

J4.13 Produce engraved surfaces using advanced techniques SQA Unit Code H9TR 04

Unit Summary

This unit covers the skills and knowledge required to use different styles of engraving to produce a decorative surface, including the use of advanced techniques. In producing engraved products, you will be required to work to instructions and to use a range of hand tools and techniques, appropriate to the type of material being used and the type and style of engraving being executed. You will be expected to take personal responsibility for your own actions and for the quality and accuracy of the work that you carry out. During, and on completion of, the engraving operations, you will be expected to check the quality of your work using visual inspection guidelines, appropriate to the aspects being checked and the specifications required. You will need to be able to recognise any defects, to determine 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) Demonstrate that you can carry out a wide range of **engraving**
- b) Engrave work made in a range of **materials**
- c) Engrave work covering a range of advanced **techniques**
- d) Check that the completed engraving is dimensionally accurate, proportionally correct and meets the specification

Knowledge and Understanding

You will know and understand:

- 1) The methods to illustrate and communicate ideas for engraving designs
- 2) The relevant mathematical formulae and calculations
- 3) The specific hazards associated with engraving equipment
- 4) How to make, harden, temper and sharpen engraving tools
- 5) How to lay out and cut a variety of letter types and heraldic insignia
- 6) Carving techniques and reverse cutting
- 7) How to combine multi-metals in a base material for overlay and inlay
- 8) Etching techniques
- 9) The use of machine and computer engraving and 3D carving
- 10) The use of complex holding devices
- 11) The preparation of templates by pattern making, hand engraving and lathe work
- 12) How to identify faults; what kinds of difficulties the specification might present, and the appropriate actions to rectify them
- 13) How to identify surface treatment and how to achieve the desired effect
- 14) The sequence of application to remove surface marks

Range

You are required to:

- A. Carry out **engraving** on all of the following:
 - (i) Plated work
 - (ii) Carved work
 - (iii) Lettering
 - (iv) Inside curves
 - (v) Multi-material combinations
 - (vi) Repair and Restoration

- B. Engrave work on all of the following **materials**:
 - (i) Silver
 - (ii) Gold
 - (iii) Platinum
 - (iv) Palladium

- C. Engrave work using at least two of the following **techniques**:
 - (i) Pantograph
 - (ii) Photo-etching
 - (iii) Laser cutting
 - (iv) CNC machine engraving