



Australian Government

AURHTX002 Inspect, test and replace heavy vehicle automatic transmissions

Release: 1

AURHTX002 Inspect, test and replace heavy vehicle automatic transmissions

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect, test and replace automatic or power shift transmissions and associated components. It involves preparing for the task, inspecting and testing the transmission, replacing the transmission, performing post-installation testing, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The automatic transmissions include those of agricultural machinery, heavy commercial vehicles or mobile plant machinery.

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

Competency Field

Mechanical - Heavy Vehicle

Unit Sector

Technical - Transmission

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 inspect and test transmission	1.1 Job requirements are determined from workplace instructions 1.2 Inspection and testing procedures and information are sourced and interpreted

Elements Elements describe the essential outcomes.	Performance Criteria 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.
	1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and test equipment and materials are selected and checked for serviceability
2. Inspect and test transmission and analyse results	2.1 Inspection and tests are carried out according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> 2.2 Inspection and test results are compared with manufacturer specifications 2.3 Inspection and test findings are reported according to workplace procedures, including recommendations for necessary repairs, replacement or adjustments
3. Prepare to remove and replace transmission	3.1 Hazards associated with the work are identified and risks are managed 3.2 Removal and replacement procedures and information are sourced and interpreted 3.3 Tools, equipment and materials are selected and checked for serviceability
4. Remove and replace transmission	4.1 Transmission is removed and replaced according to manufacturer specifications, workplace procedures, and safety and environmental requirements 4.2 Adjustments during removal and replacement are made according to manufacturer specifications and workplace procedures 4.3 Post-replacement testing is carried out according to workplace procedures
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations and vehicle or machinery is presented ready for use 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored according to workplace procedures 5.4 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
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking inspection, testing and replacement procedures and specifications relating to heavy vehicle automatic transmissions.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection and test findings, making recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report test findings and make recommendations.
Numeracy skills to:	- interpret test equipment readings and use basic mathematical operations, including addition, subtraction, multiplication and division, to calculate distances, tolerances and deviations from manufacturer specifications - calculate liquid volumes.
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 transmission test equipment.

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: - using lifting and supporting equipment when working with transmissions - manually handling heavy vehicle transmissions - environmental requirements, including procedures for trapping, storing and disposing of fluids released from transmissions.
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Unit Mapping Information

Equivalent to AURHTX3002 Inspect, test and replace transmissions - automatic (heavy vehicle)

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 AURHTX002 Inspect, test and replace heavy vehicle automatic transmissions

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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:

- inspect, test and replace the automatic transmissions of two different heavy vehicles or machinery.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting, testing and replacing heavy vehicle automatic transmissions, including procedures for:
 - using lifting and supporting equipment when working with transmissions
 - manually handling heavy vehicle transmissions
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from transmissions
- operating principles of heavy vehicle automatic transmissions, including:
 - fluid couplings
 - mechanical systems, including:
 - gear types
 - gear ratios and torque
 - simple and compound planetary gear trains
 - gear range and transfer case power flows
 - hydraulic systems and components
 - electronic systems, including:
 - electronic control units (ECU)

- electronic sensors
- solenoids
- inspection procedures for heavy vehicle automatic transmissions, including:
 - visual, aural and functional assessment, including:
 - fluid leakage
 - oil condition
 - speed and range selection
 - wear, damage, and corrosion
 - electrical circuit faults
- testing procedures for heavy vehicle automatic transmissions, including:
 - stall testing
 - pressure testing
 - scan tool testing
- replacement procedures for heavy vehicle automatic transmissions
- post-replacement testing procedures for heavy vehicle automatic transmissions, including operational testing.

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 automatic transmissions of heavy vehicles or machinery that they have inspected, tested and replaced, 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 automatic transmission specifications
- two different heavy vehicles or machinery with automatic transmissions requiring testing and replacement
- test equipment for heavy vehicle automatic transmissions
- tools, equipment and materials appropriate for inspecting, testing and replacing heavy vehicle automatic transmissions.

Links

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