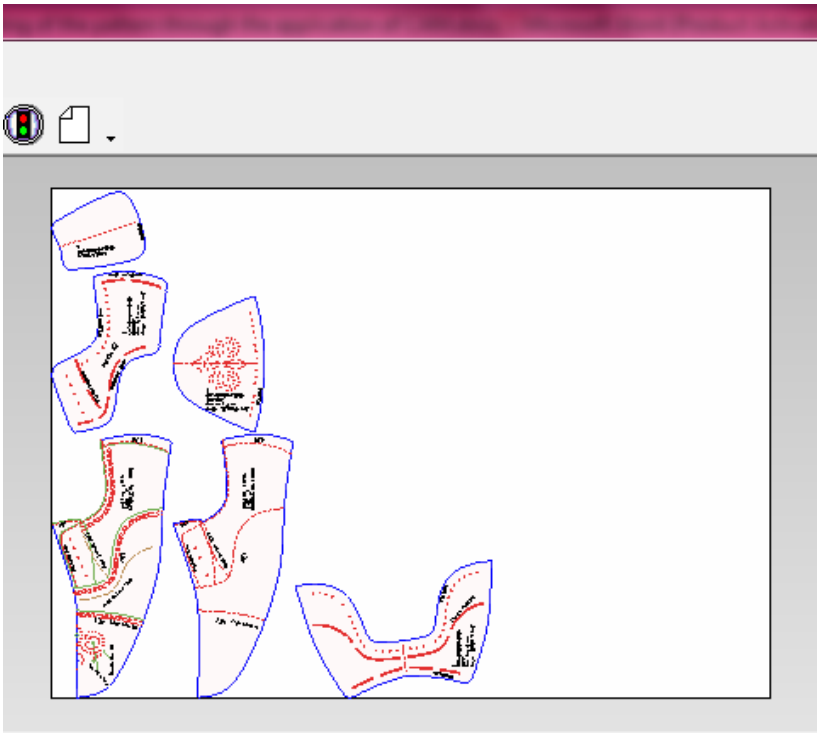
To generate the more than one copy of the same pattern user is required to change it under the Colum of copies.



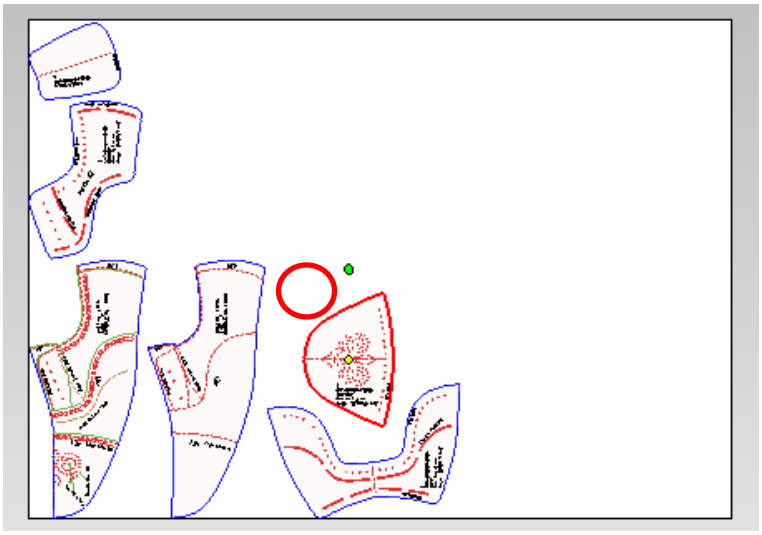
To draw the pattern on the defined sheet select icon New Nest



User will achieve the nested view of the patterns on the sheet.

