

# CRAFTSMANSHIP



FOSTERING A NEW AND COMPETITIVE  
APPROACH TO CRAFTS AND SEMI-INDUSTRIAL  
HIGH ADDED-VALUE SECTORS

## The Art of Silverware: Construction of Silver Bracelet

GREECE



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# CRAFTSMANSHIP+

THE ART OF SILVERWARE:  
CONSTRUCTION OF SILVER BRACELET

## TIEPIEXOMENA

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Sega, Limamator, Measuring Tape, Silver Wire



Βουρτσάκια, Σφραγίδα ασημιού  
925 Brushes, 925 Silver Stamp



Metal board



Whitening fusion



Files



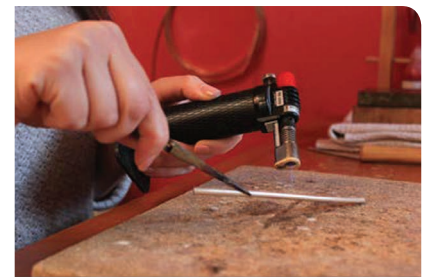
Brushes



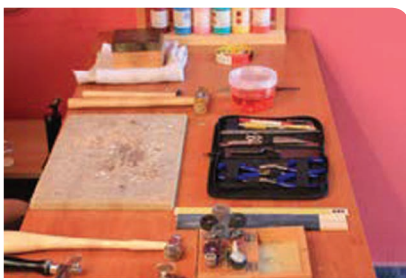
Bracelets shape and silicone hammer



Smyrigli



Firing gun and tong



Work table

## CONSTRUCTION OF SILVER BRACELET

### MATERIALS | TOOLS

16mm Wire made of 925 sterling silver, 16 mm thick  
Slacking solution  
Measuring tape  
Sega (manual)

Limamator  
Firing gun  
Ball hammer  
Silicone hammer  
File  
Trumpets for bracelet  
Pliers

Chisel  
Metal Tac  
Smyrigli  
Stamp/Seal  
Grinding brushes for matte finish

## CHARACTERISTICS AND TECHNIQUES OF SILVER JEWELRY CREATIONS

### CHARACTERISTICS OF THE RAW MATERIAL: Silver (Ag)

Silver is a white, soft and shiny metal, the best heat conductor available and extremely ductile. We rarely find silver at nature. The majority is mainly produced as a by-product from the exploitation of other elements such as copper or lead.

The degree of silver's purity is counted in millimeters (percent of a thousandth of weight). Silver items must bear a stamp indicating the alloy from which the object or jewel was made, typically 800 ‰ or 925 ‰.

Pure silver 1000 ‰ is a soft metal and it is difficult to handle it and alloys with other metal admixtures are being created to «harden» silver and deliver durable objects for daily use, e.g. cutlery, serving dishes, or personal items such as key rings, paper cutters, jewelry, etc.

Silver is considered highly forgivable and was always been considered as a precious metal for creating precious items such as tableware, candlesticks, trays, dinnerware, teapots, winecoolers, jars, jugs, etc.

Further to that necklaces, earrings, rings, bracelets and pins are being produced from silver. Since silver is considered a «soft» metal and we can also create jewelry carved, embossed, made with various techniques, framed with subtle representations, meanders and colorful precious stones.

## TRADITIONAL SILVERSMITHING TECHNIQUES

### CUTTING

Filing the already shaped metal to the desired thickness and dimensions of the respective design.

### HAMMERING

Hammering was the first way people discovered, thousands of years ago, in order to process metals. Wire and metal sheets, were created using hammering, more precisely, by hitting a piece of metal with a hammer on a hard surface (nowadays this hard surface is a steel anvil). By hitting the metal, it becomes thinner and longer. This way wire and the lamina were created, to be further processed. Hammering remained for thousands of years, the basic method used to shape all kind of metals.

### SOLDERING

We are using the terms soldering or welding in jewelry making industry, to describe the process of permanent joining of two metal pieces. To achieve this result we hold the pieces together, soldering them with a soldering gun. Between the two pieces of metal, insert a small amount of a suitable alloy called solder or simply gluing material. By continuously heating the metals the temperature is progressively rising. At a particular point, the alloy melts (liquefies), and is joining the two pieces of metal together permanently. When the metal cools, the soldering is successful. The metals to be soldered define the respective alloy used for the soldering.

