



Australian Government

AURJTD003 Diagnose and repair motorcycle suspension systems

Release: 1

AURJTD003 Diagnose and repair motorcycle suspension systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to diagnose and repair faults in the suspension systems of motorcycles. It involves preparing for the task, selecting the correct diagnostic procedure, carrying out the diagnosis and the repair, performing post-repair testing, and completing workplace processes and documentation.

It applies to those working on motorcycles in the automotive service and repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Motorcycle

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to diagnose and repair motorcycle suspension system	1.1 Workplace instructions are used to determine job requirements 1.2 Diagnostic information is sourced and interpreted 1.3 Diagnostic options are analysed and those most appropriate to the circumstances are selected 1.4 Hazards associated with the work are identified and risks are managed

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	1.5 Diagnostic tools and equipment are selected and checked for serviceability
2. Diagnose suspension system	2.1 Diagnostic tests are performed according to workplace procedures, and <i>safety and environmental requirements</i> 2.2 Faults are identified from diagnostic test results and causes of faults are determined 2.3 Diagnosis findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Repair suspension system	3.1 Repair information is sourced and interpreted 3.2 Repair options are analysed and those most appropriate to the circumstances are selected 3.3 Repair tools, equipment and materials are selected and checked 3.4 Repairs and component replacements and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or system 3.5 Post-repair testing is carried out according to workplace procedures to confirm fault rectification, and any further problems detected as having been introduced during the repair process are rectified
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and motorcycle is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
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Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking suspension system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report diagnostic findings and make repair recommendations.
Numeracy skills to:	measure suspension system components and use basic mathematical operations, including addition and subtraction, to calculate distances, tolerances and deviations from manufacturer specifications.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use measuring equipment, such as tape measures, rulers and vernier calipers.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with: - stored energy in springs - suspension system oils - gas struts - environmental requirements, including procedures for trapping, storing and disposing of oils released from suspension systems.
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Unit Mapping Information

Equivalent to AURJTD3003 Diagnose and repair motorcycle suspension systems

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURJTD003 Diagnose and repair motorcycle suspension systems

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Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in the front suspension systems of two different motorcycles, in which the work must involve:
 - removing, dismantling, reassembling, refitting and adjusting front forks
 - changing seals, valves, bushings and oil
- diagnose and repair a fault in the rear suspension systems of two different motorcycles.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing and repairing motorcycle suspension systems, including procedures for working with:
 - stored energy in springs
 - suspension system oils
 - gas struts
- environmental requirements, including procedures for trapping, storing and disposing of oils released from suspension systems
- operating principles of motorcycle suspension systems and associated components, including:
 - brake dive
 - fork spring rate
 - fork compression damping

- application, purpose and operation of the following motorcycle suspension systems and components, including:
 - shock absorbers, including:
 - twin shock absorbers
 - mono-shock absorbers
 - telescopic fork suspension
 - inverted telescopic fork suspension
 - front tele-lever and duo-lever
 - rear swing arm suspension (twin-sided, mono-shock and para-lever)
 - gas struts
- diagnostic testing procedures for motorcycle suspension systems, including procedures for:
 - evaluating performance
 - analysing component wear
 - analysing system noise
- repair procedures for motorcycle suspension systems, including procedures for:
 - adjusting pre-load and damping
 - removing, dismantling, reassembling and replacing components, including:
 - seal, bushing and valve replacement
 - oil replacement
 - air purging
 - replacing front fork slider bushes
 - removing and replacing rear shock absorbers
 - dismantling and repairing rear shock absorbers
 - repairing steering damper assemblies
- post-repair testing procedures for motorcycle suspension systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the motorcycle braking systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- motorcycle repair workplace or simulated workplace

- workplace instructions
- manufacturer motorcycle braking system specifications
- two different motorcycles with faults in the braking systems specified in the performance evidence
- diagnostic equipment for motorcycle braking systems
- tools, equipment and materials appropriate for repairing motorcycle braking systems.

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