



National Unit Specification: general information

UNIT Woodmachining: Spindle Moulder (SCQF level 6)

CODE F7H3 12

SUMMARY

This Unit is suitable for candidates working towards a Modern Apprenticeship in Woodmachining and on completion of this Unit the candidate will be competent in setting up a Spindle Moulder, selecting materials, securing tooling, using various jigs and attachments and use the machine safely for stopped work, trenching, dovetailing and curved work. It is also designed to enable candidates to develop their knowledge and understanding in woodmachining terminology, techniques and current safe working practices.

OUTCOMES

- 1 Demonstrate knowledge and understanding of the use of spindle moulders.
- 2 Set up and operate a spindle moulder to produce components using stops.
- 3 Set up and operate a spindle moulder to produce stair stringers.
- 4 Set up and operate a spindle moulder to produce curved components.
- 5 Set up and operate a spindle moulder to produce dovetailed components using a dovetailing jig.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates undertaking the Professional Development Award in Woodmachining at SCQF level 6 must meet the requirements of the Modern Apprentices which include being employed in the relevant craft industry.

CREDIT VALUE

2 credits at SCQF level 6 (12 SCQF credit points at SCQF level 6*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Administrative Information

Superclass: TG

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National Unit Specification: general information (cont)

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CORE SKILLS

While there is no automatic certification of Core Skills or Core Skills components in this Unit, opportunities for developing aspects of the following Core Skills are highlighted in support notes of this Unit:

- ◆ *Problem Solving* at SCQF level 4
- ◆ *Working with Others* at SCQF level 4
- ◆ *Numeracy* at SCQF level 4
- ◆ *Communication* at SCQF level 4

National Unit Specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME 1

Demonstrate knowledge and understanding of the use of spindle moulders.

Performance Criteria

- (a) Correctly state the use of various types of cutter blocks.
- (b) Correctly state the use of various types of guards
- (c) Correctly describe the use of proprietary jigs.

OUTCOME 2

Set up and operate a spindle moulder to produce components using stops

Performance Criteria

- (a) Correctly secure and use a back stop during machine operations.
- (b) Correctly secure and use a front stop during machine operations.
- (c) Comply with current health and safety regulations in all work methods and throughout all practical activities.

OUTCOME 3

Set up and operate a spindle moulder to produce stair stringers.

Performance Criteria

- (a) Correctly mount and secure stair routing head.
- (b) Correctly secure and set routing cutter to head.
- (c) Correctly set jig to machine to an agreed going and rise and secure to stringer.
- (d) Produce a pair of stringers with a minimum of three treads and risers to an agreed tolerance.
- (e) Comply with current health and safety regulations in all work methods and throughout all practical activities.

National Unit Specification: statement of standards (cont)

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OUTCOME 4

Set up and operate a spindle moulder to produce curved components.

Performance Criteria

- (a) Set up for curved work correctly.
- (b) Produce curved components in accordance with the specification.
- (c) Comply with current health and safety regulations in all work methods and throughout all practical activities.

OUTCOME 5

Set up and operate a spindle moulder to produce dovetailed components using a dovetailing jig.

Performance Criteria

- (a) Correctly mount and secure dovetailing head.
- (b) Correctly secure and set dovetail cutter to head.
- (c) Correctly set jig to produce dovetails.
- (d) Produce components to enable the assembly of a box with machined dovetails.
- (e) Comply with current health and safety regulations in all work methods and throughout all practical activities.

EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required to demonstrate that the candidates have achieved this Unit to the standard specified all Outcomes and Performance Criteria. All working practices must be in line with relevant and current Health and Safety legislation and regulations. A Risk Assessment and Method Statement must be completed **prior** to any practical activities taking place.

Written or oral evidence is required to show that the candidate has achieved the standards specified in the Performance Criteria in Outcome 1 which demonstrates the candidate understands the terminology by stating the use of four cutter blocks, stating the use of three types of guards and describing the use of three types of proprietary jigs. Evidence for this Outcome will be obtained under closed-book supervised conditions.

Performance evidence supplemented with assessor observation checklist should be used to show that the candidate has achieved the standards specified in the Performance Criteria in Outcomes 2, 3, 4 and 5. The candidate will be observed to show that they can, on three occasions, position and secure stops in a safe and organised manner, set up a spindle moulder for stair routing and produce a pair of stringers in a safe and organised manner. Set up a spindle moulder for dovetailing and produce components for the production of a dovetailed box in a safe and organised manner and on two occasions, set up a spindle moulder for curved work and produce curved components.

National Unit Specification: statement of standards (cont)

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Candidate's work methods and activities must be correct in terms of:

- ◆ Sequencing operations
- ◆ Satisfying current safety regulations

These Evidence Requirements will be met by the completion of the Training and Assessment Programme (TAP) Woodmachining.

National Unit Specification: support notes

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This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 80 hours.

GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

This Unit has been developed as a mandatory Unit in the PDA in Woodmachining at SCQF level 6 which is a mandatory component of the Modern Apprenticeship. The content and context of this Unit is aimed at candidates who are pursuing a career in the craft of Woodmachining.

The candidate successfully completing this Unit will require underpinning knowledge and skills relating to the practical applications of woodmachining and equipment, the design and use of equipment for specific purposes and manufacturing processes including the correct sequencing of operations, safe working practices and safety legislation.

This Unit would be offered to candidates from the construction and related services. The skills are transferable within different working environments but the Unit is primarily aimed at candidates whose normal place of work would be a site, workshop or similar environment.

