

J4.9 Produce rubber moulds for complicated castings SQA Unit Code H9TM 04

Unit Summary

This unit covers the skills and knowledge required to produce moulds for lost wax casting activities. You will be required to produce complicated castings from complicated rubber moulds. 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. You will need to be able to recognise defects, to determine the appropriate action to rectify them, and to ensure that the finished work meets the required standard. Whilst taking part in these activities you will need to report any difficulties or problems that you cannot personally resolve, and to carry out any subsequently agreed actions.

Performance Indicators

You will be able to:

- a) Carry out all the necessary preparatory work on mould frames and sprue formers
- b) Ensure all master patterns are free of surface defects and have sufficient material to allow for shrinkage
- c) Correct master patterns, if necessary, to increase/maintain quality
- d) Produce items using a range of **mould cutting techniques**:
- e) Produce items using various **curing mould processes**
- f) Remove the master patterns without damage
- g) Check that the mould will produce a wax that is within a tolerable shrinkage value and free from defects
- h) Carry out all activities safely and correctly, and 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) The specific safety practices and procedures to be observed when handling chemicals and sharp instruments, including safe transport and storage
- 2) The specific materials to be used, quantities and mixing ratios to be applied, working life of materials and mixes
- 3) The importance of preparing the master patterns and equipment before starting mould work, and what preparations are required
- 4) Methods and techniques of advanced mould making
- 5) Methods and techniques for the removal of master patterns
- 6) How to identify defects and rectify faults
- 7) The different types of wax that are used
- 8) Other non-commercial forms of casting
- 9) Wax carving and repair techniques
- 10) Mathematical calculations and formulae appropriate to the lost wax casting process

Range

You are required to:

- A. Produce items two of the following **mould cutting techniques**:
 - (i) Two part mould
 - (ii) Three part mould
 - (iii) Spiral cutting

- B. Producing a wide range of wax components using both of the following **curing mould processes**:
 - (i) Hot
 - (ii) Cold