

-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- 0064465 -Session-1986-87
-Superclass- VG
**-Title- HEAVY MOBILE PLANT AND PSV ELECTRICAL UNIT
TEST AND RECLAMATION: STARTER MOTORS**

-DESCRIPTION-

Type and Purpose A specialist module which enables the student to develop the skills and knowledge to overhaul and test heavy mobile plant and psv engine starter motors.

Preferred Entry Level 04050 Introduction to Materials (1/2)
04468 Mobile Plant Electrics 1: Introduction
04702 Introductory Machining Skills

Learning Outcomes The student should:

1. assess the mechanical and electrical condition of components;
2. assess the viability and appropriateness in respect of reclamation;
3. apply reclamation procedures;
4. adjust and test units for satisfactory operation;
5. work safely.

Content/ Context Corresponding to the Learning Outcomes:

1. methods of dismantling for inspecting and testing units such as axial starters, co-axial starters and other heavy starters from a range of manufacturers. Use of manuals, circuit diagrams and other relevant material. Use of specialist test and measuring equipment. Possible causes of common faults.
2. influence of warranty and guarantee. Use of price lists, overhaul prices, wage rates, etc.

3. dismantling, reconditioning and assembly procedures.

Use of reconditioning equipment, lathes, drills, press, soldering, etc.

4. use of specialist test equipment such as test bench, etc.

Service adjustments and tests prior to installation.

5. safe working practices when dealing with components and test equipment.

Suggested Learning and Teaching Approaches

This module should be taught in a practical situation using an adequate range of up-to-date engine starter motors.

Emphasis should be on the use of suitable equipment to test engine starter motors and on the skills required to recondition engine starter motors to manufacturer's specifications.

Demonstrations should be used in preference to lectures, and students must work on a variety of makes and types of starter motors.

Manufacturers' service literature and an adequate supply of service spare parts should be available.

The teaching approach should be designed to encourage the student to develop a safe and tidy, diagnostic approach to the subject.

Assessment Procedures

All learning outcomes must be validly assessed.

The student must be informed of the tasks which contribute to summative assessment. Any unsatisfactory aspects of performance should, if possible, be discussed with the student as and when they arise.

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each learning outcome.

The following abbreviations are used below:

LO Learning Outcome
IA Instrument of Assessment
PC Performance Criteria

- LO1 IA Assignment report.
- PC The student:
- (a) correctly identifies the mechanical repairs required;
 - (b) correctly identifies the electrical repairs required;
 - (c) suggests possible causes for identified faults.
- LO2 IA Assignment report.
- PC The student correctly assesses the financial viability of reclamation.
- LO3 IA Observation checklist.
- PC The student:
- (a) correctly reconditions components;
 - (b) makes appropriate tests during assembly.
- LO4 IA Observation checklist.
- PC The student:
- (a) mounts unit for test correctly;
 - (b) carries out adjustment and test procedures correctly.
- LO5 IA Observation checklist.
- PC The student consistently:
- (a) wears all necessary safety clothing and equipment;
 - (b) behaves in a manner appropriate to the working environment;
 - (c) uses tools and equipment safely.