The Unit deals with the theory and practice associated with the setting up, servicing and use of spindle moulders and is complemented by Units dealing with work in woodmachining. It should be delivered as part of a structured programme of training and orientated to the context of the candidate's work and area of responsibility.

Health and Safety and Sustainability are integral and key to the Construction Industry therefore throughout the Unit emphasis will be placed where appropriate on the application of Health and Safety and Sustainability. Safety working practices should be looked at in accordance with current safety codes of practice and regulations. Sustainability should include reference to criteria affecting sustainability, impact of not implementing sustainability on the environment and the legislation promoting sustainability.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Candidates should be given working drawings and specifications. It is recommended that candidates work towards tolerances of $\pm 0.5\text{mm}$ for component dimensions and $\pm 2\text{mm}$ for complete manufactured work pieces.

Outcome 1

The candidate should be introduced to the vertical spindle moulder. Workshop safety and machine safety can be explained with demonstrations given on the correct methods of setting up each piece of equipment. It is important to stress the need for strict adherence to the instructions and safety requirements applicable to each machine. Correct terminology should be used throughout.

National Unit Specification: support notes (cont)

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Outcome 2

The candidate should be presented with workshop drawings for various “stopped” timber components. The Spindle must be set up making sure the stops are secured correctly. The candidate must then operate machine to carry out the stopped work while using a suitable jig which they must manufacture. The tutor/trainer should demonstrate the correct methods to be employed to achieve the Outcome with an emphasis on safe working practices and sequencing of operations.

Outcome 3

The candidate should be presented with workshop drawings for a straight flight stair. The Candidate must then set machine for routing making sure that the cutter and jig are fitted correctly. The candidate must then operate machine to machine a pair of stringers. The tutor/trainer should demonstrate the correct methods to be employed to achieve the Outcome with an emphasis on safe working practices and sequencing of operations.

Outcome 4

The candidate should be presented with workshop drawings for various sections of curved and shaped work. The candidate must then set machine with ring fence, also making sure that the cutter block is fitted correctly. The candidate must then operate machine to machine various shaped/curved components while using a suitable jig which they must manufacture. The tutor/trainer should demonstrate the correct methods to be employed to achieve the Outcome with an emphasis on safe working practices and sequencing of operations.

Outcome 5

The candidate should be presented with workshop drawings for various components to allow assembly of a dovetailed drawer or box. The candidate must set machine with dovetail cutter making sure this is secured securely. The candidate must then operate machine to machine various components while using a suitable jig. The tutor/trainer should demonstrate the correct methods to be employed to achieve the Outcome with an emphasis on safe working practices and sequencing of operations.

The candidate should be introduced to all relevant machinery components, tooling and ancillary equipment through classroom teaching with the use of visual aids, electronic presentations, DVDs, e-learning, reference books, classroom exercises and group discussions. The function of each component should be thoroughly demonstrated. Safe working practice methods should be demonstrated by candidates showing good technique in the measuring, marking out of materials, setting and safe operation of machinery. This teaching approach should help ensure the candidate is acquiring the underpinning knowledge required for the Unit.

National Unit Specification: support notes (cont)

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Opportunities should be taken throughout delivery of this Unit to meet the requirements of the generic Units of the Training and Assessment Programme including:

- ◆ Conform to Efficient Working Practices
- ◆ Conform to General Workplace Safety
- ◆ Move and Handle Resources
- ◆ Confirm Work Activities and Resources for the Work
- ◆ Develop and Maintain Good Working Relationships
- ◆ Confirm the Occupational Method of Work

At the time of writing the following safety requirements apply: HSW (Health and Safety at Work etc.) Act; COSHH (Control of Substances Hazardous to Health) Regulations, Approved code of practice (ACOP), Provision and use of work equipment (PUWER).

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

There are opportunities to develop the Core Skill of *Problem Solving* at SCQF level 4. Candidates will need to take account of a range of factors in order to work efficiently and safely, such as the choice of tools, appropriate materials, safety issues, safety equipment and sustainability. Individual discussions with assessors and the use of role play will enhance the evaluation of efficient working practices.

There are opportunities to develop the Core Skill of *Working with Others* at SCQF level 4, particularly in Outcomes 2 and 3, as these practical assessments could be carried out in pairs. Candidates can agree responsibilities and provide support and information to each other during the practical group activities.

There are opportunities to develop the Core Skill of *Numeracy* at SCQF level 4 through the interpretation of information from 3 dimensional working drawings and the practical use of calculation and measuring scales.

There are opportunities to develop the Core Skill of *Communication* at SCQF level 4 throughout practical tasks, as candidates should be expected to communicate with others using the correct terminology, tone and style suited to the workplace.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Section 3 of the Woodmachining Training and Assessment Programme (TAP) provides detailed assessment material for this Unit. It is advised to use the TAP which has been developed centrally by SQA. Any other instrument of assessment used must be comparable to the TAP and have been through prior verification. It is expected that candidates will be given as much practise as possible, prior to being set the assessment tasks contained within the TAP.

For Outcome 1, an appropriate method of assessing the candidate's knowledge and understanding of terminology and components in relation to spindle moulder machines would be through a question paper conducted under controlled, supervised conditions.

National Unit Specification: support notes

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Evidence will be gathered for Outcomes 2, 3, 4 and 5 through observation that the candidates have met the given standards and tolerances during the practical activity. An assessor observation checklist can be used to record this evidence. Assessment should be conducted under controlled, supervised conditions. A suitable task that would allow candidates to demonstrate competence could be spindle moulder work involved in the manufacture of various doors, small stools and craft projects.

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements