

[Unique Reference Number]

Repair electrical faults in bus/coach systems and components



Overview

This unit identifies the competencies you need to repair faults on bus/coach electrical systems and components in accordance with approved procedures. You will be required to carry out a range of previously identified repair activities that on completion meet organisational and regulatory standards.

You will know about the information sources available to assist you in undertaking electrical repairs and will understand the methods used to determine the suitability of such repairs and their application. You will understand the technical knowledge relating to electrical systems in adequate depth to carry out the repair activities to the required specification.

Applying relevant safe working practices will be a key issue throughout.

This unit consists of one element:

1. Repair electrical faults in bus/coach systems and components

This element is about repairing electrical faults. You will comply with your organisation's relevant policy and procedures and statutory requirements for the repair activities undertaken and to report any problems to the relevant authority. You will be able to work to a specification agreed with your supervisor. If, in the course of the repair, this specification requires changing or modifying it is expected that you would use your knowledge, skills and experience to initiate an alternative route without compromising the quality of the repair.

A repair as defined in this element is one which may involve interaction between two or more vehicle systems and components.

The completed repair should meet as required your organisation's, manufacturers' and regulatory expectations.

This unit is for all those who work in a bus/coach engineering and maintenance workshop or environment.

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Performance criteria

You must be able to:

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- P1 work safely at all times, complying with health and safety and other relevant regulations and guidelines
- P2 follow the relevant specifications for the component to be repaired
- P3 prepare the component for repair
- P4 carry out the repairs within agreed timescale using approved materials and components and methods and procedures including, as appropriate: dismantling, assessment, replacement, refurbish, re-assembly, adjustments, testing
- P5 use a range of repair tools and equipment, including, as appropriate: hand tools, general workshop equipment, removers and replacers, joining equipment, electrical and electronic testers, brake testing equipment, emissions tester, measuring equipment
- P6 ensure that the repaired component meets the specified operating conditions
- P7 produce accurate and complete records of all repair work carried out

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Knowledge and understanding

You need to know and understand:

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- K1 the relevant safe working procedures covered by;
 - K1.1 HASWA
 - K1.2 your organisation's health and safety policy and procedures
 - K1.3 COSHH regulations
 - K1.4 PPE regulations
 - K1.5 tools and equipment instructions and safety guidance for their use, maintenance and storage
- K2 the type of constraints which influence the repair method chosen including:
 - K2.1 costs
 - K2.2 availability of materials and equipment
 - K2.3 legislation
 - K2.4 warranty
- K3 how to source and use relevant information for planning and progressing your work, including as appropriate:
 - K3.1 data sheets
 - K3.2 specifications
 - K3.3 inspection sheets
 - K3.4 drawings
 - K3.5 diagrams
 - K3.6 manufacturers' manuals and bulletins
 - K3.7 vehicle records
 - K3.8 workshop manuals
 - K3.9 wiring and circuit diagrams
 - K3.10 trouble shooting charts
 - K3.11 diagnostic reports
 - K3.12 defect reports
 - K3.13 repair schedules
- K4 the layout and operation of bus/coach electrical systems and their associated components to include:
 - K4.1 battery and charging systems
 - K4.2 engine starting systems
 - K4.3 engine electrical systems
 - K4.4 body electrical systems
 - K4.5 chassis electrical systems
 - K4.6 advanced electronic principles
- K5 how to repair faults in bus/coach systems and components, including as appropriate:
 - K5.1 battery and charging systems and their associated components
 - K5.2 engine starting systems and their associated components
 - K5.3 engine electrics and their associated components

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- K5.4 body electrical systems and their associated components
- K5.5 chassis electrical systems and their associated components
- K5.6 braking, transmission and suspension electrical control systems
- K6 the methods undertaken for repair in the main bus/coach systems, including as appropriate:
 - K6.1 dismantling
 - K6.2 assessment
 - K6.3 replacement
 - K6.4 recondition refurbishment
 - K6.5 overhaul
 - K6.6 reassembly
- K7 the checks on a completed repair to ensure they meet company and regulatory standards
- K8 how to operate workshop equipment and tools used to repair electrical faults and to leave them after use in a clean and workable condition and to know the control procedures for reporting defects
- K9 how different types of repair activities are reported and presented to ensure clarity and accuracy of detail
- K10 the importance of reporting the progress and completion of the complex repair including the provision of information on the parts used follow up work and potential problems
- K11 the extent of your own responsibility and to whom you should report if you have problems that you cannot solve

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Additional information

Glossary

Your organisation

This is the company you work for or, if you are self employed, the rules you have set for yourself to ensure that you comply with relevant legal and licensing requirements

HASWA

Health and Safety at Work Act

COSHH

Control of Substances Hazardous to Health

PPE

Personal Protective Equipment

Component

Includes any parts, assemblies, sub-assemblies, panels, framework, furniture, hardware or trim, glazing or door units

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Suite	Bus and Coach Engineering and Maintenance
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