
Overview

This standard is about removing and replacing units and components where dismantling and re-assembly of chassis systems is required. It is also about evaluating the performance of replaced units and components.

The units and components concerned are not those replaced as part of normal routine, vehicle maintenance (servicing) activities.

**Performance
criteria**

- You must be able to:
- P1 use suitable personal and vehicle protective equipment throughout all removal and replacement activities
 - P2 support your removal and replacement activities by reviewing:
 - P2.1 vehicle technical data
 - P2.2 removal and replacement procedures
 - P2.3 legal requirements
 - P3 prepare, check and use all the **equipment** required following manufacturers' instructions
 - P4 prepare the vehicle systems and work area for safe working procedures (where appropriate)
 - P5 carry out all removal and replacement activities following:
 - P5.1 manufacturers' instructions
 - P5.2 recognised repair methods
 - P5.3 your workplace procedures
 - P5.4 health, safety and environmental requirements
 - P6 work in a way which minimises the risk of:
 - P6.1 damage to other vehicle systems
 - P6.2 damage to other vehicle units components
 - P6.3 contact with leakage
 - P6.4 contact with hazardous substances
 - P6.5 damage to your working environment
 - P7 ensure replacement chassis **units and components** conform to the vehicle operating specification and any legal requirements
 - P8 promptly record and report any additional faults you notice during the course of your work
 - P9 use suitable **testing methods** to evaluate the performance of the reassembled system accurately
 - P10 ensure the reassembled chassis system performs to the vehicle operating specification and meets any legal requirements prior to returning it to the customer
 - P11 ensure your records are accurate, complete and passed to the relevant person(s) in the agreed timescale and in the format required

P12 complete all removal and replacement activities within the agreed timescale

P13 promptly report any expected delays in completion to the relevant person(s)

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

- K1 the legislation and workplace procedures relevant to:
 - K1.1 health and safety
 - K1.2 the environment (including waste disposal)
 - K1.3 personal and vehicle protective equipment
- K2 the importance of documenting removal and replacement information
- K3 the importance of working to agreed timescales and keeping others informed of progress
- K4 the relationship between time and costs
- K5 the importance of promptly reporting anticipated delays to the relevant person(s)

Use of technical information

- K6 how to find, interpret and use technical information applicable to unit and component removal and replacement within **chassis systems**
- K7 the importance of using the correct sources of technical information
- K8 the purpose of and how to use identification codes

Electrical and electronic principles

- K9 vehicle earthing principles and earthing methods
- K10 electrical and electronic principles associated with **chassis systems**, including types of sensors and actuators, their application and operation
- K11 types of circuit protection and why these are necessary
- K12 electrical safety procedures
- K13 electric symbols, units and terms
- K14 electrical and electronic control system principles
- K15 the hazards associated with working on or near high energy electrical vehicle components

Chassis system operation and construction

- K16 how **chassis systems** and their related **units and components** are constructed, removed and replaced for the classification of vehicle worked upon

K17 how **chassis systems** and their related **units and components** operate for classification of vehicle worked upon

Equipment

K18 how to prepare, check and use all the removal and replacement **equipment** required

Chassis system unit and component removal and replacement

- K19 how to remove and replace chassis system mechanical, electrical and hydraulic **units and components** for the classification of vehicle worked upon
- K20 how to select and use gaskets, sealants, seals, fittings and fasteners
- K21 how to test and evaluate the performance of replacement chassis system **units and components** and the reassembled system against the vehicle operating specifications and any legal requirements
- K22 the relationship between **testing methods** and the chassis system **units and components** replaced – the use of appropriate test methods
- K23 when replacement **units and components** must meet the original **equipment** specification (OES) for warranty or other requirements
- K24 how to work safely avoiding damage to other vehicle systems, units and components and contact with leakage and hazardous substances (any special arrangements or precautions when working with alternative fuel or hybrid vehicles must be covered)

Scope/range

- 1. Equipment is:**
 - 1.1. hand tools
 - 1.2. special workshop tools
 - 1.3. general workshop equipment
 - 1.4. electrical testing equipment

- 2. Testing methods are:**
 - 2.1. sensory
 - 2.2. functional
 - 2.3. measurement

- 3. Units and components are:**
 - 3.1. mechanical
 - 3.2. electrical
 - 3.3. hydraulic/pneumatic

- 4. Chassis systems are:**
 - 4.1. steering
 - 4.2. suspension
 - 4.3. braking

**Additional
Information****Glossary**

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

Agreed timescales

Examples include: manufacturer's recommended work times, job times set by your company or a job time agreed with a specific customer.

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.

Functional testing

Examples include: use of brake roller tester, chassis dynamometer, suspension activation, security activator.

Steering and suspension system

For the purposes of this NOS, this will also include wheels and tyres.

Units and components

Any unit or component from the chassis systems defined in the Scoping Statement above.

Vehicles

These can be any of the following types of light vehicle: SI, CI, Hybrid, Electric or Alternative fuel vehicles.

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