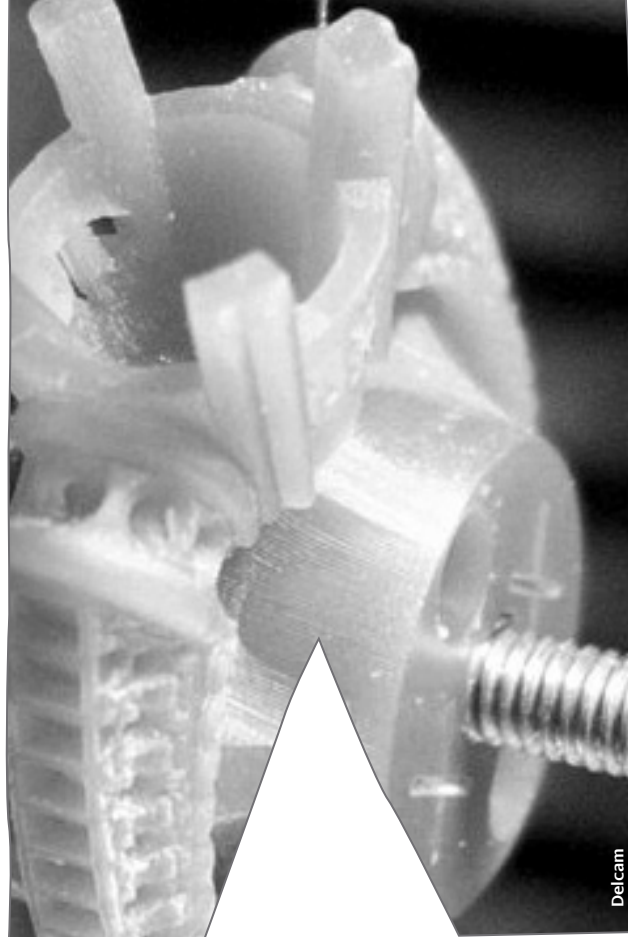


Fact Sheet 01: getting your work made



Delcam

Manufacturing options - the production process

The decision to get your work made by someone else can be a daunting prospect to begin with. Most start-up businesses tend to manufacture their work in-house, but as your business grows, you may want to consider outsourcing some of the key processes in the manufacture of your work or even consider the prospect of the entire process being taken out of your hands. This enables you to free up your time for other important aspects in running your business. As far as manufacture is concerned, your job becomes one of overseeing the production process to ensure it maintains the quality and cost that you require and is completed in the time frame you have allowed.

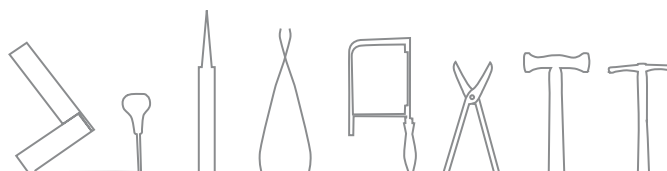
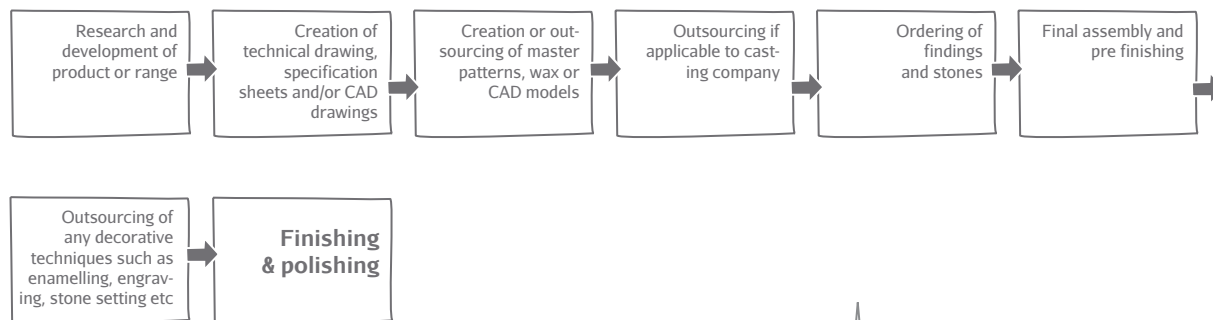
Advantages of in-house manufacturing

