



Australian Government

**Assessment Requirements for AURKT101
Diagnose and repair powershift
transmissions**

Release: 1

Assessment Requirements for AURKTX101 Diagnose and repair powershift transmissions

Modification History

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

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 two different vehicles or machines with the powershift transmissions as follows:
 - one with multiple countershaft transmission
 - one with planetary shift transmission
- conduct powershift transmission stall test during above work according to manufacturer specifications and workplace procedures.

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 powershift transmissions, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair powershift transmissions, 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 powershift transmissions, including procedures for isolating and stabilising machines
- environmental requirements relating to diagnosing and repairing powershift transmissions, 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
- 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

- 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

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.

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

Links

Companion Volume Implementation Guide is found on VETNet -

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