IMIMET04

Remove, Renew and Refit Electromechanical and Electronic Components

Overview

This standard is about the removal, renewal and refitting of electromechanical and electronic components within advanced vehicle systems following accident damage. It is advisable to check the current regulatory requirements concerning F Gas prior to handling and storing refrigerants.

Performance criteria

You must be able to:

1. use the appropriate personal protective equipment when removing and refitting **electromechanical** and electronic components
2. protect the **vehicle** and its contents effectively when removing and refitting electromechanical and electronic components
3. support your removal and replacement activities by referring to:
    - 3.1 vehicle technical data
    - 3.2 removal and replacement procedures
    - 3.3 legal requirements
4. ensure that the **tools and equipment** you require are calibrated and in a safe working condition
5. select and use the correct tools and equipment for the components you are going to remove or refit
6. remove and refit electromechanical and electronic components following:
    - 6.1 recognised research methods
    - 6.2 removal and refitting procedures
    - 6.3 manufacturers' instructions
    - 6.4 your workplace procedures
    - 6.5 health, safety and legal requirements
7. work in a way which reduces the risk of damaging other components and units on the vehicle
8. adapt your working practices safely to suit the needs of the job and vehicle
9. store all removed components, refrigerants, gases and vehicle safety system pyrotechnic devices safely in the correct location
10. prepare, connect and test all available electronic system testing equipment following manufacturer's instructions prior to use
11. check that the components you have refitted operate correctly following the manufacturer's specification prior to release to the customer
12. correct any component and system operational faults within the limits of your authority
13. report any additional vehicle unit and component faults you find during the course of your work to the relevant person(s) promptly
14. make suitable and justifiable recommendations for further cost effective repairs, if required
15. report any delays in completing your work to the relevant person(s) promptly
16. remove and refit electromechanical and electronic components within the agreed timescale

17. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the removal and refitting of electromechanical and electronic components
2. how the vehicle is powered and associated health and safety risks
3. your workplace procedures for:
    - 3.1 the referral of problems
    - 3.2 reporting of delays to the completion of work
    - 3.3 completion of work records
4. the work that needs to be done and the standard required
5. the requirements for protecting the vehicle and contents from damage before, during and after removing and refitting activities
6. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and refitting electromechanical and electronic components

Equipment

7. how to select, check and use all the tools and equipment required to remove and refit electromechanical and electronic components

Removal, renewal and refitting of electromechanical and electronic components

8. the types of components found in advanced **electromechanical and electronic systems**
9. the construction and operation of advanced electromechanical and electronic components and systems
10. how electromechanical and electronic components and systems interact with other vehicle systems via multiplexing
11. where to find and how to interpret and use sources of information applicable to the removal and refitting of electromechanical and electronic components
12. the procedures necessary prior to carrying out removal and refitting of electromechanical and electronic components
13. types of **contaminants** associated with accident damaged vehicles and the dangers associated with them
14. the procedures for the systematic removal and refitting electromechanical and electronic components

15. the methods of storing removed parts and the importance of storing them correctly
16. how to handle and store refrigerants, gases, vehicle safety systems and pyrotechnic devices
17. the different types of fastenings and the reasons for their use
18. the need for correct alignment of components and the methods used to achieve this
19. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose
20. how to test and evaluate the performance of renewed and refitted electromechanical and electronic components against vehicle operating specifications and any legal requirements

Scope/range

All the items listed below form part of the National Occupational Standard.

1. Electromechanical systems are:

    1.1 engine (air, fuel and exhaust)
    1.2 transmission
    1.3 chassis (covers steering, suspension and brakes
    1.4 electrical/electronic (excluding high voltage battery systems)
    1.5 Advanced Driver Assistance Systems (passive and active)

2. Tools and equipment required for:

    2.1 removal and refitting of engine electromechanical systems
    2.2 removal and refitting of transmission electromechanical systems
    2.3 removal and refitting of chassis electromechanical systems
    2.4 specialist electrical/electronic repair
    2.5 general workshop activities

Glossary

Contaminants
Examples include: high voltage; glass; gases; fuel; hydro-carbons

Vehicles

These can be light vehicles or commercial vehicles

IMIMET04

Remove, Renew and Refit Electromechanical and Electronic Components

Developed by	IMI
Version Number	2
Date Approved	March 2018
Indicative Review Date	March 2021
Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMIMET04
Relevant Occupations	Mechanical, Electrical and Trim Assistant Technician (Automotive); Mechanical, Electrical and Trim Technician (Automotive)
Suite	Accident Repair - Mechanical, Electrical and Trim
Keywords	Remove, Renew, Refit Electromechanical and Electronic Components