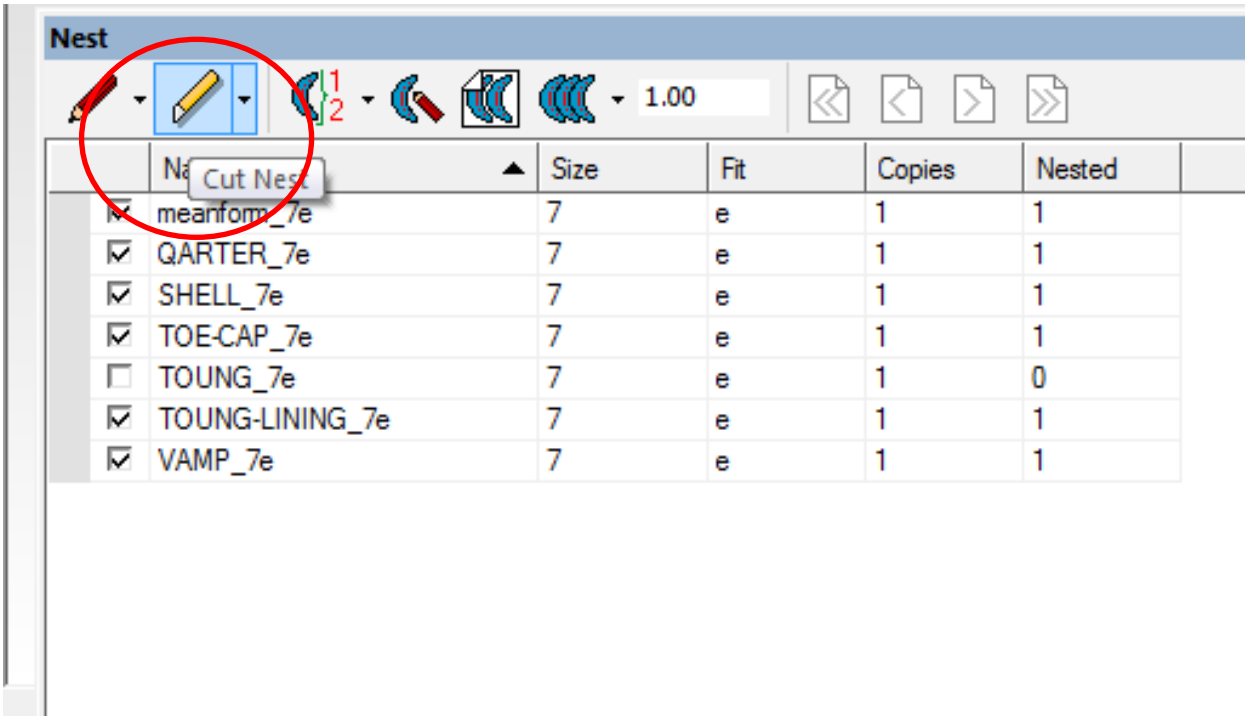


To chage the position of the pattern on the sheet user is required to selec the pattern and move it, to roatate hold the rotation button i.e. green colour circle user can rotate the pattern freely.

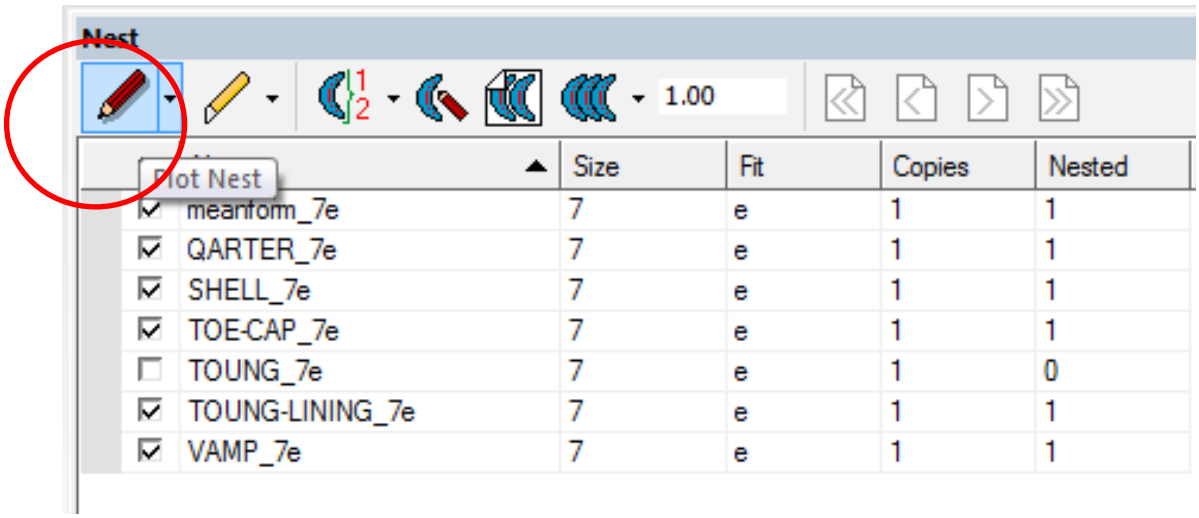


Data is ready to feed machine keep the CAM machine ON and should be ON-LINE mode.

To make machine on line, Select ON-LINE button on the panel of the machine.

