

Inspect and replace light vehicle exhaust components

Overview

This standard is about inspecting exhaust components for replacement or continued serviceability and removing and replacing components identified as being faulty, damaged, deteriorated or where the customer has requested replacement.

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Performance criteria

- You must be able to:*
- P1 select and wear suitable personal protective equipment throughout all exhaust system component inspection and replacement activities
 - P2 seek confirmation that all equipment is safe prior to use
 - P3 carry out inspections on **exhaust system components** relevant to the faults reported
 - P4 conduct all inspection and replacement activities following:
 - P4.1 vehicle, equipment and component manufacturers' recommendations
 - P4.2 your workplace procedures
 - P4.3 health and safety requirements
 - P5 ensure your inspection clearly identifies the serviceability of the exhaust system component and the cause of any faults identified
 - 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 exhaust components and fixings
 - P8 ensure that the replacement **exhaust system components** are correctly fitted and aligned prior to releasing the vehicle to the customer
 - P9 advise customers of any running in procedures for new exhausts
 - P10 dispose of removed **exhaust system components** safely to comply with legal requirements and your workplace procedures
 - P11 complete all inspection and replacement activities within the agreed timescale
 - P12 promptly report any anticipated delays in completion to the relevant person(s)

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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 the current legal requirements relating to vehicle exhaust systems

K3 your workplace procedures for:

K3.1 the referral of problems

K3.2 reporting of delays to the completion of work

K3.3 personal protection

K4 how to dispose of removed components in line with health and safety and legal requirements

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 removal and replacement of exhausts, for testing and resetting and how to select and use them

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

K10 how to use cutting equipment to make straight through section cuts

Exhaust inspection, removal and replacement operations

K11 the purpose, function and layout of vehicle exhaust systems and their associated components

K12 the common faults associated with vehicle **exhaust system components**

K13 the fault identification methods and procedures associated with vehicle **exhaust system components**

K14 the removal and replacement procedures associated with vehicle exhaust systems, including health and safety requirements

K15 the construction of vehicle **exhaust system components**

K16 when and how to use heat to remove seized components if applicable

K17 how to check that replacement components are of the correct type and quality for the vehicle and conform to legal requirements where relevant i.e type approved

K18 how to make adjustments to **exhaust system components**

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K19 how to check **exhaust system components** are functioning correctly after refitting and or replacement and the importance of doing so before release to the customer

K20 the importance of ensuring customers are advised of the running in procedures for new exhausts prior to leaving your premises

K21 how to work safely avoiding injury to yourself, to others and damage to vehicles

K22 exhaust related emissions control systems

K23 how to remove, replace and clean or rethread broken, damaged or seized exhaust fixings

Scope/range

1. **Exhaust system components** include:
 - 1.1. complete exhaust system (separately or as complete unit)
 - 1.2. individual component, e.g. silencer, link pipe, tail pipe etc.
 - 1.3. catalytic converters/particulate filters and associated components and fluids
 - 1.4. lambda sensors
 - 1.5. Selective catalytic reduction (SCR) system and associated components and fluids
 - 1.6. NO_x reduction system

2. **Tools and equipment** include:
 - 2.1. hand tools
 - 2.2. special purpose tools
 - 2.3. lifting and supporting equipment
 - 2.4. heating and cutting equipment
 - 2.5. electronic equipment
 - 2.6. diagnostic equipment

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

Catalytic converter associated components and fluids

To include fuel treatments, for example Eolys

Complete exhaust system

This is a system from the engine to exit of the vehicle - to include additional exhaust components (e.g. gaskets, hangers, mounting rubbers, clamps, sleeves) and consumables (e.g. exhaust sealing compound)

Heating and cutting equipment

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

Lambda sensors

To include pre and post catalytic converter, wide band, zirconia, titania/titanium.

Manufacturers

This term can include product and vehicle manufacturers

Selective catalytic reduction (SCR) system components and fluids

To include exhaust gas treatment, for example Ad-blue

Special purpose tools

Examples include exhaust chain cutter, exhaust flaring dolly, thread cutting taps and dies, stud removal tools

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Developed by IMI

Version Number 3

Date Approved December 2021

Indicative Review Date December 2024

Validity Current

Status Original

Originating Organisation IMI

Original URN VF09

Relevant Occupations Vehicle Fitters; Vehicle Fitting Operations (Automotive)

Suite Vehicle Fitting

Keywords Inspect; replace; light; vehicle; exhaust; components;
