



Australian Government

AURTTF102 Inspect and service diesel fuel injection 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

Application

This unit describes the skills and knowledge required to inspect and service diesel fuel injection systems. It involves preparing for the task, inspecting the fuel injection system for leaks, inspecting the air filter, reporting the inspection findings, servicing and adjusting the system, and completing workplace processes and documentation.

The unit applies to those working in the automotive service and repair industry. The diesel fuel injection systems include those of agricultural machinery, heavy commercial vehicles, light vehicles, marine vessels, motorcycles, mobile plant 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 inspect and service diesel fuel injection system	1.1 Determine job requirements from workplace instructions 1.2 Source and interpret servicing information 1.3 Identify hazards associated with the work and manage risks 1.4 Select and check tools, equipment and materials for serviceability
2. Inspect diesel fuel injection system	2.1 Carry out inspection according to manufacturer specifications, workplace procedures, and safety and environmental requirements 2.2 Compare inspection results with manufacturer specifications 2.3 Report inspection findings according to workplace procedures

ELEMENTS	PERFORMANCE CRITERIA
3. Service diesel fuel injection system	3.1 Carry out service and adjustments according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems 3.2 Carry out post-service testing according to workplace procedures, including engine start-up check for leaks and operation
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.
Numeracy	Calculates liquid volumes and service schedule intervals using basic mathematical operations, including addition and subtraction.
Oral communication	Clarifies instructions.
Reading	Interprets information from manufacturer and workshop literature when seeking service procedures and specifications relating to diesel fuel injection systems.
Problem solving	Refers problems outside area of responsibility to required person.

Unit Mapping Information

Supersedes and is equivalent to AURTTF002 Inspect and service diesel fuel injection 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 AURTTF102 Inspect and service diesel fuel injection systems

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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:

- inspect and service a diesel fuel injection system on at least two different vehicles or machines.

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 inspect and service diesel fuel injection systems, including:
 - information provided by customer and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to inspect and service diesel fuel injection systems, including:
 - establishing serviceability of tools and equipment
 - documentation procedures, including:
 - inspection findings such as recommendations for required repairs or adjustments
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures
 - work health and safety (WHS) requirements relating to inspecting and servicing diesel fuel injection systems, including procedures for:
 - working with high pressure diesel fuel systems
 - working with high voltage diesel fuel injectors

- working with stored fuel pressures
- engine start-up and shut-down
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from fuel systems
- application, purpose and operation of air filter and air intake housing and ducting
- identification and function of mechanically controlled diesel fuel injection system and components, including:
 - types and applications of fuels, including diesel and biofuels
 - fuel tank and lines
 - fuel filters and sedimenter filters
 - fuel supply pumps
 - injection pumps, including:
 - in-line
 - rotary
 - injector pipes
 - injectors
 - overflow or leak-off pipes
- identification and function of electronic diesel fuel injection systems and common rail fuel systems and components, including:
 - fuel tank and lines
 - fuel filters and sedimenter filter
 - fuel supply pumps
 - injection pumps
 - pressure and injector pipes
 - fuel rail
 - injectors
 - overflow or leak-off pipes
 - electronic control unit and sensors
- inspection procedures for diesel fuel injection systems, including procedures relating to leaks, damaged piping and sedimentary sight glasses
- service and adjustment procedures for diesel fuel injection systems, including:
 - servicing sediment filters
 - replacing fuel filters
 - bleeding fuel system as required
 - servicing air filter and air intake housing and ducting
 - engine speed adjustments as required and operational testing
- post-service testing procedures for diesel fuel injection system.

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 diesel fuel injection 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 diesel fuel injection system specifications
- two different vehicles or machinery with diesel fuel injection systems requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing diesel fuel injection systems.

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

Links

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