



Australian Government

AURTTE104 Inspect and service engines

Release: 1

AURTTE104 Inspect and service engines

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 engines. It involves preparing for the task, inspecting the engine, reporting the inspection findings, servicing and adjusting the engine, and completing workplace processes and documentation. The servicing undertaken will vary based on the work context.

The unit applies to those working in the automotive service and repair industry. The engines include those of agricultural machinery, heavy commercial vehicles, light vehicles, mobile plant or motorcycles. The unit does not apply to outdoor power equipment engines.

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

Unit Sector

Mechanical Miscellaneous Technical - Engines

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 engine	1.1 Identify job requirements from workplace instructions 1.2 Obtain and interpret servicing information 1.3 Identify hazards associated with the work, assess potential risks and implement control measures in line with workplace policies and procedures 1.4 Identify tools and equipment required for servicing activity and establish serviceability according to workplace procedures
2. Inspect engine	2.1 Carry out inspection according to manufacturer specifications, workplace procedures, workplace health and

ELEMENTS	PERFORMANCE CRITERIA
	safety and environmental requirements 2.2 Compare inspection results with manufacturer specifications 2.3 Report inspection findings and recommendations for necessary repairs according to workplace procedures
3. Service engine	3.1 Carry out service and adjustments according to manufacturer specifications, workplace procedures, workplace health and safety and environmental requirements 3.2 Carry out post-service testing according to workplace procedures
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.
Reading	Interprets information from manufacturer and workshop literature when seeking engine service procedures and specifications.
Oral communication	Clarifies instructions.
Numeracy	Calculates liquid volumes and service schedule intervals, using mathematical operations, including addition and subtraction.

Unit Mapping Information

Supersedes and is equivalent to AURTTE004 Inspect and service engines.

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 AURTTE104 Inspect and service engines

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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 the engines of a least two different vehicles or machinery, completing the following in the course of the above work:
 - inspecting a vehicle for oil and fluid leaks
 - reporting any identified abnormal engine noises
 - inspecting ancillary components
 - replacing engine oil and filters
 - starting up and running engine to operating temperature
 - checking for leaks.

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 engines, including:
 - vehicle manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to inspect and service engines, including:
 - establishing the 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 inspecting and servicing engines, including procedures for working with:
 - rotating and hot components
 - engine oils
 - high energy ignition and charging systems
 - high voltage injectors
 - lifting and supporting equipment, including pits
 - hoists, including:
 - two-point hoists
 - four-point hoists
 - jack hoists
 - procedures for daily inspection of hoist
- environmental requirements relating to inspecting and servicing engines, including procedures for:
 - trapping, storing and disposing of fluids released from engines
 - identifying and handling oils and fluids
- identification and function of major engine components, including:
 - cylinder block and head
 - piston and connecting rod
 - crankshaft
 - valve train
 - manifolds
 - ports and reed valve
- identification and function of engine systems, including:
 - lubrication
 - cooling system
 - fuel system
 - air system
- basic operation of spark ignition engines and compression ignition engines, including:
 - two-stroke spark ignition engines
 - four-stroke spark ignition engines
 - four-stroke compression ignition engines
- types of engine configurations, including:
 - two-stroke spark ignition engines
 - four-stroke spark ignition engines
 - four-stroke compression ignition engines
- types and applications of engine oils and filters
- difference between mineral and synthetic fluids
- inspection procedures for engines, including:
 - oil and fluid leaks

- ancillary components, including:
 - mountings
 - belts, pulleys and hoses
- service and adjustment procedures for engines, including:
 - adjusting or replacing engine components
 - replacing oil
 - replacing filter
- post-service testing procedures for engines.

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 engines 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 engine specifications
- two different vehicles or machinery with engines requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing engines.

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

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