

## J3.21 Carry out Electro-deposition on jewellery or silverware components SQA Unit Code H9VP 04

### Unit Summary

This unit covers the skills and knowledge required to plate or electroform components, using appropriate techniques. In producing plated and electroformed components, you will be required to work to instructions and to use a range of tools and mechanical techniques, appropriate to the type of material, and items required. During, and on completion of, the plating and electroforming operations, you will be expected to visually check the quality of your work. You will need to report any defects, to seek guidance on defects, seek advice on the appropriate action to rectify them, and to ensure that the finished work meets the required standard.

### Performance Indicators

You will be able to:

- a) Produce a selection of items using a range of **electro-deposition techniques**
- b) Electroform various **materials**
- c) Electroplate on a range of **metals**
- d) Carry out all activities safely and correctly, in a manner that does not cause risk of injury to yourself or others, or damage to components and equipment

### Knowledge and Understanding

You will know and understand:

- 1) How to avoid any unnecessary damage to metal surfaces
- 2) How to select the correct chemicals and equipment for prescribed tasks and processes
- 3) How plating/electroforming solutions are maintained and kept free of contaminants
- 4) The matrix materials used, and how to make them conductive
- 5) The limitations to plating and electroforming
- 6) The characteristics of mandrel/matrix and solutions, the dangers of interactions of materials during production, contamination problems, and precautions to take against contamination
- 7) How to recognise faults and problems and the appropriate action to take
- 8) Which neutralising agents can be used for cleaning tanks, and how to recognise them
- 9) How to determine the most appropriate part of the tank for specified treatments
- 10) How to recognise uneven or insufficient deposition and completion
- 11) How to separate core mandrels
- 12) The importance of safe and prompt removal of chemicals and waste materials, and the requirements for environmentally acceptable recycling and disposal

### Range

You are required to:

- A. Produce items using at least three of the following **electro-deposition techniques**:
  - (i) Plating
  - (ii) Gilding
  - (iii) Matrix
  - (iv) Electro-forming

B. Electroform both of the following **materials**:

- (i) Metal
- (ii) Wax

C. Electroplate both of the following **metals**:

- (i) Silver
- (ii) Base metal
- (iii) Gold (gilding)