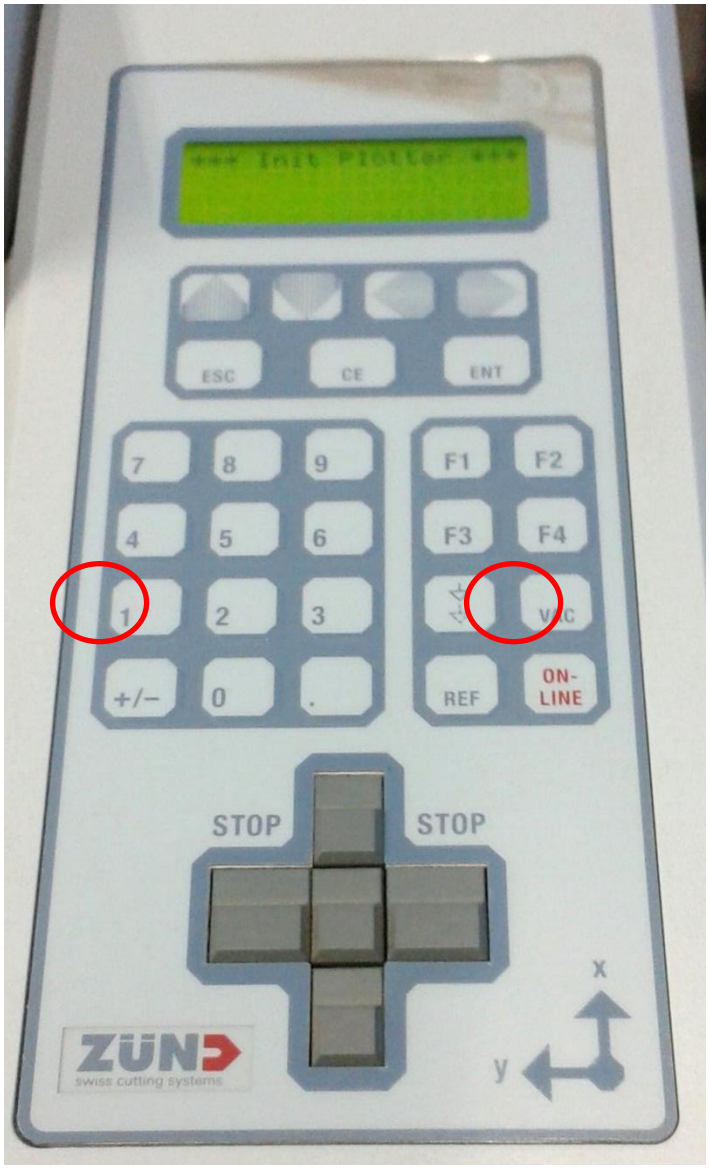


To get the pattern cut form the CAM machine, select the Cut Nest Icon



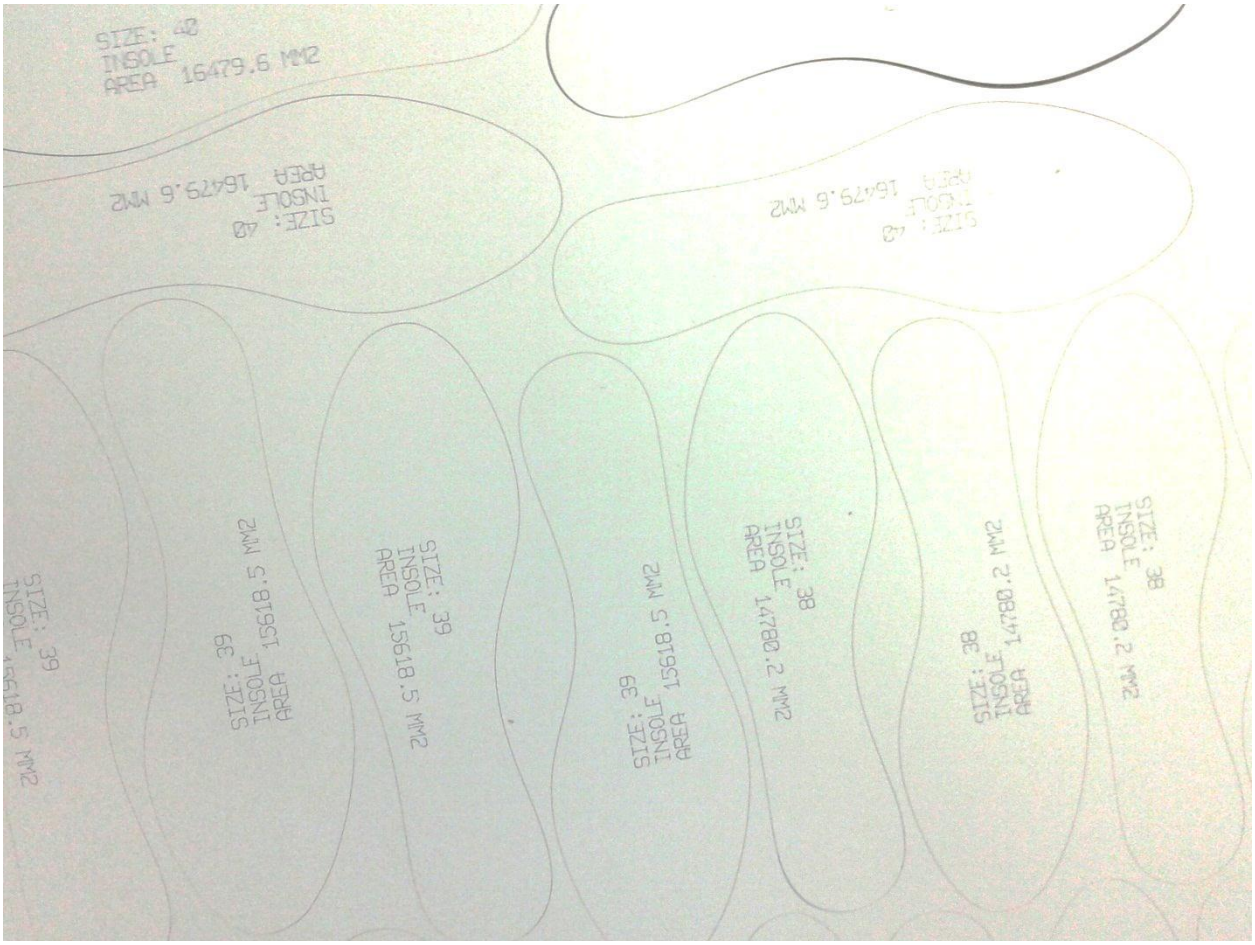
To get the pattern plotted on the CAM machine, select the Plot Nest Icon

