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## Overview

This standard is about inspecting and replacing suspension components using a variety of equipment and testing techniques.

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## Performance criteria

- You must be able to:*
- P1 select and use suitable personal protective equipment and vehicle coverings throughout all suspension damper inspection, testing and replacement activities
  - P2 work in a way which minimises the risk of damage to the vehicle and its systems
  - P3 carry out tests on **suspension dampers** and **springs** relevant to the faults reported
  - P4 conduct all testing and replacement activities following:
    - P4.1 vehicle, equipment and component manufacturers' recommendations
    - P4.2 your workplace procedures
    - P4.3 health and safety requirements
    - P4.4 legal requirements
  - P5 ensure your **testing techniques** clearly identify the type of suspension damper and spring fault(s)
  - P6 make clear and suitable recommendations for further action based upon the results of your inspection to the relevant person(s)
  - P7 carry out removal and replacement activities using:
    - P7.1 suitable **tools and equipment**
    - P7.2 the correct techniques
    - P7.3 suitable **suspension dampers** or **springs** for the vehicle
  - P8 ensure that vehicle geometry is checked and adjusted to manufacturer's recommendations before release to the customer
  - P9 ensure that the replacement **suspension dampers** and **springs** functions correctly prior to releasing the vehicle to the customer
  - P10 dispose of removed **suspension dampers** and **springs** safely to comply with your workplace procedures
  - P11 complete all inspection, testing and replacement activities within the agreed timescale
  - P12 promptly report any anticipated 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 current health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection

K2 your workplace procedures for:

K2.1 the referral of problems

K2.2 reporting of delays to the completion of work

K2.3 personal protection

K3 how to dispose of removed components in line with health and safety requirements

K4 the importance of disposing of waste safely and the consequences of not doing so to others and the environment

K5 the importance of working to agreed timescales and keeping others informed of progress

K6 the importance of promptly reporting anticipated delays to the relevant person(s)

K7 the relationship between time and costs

### **Tools and equipment**

K8 the **tools and equipment** used for the replacement of **suspension dampers** and **springs** and how to select and use them

K9 how to perform safety and operational checks on tools and equipment

### **Inspection and replacement of suspension dampers and springs**

K10 the types, purpose, function and location of **suspension dampers** and **springs**

K11 the possible faults associated with **suspension dampers** and **springs**

K12 the **testing techniques** and procedures associated with **suspension dampers** and **springs**

K13 the removal and refitting procedures associated with **suspension dampers** and **springs** including health and safety requirements

K14 the dangers of and precautions to be taken when using spring compressors

K15 how to check that replacement components are of the correct type and quality for the vehicle and conform to legal requirements where relevant

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K16 how to check that components are functioning and adjusted correctly and the importance of doing so before release to the customer

K17 how to check suspension and steering geometry post replacement

K18 how to work safely avoiding injury to yourself, to others and damage to vehicles

K19 the implications of adjustment or replacement of suspension components on ADAS systems

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## Scope/range

1. **Suspension dampers** include:
  - 1.1. telescopic
  - 1.2. semi-strut/MacPherson strut
  - 1.3. gas assisted
  - 1.4. air
  - 1.5. magnetic
  
2. **Springs** include:
  - 2.1. metallic
  - 2.2. rubber
  - 2.3. pneumatic
  
3. **Tools and equipment** include:
  - 3.1. hand tools
  - 3.2. lifting and supporting equipment
  - 3.3. specialist tools
  - 3.4. electronic equipment
  - 3.5. vehicle geometry
  - 3.6. diagnostic tools
  - 3.7. heating and cutting equipment
  
4. **Testing techniques** include:
  - 4.1. functional
  - 4.2. sensory
  - 4.3. electronic

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## Glossary

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

### **ADAS**

Advanced driver-assistance systems, includes systems for driver safety, pedestrian safety, motion/stability control and collision avoidance systems.

### **Agreed timescales**

Examples include job times set by your company or agreed with a specific customer.

### **Heating and cutting equipment**

To include oxy-acetylene, plasma cutters, induction heating equipment etc.

### **Specialist tools**

Examples include spring compressors, strut guide, strut insert retainer tools, ball joint separators

### **Suspension components**

Components used to support the weight and adjust the ride height of the vehicle to provide a comfortable ride for the occupant.

IMIVF11

Inspect, test and replace light vehicle suspension components



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**Suite** Vehicle Fitting

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