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**Overview**

This standard is about the removal, renewal and refitting of mechanical components within vehicle mechanical systems where the procedure is straightforward and where items are not directly linked to vehicle safety systems. Disconnection or removal of vehicle safety systems is not expected in this standard.

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**Performance criteria***You must be able to*

- P1. use the appropriate personal protective equipment when removing and refitting mechanical components
- P2. protect the vehicle and its contents when removing and refitting mechanical components
- P3. support your removal and replacement activities by referring to:
  - P3.1. vehicle technical data
  - P3.2. removal and replacement procedures
  - P3.3. legal requirements
- P4. ensure that the **tools and equipment** you require are calibrated and in a safe working condition to meet manufacturer's and legal requirements
- P5. select and use the correct **tools and equipment** for the components you are going to remove or fit
- P6. carry out an initial four wheel alignment diagnostic check
- P7. record and report the data to an appropriate person
- P8. remove and refit mechanical components following:
  - P8.1. recognised research methods
  - P8.2. removal and fitting procedures
  - P8.3. manufacturers' instructions
  - P8.4. your workplace procedures
  - P8.5. health, safety and legal requirements
- P9. renew fittings and fasteners that are unsuitable for re-use
- P10. dispose of waste materials to conform with legal, environmental and workplace requirements
- P11. work in a way which reduces the risk of damaging other components and units on the vehicle
- P12. adapt your work techniques safely to suit the needs of the job when necessary
- P13. store all removed components safely in the correct location
- P14. check that the components you have fitted operate correctly following the manufacturer's specification
- P15. check wheel alignment and adjust if necessary
- P16. promptly report any additional faults or defects you find during the course of your work to the relevant person(s)

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- P17. promptly report any delays in completing your work to the relevant person(s) in the format required
  - P18. remove and refit mechanical components within the agreed timescale
  - P19. complete work records accurately, in the format required and pass them to the relevant person(s)

## Knowledge and understanding

You need to know and understand:

### Legislative and organisational requirements and procedures

- K1 the health, safety, environmental and legal requirements relating to the removal and refitting of mechanical components
- K2 how the vehicle is powered and the associated health and safety risks
- K3 your workplace procedures for:
  - K3.1 referral of problems
  - K3.2 reporting of delays to the completion of work
  - K3.3 completion of work records and format required
- K4 the work that needs to be done and the standard required
- K5 the requirements for protecting the vehicle and contents from damage before, during and after removing and refitting activities
- K6 the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and refitting mechanical components

### Equipment

- K7 how to select, check and use all the **tools and equipment** required to remove and refit mechanical components

### Wheel alignment

- K8 how to carry out a four wheel alignment diagnostic check
- K9 how to accurately interpret and record the data and who to report the findings to
- K10 how four wheel alignment might affect ADAS functionality

### Removal, renewal and refitting of mechanical components

- K11 the types of common vehicle **mechanical systems** components
- K12 the construction and operation of common vehicle **mechanical systems**
- K13 how **mechanical systems** and their components work and their function
- K14 where to find and how to interpret and use sources of information applicable to the removal and fitting of mechanical components
- K15 the procedures for removing and fitting mechanical components

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- K16 the methods of storing removed parts and the importance of storing them correctly
  - K17 the different types of fastenings and the reasons for their use
  - K18 single use mechanical fasteners, why they are used and the dangers of not renewing them
  - K19 the need for correct alignment of components and the methods used to achieve this including adjustment of wheel alignment
  - K20 the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose

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**Scope/range**

- 1. Mechanical systems** can include:
  - 1.1. engine (air, fuel and exhaust)
  - 1.2. transmission
  - 1.3. chassis (covers steering, suspension and brakes)
  - 1.4. Advanced Driver Assistance Systems (passive and active)
  - 1.5. high voltage integrated electrical systems
  
- 2. Tools and equipment** required for :
  - 2.1. removal and refitting of engine mechanical systems
  - 2.2. removal and refitting of transmission mechanical systems
  - 2.3. removal and refitting of chassis mechanical systems
  - 2.4. specialist repair
  - 2.5. general workshop activities
  - 2.6. calibration and reinstatement of safety operating systems
  - 2.7. jacking and lifting

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**Additional  
Information****Glossary**

*This section contains examples and explanations of some of the terms used but does not form part of the standard.*

**Alternative Fuel**

This is defined as any type of fuel that may be used to power an internal combustion engine; examples would include LPG, bio ethanol etc.

**Vehicles**

These can be light vehicles or commercial vehicles. In addition, they may be SI, CI, Hybrid, Electric or Alternative fuel vehicles.

**Vehicle Safety Systems**

This is a generic term which includes, for example, supplemental restraint systems (SRS), engine managements systems, assisted brake systems (ABS) , Advanced Driver Assistance Systems (ADAS) and any equipment related to safety.

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<b>Suite</b>	Accident Repair - Mechanical, Electrical and Trim
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