



Australian Government

**Assessment Requirements for AURRTC001
Diagnose and repair marine exhaust and
cooling systems**

Release: 1

Assessment Requirements for AURRTC001 Diagnose and repair marine exhaust and cooling systems

Modification History

Release	Comment
Release 1	New unit of competency.

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:

- diagnose and repair a fault in the fresh water cooling exhaust and cooling systems of two different vessels
- diagnose and repair a fault in the raw water exhaust and cooling systems of two different vessels.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing and repairing marine exhaust and cooling systems, including procedures for:
 - lifting and supporting exhaust and cooling system components
 - working with hot exhaust and cooling system components
- environmental requirements, including procedures for trapping, storing and disposing of materials released from exhaust systems
- application, purpose and operation of marine exhaust and cooling systems and components, including:
 - fresh water cooling systems, including:
 - circulation pumps
 - thermostats
 - heat exchangers
 - exhaust manifolds
 - turbochargers

- dry exhausts
- raw water cooling systems, including:
 - pumps, including camshaft, belt, shaft and gear driven
 - relief valves
 - engine oil coolers
 - transmission oil coolers
 - sacrificial anodes
 - intercoolers
 - seawater strainers
 - exhaust manifolds
 - exhaust elbows and risers
 - exhaust tubes and hoses
 - wet exhausts
 - mufflers and waterlocks
 - siphon breaks
 - exhaust outlet flappers
- diagnostic testing procedures for exhaust and cooling systems, including:
 - manometer measurement
 - turbocharger boost measurement
 - raw water system pressure and flow measurement
 - fresh water cooling system pressure testing
 - infra-red temperature measurement
- dismantling and repair procedures for exhaust and cooling systems, including procedures for inspecting and evaluating the following components:
 - circulation pumps
 - thermostats
 - heat exchangers
 - turbochargers and intercoolers
 - raw water pumps, including camshaft, belt, shaft and gear driven
 - relief valves
 - sacrificial anodes
 - seawater strainers
 - exhaust manifolds
 - exhaust elbows and risers
 - exhaust tubes and hoses
 - mufflers and waterlocks
 - siphon breaks
 - exhaust outlet flappers
- post-repair testing procedures for exhaust and cooling systems, including water testing procedures while under load.

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 marine exhaust and cooling 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:

- marine repair workplace or simulated workplace
- workplace instructions
- manufacturer exhaust and cooling system specifications
- two different marine vessels with faults in their fresh water cooling exhaust and cooling systems
- two different marine vessels with faults in their raw water exhaust and cooling systems
- diagnostic equipment for marine exhaust and cooling systems
- tools, equipment and materials appropriate for dismantling, testing, repairing and reassembling marine exhaust and cooling systems.

Links

Companion Volume implementation guides are found in VETNet -

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

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