
Overview

This standard is about the overhaul of light vehicle mechanical units, for example, engines, gear boxes, final drive assemblies, steering units and components, suspension units and components. The unit covers dismantling, assessment, repair, replacement or adjustment of internal components together with re-assembly and testing.

**Performance
criteria**

- You must be able to:
- P1 use suitable personal and vehicle protective equipment throughout all **overhauling activities**
 - P2 use suitable sources of technical information to support your **overhauling activities**
 - P3 prepare the vehicle mechanical unit and work area for safe working procedures as appropriate to the vehicle
 - P4 assess and prepare all the equipment required, following manufacturers' instructions, prior to use
 - P5 prepare, check and use the tools and equipment required correctly and safely throughout all **overhauling activities**
 - P6 carry out all **overhauling activities** following:
 - P6.1 manufacturers' instructions
 - P6.2 recognised repair methods
 - P6.3 your workplace procedures
 - P6.4 health, safety and environmental requirements
 - P7 work in a way which minimises the risk of:
 - P7.1 damage to other components
 - P7.2 leakages
 - P7.3 contact with hazardous substances
 - P8 ensure your assessment of the dismantled units identifies accurately the condition and suitability for overhaul
 - P9 promptly inform the relevant person(s) where an overhaul is uneconomic or unsatisfactory to perform
 - P10 use testing methods which comply with the manufacturer's requirements
 - P11 adjust the unit's components correctly, when necessary, to ensure that they operate to meet the vehicle operating requirements
 - P12 ensure the overhauled units and assemblies conform to the vehicle operating specification and any legal requirements
 - P13 ensure your overhaul records are accurate, complete and passed promptly to the relevant person(s) in the format required
 - P14 complete all **overhauling activities** within the agreed timescale
 - P15 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 legal requirements applicable to the units and assemblies overhauled (including road safety requirements)
- K2 the legislation and workplace procedures relevant to
 - K2.1 health and safety
 - K2.2 the environment (including waste disposal)
 - K2.3 personal and vehicle protective equipment
- K3 your workplace procedures for:
 - K3.1 recording **overhaul activities**
 - K3.2 reporting the results of tests
 - K3.3 the referral of problems
 - K3.4 reporting delays to the completion of work
- K4 the importance of working to recognised overhauling and repair procedures and processes and obtaining the correct information for overhauling and repair activities to proceed
- K5 the importance of documenting repair information
- K6 the importance of working to agreed timescales and keeping others informed of progress
- K7 the importance of promptly reporting any anticipated delays to the relevant person(s)

Equipment

- K8 how to prepare and check the accuracy and operation of all the overhauling and testing equipment required
- K9 how to use all the overhauling and testing equipment required

Mechanical units overhauling activities

- K10 how to find, interpret and use sources of information on overhauling procedures and statutory requirements
- K11 how the relevant vehicle mechanical units and assemblies operate
- K12 how mechanical units and assemblies are constructed, dismantled and reassembled
- K13 the possible causes of faults in mechanical units and assemblies

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- K14 vehicle operating specification for limits, fits and tolerances and where this information can be sourced
 - K15 how to assess the condition evident within units, sub-assemblies and components
 - K16 the cost-benefit / relationship between the reconditioning, repair and replacement of components
 - K17 how to carry out **overhauling activities** for the type(s) of units worked upon
 - K18 the relationship between test methodology and the faults repaired – the use of appropriate testing methods
 - K19 how to test and evaluate the performance of overhauled units against the operating specification
 - K20 how to interpret test results
 - K21 how to identify the types and causes of mechanical units and assembly failure
 - K22 how to make suitable adjustments to components and units
 - K23 how to work safely avoiding personal injury, damage to components leakage and hazardous substances
 - K24 how to make cost effective recommendations based upon the cost-benefit relationship between the reconditioning, repair and replacement of components

Scope/range

- 1. Overhaul activities are:**
 - 1.1. dismantling
 - 1.2. assessment
 - 1.3. repair
 - 1.4. replacement
 - 1.5. adjustment of internal components
 - 1.6. re-assembly
 - 1.7. functional testing

**Additional
Information****Glossary**

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

Adjustments

Examples include, adjustments made to clearances, gaps, settings, pressures, tensions, pre-load and speeds.

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.

Agreed timescales

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

Assessments

Examples include those for wear, damage, alignment, corrosion, leakage, distortion and balance.

Equipment

Examples include hand tools, pullers and presses, measuring instruments, refurbishment tools, general workshop equipment and special service tools.

Functional testing

This refers to any applicable functional tests carried out after overhaul.

Mechanical units

Examples are: power units, gear boxes, final drive assemblies, steering units and components, suspension units and components.

Testing methods

As prescribed by the appropriate technical literature.

Vehicles

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

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