### DEOXIDATION

In order to remove oxygen content from a metal object and clean the metal, we have to dip it in a scrubbing solution (also called whitening solution by craftsmen), usually using a 10% solution of sulfuric acid in water.

### CASTING

Casting is the process/method of producing metal objects, by pouring molten metal (in liquid form) into a mold of the intended shape. The metal and mold are then cooled (solidified), and the metal part (the casting) is extracted having the shape of the mold.

### FILING

Filing is done on the filing board with a smooth file. By filing the edge of a wire we create a point.



# CONSTRUCTION OF SILVER BRACELET

## Step 1 | CHOOSING THE METAL

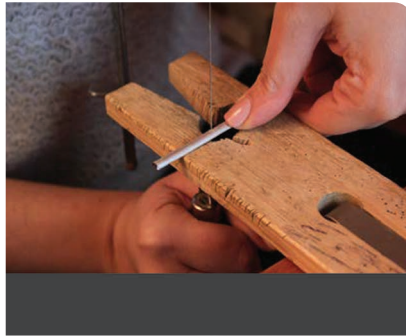
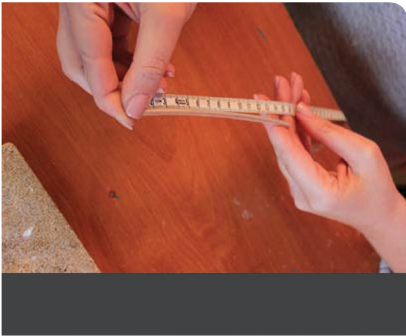
The first stage for any creation is the choice of the appropriate metal to be used. You can find various choices of metals and wires available. With the appropriate research, you will have the chance to find the metal that will give you the best possible results based on the design you have chosen.

For this particular design, **a wire of 925 sterling silver was chosen, curved on one side.**

## Step 2 | METAL SHAPING

### Cutting

We cut the wire that we have chosen using of a manual jigsaw and a 16cm diameter tape measure, for “medium” size. (The centimeters we choose vary according to the size we want for the bracelet).

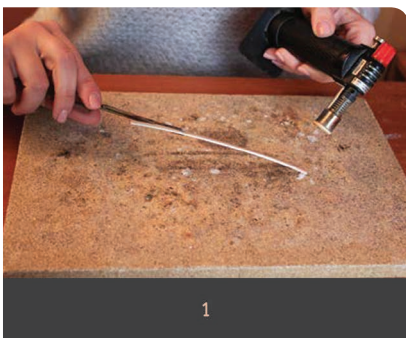


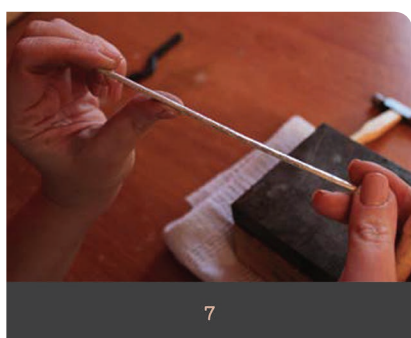
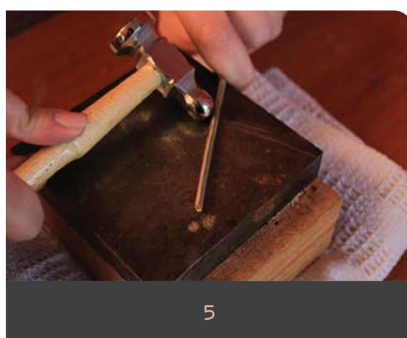
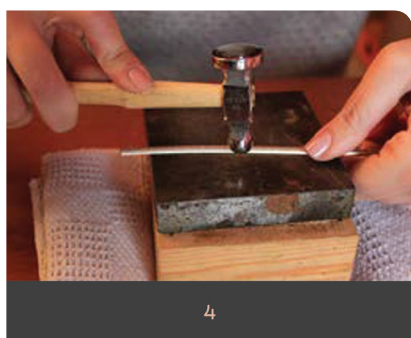
## CONSTRUCTION OF SILVER BRACELET

### Calcination

In order to proceed with the hammering process, we are heating the metal (with fire). This way, metal's shaping becomes more efficient. 1 2

Immediately we seal the metal with the stamp certifying that silver used is 925. 3





## CONSTRUCTION OF SILVER BRACELET

### Forging

We allow the sealed metal to cool. Then we begin forging it on the metallic bunk. Use a ball-peen hammer for the forging process. The one side of ball-peen hammer is ball shaped. For our design, a thick bracelet we need a ball-peen hammer with a big ball.

