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NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**STATEMENT OF STANDARDS****UNIT NUMBER:** 2211203**UNIT TITLE:** PLANT OPERATIONS: SERVICING AND REPAIRING
PLANT AND EQUIPMENT (SERVICING AND MINOR
ADJUSTMENTS)

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

OUTCOME (ELEMENT OF COMPETENCE)

1. INTERPRET TECHNICAL INFORMATION TO SERVICE PLANT AND EQUIPMENT

PERFORMANCE CRITERIA

- (a) Technical information derived from given sources relates to the relevant task.
- (b) Corrective actions are implemented against deviations from specifications.
- (c) Oral or written instructions are correctly interpreted and implemented.

RANGE STATEMENT

Information sources: manufacturers' operator manuals; manuals and service charts; company servicing instructions; oral or written instructions.

Corrective actions: variations of machine specifications amendments.

EVIDENCE REQUIREMENTS

Performance evidence of competence under working conditions in:

- (i) extracting servicing information from service charts and operator manuals;
- (ii) extracting procedures for minor operator adjustments from operator manuals;
- (iii) interpreting information and instructions from supervisor.

Oral or written evidence of knowledge and understanding of:

- (i) types and purpose of information sources;
- (ii) methods of checking and reporting inaccuracies in information sources.

All the performance criteria must be met and all items in the range statement covered.

OUTCOME (ELEMENT OF COMPETENCE)

2. SELECT MATERIALS AND SUBSTANCES TO SERVICE PLANT AND EQUIPMENT

PERFORMANCE CRITERIA

- (a) The materials and substances selected comply with the specification in terms of quantity, quality and type.
- (b) Work methods and activities minimise damage to the natural environment.
- (c) Corrective actions are implemented in response to problems with tools and materials.

RANGE STATEMENT

Information sources: manufacturers' operator manuals and service charts.

Machinery and equipment: mobile plant, wheeled and tracked; rope and hydraulically actuated equipment; attachments.

Materials and substances: fuels; lubricants; coolants; fluids.

Safety: personal protection; HASWA (Health and Safety at Work Act); COSHH (Control of Substances Hazardous to Health) Regulations.

Location: site.

EVIDENCE REQUIREMENTS

Performance evidence of competence under working conditions in selecting materials and substances.

Oral or written evidence of knowledge and understanding of:

- (i) types and purpose of information sources;
- (ii) characteristics, properties and uses of materials and substances in the range;
- (iii) responsibilities with regard to statutory regulations.

All the performance criteria must be met and all items in the range statement covered.

OUTCOME (ELEMENT OF COMPETENCE)**3. APPLY MATERIALS AND SUBSTANCES TO SERVICE PLANT AND EQUIPMENT****PERFORMANCE CRITERIA**

- (a) Oral or written instructions are correctly interpreted and implemented.
- (b) The selection of tools and equipment is appropriate to the work.
- (c) Corrective actions are implemented in response to problems with tools and materials.
- (d) The preparation of materials is complete and conforms with manufacturers' instructions.
- (e) The method of application conforms to the specification.
- (f) The cleanliness of the work area is maintained.
- (g) Work methods and activities are correct in terms of:
 - (i) satisfying safety requirements;
 - (ii) optimising the use of available materials and manpower;
 - (iii) minimising damage to the natural environment.

RANGE STATEMENT

Information sources: manufacturers' operator manuals and service charts.

Tools and equipment: grease guns; volume bucket oil measures; wipe cloths; fuel/oil/water containers; service tools; compressed air.

Components: power units; transmissions; chassis; controls; ropes; pins and bushes; hydraulic system; brakes; steering; wheels; tyres and tracks; auxiliary equipment.

Materials and substances: fuels; lubricants; coolants; fluids.

Preparation processes: replenish; drain; apply.

Safety: personal protection; material and substances handling; machine operating instructions; HASWA (Health and Safety at Work Act); COSHH (Control of Substances Hazardous to Health) Regulations.