- * Control over the process and quality
- * No extra external labour costs to consider
- * No need for any travel or shipping considerations

Disadvantages of in-house manufacture

- * Only small quantities can be produced
- * Less time available for other aspects of your business such as admin, PR, selling etc
- * Responsible for sourcing findings and materials yourself

Although the type of product you have designed will largely determine the production process, the following flowchart shows the key stages of production:



Outsourcing

Finding a manufacturer you trust to make up your designs to the quality you require and the cost you are aiming for can be hard but once you have built up your contacts, the rest of the process is relatively simple. There are a myriad of specialist skilled workers in the industry working behind the scenes. Most of these craftsmen and women have built up skills over years and even decades and can provide an invaluable service to enhance your product. Remember, you have the control over how much of this process you want to keep in-house and which elements you want to outsource.

How to approach a manufacturer is covered in more detail in **Fact Sheet 02: approaching a manufacturer**, but for example, you can outsource work in any or all of the following areas of manufacture:

- * Mounting and setting of stones
- * **Engraving** of patterns and letters/words
- * Chasing and repoussé work
- * Polishing and finishing
- * Engineering of components
- * Cleaning up of castings
- * General repairs
- * Restoration
- * **Casting**
- * Decorative techniques such as chasing, enamelling, photo-etching etc
- * **Laser welding**
- * **CAD**
- * **Wax model/pattern making**
- * Spinning
- * Die sinking and stamping

Advantages of outsourcing

- * Labour costs may be smaller than in-house costs due to speed.
- * Ability to incorporate skill areas that you might not have.
- * Ability to produce larger numbers of pieces.
- * Responsibility for sourcing findings and materials taken away from you

Disadvantages of outsourcing

- * Less control over quality
- * Lead-times – need to allow for extra time
- * Potential travel and shipping costs

Where to source materials

The UK jewellery industry is primarily focused around the centres of Hatton Garden in London, the Jewellery Quarter in Birmingham, Sheffield and in the city of Edinburgh. These areas, now seen as the traditional areas of manufacture, were based around the regional Assay Offices where once thriving industry took place. Most of the main findings and bullion companies tend to be centred around these areas and you can find out names and addresses on any of the databases listed at the end of each fact sheet.

Most findings and bullion companies will ask for identification and set you up with a customer reference number or code and you can either go in person or order on line.

You can also find a large variety of findings, chain and gemstone dealers at the key industry trade shows in the UK and Europe. If you can't travel to any of these, most have an online catalogue of exhibitors you can access throughout the year:

BaselWorld, Basel, Switzerland
www.baselworld.com

Inhorgenta, Munich, Germany
www.inhorgenta.com

Vicenza Fair, Vicenza, Italy
www.vicenzafiera.it

Spring & Autumn Fair, Birmingham, UK
www.springfair.com

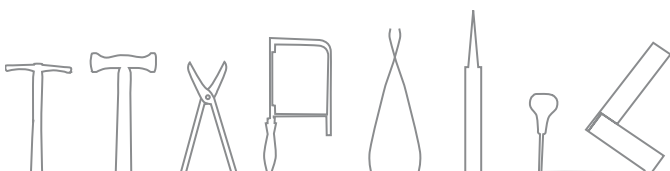
International Jewellery London, Earl's Court, UK
www.jewellerylondon.com

Jewellery alloys

Before you embark on putting your work in to production, it is worth taking some time to understand the materials you are working with. For the newcomer to the industry, an easy mistake to make is to assume that the sheet or wire you buy from the bullion dealer will work in every situation and that is not necessarily the case.

Silver, gold and platinum in their pure form, are all very soft, very ductile metals and are not very practical for jewellery application. They all have very low (HV) in the annealed condition, which is very low when compared to many other metals and alloys.

Therefore, it is necessary to alloy the pure metal with another metal. As a consequence, their wear and scratch resistance is better, they have higher strength and hardness, allowing better dent and damage resistance.



The Jewellers Toolkit

Gold is alloyed typically, with silver and copper to give the carat golds, platinum with a number of alloying metals to give a range of 950 or other fineness alloys, silver with copper to give Britannia silver, sterling silver and other lower finenesses. However, not all alloys are equal when it comes to fitness for purpose. An issue commonly seen with platinum jewellery is that the incorrect alloy is used which can result in denting. For example, 950 standard platinum rings supplied to the UK market but manufactured in SE Asia and the Far East are often fabricated from a platinum 5% palladium alloy. This has a hardness of only about 60HV. Because of this, the alloy is relatively soft and easily damaged during normal wear. In contrast, platinum/cobalt, platinum/ruthenium and platinum/copper alloys have annealed or cast hardnesses in the range 120-135HV and these are much more resistant to wear and tear.

