



## National Unit Specification: general information

**UNIT** Woodmachining: Small Tool Maintenance (SCQF level 6)

**CODE** F7GW 12

### SUMMARY

This Unit is suitable for candidates working towards a Modern Apprenticeship in Woodmachining and will develop the candidate's skills in the maintenance of small tools. It is designed to develop candidate competence in selecting appropriate methods of safely sharpening small tools, drills and cutters. This Unit is also designed to enable candidates to develop their knowledge and understanding of the terminology, abrasives and equipment used in the maintenance of small tools.

### OUTCOMES

- 1 Demonstrate knowledge and understanding of sharpening small tools safely.
- 2 Demonstrate the sharpening of drills.
- 3 Demonstrate the sharpening of cutters.

### 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 a 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

**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 Skill components in this Unit, opportunities for developing aspects of the following Core Skills are highlighted in Support Notes of this Unit:

- ◆ *Information and Communication Technology* at SCQF level 3
- ◆ *Communication* at SCQF level 4

## **National Unit Specification: statement of standards**

### **UNIT      Woodmachining: Small Tool Maintenance (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 sharpening small tools safely.

##### **Performance Criteria**

- (a) Correctly define small tool maintenance terminology.
- (b) Accurately specify tool geometry.
- (c) Correctly identify sharpening equipment and grinding agents.
- (d) Correctly outline sharpening methods.
- (e) Correctly define current legislation in relation to the use of related grinding machines.

#### **OUTCOME 2**

Demonstrate the sharpening of drills.

##### **Performance Criteria**

- (a) Accurately apply freehand grinding methods.
- (b) Correctly use machine grinding techniques.
- (c) Correctly use hand filing methods.
- (d) Comply with current health and safety regulations in all work methods and throughout all practical activities.

#### **OUTCOME 3**

Demonstrate the sharpening of cutters.

##### **Performance Criteria**

- (a) Correctly apply grinding methods.
- (b) Correctly use reamers.
- (c) Correctly apply honing methods.
- (d) 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: Small Tool Maintenance (SCQF level 6)**

#### **EVIDENCE REQUIREMENTS FOR THIS UNIT**

Evidence is required to demonstrate that the candidates have achieved this Unit to the standard specified within 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 for Outcome 1 which demonstrates the candidates' knowledge and understanding of technical terminology relating to grinding angles of cutters, mortice chains, hollow ground mortice chisel and auger and the safe use of appropriate grinding equipment. Evidence for this Outcome will be obtained by a series of multiple choice question papers under closed-book supervised conditions.

Performance evidence supplemented by an assessor observation checklist is required for Outcomes 2 and 3, to show the candidate can select the correct technical equipment to sharpen:

- ◆ one single flute router cutter
- ◆ one double flute router cutter
- ◆ one mortice chain
- ◆ one hollow chisel and auger

Evidence for these Outcomes must be gathered under controlled supervised conditions.

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

## National Unit Specification: support notes

### UNIT Woodmachining: Small Tool Maintenance (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 successful completion of this Unit will provide candidates with the required underpinning knowledge of the equipment and skills required relating to the maintenance and sharpening of various router cutters, drill bits, mortice chisels and augers, safe working practices and current health and safety legislation.

This Unit would be offered to candidates from the construction and related industries. 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 an introduction into the theory and practice associated with toolroom practices and is complemented by Units dealing with related work in machine woodworking. Candidates should be working towards *Woodmachining: Mortise Machines*, *Woodmachining: High Speed Router* and *Woodmachining: Wood Turning and Drilling* at SCQF level 6 before attempting to sharpen a router cutter, mortice chain and hollow ground chisel and auger. 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.

Ranges of machinery and equipment should include: universal grinder; dividing head; radial grinding; mortice chain grinder; hollow chisel grinder; reamer; hones.

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.

## National Unit Specification: support notes (cont)

### UNIT Woodmachining: Small Tool Maintenance (SCQF level 6)

#### GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

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

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. Safe working practice methods should be demonstrated by candidates showing good technique in the use of sharpening equipment and machinery. This teaching approach should help ensure the candidate is acquiring the underpinning knowledge required for the Unit.

Candidates should be made aware of the standard method of grinding spiral fluted drills, and of modifying the end of the drill to give a centre point and scribing wings for improved drilling of timber.

Tutors/trainers should demonstrate practical elements step-by-step until the candidate feels confident enough to attempt them on their own. The requirements to adopt safe working practices and comply with safety legislation should be emphasised throughout.

#### Outcome 2

The candidate should be provided with templates/gauges for checking that the correct angle is achieved when freehand grinding twist drill bits.

#### Outcome 3

Single wing router cutters (spoon bits) could be substituted by short sections of M/S tube cut into two pieces along its length for freehand grinding practice. Work on TCT cutters could be restricted to the use of a diamond hone for sharpening.

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; Abrasive Wheels Regulations; PUWER (Provision and Use of Work Equipment Regulations).

## National Unit Specification: support notes (cont)

### UNIT Woodmachining: Small Tool Maintenance (SCQF level 6)

#### OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

The Core Skill of *Information and Communication Technology* at SCQF level 3 could be developed by the use of spreadsheets for lubrication charts and risk assessment, e-learning and e-assessment.

Candidates will have the opportunity to develop the Core Skill of *Communication* at SCQF level 4 throughout practical tasks, as they should be expected to communicate with others using the appropriate terminology, tone and style suited to the workplace.

#### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The Woodmachining Training and Assessment Programme (TAP) sections 5 and 7 provide 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.

A suitable method of assessing the candidates' knowledge and understanding of terminology used to identify types of machinery, grinding agents, tooling and machine parts, cutter geometries and grinding angles used in the maintenance of drill bits, router cutters, mortice chains, hollow ground mortise chisels and augers, would be through a series of written and multiple choice question papers.

A series of practical activities will allow evidence to be gathered for Outcomes 2 and 3 through observation that the candidates have met the given standards and tolerances. An assessor observation checklist can be used to record this evidence.

#### 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)