



Australian Government

**Assessment Requirements for AURKTX001
Diagnose and repair powershift
transmissions**

Release: 1

Assessment Requirements for AURKT001 Diagnose and repair powershift 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:

- diagnose and repair a fault in two different vehicles or machines with the following powershift transmissions:
 - multiple countershaft transmission
 - planetary shift transmission
- conduct powershift transmission stall test during above work according to manufacturer specifications and workplace procedures.

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 powershift transmissions, including procedures for isolating and stabilising machines
- environmental requirements, including procedures for trapping, storing and disposing of hydraulic fluid released from powershift transmissions
- operating principles of powershift transmissions and associated components, including:
 - torque converters, torque divider torque converters and variable capacity torque converters
 - electronically modulated transmission
 - countershaft transmissions, including:
 - gear types
 - gear ratios and torque reduction and multiplication
 - simple and compound gear trains

- compound planetary transmissions, including:
 - gear types
 - gear ratios and torque reduction and multiplication
 - simple and compound planetary gear trains
- transmission control valves and solenoids
- hydraulic circuits and schematics
- application, purpose and operation of powershift transmissions and components, including:
 - power flows in:
 - multiple countershaft transmissions
 - compound planetary transmissions
 - torque converters, torque divider torque converters, and variable capacity torque converters
 - hydraulic components and hydraulic control components, including:
 - oil pumps
 - hydraulic valves
 - electronic transmission pressure modulation
 - power train electronic control system
 - mechanical components, including:
 - clutch packs
 - one-way clutches
 - planetary gears
 - compound gear sets
 - powershift electronic control systems
 - transfer cases
 - hydraulic oils and filters
- diagnostic testing procedures for powershift transmissions, including:
 - following safety requirements when stall testing
 - stall testing according to manufacturer specifications and workplace procedures
- dismantling procedures for powershift transmissions, including:
 - measuring clearances and tolerances
 - inspecting components
- repair procedures for powershift transmissions, including procedures for inspecting, evaluating and measuring component wear
- post-repair testing procedures for powershift transmissions, including:
 - stall testing according to manufacturer specifications and workplace procedures.

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 powershift 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 powershift transmission specifications
- two different vehicles or machines with powershift transmission faults
- diagnostic equipment for powershift transmissions
- tools, equipment and materials appropriate for repairing and adjusting powershift transmissions.

Links

Companion Volume implementation guides are found in VETNet -

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

Companion Volume implementation guides are found in VETNet -

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