Ethics & sustainability

Though some manufacturers build their entire business model around a single ethical or sustainability premise, for most jewellers ethics and sustainability are best considered as aspects that inform their activities. There are no standard guidelines for what constitutes 'ethical practice' and sustainability has been measured by very different criteria. Current definitions for both are heavily influenced by activists and campaigners, who are promoting their own specific agendas. The word ethical has been used to cover: supporting fair trade initiatives, helping protect indigenous communities, responding to environmental and ecological concerns, reducing resource use and using recycled materials. Professional jewellers need to develop their own personal position that can be put into practice through their business. They also increasingly need to be able to clearly describe and be prepared to defend this position in public and media debates as well as to their clients.

In-house manufacturers have more direct control over processes and how to ensure these meet their chosen ethical and sustainable criteria. Outsourcing brings additional issues. There is a need to identify if suppliers have a complimentary ethical perspective and the extent to which these ideals are manifested in their day-to-day practical actions. All manufacturers have some external suppliers. These include tools and equipment, energy supply and secondary production materials (e.g. pickling acids or polishing compounds), as well as precious metals, gemstones and other raw materials and packaging.

There are currently a range of ethical initiatives in the jewellery sector. The most high-profile are the Kimberley Process, Fairtrade and Fairmined Gold, and the Responsible Jewellery Council accreditation programme. Jewellers should be familiar with these and their strengths and limitations. Some manufacturers have chosen to develop their own, independent ethical sourcing systems, working with specific communities in the developing world. Involvement in any of these activities is often used as part of a company's promotional strategy.

Many companies highlight their ethical and sustainable position on their website and in promotional literature. It is worth noting that some suppliers or outsourcing companies, whilst being more low-key regarding ethics, may respond positively to specific proposals with an ethical or sustainable dimension depending on the nature of the work.

The Kimberley Process

www.kimberleyprocess.com

Fairtrade and Fairmined Gold

www.fairtrade.org.uk/gold

Responsible Jewellery Council

www.responsiblejewellery.com

Contracts

Although it is not usual to use contracts in our industry for small outsourcing jobs, these may be necessary if you start manufacturing in large quantities and it is certainly good practice to keep a paper trail of all your conversations and orders. The British Jewellers' Association offers sample contracts in areas such as design, IP and also offers help with pricing, guidance on writing terms and conditions and has a legal help line for its members. It offers a free student graduate newsletter from its website: www.bja.org.uk

Production management

Lead times and time management

An easy mistake for a newcomer to make is to assume that when they have their piece ready to be worked on by an outworker such as a **bench jeweller**, that the person will be available to get on with the job straight away. Bench jewellers are very experienced craftspeople and as a result are highly sought after. You need to allow sufficient lead times and book your work in ahead of time with your chosen craftsman and integrate it into your production management plan. Each one will vary but lead times can be 4-6 weeks. If you are using more than one craftsman, this needs to be thought about in advance and checked at every stage.



Hallmarking

When working in precious metals, consideration also needs to be given within your production plan for hallmarking your work. The Hallmarking Act 1973 requires that all precious metal articles offered for sale in the UK have a hallmark applied by an independent assay office to guarantee the precious metal content of the item.

Therefore, if you are using gold, silver, platinum or palladium alloys, it is a legal requirement to have your items tested to ensure they conform to the legal standards. Each assay office offers a number of different testing or assaying methods at the end of which process; your hallmark is applied either by the traditional hand marking process or by the latest laser marking technology. The former can be applied to unfinished work and may need a degree of re-finishing but is widely accepted as the most aesthetically pleasing method of hallmarking. However, laser marks can be applied after the product has been finished and also can be applied to very small items with thin gauges of metal. In terms of your production, you need to factor in an extra day or two to have your work hallmarked. You can get it done very quickly but you pay a premium for this service and should limit it to urgent jobs only. Also, sending multiples of items will reduce costs – check with your assay office for a breakdown.

