



Australian Government

AURTTE006 Remove and replace conventional engine assemblies

Release: 1

AURTTE006 Remove and replace conventional engine assemblies

Modification History

Release	Comment
Release 1	New unit of competency

Application

This unit describes the performance outcomes required to remove and replace the conventional engine assembly of a vehicle. It requires the learner to plan and prepare the task; remove the engine and inspect the associated components; replace the engine and check its operation; and maintain the work area, tools and equipment.

It applies to those undertaking a Vocational Education and Training in Schools (VETiS) or pre-vocational qualification as preparation to entering the automotive service and repair or automotive manufacturing industry.

The unit is designed for use in a highly supervised context and is not suitable for use in a vocational qualification.

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

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Engines

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 italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare for engine removal and replacement	1.1 <i>Safety and environmental requirements</i> are sourced and interpreted 1.2 Task instruction is interpreted and vehicle to be worked on is identified

ELEMENTS	PERFORMANCE CRITERIA
	1.3 Manufacturer specifications and workplace procedures for engine removal and replacement are sourced and interpreted 1.4 Potential hazards and risks associated with task are identified and reported to workplace supervisor 1.5 Tools and equipment required for engine removal and replacement are identified according to manufacturer specifications
2. Remove engine assembly and inspect engine and associated components	2.1 Tools, equipment and materials are selected and checked prior to use according to manufacturer specifications and workplace safety procedures 2.2 Vehicle is prepared for engine removal according to workplace procedures and safety and environmental requirements 2.3 Engine and associated components are identified and inspected according to manufacturer specifications 2.4 Engine is removed according to workplace procedures, manufacturer specifications and safety requirements, and without causing damage to components, tools or equipment 2.5 Engine and associated component inspection results are recorded
3. Replace engine assembly	3.1 Engine and associated components are prepared for assembly 3.2 Engine is replaced according to workplace procedures, manufacturer specifications and safety requirements, and without causing damage to components, tools or equipment 3.3 Engine fluid levels are checked and topped up with the appropriate lubricant and coolant according to manufacturer specifications and procedures 3.4 Engine and vehicle is tested for correct operation
4. Complete work processes	4.1 Final inspection is made to ensure work meets task instruction and workplace standards, and engine or vehicle is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected and stored according to environmental requirements and workplace procedures 4.3 Tools and equipment are checked and stored in a condition ready for use according to workplace procedures, or tagged and reported where necessary 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 criteria and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of engine information and engine removal and replacement procedures.
Reading skills to:	- select and interpret key information from manufacturer specifications, safety requirements and workplace procedures to safely remove and replace engines - select and interpret key information from environmental requirements and workplace procedures to ensure a clean and safe work site.
Writing skills to:	legibly and accurately fill out workplace documentation using correct industry terminology and conventions.
Oral communication skills to:	participate effectively in verbal exchanges using questioning and active listening to request, clarify and clearly convey information.
Numeracy skills to:	- read and interpret numerical information in engine information - use basic mathematical operations, including addition, subtraction, multiplication and division, to calculate ratios and volumes.
Planning and organising skills to:	plan own work requirements and prioritise actions to complete engine removal and replacement.
Self-management skills to:	recognise own limitations when selecting and using tools and equipment and seek timely advice.
Problem-solving skills to:	- identify potential or actual hazards and take action to minimise risk - refer problems that cannot be readily resolved and seek assistance from workplace supervisor.
Technology skills to:	set up and operate equipment and tools required to complete engine removal and replacement.

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</i>	information about key aspects of work health and safety
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requirements must include:	(WHS), occupational health and safety (OHS) and environmental requirements, including: • use of personal protective equipment, including safety glasses, ear protection and safety footwear • use of hand tools and lifting equipment • collection and disposal of used engine lubricants and coolant.
Tools and equipment must include:	• engine lifting equipment and related special tools.
Engine and associated components must include:	• cooling system components • electrical system components • exhaust system components • fuel system components.
Engine must include:	• an engine in a front engine, rear wheel drive vehicle.

Unit Mapping Information

No equivalent unit.

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 AURTTE006 Remove and replace conventional engine assemblies

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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:

- remove and replace at least one engine assembly from a conventional rear wheel drive vehicle.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- key aspects of work health and safety (WHS), occupational health and safety (OHS) and environmental requirements, including:
 - use of safety glasses, ear protection and safety footwear
 - use of engine lifting equipment
 - collection and disposal of used engine lubricants and coolant
- types, application and basic operation of engines, including:
 - multi-cylinder configurations
 - petrol and diesel classifications
 - engine lubrication requirements, including types and classifications of engine lubricants
- engine assembly removal procedures
- engine assembly and associated component inspection procedures, including procedures for inspecting:
 - cooling system components
 - electrical system components
 - exhaust system components
 - fuel system components
- engine assembly replacement procedures, including pre-startup checks and post-startup checks

- work area clean-up and maintenance requirements.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the vehicles where they have removed and replaced the engine assembly, 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 workplace or simulated workplace
- personal protective equipment appropriate to the workplace
- an operable vehicle with rear wheel drive
- automotive tools, engine assembly lifting equipment and attachments
- engine oil
- engine coolant.

Links

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