

# Goldsmiths Quimbaya Orfebreria scale up production by 400% with the introduction of 3D printing



With the introduction of the LC Precision 1.5 desktop 3D printer into their workflow, Quimbaya Orfebreria have scaled up their production by 400%, reduced manufacturing time by 80% and introduced many complex designs into their exclusive and unique jewellery collections.

*"We chose Photocentric's printers because we believe that the price-performance ratio is excellent; Photocentric also know how to continue to evolve and develop extremely good 3D products for the industry. The level of detail achieved when manufacturing our unique jewellery is excellent with LC Precision 1.5. We can produce a large capacity of moulds in a short time thanks to its advanced technology."*

Juanma Romero, Founder.



## Quimbaya Orfebreria Company Introduction

*"We are Quimbaya. An avant-garde company that fuses the beautiful trade of the Orfebreria\* with 3D technology to produce exclusive jewellery"*

– Quimbaya Orfebreria

\*Orfebreria – Goldsmithing

Located in the city of Mendiola Córdoba, Argentina, are Goldsmiths Quimbaya with their dedication to manufacturing unique jewellery; priding themselves on crafting special pieces for the needs of their customers in Argentina. In the heart of Quimbaya's workshop lies a multidisciplinary team where the skill of the Goldsmith combines with engineering know how, allowing one-of-a-kind pieces to be crafted day in day out. Traditional limitations are no more, 3D printing technology now accompanies the hands of Quimbaya's qualified craftsman, giving them the perfect blend of traditional methods with advanced technology to produce multiple pieces of great complexity and quality every day.

Marcel Acrich, Juanma Romero and Nacho Romero welcome you to the "Fabulous World of Jewellery"



### Industry - Jewellery

Quimbaya Orfebreria are the first company in Argentina to incorporate 3D printing into the production system of jewellery.

## Challenges

### Saturation of production

Despite production being at full capacity, demand began to outweigh supply – the manual labour production could not meet the level of jewellery orders. The solution at this time was to scale up production by employing more goldsmiths.

### Limitation of complex designs

Employing more goldsmiths meant more hands were available for production, however, the traditional methods of working by hand meant Quimbaya still faced the problem of being unable to achieve complex designs for their clientele.

### Extensive Process

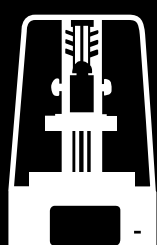
Manual labour also meant a lengthy manufacturing process, especially with each piece having to go through a full production before being presented to the end customer. This includes casting, rolling, stamping, filing, grinding, crimping and polishing.

## Solution

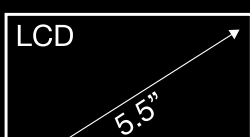
### LC Precision 1.5 desktop printer

Quimbaya decided to turn to the advanced technology of 3D printing for a solution to increase their production levels and overcome design restraint. They chose to incorporate the Photocentric LC Precision 1.5 desktop printer into their workflow the award winning, high resolution printer ideal for intricate applications such as jewellery, dental models and miniature figurine work.

With its optimised range of resins for jewellery design and manufacturing: Daylight Precision Cast for high definition castable parts, Precision Concept for prototyping designs before proceeding with manufacture and Precision Mould for use in silicone moulds, the LC Precision range is an ideal package for designers and manufacturers in the jewellery industry.

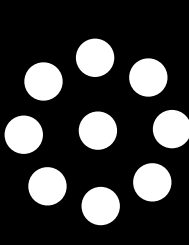


LC Precision 1.5 Printer Specs



5.5" - 2560 x 1440px

Screen



47 Microns

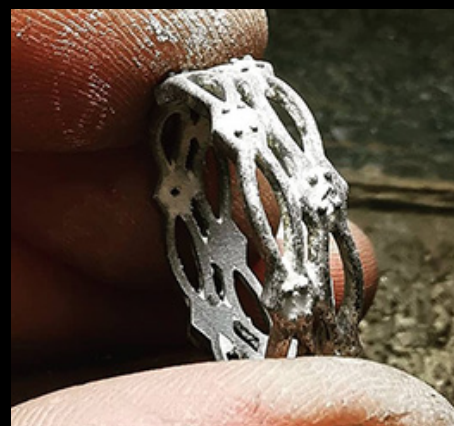
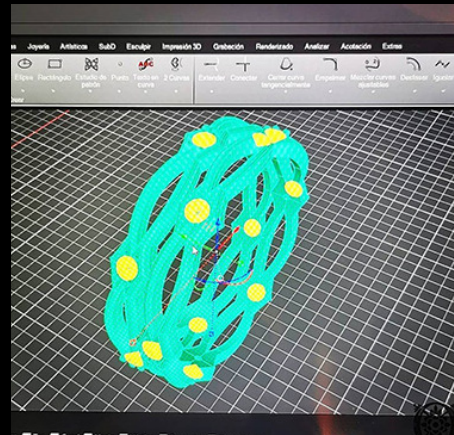
XY Resolution



4-11 seconds

(Dependent on resin)

Cure Speed at 100 microns



Printed on LC Precision 1.5 with New Daylight Precision Violet Cast resin – the new and improved formulation for creating high definition castable parts, with improved performance and finished result.

## Results of integrating LC Precision 1.5 into Quimbaya's workflow



### Manufacturing time reduced by 80%

The build volume capabilities of LC Precision 1.5 mean that Quimbaya can maximise capacity in one print run; filling the platform bed and printing several intricate pieces in one go, or even printing multiple models of the same design. This has eliminated the need for long hours of manual labour, streamlining the manufacturing process.



### Production increased by 400%

Despite production being at full capacity, demand began to outweigh supply the manual labour production could not meet the level of jewellery orders. The solution at this time was to scale up production by employing more goldsmiths.



### Rapid Low-cost high definition prototyping for client consultation

Prototype pieces can be made with the Daylight Precision jewellery resin range at a very low cost, allowing Quimbaya to present designs to clients for consultation and fitting purposes in a small time-frame before sending it off for production, further improving the client's experience and satisfaction.



### More intricate and complex designs produced

With 3D printing, any design idea can now be realised with a high level of detail compared with manual manufacturing - a great example of such complex work is the Game of Thrones spoon project.

## Costs



### Manual Method



### 3D Method



Quantity

1,440

1,440\*



Workforce

\$10\*\*

\$2\*\*



Metal

The Same

The Same



Resin

N/A

\$20



Total Cost

\$14.40

\$3.52



Savings

\$10.88

Saving per piece (Avg ring)

70%

Saving %

\* The production can be up to 14,400 pieces without to change its costs using 3D printing

\*\* Average cost per piece.



Detailed jewellery ring design printed in new Daylight Violet Cast resin on LC Precision 1.5 and casted in silver.