



Australian Government

AURHTY102 Diagnose and repair mechanical connections of heavy vehicles and trailers over 4.5 tonnes

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge required to diagnose and repair faults in the mechanical connections fitted to both heavy vehicles and trailers. The unit involves preparing for the task, sourcing a diagnostic testing strategy, diagnosing the cause of the fault, carrying out the repair, performing post-repair testing, and completing workplace processes and documentation.

The unit applies to those who work in the automotive service and repair industry. The mechanical connections include those in agricultural machinery, heavy commercial vehicles, trailers over 4.5 tonnes or mobile plant machinery.

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

Unit Sector

Mechanical – Heavy Vehicle Technical – Chassis and Frame

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to diagnose and repair heavy vehicle mechanical connection	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for diagnosis activity 1.3 Analyse diagnostic options and source testing strategy to identify cause of fault using workplace and manufacturer procedures 1.4 Identify hazards and environmental issues associated with diagnose and repair activity, assess potential risks and implement control measures in line with workplace policies

ELEMENT	PERFORMANCE CRITERIA
	and procedures 1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures
2. Diagnose heavy vehicle mechanical connection	2.1 Implement diagnostic tests set out in testing strategy according to manufacturer and workplace procedures, and workplace health and safety requirements 2.2 Identify cause of fault through analysis of diagnostic test results 2.3 Confirm and report cause of fault according to workplace procedures 2.4 Develop and report recommendations for necessary repairs according to workplace procedures
3. Repair heavy vehicle mechanical connection	3.1 Identify required information for repair activity 3.2 Identify required tools, equipment and materials required for repair activity and establish serviceability according to workplace procedures 3.3 Carry out repairs according to workplace and manufacturer procedures, manufacturer specifications, workplace health and safety and environmental requirements 3.4 Carry out post-repair testing according to workplace procedures, workplace health and safety and environmental requirements
4. Complete work processes	4.1 Conduct final inspection according to workplace procedures and confirm commercial trailer is ready for use 4.2 Clear work area and dispose of or recycle materials according to workplace procedures 4.3 Complete documentation according to workplace procedures

Foundation Skills

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

SKILL	DESCRIPTION
Learning	- Locates required sources of information efficiently - Develops a sequenced plan for a specific task
Reading	Organises and interprets technical information from workplace procedures, manufacturer procedures and

SKILL	DESCRIPTION
	manufacturer specifications
Oral communication	• Clarifies instructions • Obtains information from customers and supervisors
Numeracy	• Measures mechanical connection components • Uses mathematical operations • Calculates deviations and tolerances from manufacturer specifications
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes
Technology	• Uses test and diagnostic equipment

Unit Mapping Information

Supersedes and is equivalent to AURHTY002 Diagnose and repair mechanical connections of heavy vehicles and trailers over 4.5 tonnes.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for AURHTY102 Diagnose and repair mechanical connections of heavy vehicles and trailers over 4.5 tonnes

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- diagnose and repair a fault in at least two of the following mechanical connections of a heavy vehicle and trailer:
 - fifth wheel assembly
 - king pins and upper couplers
 - pintle hook and drawbar
 - landing gear
- diagnose and repair a fault in both of the following:
 - electrical connections of a heavy vehicle and trailer
 - pneumatic connection of a heavy vehicle and trailer.

In the course of the above work, the candidate must:

- check for slack in the fifth wheel operation when connected to a trailer
- inspect top plate and brackets for cracks
- inspect the fifth wheel and mounting plate welds
- check fifth wheel operation using a lock tester.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to diagnose and repair mechanical connections of heavy vehicles and trailers over 4.5 tonnes, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation

- workplace procedures required to diagnose and repair mechanical connections of heavy vehicles and trailers over 4.5 tonnes, including:
 - establishing serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures
- workplace health and safety (WHS) requirements relating to diagnosing and repairing mechanical connections of heavy vehicles and trailers over 4.5 tonnes, including procedures for:
 - lifting and supporting heavy vehicles and trailers
 - safely manoeuvring heavy vehicles and trailers
- environmental requirements relating to diagnosing and repairing mechanical connections of heavy vehicles and trailers over 4.5 tonnes, including procedures for safely handling and disposing of lubricants
- purpose and operation of mechanical connections of heavy vehicles and trailers over 4.5 tonnes, including:
 - fifth wheel assemblies
 - king pins and upper couplers
 - pintle hook and drawbar
 - landing gear
 - electrical connections
 - pneumatic connections
- types and applications of fifth wheel lubricants
- diagnostic testing procedures for mechanical connections of heavy vehicles and trailers over 4.5 tonnes, including:
 - checking for slack in the fifth wheel operation when connected to a trailer
 - inspecting top plate and brackets for cracks
 - inspecting the fifth wheel and mounting plate welds
 - checking fifth wheel operation using a lock tester
 - testing electrical connections
 - testing pneumatic connections
- repair and adjustment procedures for mechanical connections of heavy vehicles and trailers over 4.5 tonnes, including:
 - fifth wheel assembly
 - king pins and upper couplers
 - pintle hook and drawbar
 - landing gear

- electrical connections
- pneumatic connections
- post-repair testing procedures for mechanical connections of heavy vehicles and trailers over 4.5 tonnes.

Assessment Conditions

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 mechanical connections of heavy vehicles and trailers 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:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer mechanical connection specifications
- two different heavy vehicle and trailer mechanical connections with faults
- lubricating equipment for mechanical connections of heavy vehicles and trailers
- tools, equipment and materials appropriate for repairing and adjusting mechanical connections of heavy vehicles and trailers.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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