



Australian Government

AURRTE010 Test marine engines in water tanks

Release: 1

AURRTE010 Test marine engines in water tanks

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to performance test a marine engine in a water tank. It involves preparing for the task, setting up the test equipment, performance testing the engine, and completing workplace processes and documentation.

It applies to those working in the marine service and repair industry.

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

Competency Field

Marine

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 and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to water test marine engine	1.1 Job requirements are determined from workplace instructions 1.2 Testing information is accessed and interpreted, and testing options appropriate to the circumstances are selected 1.3 Work area is set up according to job and workplace requirements 1.4 Hazards associated with the work are identified and risks are managed 1.5 Testing tools and equipment are selected and checked for

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.
	serviceability
2. Set up engine and testing equipment	2.1 Engine is prepared for testing according to workplace procedures and <i>safety and environmental requirements</i> 2.2 Engine is set in testing area according to manufacturer specifications, workplace procedures and safety requirements 2.3 Testing equipment is attached to engine according to manufacturer specifications and workplace procedures
3. Performance test engine	3.1 Engine is started and operated through speed range according to manufacturer specifications, workplace procedures and safety requirements 3.2 Performance data is recorded during engine test sequence according to workplace procedures 3.3 Engine performance data is compared with manufacturer specifications, and discrepancies are noted 3.4 Testing equipment is removed from engine, and engine is removed from test area, according to manufacturer and workplace procedures and safety requirements 3.5 Test report is prepared and recommendations are made for repairs or modifications according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and engine is presented ready for use or stored according to workplace procedures 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.

Skills	Description
Reading skills to:	interpret information from manufacturer and workshop literature when seeking marine engine's specifications and procedures.
Writing skills to:	legibly and accurately fill out engine performance report documentation when reporting findings and recording parts and material used.
Oral communication skills to:	clarify instructions and report findings.
Numeracy skills to:	- interpret numbers on gauges and test instruments - use basic mathematical operations, including addition and subtraction, to calculate deviations from manufacturer specifications.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Problem solving skills to:	- determine most appropriate method of placing engine in test tank - determine most appropriate testing equipment to gather data to required accuracy.
Technology skills to:	use gauges and test instruments, such as oil pressure gauges, fuel pressure and flow gauges, tachometers and temperature probes.

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: - lifting and supporting marine engines - working with rotating engine components - placing marine engines in test tanks - environmental requirements, including procedures for trapping, storing and disposing of fluids released from marine engines during water testing.
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Unit Mapping Information

Equivalent to AURRTE3010 Water test engines in tanks

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 AURRTE010 Test marine engines in water tanks

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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:

- water test two different marine engines in tanks, including one outboard engine.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to testing marine engines in water tanks, including procedures for:
 - lifting and supporting marine engines
 - working with rotating engine components
 - placing marine engines in test tanks
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from marine engines during water testing
- application, purpose and operation of water testing tanks, including:
 - methods of mounting engines to test tank
 - engine test propellers
- application, purpose and operation of marine engine test equipment, including:
 - oil pressure gauges
 - fuel pressure and flow gauges
 - tachometers
 - temperature probes
- procedures for performance testing marine engines in water tanks, including load testing
- procedures for compiling engine performance reports.

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 vessels or engines that they have tested in water tanks, 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:

- marine repair workplace or simulated workplace
- workplace instructions
- manufacturer engine specifications
- water tank for testing marine engines
- two different marine engines requiring water testing in tanks
- marine engine test equipment as specified in the knowledge evidence
- tools, equipment and materials appropriate for water testing marine engines in tanks.

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