

IMIHV11

Overhaul large goods and passenger vehicle mechanical units



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Overview

This standard is about the bench-based overhaul of mechanical units, involving dismantling, assessment, repair, replacement or adjustment of internal components together with re-assembly and testing.

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Performance criteria

You must be able to:

- P1 wear suitable personal protective equipment throughout all overhauling activities
- P2 use suitable sources of technical information to support your overhauling activities
- P3 assess and prepare all the equipment required, following manufacturers' instructions, prior to use
- P4 use the tools and equipment required correctly and safely throughout all overhauling activities
- P5 carry out all overhauling activities following:
 - P5.1 the manufacturer's instructions
 - P5.2 your workplace procedures
 - P5.3 health, safety and environmental requirements
- P6 work in a way which minimises the risk of:
 - P6.1 damage to other components
 - P6.2 leakages
 - P6.3 contact with hazardous substances
- P7 ensure your assessment of the dismantled unit identifies accurately its condition and suitability for overhaul
- P8 inform the relevant person(s) promptly where an overhaul is uneconomic or unsatisfactory to perform
- P9 use testing methods which comply with the manufacturer's requirements
- P10 adjust the unit's components correctly to ensure that they operate to meet the vehicle operating requirements, when necessary
- P11 ensure the overhauled units and assemblies conform to the vehicle operating specification and any legal requirements
- P12 ensure your overhaul records are accurate, complete and passed to the relevant person(s) promptly in the format required
- P13 complete all overhauling activities within the agreed timescale
- P14 report any anticipated delays in completion to the relevant person(s) promptly

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Knowledge and understanding

Legislative and organisational requirements and procedures

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You need to know and understand:

- 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 appropriate personal protective equipment
- K3 the implications on an Operators Licence of not carrying out repairs correctly
- K4 your workplace procedures for
 - K4.1 recording **overhaul activities**
 - K4.2 the referral of problems
 - K4.3 reporting delays to the completion of work
- 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 reporting any anticipated delays to the relevant person(s) promptly

You need to know and understand:

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

You need to know and understand:

Mechanical unit 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 unit sub-assemblies and components
- K16 the cost-benefit relationship between the reconditioning, repair and replacement of components within units
- K17 how to carry out overhauling activities for the type(s) of unit 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 unit 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

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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

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Additional information

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

Glossary

Adjustments:

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

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Agreed timescales:

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

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Assessments:

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

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Equipment:

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

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Functional testing:

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

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Mechanical units:

Examples are: engines, gear boxes, final drives, steering, suspension, chassis assemblies.

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Testing methods:

As prescribed by the appropriate technical literature.

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Suite Maintenance and Repair - Large Goods and Passenger Vehicle

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