



## **ELIO POMA**

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Since 1984 he has been the technical director of the Precious Metals Testing Laboratory of the Vicenza Chamber of Commerce, the first institutional Italian laboratory and a reference point for Vicenza's goldsmithing district.

As he is a teacher and technical expert in quality and certification of the goldsmithing sector, he works as a lead auditor for important certification bodies in the field of the management systems ISO 9000, SA 8000 and the accreditation system for test laboratories. He is a member of the Technical Committee of U.N.I.- the Italian standardisation body, and of C.E.N., which sets the technical standard for the precious metals sector. He collaborates as a technical expert with MAP and with ASSICOR in drawing up legislative and regulatory guidelines. He has taken part in different national research projects for the goldsmithing sector as part of the programme MURST-MICA "Pro.Art."; exploiting products and processes in the precious metals sector; SAIME: devising innovative analytical systems for determining fineness in precious metal alloys.

*Items made in precious metal alloys must provide the market and consumer with all of the information concerning the nature of the main precious metal in the alloy (Gold, Silver, Platinum, Palladium), its standard (percentage in thousands or carats) and the name of the manufacturer or importer (in charge of issuing the item on the market) and, in some legislations, the mark of the controlling body (Assay Office) certifying the authenticity of the item.*

*If communicated and registered, it is possible to add further markings to identify the manufacturer and/or retailer to the obligatory legal marking (identification mark and hallmark).*

*This information is stamped onto the item at the end of the production process, using mechanical or laser marking technology.*

*At the end of the identification process, the item can be legally put on the market.*

# “Labelling and Marking for Items in Precious Metal”

## Use of laser technology in the Italian gold industry

### 1. Legal marking of gold items

Items made in precious metal alloys must provide the market and consumer with all of the information concerning the nature of the main precious metal in the alloy (Gold, Silver, Platinum, Palladium), its standard (percentage in thousands or carats) and the name of the manufacturer or importer (in charge of issuing the item on the market) and, in some legislations, the mark of the controlling body (Assay Office) certifying the authenticity of the item.

If communicated and registered, it is possible to add further markings to identify the manufacturer and/or retailer to the obligatory legal marking (identification mark and hallmark).

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### 2. The process for obtaining a manufacturer’s trademark and/or importation mark

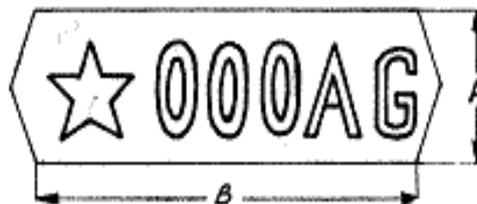
A legal hallmark is requested from the relevant body; in Italy this occurs via the Chamber of Commerce, the body that supervises and controls the precious metals industry which, after ensuring that the company, manufacturer or importer meets the relevant requirements, assigns an unequivocal identification number to same.

The legal hallmark contains these three elements: country assigning the mark (Italy has a five-point star to identify the Republic of Italy), the code for the province where the company has its registered offices and the identification number of the company, as assigned when the application is submitted.

D.P.R. 30 MAY 2002, N. 150

#### Annex III

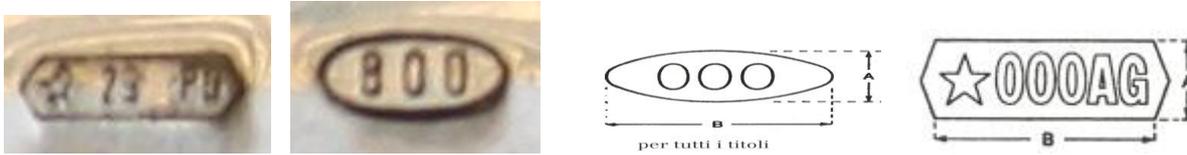
TABLE OF CHARACTERISTICS AND DIMENSIONS  
FOR HALLMARKS ON PRECIOUS METALS



Hallmark dimensions		
Print	A mm	B mm
1 <sup>st</sup> size	0.6	1.8
2 <sup>nd</sup> size	0.8	2.7
3 <sup>rd</sup> size	1.2	3.8
4 <sup>th</sup> size	1.6	5.6

### 3. Mechanical hallmarking

Hallmarking (punching) is carried out using a mechanical punch made from a die that is made and kept by the relevant body and from which the punches are made in the four sizes (standard dimensions) which are legalised at the time of issue.