Location: site.

Corrective action: unsuitable or damaged materials and substances; damaged tools and equipment.

EVIDENCE REQUIREMENTS

Performance evidence of competence under working conditions in:

- (i) applying materials and substances;
- (ii) replenishing and replacing;
- (iii) draining;
- (iv) making visual checks;
- (v) cleaning air and fuel filters to operator levels;
- (vi) disposing of waste materials.

Oral or written evidence of knowledge and understanding of:

- (i) types and purpose of information sources;
- (ii) reasons for different types of lubricants, fluids, coolants and fuels;
- (iii) reasons and correct methods of disposing of waste materials and substances;
- (iv) reasons for and methods of cleaning air and fuel filters to operator levels;
- (v) types and purposes of tools and equipment;
- (vi) types and purposes of components;
- (vii) reasons for different tyre pressures;
- (viii) responsibilities with regard to statutory regulations.

All the performance criteria must be met and all items in the range statement covered.

OUTCOME (ELEMENT OF COMPETENCE)**4. CARRY OUT ADJUSTMENTS TO PLANT AND EQUIPMENT****PERFORMANCE CRITERIA**

- (a) The selection of tools and equipment is appropriate to the work.
- (b) Corrective actions are implemented against deviations from the specification.
- (c) Machinery and equipment are adjusted to comply with manufacturers' specifications.
- (d) Work methods and activities are correct in terms of:
 - (i) satisfying safety requirements;
 - (ii) optimising the use of available materials and manpower;
 - (iii) minimising damage to the natural environment.

RANGE STATEMENT

Information sources: manufacturers' operator manuals; oral or written instructions; manufacturers' specifications.

Tools: operator service tools.

Components: belts; chains; controls; clutches; brakes; tracks; attachments.

Preparation processes: clearances; settings; adjusting.

Safety: personal protection; materials handling; machine operating instructions; HASWA (Health and Safety at Work Act); COSHH (Control of Substances Hazardous to Health) Regulations.

Location: site.

Corrective actions: variations of machine specifications amendments.

EVIDENCE REQUIREMENTS

Performance evidence of competence under working conditions in carrying out operator adjustments.

Oral or written evidence of knowledge and understanding of:

- (i) types and purpose of information sources;
- (ii) the need for correct clearances when adjusting clutches and brakes;
- (iii) variations in track tension to meet varying conditions;
- (iv) the importance of correct belt and chain tensioning;
- (v) the importance of the correct positioning and functioning of controls;
- (vi) methods of carrying out adjustments;
- (vii) methods of identifying the need for adjustment;
- (viii) methods of checking that the adjustments are correct;
- (ix) responsibilities with regard to statutory regulations.

All the performance criteria must be met and all items in the range statement covered.

OUTCOME (ELEMENT OF COMPETENCE)

- 5. RECORD AND MAINTAIN INFORMATION FOR SERVICING AND REPAIRING PLANT AND EQUIPMENT

PERFORMANCE CRITERIA

- (a) Oral or written instructions are correctly interpreted and implemented.
- (b) Records are complete, accurate, clear and accessible.
- (c) Work methods and activities are correct in terms of:
 - (i) satisfying safety requirements;
 - (ii) optimising the use of available materials and manpower;
 - (iii) minimising damage to the natural environment.

RANGE STATEMENT

Information sources: statutory regulations; company record requirements; company instructions; oral or written instructions.

Documentation: statutory forms and registers; timesheets; service records; company initiated records.

Safety: personal protection; machine operating instructions; HASWA (Health and Safety at Work Act); COSHH (Control of Substances Hazardous to Health) Regulations.

Location: site.

EVIDENCE REQUIREMENTS

Performance evidence of competence under working conditions in completing information including statutory and non-statutory documentation.

