



Australian Government

**Assessment Requirements for AURRTX003
Diagnose and repair marine outboard and
stern drive transmissions**

Release: 1

Assessment Requirements for AURRTX003 Diagnose and repair marine outboard and stern drive transmissions

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:
 - two different marine outboard transmissions
 - one marine stern drive transmission.

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 outboard and stern drive transmissions, including procedures for:
 - working with turning propellers
 - operating manual and mechanical lifting equipment
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from transmissions
- operating principles of outboard and stern drive transmissions and associated components, including:
 - gear types
 - gear ratios and torque reduction and multiplication
- application, purpose and operation of outboard and stern drive transmissions and components, including:
 - power flows
 - gearshift mechanisms, including:
 - cone clutches

- mechanical dog clutches
- methods of matching propeller to transmission gear ratio, engine output and boat performance
- diagnostic testing procedures for outboard and stern drive transmissions, including procedures for analysing:
 - gear selection problems
 - abnormal system noise
- dismantling procedures for outboard and stern drive transmissions, including procedures for:
 - measuring clearances and tolerances
 - inspecting components
- repair procedures for outboard and stern drive transmissions, including procedures for replacing:
 - gearshift mechanisms
 - bearings and seals, including oil replacement
 - gears
 - propellers
- assembly procedures for outboard and stern drive transmissions, including procedures for:
 - shimming bearings and gears
 - adjusting preload and rolling torque
 - checking gear tooth contact patterns
- post-repair testing procedures for outboard and stern drive transmissions, including procedures for water testing.

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 outboard and stern drive transmissions in marine vessels 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 transmission specifications
- two different marine outboard transmissions with faults
- one marine stern drive transmission with faults

- diagnostic equipment for marine outboard and stern drive transmissions
- tools, equipment and materials appropriate for dismantling, repairing, reassembling and adjusting marine outboard and stern drive transmissions.

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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