

J3.16 Produce engraved surfaces SQA Unit Code H9VK 04

Unit Summary

This unit covers the skills and knowledge required to produce a decorative surface, using appropriate engraving techniques. In producing engraved products, you will be required to work to instructions and to use a range of hand tools and a variety of techniques, appropriate to the type of material being used and the type and style of engraving being executed.

During, and on completion of, the engraving operations, you will be expected to visually check the quality of your work. You will need to report and seek guidance on any 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) Engrave work made in a range of **materials**
- b) Carry out a range of engraving **designs**
- c) Carry out work on a range of **surfaces**
- d) Engrave work using a Pantograph (2D and 3D) and CNC
- e) Eliminate unwanted engraving and slips
- f) Check that the completed engraving is dimensionally accurate, proportionally correct and meets the specification

Complete work to the specifications an appropriate

Knowledge and Understanding

You will know and understand:

- 1) Work place health and safety requirements appropriate to the industry
- 2) The safe storage, handling and disposal of chemicals used in the workshop
- 3) Safe operation and maintenance of machines and tools
- 4) How to make, harden, temper and sharpen tools
- 5) Letter forms and their layout, inscriptions and monograms
- 6) Layout of scrollwork and ornamental patterns
- 7) Drawing concepts such as line, shape, shading and be proficient in drawing these and interpreting them into the appropriate engraved line.
- 8) How to interpret pictorial work, represented as line, dot or texture
- 9) How to copy designs
- 10) How to increase and reduce designs
- 11) Heraldic rules and terminology
- 12) Heraldic colouring
- 13) Basic metallurgy
- 14) How to identify materials to be engraved and the processes that may have been applied to them
- 15) Carving techniques and reverse cutting

- 16) How to cut different types of engraved lines and be able to engrave these according to the job. For e.g. fine shading, threading, flange cut and v-cut.
- 17) Etching techniques
- 18) Enlargement and reduction
- 19) Methods of holding and centering work
- 20) The use of machine and computer engraving and 3D carving
- 21) How to combine multi-metals in a base material for overlay and inlay
- 22) Surface preparation and methods of erasure
- 23) How to prepare templates by pattern making, hand engraving and lathe work
- 24) How to identify faults, what kinds of difficulties the specification might present, and the appropriate actions to overcome these difficulties
- 25) How to identify surface treatment, and how to achieve a desired effect
- 26) The sequence of application to remove surface marks

Range

You are required to:

A. Engrave work made in at two of the following materials

- (i) Silver
- (ii) Gold
- (iii) Copper
- (iv) Brass

B. Engrave two of the following **designs**

- (i) Textured and ornamental work
- (ii) Basic lettering and monograms
- (iii) Heraldic patterns and heraldic colours
- (iv) Basic carved work

B. Engrave all of the following **surfaces**

- (i) Flat
- (ii) Concave
- (iii) Convex