*Example of legal hallmarking*

### 4. New regulations

With the publication of D.P.R. 26 September 2012, no. 208, a regulation which changes the legislation in force – D.P.R. 30 May 2002, no.150, concerning regulations for the application of D.L. 22 May 1999, no. 251, on the discipline of standards and hallmarks for precious metals – the use of laser technology has been introduced in Italy, both for legal manufacturer/importer hallmarks and also for laboratories (Assay Office) qualified to certify product conformity.

The same decree has introduced a national hallmark, for the same laboratories, comprised of a circle inside which there is a profile of the head of “Italia Turrita” to identify the Italian Republic, with the code for the province of the qualified Laboratory, certifying the conformity of products for sale or export, as set down in international conventions or agreements, which Italy has signed.



*Laser marking*

### 5. The procedure to grant laser hallmarking

Subsequent to the publication of D.P.R. no. 208 a specific, non-regulatory decree will define the detailed technical guidelines for implementing laser technology to hallmark items.

The procedures for granting the hallmark for laser marking are the same as the procedures envisaged for mechanical marking, which will remain in force, maintaining the same identification characteristics for the company (identification number) and the same standards (logo and size).

The die will no longer be physical but replaced by a file with the characteristics that can pilot a laser ray on a special marker on which to add the hallmark to the item.

The “master” file will be produced with elements to prevent counterfeiting, digitally signed by the person in charge of the authorisation procedure and filed “as per regulations” in the storage site of the Chamber of Commerce.

## 1. 5.1 Process stages

### Stage A – Application to prepare laser punches

The company requests the preparation of *laser punches*; the application is presented at the Metric Office of the competent Chamber of Commerce and it is recorded in the computerised system of the office (*Eureka*);

### Stage B – Laser punch preparation

Once the checks and administration actions have been completed, the Metric Office will ask Infocamere to prepare the *laser punches*. 4 files are created, in line with the different dimensions of the *hallmark*, as envisaged by the regulations in force;

### Stage C – Validation and conservation of laser punches

The *laser punches* are digitally signed by the person in charge of the procedure and filed on the conservation site of the Chamber of Commerce.

### Stage D – USB token generation

A USB token (*“key”*) is initialised with the 4 *laser punches* prepared and suitably encrypted. Once this operation has been performed, the *USB token* is finalised, i.e. it is made accessible for use, only by those who know the secret release code (PIN).

### Stage E – Transmission to the Chamber of the USB token and secret code (PIN)

The *USB token* protected in this way (so-called *“hardened”* stick) is transmitted to the applying Chamber of Commerce ; the release code (PIN) is also transmitted to the competent Chamber of Commerce, sealed in an envelope.

### Stage F – The business is given the USB token and secret code (PIN)

Following the methods of the administration process, the Chamber of Commerce will make the *USB token* available to company with a sealed envelope containing its release.

