IMIVF11
Inspect and replace light vehicle suspension components

Overview

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

Performance criteria

You must be able to:

P1 select and use suitable personal protective equipment and vehicle coverings throughout all suspension damper 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 testing, inspection 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

You need to know and understand:

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**

You need to know and understand:

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

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

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

Additional information

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

Glossary

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.

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