Before shooting data to the CAM machine, place the pattern cutting sheet on the bed of machine and turn on the Vacuum suck sun system of machine, it will the pattern sheet on the bed, while knife is moving on very fast speed sheet will not move from its position.

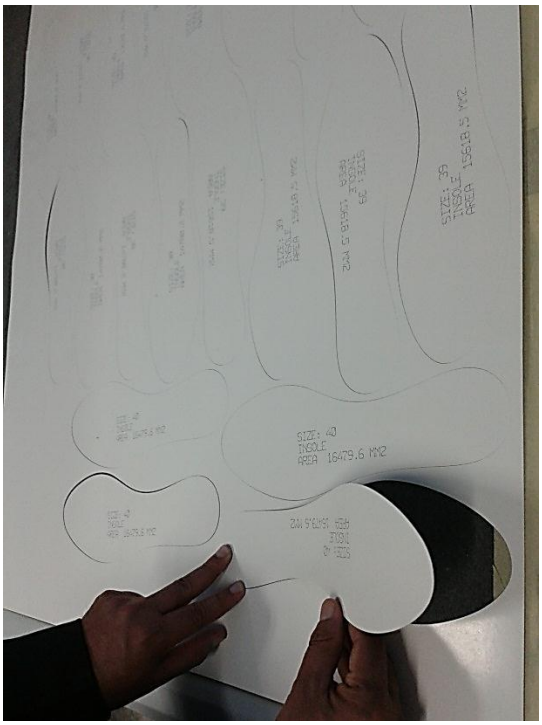


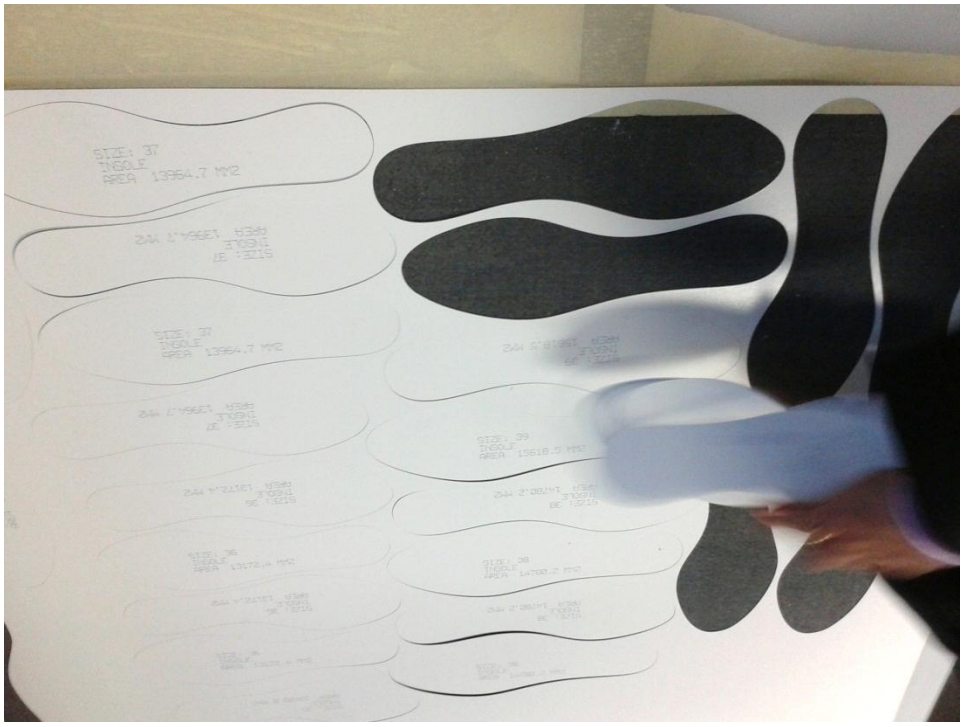
To turn on the Vacuum suck sun, select the VAC button on the panel of machine following the button 1. Suction will start. To turn off suction select the VAC button following the button 1, suction will stop.

Once the data is sent to the CAM machine stats plotting and cutting as defined in the CAD

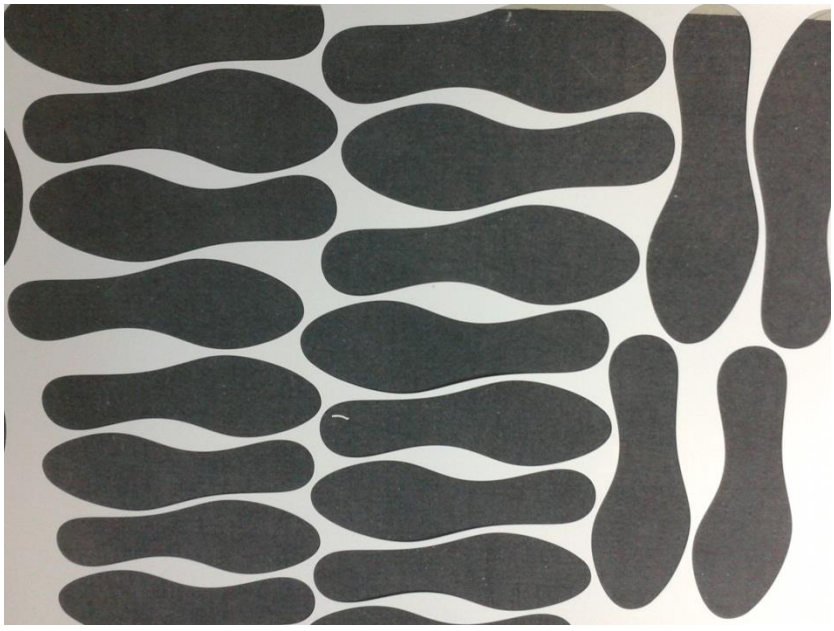


Once the cutting and plotting process completes the movement of machine's head stops. Now turn off the Vacuum as described before





Hold the sheet in your hand and take it off from the machine's bed. Cut pattern will remain on the bed of machine and cut out sheet will come in your hand



Collect all the cut pattern, place them size wise starting from small size to higher size knock them from any direction to ascertain the grading is as per requirement.

Graded pattern achieved.

Self-Check 1	Written Test

Name: _____ **Date:** _____

Total marks:-10)

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

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

Test I: Fill in the blanks:

1. What is the source of CAM data? (Mark 1)
2. What is use of keeping the scale original? (Mark 1)
3. What file is generated by source for CAM? (Mark 1)
4. How you will identify file the latest CAM file generated from source? (Mark 1)
5. Under which windows you can see the list of pattern ready for cut? (Mark 1)
6. How you can turn ON and turn OFF is the particular pattern for CAM?(Mark 1)
7. How you will draw the layout of pattern on the cutting sheet? (Mark 1)
8. What is important to do on machine before you sent data to cutting machine? (Mark 1)
9. What is the use of Vacuum suction on CAM machine? (Mark 1)
10. What you will do before taking out the cut patterns from the machine bed? (Mark 1)

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Test I. Short Answer Questions

1. _____
2. _____

_____

3. _____

_____

4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Reference Materials

Book:

1. Erik Oberg, Franklin D. Jones, Holbrook L. Horton, and Henry H. Ryffel, “Machinery’s Handbook”, 27th Edition, Industrial Press, Inc., New York, NY, 2004

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