



Australian Government

AURTTF002 Inspect and service diesel fuel injection systems

Release: 1

AURTTF002 Inspect and service diesel fuel injection systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes 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.

It 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.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical – Fuel Systems

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to inspect and service diesel fuel injection system	1.1 Job requirements are determined from workplace instructions 1.2 Servicing information is sourced and interpreted 1.3 Hazards associated with the work are identified and risks are managed

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	1.4 Tools, equipment and materials are selected and checked for serviceability
2. Inspect diesel fuel injection system	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Service diesel fuel injection system	3.1 <i>Service</i> and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems 3.2 Post-service testing is carried out according to workplace procedures, including engine start-up check for leaks and operation
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle or machinery is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

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

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking service procedures and specifications relating to diesel fuel injection systems.

Skills	Description
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and recording parts and material used.
Oral communication skills to:	- clarify instructions - report inspection findings and make repair recommendations.
Numeracy skills to:	calculate liquid volumes and service schedule intervals using basic mathematical operations, including addition and subtraction.
Problem solving skills to:	refer problems outside area of responsibility to appropriate person.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, 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.
<i>Service</i> must include:	- replacing fuel filters - servicing sedimenter filters - bleeding fuel systems as required - servicing air filters.

Unit Mapping Information

Equivalent to AURTTF2002 Service diesel fuel injection systems

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for AURTTF002 Inspect and service diesel fuel injection systems

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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:

- inspect and service a diesel fuel injection system on two different vehicles or machinery.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) 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 sedimenter filter
 - replacing fuel filter
 - 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

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 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.

Links

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