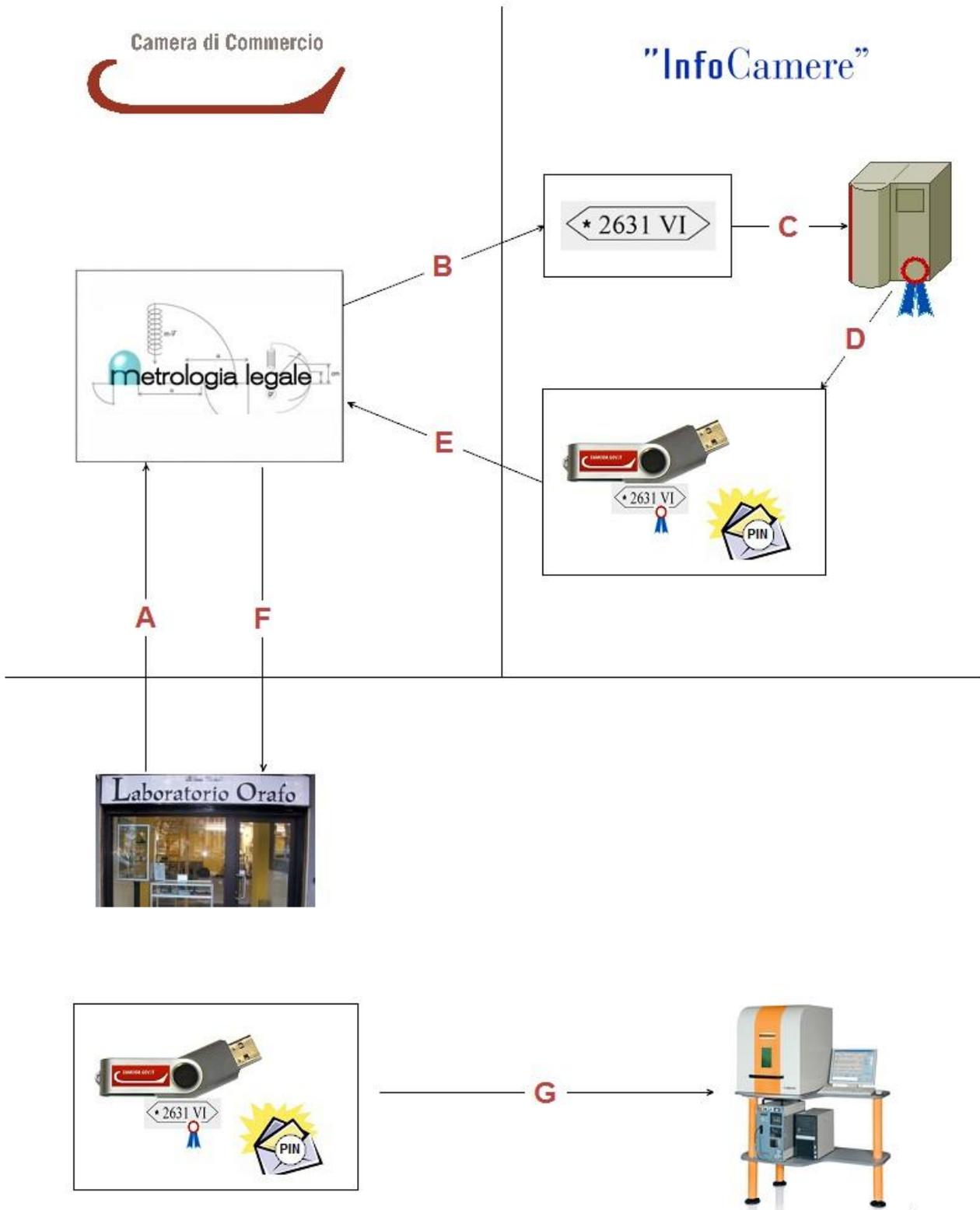
### Stage G – Use of laser punches (Hallmarking)

The *token* is inserted into the relevant USB port of the computer piloting the *laser marker*; the *laser marker software*, which will have been implemented by the manufacturer in the meantime, pursuant to the technical guidelines published in a special Decree, will recognise the *token* and therefore, it will be able to interact with it.

The computer-based procedure for the *laser marker*:

- requires the release code (PIN) of the *token* to be entered
- to access the laser punch of the required size; it de-encrypts it and copies it to the volatile memory of the *laser marker*
- starting the marking session
- and guarantees that at the end of hallmarking activities, that the laser punch will not *remain* in the memory of the *laser marker*

## 2. Diagram of the process



## 6. The certification and conformity marking procedure

As stated, the D.P.R. decree 26 September 2012, no. 208, has introduced the possibility for qualified laboratories to apply a national conformity mark, comprised of a circle inside which there is a profile of the “Italia Turrita” head, which identifies the Italian Republic and at the base, a number for the province of the qualified Laboratory that certifies product conformity.

The company concerned can apply to the qualified Laboratory for conformity certification and laser marking for its products to be sold or exported, as envisaged in international agreements or conventions for which Italy has signed.



*“Italia Turrita” national laser hallmark*

## 6. Product conformity checks

The product batch subjected to conformity checks are sampled by the qualified laboratory following representative sampling criteria and subsequently tested using internationally recognised test methods. The sampling may occur at the qualified Laboratory premises or at the premises of the manufacturer, in the same way as the conformity marking for the products.

## 7. SLC Project – Safe Hallmarking

Product hallmarking using laser technology may occur, through conformity checks at the laboratory with “Inside marking” qualification or at “Offside marking” qualification.

Files with the legal conformity marking are encrypted in the relevant USB token (source) and in the first case, they are unencrypted by the same qualified Laboratory by PIN; in the second case, the computer controlling the laser marker must have a standard unencryption application (e.g. AES 256) which shows the files unencrypted so that they can be used for the hallmarking session.

In both cases, the source is the USB token and the hallmark files are not copied to the hard disk or remote memory of the computer.

For these operations, the manufacturer’s laser must be enabled and validated for hallmarking operations.

## **Conclusions**

The implementation of laser technology in the precious metal production sector is doubtless another important technological innovation.

The possibility to mark products at the end of the production process – today increasingly lighter and smaller – represents a definite advantage for the operator.

For qualified Italian laboratories (Assay Office) too, laser marking speeds up the product conformity certification process, aligning procedures with those of European partners.

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