



**Australian Government**

# **Assessment Requirements for AURLTB103 Diagnose and repair light vehicle hydraulic braking systems**

**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

## 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 light vehicle four-wheel disc hydraulic braking systems, in which the work must involve removing and refitting or replacing the brake callipers, disc pads and disc rotors
  - one light vehicle drum braking system, in which the work must involve removing and refitting or replacing brake drums, brake shoes and wheel cylinders
  - one light vehicle brake master cylinder, in which the work must involve removing and refitting or replacing the brake master cylinder
- carry out diagnostic tests in each of the above tasks for at least one of the following faults:
  - worn brake pads
  - malfunctioning master cylinders
  - contaminated brake fluid.

## 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 light vehicle hydraulic braking systems, including:
  - information provided by customers and supervisors
  - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair light vehicle hydraulic braking systems, 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 light vehicle hydraulic braking systems, including procedures for:
  - lifting and supporting light vehicles
  - handling and controlling brake dust and brake fluids
- environmental requirements relating to diagnosing and repairing light vehicle hydraulic braking systems, including procedures for trapping, storing and disposing of brake dust and brake fluid released from hydraulic braking systems
- operating principles of light vehicle hydraulic braking systems, including:
  - levers
  - friction
  - hydraulics, including the relationship between force, pressure and area
- properties of brake fluids, including:
  - Department of Transportation (DOT) classification
  - synthetic and non-synthetic
  - compatibility of fluid types
- purpose and operation of light vehicle hydraulic braking systems and components, including:
  - front and rear split systems
  - diagonal split systems
  - master cylinders, including:
    - tandem master cylinders
    - compensating-type master cylinders
    - centre-valve master cylinders
  - drum braking system and components, including:
    - self-energising or servo effect
    - leading and trailing shoe braking systems
    - duo-servo braking systems
    - two-leading shoe braking systems
    - wheel cylinders
    - manual and self-adjustment systems of drum braking systems
  - disc braking systems and components, including:
    - types of brake discs
    - disc pads
    - self-adjustment of disc pads
    - fixed, floating and dual-piston brake callipers

- parking brake systems and components, including:
  - parking brake levers
  - drum parking brakes
  - disc parking brakes
  - electronic parking brake systems
- braking system valves and switches, including:
  - pressure differential valves and switches
  - proportioning valves
  - load-sensing proportioning valves
  - drum brake check valves
- fluid-level warning devices
- vacuum operated brake boosting systems
- diagnostic testing procedures for light vehicle hydraulic braking systems, including procedures for:
  - checking brake pedal
  - operational tests of brake booster
  - operational tests of master cylinder
  - testing brake fluid
  - operational tests of hand brake
  - operational tests of drum and disc brakes
  - measuring and evaluating brake drums, shoes, discs and pads
- repair procedures for light vehicle hydraulic braking systems, including procedures for:
  - removing, replacing and adjusting hydraulic system components, including master cylinder, proportioning valves, switches, brake hoses and lines, disc callipers and wheel cylinders
  - removing, replacing and adjusting braking system components, including brake booster, master cylinder, hand brake lever and cables, brake shoes and drums, brake pads and brake discs
  - bleeding brakes, including anti-lock braking systems (ABS)
- post-repair testing procedures for light vehicle hydraulic braking systems, including procedures for road testing and bedding in brakes.

## 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 light vehicle hydraulic braking systems 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 braking system specifications
- two different light vehicles with four-wheel hydraulic disc brake systems with faults
- one light vehicle with a rear drum brake system
- diagnostic equipment for light vehicle hydraulic braking systems
- tools, equipment and materials appropriate for repairing light vehicle braking systems.

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>