



Australian Government

**Assessment Requirements for AURRTC101
Diagnose and repair marine exhaust and
cooling systems**

Release: 1

Assessment Requirements for AURRTC101 Diagnose and repair marine exhaust and cooling systems

Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

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:

- diagnose and repair a fault in the freshwater 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

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 diagnose and repair marine exhaust and cooling systems including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair marine exhaust and cooling systems including:
 - establishing 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 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 relating to diagnosing and repairing marine exhaust and cooling systems, including procedures for trapping, storing and disposing of materials released from exhaust systems
- purpose and operation of marine exhaust and cooling systems and components, including:
 - fresh watercooling 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 marine exhaust and cooling systems, including:
 - manometer measurement
 - turbocharger boost measurement
 - raw water system pressure and flow measurement
 - freshwater cooling system pressure testing
 - infra-red temperature measurement
- dismantling and repair procedures for marine exhaust and cooling systems, including procedures 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 marine exhaust and cooling systems, including water testing procedures while under load.

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 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 freshwater 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.

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

Links

Companion Volume Implementation Guide is found on VETNet -

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