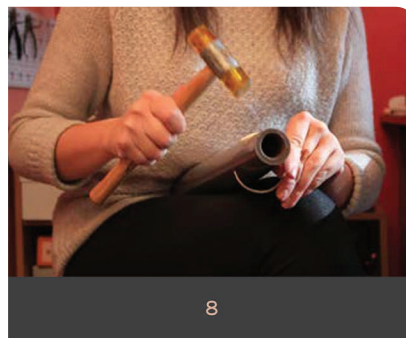
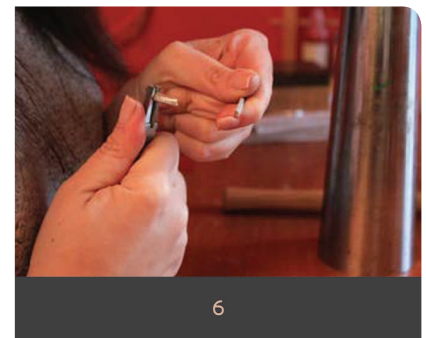
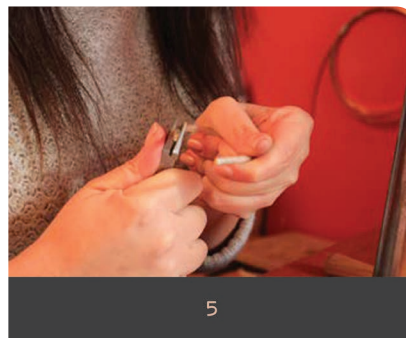
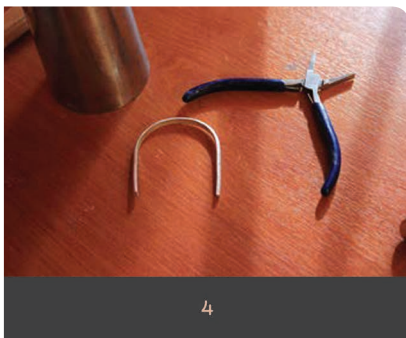
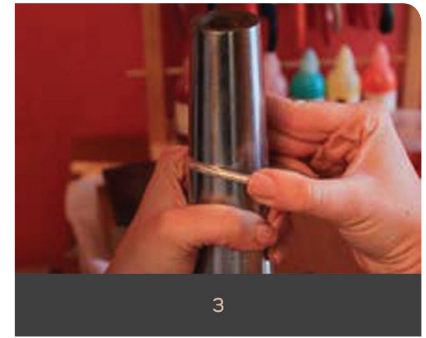
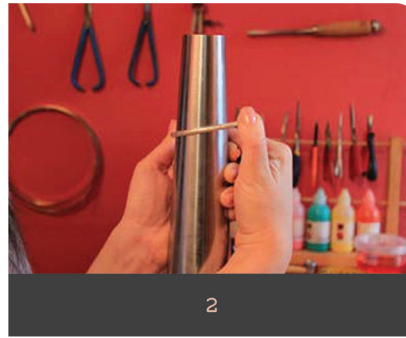
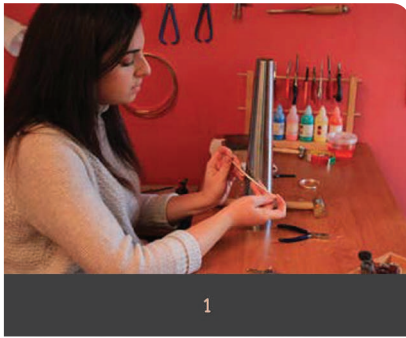
1

We begin the forging process from the curved side of the metal. We start knocking from the center to the edges. It is very important to be careful and not hit the same spot twice.

2 - 4

Once we have finished with the outside of the metal, we continue forging the metal's sides. We have to be careful with the side knocks to avoid creating creases that will distort the edges of the bracelet.