Oral or written evidence of knowledge and understanding of:

- (i) types and purpose of records and documentation;
- (ii) methods of reporting information;
- (iii) differences between company and statutory requirements for documentation;
- (iv) responsibilities with regard to statutory regulations.

All the performance criteria must be met and all items in the range statement covered.

ASSESSMENT RECORDS

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Accurate records should be made of assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

SPECIAL NEEDS

In certain cases, modified outcomes and range statements can be proposed for certification. See references at end of Support Notes.

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NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**SUPPORT NOTES**

UNIT NUMBER	2211203
UNIT TITLE	PLANT OPERATIONS: SERVICING AND REPAIRING PLANT AND EQUIPMENT (SERVICING AND MINOR ADJUSTMENTS)

SUPPORT NOTES: This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

NOTIONAL DESIGN LENGTH: SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 40 hours. The use of notional design length for programme design and timetabling is advisory only.

PURPOSE This unit is designed to enable the candidate to develop skills and knowledge related to carrying out operator servicing and adjustments, from oral and written instructions, to construction plant and equipment.

SQA publishes summaries of NC units for easy reference, publicity purposes, centre handbooks, etc. The summary statement for this unit is as follows:

This module will help you to acquire the skills and knowledge necessary to interpret technical information, select and apply materials and substances to service plant and equipment and to maintain a record for servicing and repair.

On completion of the module you will have a working knowledge of the relevant safety procedures and legislation.

CONTENT/CONTEXT The candidate successfully completing this module will require underpinning knowledge and skills relating to the interpretation of technical information for selecting and applying materials and substances in the servicing and repair of plant and equipment.

The unit would be offered to candidates from the construction and related services 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 or similar environment.

The range statement is applicable to all areas of construction and other related or similarly structured industries. The competences and underpinning knowledge gained in successfully completing this unit would be transferable across a range of disciplines within the built environment.

The unit deals with servicing and repairing construction plant and equipment and is complemented by units dealing with related aspects of work in Plant Operations.

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.

APPROACHES TO GENERATING EVIDENCE The achievement of the underpinning knowledge required for this unit would be assisted by the use of slides and videos, and hands-on experience.

Tutors/trainers should demonstrate practical elements step-by-step until the candidate feels confident enough to attempt them on his/her own, and the safety factors should be thoroughly emphasised.

Supervisors and employers could also play an important part in assisting candidates to generate evidence.

ASSESSMENT PROCEDURES Candidates will be able to provide evidence of performance using a variety of methods. These will include:

- Performance at work (recorded in Candidate's Assessment and Evidence Record or other methods).
- Performance in training (recorded in Candidate's Assessment and Evidence Record or other methods).
- Simulated exercises (skills/progress test results).
- Past achievement/experience e.g. letters of endorsement; past certificates.

Evidence gathering from the workplace will be the preferred method; however there may be situations where this is inappropriate or the evidence is insufficient. Supplementary evidence will also be required to demonstrate the underpinning knowledge related to the competences in the unit.

For detailed guidance on assessment, reference should be made to the publications listed at the end of the Support Notes and to the Assessment Guidance Notes available for the delivery of the Scottish Vocational Qualification of which this module is a component.

PROGRESSION This unit forms part of the following SVQs:

Construction: Plant Operations - Lifting (level II)

Construction: Plant Operations - Earthmoving (level II)

Each module is a separate unit and the modules are not necessarily taken in a prescribed order, although there is a logical sequence to the acquisition of the skills and knowledge concerned.

Progression would normally be to the level III SVQ in Plant Operations.

RECOGNITION Many SQA NC units are recognised for entry/recruitment purposes. For up-to-date information see the SQA guide 'Recognised and Recommended Groupings'.

REFERENCES

1. Guidelines for Module Writers.
2. SQA's National Standards for Assessment and Verification.
3. For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment.
4. Procedures for special needs statements are set out in SQA's guide 'Students with Special Needs'.

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