To find out more about hallmarking, visit the websites of one of the four UK assay offices or the Hallmarking Council.

The Hallmarking Council

www.bis.gov.uk/britishhallmarkingcouncil

Assay Office London

www.assayofficelondon.co.uk

Birmingham Assay Office

www.theassayoffice.co.uk

Edinburgh Assay Office

www.edinburghassayoffice.co.uk

Sheffield Assay Office

www.assayoffice.co.uk

Ordering

When taking goods to be outsourced, it is good practice to complete a **purchase order** with the date, item, quantity, weight and description of the goods delivered to the outworker or manufacturer. The purchase order will normally contain information that confirms what has been discussed verbally and include any items that are being handed over for the outworker to use.

Try and get a signature that the items have been received if you are delivering in person, or have three copies, two of which you send along with the package, asking the outworker to return one signed copy as acknowledgment of the safe arrival of the goods.

Getting your work made FAQ

Q: What is a sponsor's mark?

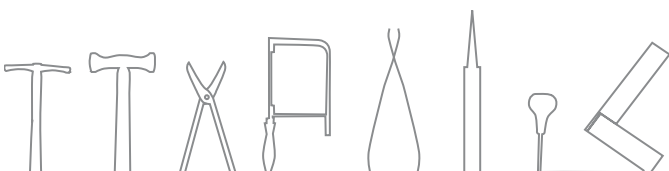
A: A sponsor's mark forms part of a hallmark and consists of the initials of the person or company registered for that mark surrounded by a shield design. To obtain one you need to register with one of the UK assay offices.

Q: What's the best platinum alloy to ask for when casting jewellery?

A: The recommended alloy is 950 platinum/cobalt which has good casting properties. It does have a slight bluish tinge when compared with other platinum alloys and it is also slightly magnetic due to the cobalt content. Platinum/ruthenium is sometimes used for casting but casters vary in their views on its castability. Platinum/copper is not suitable for casting but is a general purpose alloy recommended when working with sheet, wire, etc.

Q: What is a lead time and why is it important?

A: It is the time a jeweller or other service gives as the time after which they can begin on your work. Therefore it is always a good idea to book ahead if you know when you will be ready to have the piece worked on. It gains importance when you are relying on more than one outworker as it impacts on your production time.



Glossary

Assay

Testing of jewellery alloys to establish precious metal content

CAD

Computer Aided Design

Hallmarking

Mark struck on a precious metal object; the full traditional mark usually consists of a sponsor's mark, traditional fineness mark, millesimal fineness mark, assay office mark and date letter mark

HV

Hardness Value

IP

Intellectual Property

Master pattern

A model of a piece of work that is to be put in to production – commonly made out of sterling silver or wax.

Databases of industry specific trade services

The following websites hold information about trade services, equipment suppliers, products and educational courses:

benchpeg: www.benchpeg.com

The jewellery industry's leading creative and digital communications network

British Jewellers' Association Trade

Product Search: www.bja.org.uk

A membership organisation that represents the jewellery industry

Ganoksin: www.ganoksin.com

An international online resource for the jewellery industry

The Goldsmiths' Company Technical Portal:

www.thegoldsmiths.co.uk

A supplier database of trade-to-trade services and suppliers

Further reading

Introduction to Precious Metals – Metallurgy for Jewellers and Silversmiths, Mark Grimwade, Publ A&C Black 2009, ISBN: 978-0-7136-8758-3

Jewelry Concepts and Technology, Oppi Untracht, Publ Robert Hale Ltd, ISBN 0-7091-9616-4

Technical sources of information

Ganoksin

www.ganoksin.com

Johnson Matthey

www.jmny.com

MJSA

www.mjasa.org

The Goldsmiths' Company

www.thegoldsmiths.co.uk

The World Gold Council

www.gold.org

Sources of training

Birmingham Institute of Art & Design

www.schoolofjewellery.co.uk

City Lit

www.citylit.ac.uk

The Goldsmiths' Institute

www.goldsmiths-centre.org.uk

Holts Academy

www.holtsacademy.com

London Metropolitan University

www.londonmet.ac.uk

London Jewellery School

www.londonjewelleryschool.co.uk

Morley College

www.morleycollege.ac.uk

West Dean College

www.westdean.org.uk

Also look at the Jewellery & Allied Industries Training Council for training information www.jaitc.org.uk

For other courses, check local and national art colleges for information.

