



Australian Government

**Assessment Requirements for AURHTX003
Diagnose and repair heavy vehicle
automatic transmissions**

Release: 1

Assessment Requirements for AURHTX003 Diagnose and repair heavy vehicle automatic transmissions

Modification History

Release	Comment
Release 1	New unit of competency.

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:

- disassemble and reassemble one heavy vehicle automatic transmission
- diagnose and repair a fault in two of the following components of a heavy vehicle automatic transmission:
 - torque converter
 - transmission oil pump
 - front pump seal
 - valve body
 - shift or pressure solenoid
 - clutch pack
 - one-way clutch
 - planetary gear set
 - internal bearings or thrust washers
 - gasket and seal leaks
 - governor
 - sensors
 - heat exchanger
- remove, refit or replace a heavy vehicle automatic transmission.

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 automatic transmissions, including procedures for:
 - using transmission lifting and supporting equipment
 - isolating and stabilising vehicles
- environmental requirements, including procedures for trapping, storing and disposing of oils and fluids released from automatic transmissions
- operating principles of heavy vehicle automatic transmissions and associated components, 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
 - electronic systems, including:
 - electronic control unit (ECU)
 - electronic sensors
 - solenoids
- application, purpose and operation of heavy vehicle automatic transmissions and components, including:
 - torque converters, including:
 - impeller, stator, one-way clutch and turbine operation
 - lock-up torque converters
 - automatic transmission mechanical components, including:
 - clutch packs, one-way clutches, simple and compound planetary gear sets, and transfer case
 - power flows, including:
 - longitudinal automatic transmissions
 - transfer case
 - power take-off
 - automatic transmission hydraulic components and hydraulic control components, including:
 - oil pumps
 - valve body and hydraulic valves
 - heat exchanger
 - automatic transmission electronic components, including:
 - ECU input sensors
 - ECU outputs
- diagnostic testing procedures for heavy vehicle automatic transmissions, including:
 - stall testing

- pressure testing
- scan tool testing
- repair procedures for heavy vehicle automatic transmissions, including for hydraulic, mechanical and electrical components
- dismantling procedures for heavy vehicle automatic transmissions, including:
 - measuring clearances and tolerances
 - inspecting components
- post-repair testing procedures for heavy vehicle automatic transmissions.

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 heavy vehicle automatic transmissions 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 automatic transmission specifications
- one heavy vehicle with faults in its automatic transmission
- diagnostic equipment for heavy vehicle automatic transmissions
- tools, equipment and materials appropriate for repairing and adjusting heavy vehicle automatic transmissions.

Links

Companion Volume implementation guides are found in VETNet -

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

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