



Australian Government

AURTTF106 Diagnose and repair petrol carburettor systems

Release: 1

AURTTF106 Diagnose and repair petrol carburettor systems

Modification History

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

Application

This unit describes the skills and knowledge required to diagnose and repair faults in the petrol carburettor systems of vehicles. The systems used vary based on the work context. The unit involves preparing for the task, sourcing a diagnostic testing strategy, diagnosing the cause of the fault, carrying out the repair, performing post-repair testing, and completing workplace processes and documentation.

The unit applies to those working in the automotive service and repair industry. The petrol carburettor systems include those in agricultural machinery, heavy commercial vehicles, light vehicles, marine vessels, mobile plant machinery, motorcycles or outdoor power equipment.

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

Unit Sector

Mechanical Miscellaneous Technical – Fuel Systems

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to diagnose and repair petrol carburettor system	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for diagnosis activity 1.3 Analyse diagnostic options and source testing strategy to identify cause of fault using workplace and manufacturer procedures 1.4 Identify hazards and environmental issues associated with diagnose and repair activity, assess potential risks and implement control measures in line with workplace policies and procedures

ELEMENTS	PERFORMANCE CRITERIA
	1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures
2. Diagnose petrol carburettor system	2.1 Implement diagnostic tests set out in testing strategy according to manufacturer and workplace procedures, and workplace health and safety requirements 2.2 Identify cause of fault through analysis of diagnostic test results 2.3 Confirm and report cause of fault according to workplace procedures 2.4 Develop and report recommendations for necessary repairs according to workplace procedures
3. Repair petrol carburettor system	3.1 Identify required information for repair activity 3.2 Identify tools, equipment and materials required for repair activity and establish serviceability according to workplace procedures 3.3 Carry out repairs according to workplace and manufacturer procedures, manufacturer specifications, workplace health and safety and environmental requirements 3.4 Carry out post-repair testing according to workplace procedures, workplace health and safety and environmental requirements
4. Complete work processes	4.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use 4.2 Clear work area and dispose of or recycle materials according to workplace procedures 4.3 Complete documentation according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Learning	- Locates required sources of information efficiently - Develops a sequenced plan for a specific task.
Reading	Organises and interprets technical information from workplace procedures, manufacturer procedures and manufacturer specifications.

SKILL	DESCRIPTION
Oral communication	• Clarifies instructions • Obtains information from customers and supervisors.
Numeracy	• Measures petrol carburettor system components • Uses mathematical operations • Calculates distances, areas, volumes and tolerances • Calculates deviations from manufacturer specifications.
Planning and organising	• Plans own work requirements • Prioritises actions to achieve required outcomes • Ensures tasks are completed within workplace timeframes.
Technology	• Uses precision measuring equipment.

Unit Mapping Information

Supersedes and is equivalent to AURTTF006 Diagnose and repair petrol carburettor systems.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for AURTTF106 Diagnose and repair petrol carburettor systems

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 each of the following different petrol carburettor systems fitted to different vehicles or engines:
 - one type of variable venturi carburettor
 - one type of multi-barrel carburettor
 - one simple carburettor.

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 petrol carburettor systems, including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair petrol carburettor 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 petrol carburettor systems, including procedures for working with flammable petrol fuel
- environmental requirements relating to diagnosing and repairing petrol carburettor systems, including procedures for trapping, storing and disposing of fluids released from fuel system
- operating principles of petrol carburettor systems, including:
 - fuel atomisation
 - air-fuel ratios and combustion cycles
 - detonation and pre-ignition
 - venturi action
- purpose and operation of petrol carburettor systems and components, including:
 - carburettor systems, including:
 - float system
 - idle system
 - fast idle system
 - main system
 - choke system
 - power system
 - accelerating system
 - single barrel carburettor operation, including:
 - mixture correction, including air-bleed, compensating jet, and metering rod mixture correction
 - manual and automatic choke operation
 - multi-barrel carburettors, including:
 - two-barrel and four-barrel carburettors
 - two-stage carburettors, including vacuum and mechanical control of second stage
- diagnostic testing procedures for petrol carburettor systems, including procedures for:
 - fuel pump pressure, volume and vacuum testing
 - air-leak testing
 - cold-start enrichment testing
 - exhaust gas analysis
- repair procedures for petrol carburettor systems, including procedures for:
 - installing fuel pumps
 - dismantling, cleaning, repairing and reassembling carburettors
 - removing, replacing and adjusting carburettors
- post-repair testing procedures for petrol carburettor systems.

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 carburettors 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 vehicle petrol carburettor system specifications
- three different vehicles or engines with faults in the petrol carburettor systems specified in the performance evidence
- diagnostic equipment for petrol carburettor systems, including an exhaust gas analyser,
- tools, equipment and materials appropriate for repairing petrol carburettor 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>