5 - 7



## CONSTRUCTION OF SILVER BRACELET

### Shaping

Having completed the forging process, we shape the bracelet on the special bracelet mandrel. We place our metal on the mandrel and press with our fingers against it. We start from the center of the bracelet and then continue towards the edges, giving the desired shape. **1 - 3**

To bend the edges of the metal we use an auxiliary pliers, curved on one side and flat on the other side. **4**

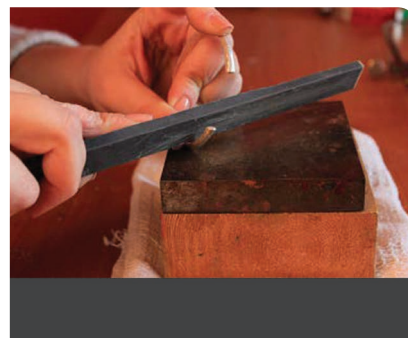
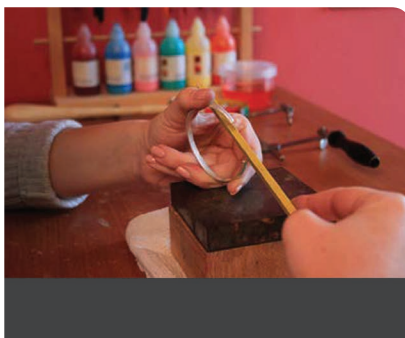
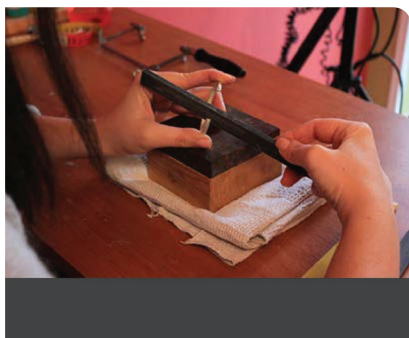
For this particular bracelet, for example, it is not important to have a rounded shape, but right (equal) curves both left and right, since the desired shape in this case is oval. **5 6**

To complete the bracelet's shaping, use the bracelet mandrel again and tap the bracelet lightly using a silicone hammer. **7 8**

## Step 3 | FILING – CLEANING

### Filing

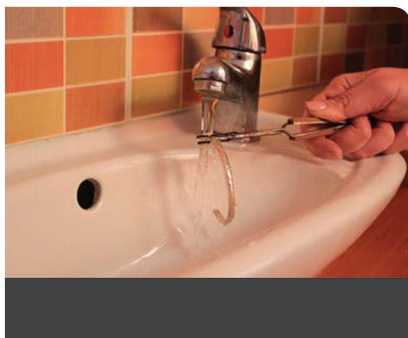
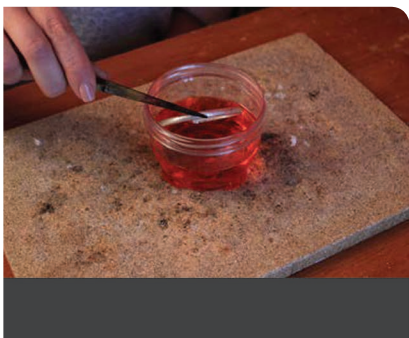
We file the outer surface of the bracelet, with 3 files of different hardness. We start the filing with the toughest file and finish the filing with the smoothest surface. This way we polish the tips of the metal until it acquires the ideal texture.



### Cleaning

With a poker tong we place the bracelet in a special cleaning solution (whitening) which, among other things, removes all the deposits and dirt from the metal.

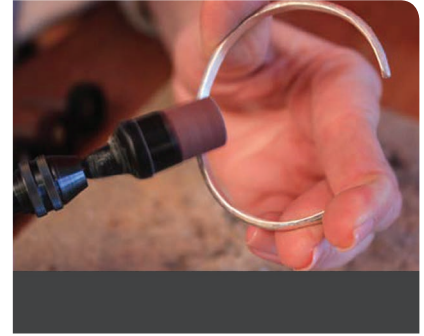
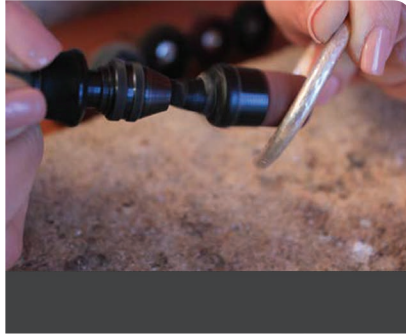
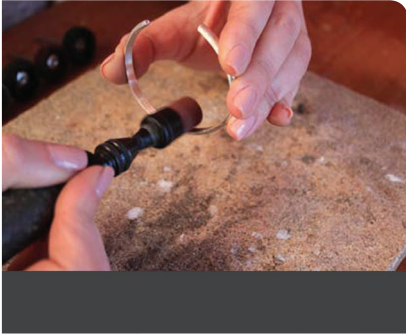
Allow the metal ~ 10 minutes into the cleaning solution. Then remove it with the poker tong and rinse it thoroughly under running water.



