



## National Unit Specification: general information

**UNIT** Woodmachining: Vertical Spindle Moulder: An Introduction  
(SCQF level 6)

**CODE** F7GN 12

### SUMMARY

This Unit is suitable for candidates working towards a Modern Apprenticeship in Woodmachining and will develop the candidate's competence in selecting materials, servicing machinery, positioning and securing tooling and operating a vertical spindle moulder for a range of operations. It is also designed to enable candidates to develop their knowledge and understanding in spindle moulder terminology, techniques and current safe working practices.

### OUTCOMES

- 1 Demonstrate knowledge and understanding of the main parts, their function and tooling used on a spindle moulder.
- 2 Maintain and set up a spindle moulder.
- 3 Operate spindle moulder and equipment for a range of operations.
- 4 Develop suitable cutting angles for different cutter blocks.

### 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

1 credit at SCQF level 6 (6 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.*

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### Administrative Information

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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**

### **UNIT        Woodmachining: Vertical Spindle Moulder: An Introduction (SCQF level 6)**

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 main parts, their function and tooling used on a spindle moulder.

##### **Performance Criteria**

- (a) Correctly define spindle moulder terminology.
- (b) State legislation applying to spindle moulders.
- (c) Correctly identify machine and main machine parts.
- (d) Correctly state the function of the machine and the main machine parts.
- (e) Correctly identify various spindle moulder tooling.
- (f) Correctly state the tooling function.
- (g) Correctly identify lubricants and their uses for cleaning and maintenance.

#### **OUTCOME 2**

Maintain and set up a spindle moulder.

##### **Performance Criteria**

- (a) Correctly clean and maintain machinery and equipment.
- (b) Correctly select appropriate tooling for a range of operations.
- (c) Correctly mount and change cutters in appropriate cutter blocks.
- (d) Comply with current health and safety regulations in all work methods and throughout all practical activities.

#### **OUTCOME 3**

Operate spindle moulder and equipment for a range of operations.

##### **Performance Criteria**

- (a) Accurately set up balanced cutter blocks.
- (b) Correctly position and secure guards, fences and table rings.
- (c) Correctly carry out pre-machining checks.
- (d) Break through false fence in accordance with recognised practice.
- (e) Produce rebated, grooved and profiled components in accordance with given specification.
- (f) Comply with current health and safety regulations in all work methods and throughout all practical activities.

## **National Unit Specification: statement of standards (cont)**

## **UNIT**      Woodmachining: Vertical Spindle Moulder: An Introduction (SCQF level 6)

### **OUTCOME 4**

Develop suitable cutting angles for different cutter blocks.

#### **Performance Criteria**

- (a) Produce drawings in accordance with recognised practice.
- (b) Accurately measure various cutting angles.
- (c) Correctly develop and record cutting angles.

### **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 and/or oral evidence is required to show that the candidate has achieved the standards specified in the Performance Criteria in Outcomes 1 and 2.

For Outcome 1 evidence is required which demonstrates the candidate understands spindle moulder terminology, the function of the spindle moulder and can correctly identify machine parts and state their functions. The candidate must also identify five cutter blocks and two types of tooling, and select cutterheads and tooling for three different operations. The candidate must also state legislation and the uses of different types of oils and greases in relation to a spindle moulder.

Written evidence is required for Outcome 4 to show the candidate can develop and draw and measure cutting angles from a selection of cutterblocks and cutter projections and record the size of the cutting angles. Evidence for these Outcomes 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 and 3. The candidate will be observed to show that they can select appropriate lubricants, oil can and grease gun before using vacuum equipment, rags and lubricants to maintain the machinery and equipment and the candidate must also report any faults identified during maintenance in accordance with recognised policy. Candidates must select the correct tooling on two occasions to show they can produce components by setting up cutterblocks and operating a spindle moulder in a safe and organised manner.

## **National Unit Specification: statement of standards (cont)**

**UNIT**      Woodmachining: Vertical Spindle Moulder: An Introduction  
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Candidates work methods and activities must be correct in terms of:

- ◆ sequencing operations
- ◆ selecting and changing spindle speed
- ◆ operating a spindle moulder
- ◆ producing components
- ◆ 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

### UNIT Woodmachining: Vertical Spindle Moulder: An Introduction (SCQF level 6)

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 40 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 develop 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 a vertical spindle moulder. It is complemented by other PDA Units at SCQF level 6 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. The context of this Unit allows for a holistic integrated approach for other Units within the PDA in Woodmachining. Therefore there are opportunities within this Unit to integrate aspects of *Woodmachining: Toolroom (Cutters)* and *Woodmachining: Craft Projects* at SCQF level 6.

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

##### Outcome 1

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

## National Unit Specification: support notes (cont)

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#### Outcome 2

Candidates may work in pairs for this Outcome. The candidate should be presented with maintenance checklists, and manufacturer's handbooks. This should allow them to carry out lubrication of the machine according to manufacturer's advice. Group discussion on lubrication procedures with particular emphasis on safe working practices should assist the candidate in gaining the necessary competences. The candidate should also be presented with various tools to allow the fitting of a selection of cutter blocks and also the setting up of the machine. 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

Candidates may work in pairs for this Outcome. The candidate should be presented with workshop drawings to manufacture timber components. 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 able to consistently select the correct cutters and cutterblocks then set up and operate the spindle machine to produce a range of timber components.

#### Outcome 4

The candidate should be presented with various cutterblocks to develop drawings. Tutor/trainer should demonstrate correct methods required to develop measure and record the size of the cutting angles.

The candidate should be given the opportunity to further develop the skills through classroom teaching with 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 practise methods should be demonstrated and attempted by candidates showing good technique in measuring and marking out of materials, setting and safe operation of machine. This teaching approach should ensure the candidate is acquiring the underpinning knowledge required for the Unit.

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 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

## National Unit Specification: support notes (cont)

### UNIT Woodmachining: Vertical Spindle Moulder: An Introduction (SCQF level 6)

#### 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. An appropriate method of assessing 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.

A series of practical activities will allow sufficient evidence to be gathered for Outcomes 2 and 3. A suitable task that would allow candidates to demonstrate competence could be spindle moulder work in the manufacture of a picture frame.

For Outcome 4 an appropriate method of assessing the candidate's knowledge and understanding of developing cutting angles would be through a classroom exercise where candidates are expected to draw and record cutting angles.



## **National Unit Specification: support notes (cont)**

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#### **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](http://www.sqa.org.uk/assessmentarrangements)