

## Working Procedure for Soldering Fashion Jewellery Components

### Essential working tools and soldering aids:

- a cup chain with set-in machine-cut stones by Preciosa
- a solder ( a Sn60Pb wire 1mm in diameter with the flux inside)
- an oxy-hydrogen blowpipe (with the flame generated from a water electrolyzer)
- the girdler's plate
- the girdler's substance
- a trowel
- tweezers, pliers, scissors

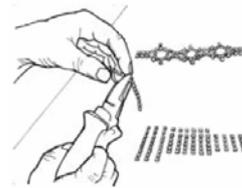
### Working procedure:

#### 1. Degrease the chain thoroughly

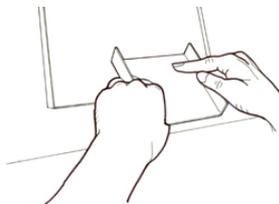
Before setting the stones in cups, the chain must be degreased and dry. To degrease, you can use either organic solvents or a water solution of suitable detergents. It is also possible to degrease the chain using bright pickling. Thorough degreasing is required in order to avoid burning the surface impurities during soldering. Such residual impurities might later pose an obstacle to achieving quality metal layers created by electroplating techniques that give the product a shiny finish.

#### 2. Set the stones in the chain's cups

After the chain has been thoroughly degreased, select stones of an adequate size and set them in the chain's cups. According to the parts list showing an exploded view of a sample product, divide the chain with set-in stones and, using pliers, cut it to sections of the required length. Do not continue handling the cut sections now.



*Cutting the chain to sections*



#### 3. Prepare the girdler's plate

Prepare the plate for soldering. Spread the girdler's substance on the plate evenly, pack down and smooth flat using a trowel. The girdler's substance must be plastic and workable and mustn't dry out. Its function is to transfer the heat from the soldered product.

Place the plate on a non-flammable surface.

*Smoothing the plastic soldering substance with a trowel*

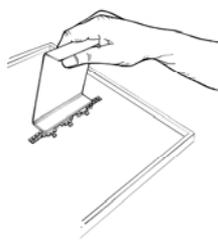
#### 4. Imprint the sample product in the substance

Using tweezers, place the finished sample product on the prepared substance with the top parts of the stones (i.e. tables) facing down. Select the most efficient layout that will enable you to place as many sample products on the plate as possible.

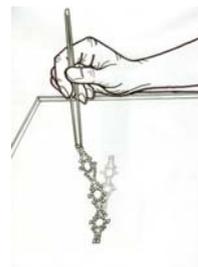
When you are satisfied with the layout, apply gentle and evenly distributed pressure to the samples using a flat tool, thus making the samples' imprints in the substance. When all the imprints are finished successfully, remove the samples carefully from the plate.



*Placing the sample product*



*Making the sample's imprint*



*Removing the sample*

### 5. Place the cut sections of the chain in the imprints

Using tweezers, take the prepared sections of the chain and place them in the imprints, laying them with their bottom parts facing upwards so that the stones' tables face down to the substance. Then check that the position of individual sections in the imprints agrees with that of the sample product.



*Placing the chain's sections*



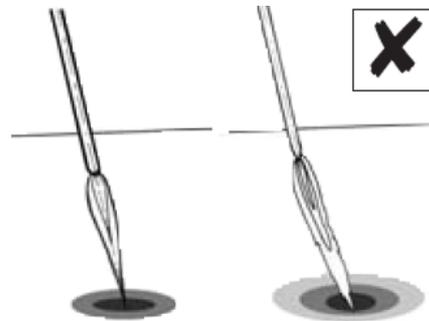
*Soldering with a vibrating flame*

### 6. Join the individual chain sections together, using the blowpipe and the solder

Adjust the flame of the blowpipe and start soldering. Heat the area surrounding the soldered joint so that the molten solder can thoroughly spill over the area. Touch the heated joint with the solder (soldering wire) and heat once again. Keep heating the solder until it melts completely and fills the microscopic gap in the soldered joint.

#### **Warning:**

To create a firm joint, the area surrounding the soldered joint must be sufficiently preheated. However, mind that you heat the area only for such an amount of time that is absolutely necessary. The ability to estimate this amount accurately is a key prerequisite for achieving the best results. Exceeding the optimum amount of time may cause irreversible damage to the stones resulting from a long-lasting extreme heat.



*Correct shape of the flame*

*Incorrect shape of the flame*

### 7. Clean the cooled product

When you have finished soldering, allow the final product time to cool down first. Then, take it out from the plate and clean it by immersing the entire product in faintly alkaline rinsing bath backed by ultrasonic cleaning technique to remove flux residues. After the iridized tarnish (a thin layer of shifting rainbow colours caused by heat) has been removed from the product's surface, you can use a faintly acid bath together with an ultrasonic cleaner. Natural or naturally identical cleaners, such as turpentine, limonene and the like, mixed with alcohol and water, are also possible. Let the finished product air-dry or dry it by a stream of warm air.

### 8. The product is now ready for further treatment

Cleaned and dried, the product can be electroplated.

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