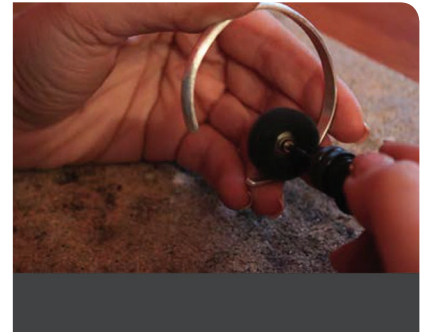
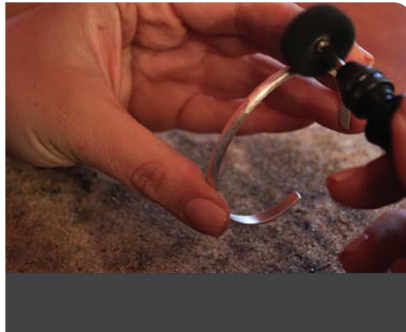
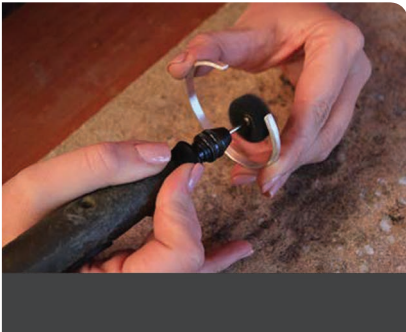
CONSTRUCTION  
OF  
SILVER BRACELET

## Step 4 | FINISHING

For this stage, we need to start with the inside of the bracelet, using a medium hardness spike for a smooth result. With this tool we are able to correct any fractures and damages throughout the bracelet's shaping process. Bear in mind that working on low speeds, we are able to better control the power we exert on the metal, in order to achieve better results.



The final finish on both the inside and the outside is made with two brushes resulting to the matte look of the bracelet. We polish going in only one direction so that we do not damage the metal surface.



## Step 5 | FINAL PRODUCT



# CONSTRUCTION OF SILVER BRACELET

## GLOSSARY

### Whitening:

A desiccant solution, usually sulfuric acid (vitriol) 10% in water. Be careful to avoid burns when using sulfuric acid.

### Cutter:

The cutter is used to cut metal wires.

### File:

Files are used to smooth the uneven surfaces that occur during the various stages.

File board: File board is a piece of wood, on which we support the metal pieces and proceed to various methods such as filing, drilling, etc. The file board is fixed to a solid metal base that is screwed onto the bench. The metal base of the file board has a smooth surface on the top, which is used to smooth metal sheets and straighten wires.

### Peasant or Snapper:

The catcher is a snapper that can hold objects in its own right. By holding an object with the catcher we have free hands and we can do the work we want, like eg weld. Cradles that do not have a spring to hold objects are called caretakers and are less useful. The caterpillars are like big eyebrow tweezers.

### Holder or Snapper:

The holder is a snapper that can hold objects. By holding an object with the catcher we have free hands and we can proceed with all kinds of works, like e.g welding. Snappers without springs to hold objects are called tweezers and are not as useful. The tweezers are like big eyebrow tweezers.

### Firing gun:

Tool used mainly for welding two metal or for metal casting.

### Jigsaw:

Tool in which we attach the saws that are suitable for cutting metal sheets. The saws that are cut or worn during use and must be replaced. Replacement is easy with the screws of the jigsaw.

### Smirgli:

very hard mineral that is used for grinding surfaces.

Ball hammer: Circular hammer hammer for light hammering  
Trumpets for bracelet: Tool on which the shape of the bracelet is shaped.

**Flexible shaft:**

There are some tasks such as jabbing, grinding, polishing, etc. for which there are special tools. In practice, however, for all of these tasks and many more, flexible tool is almost always used for every task. It's a mover that gives rotation to a flexible arm. At the end of the arm there is a chuck, in which we fit small parts for drilling, grinding etc.