



Australian Government

AURRTX001 Inspect and service marine outboard and stern drive transmissions

Release: 1

AURRTX001 Inspect and service marine outboard and stern drive transmissions

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect and service marine outboard and stern drive transmissions. It involves preparing for the task, inspecting the transmission, reporting the inspection findings, servicing and adjusting the transmission, 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 - Transmission

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 inspect and service outboard and stern drive transmission	1.1 Job requirements are determined from workplace instructions 1.2 Servicing information is sourced and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and materials 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. Inspect transmission	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures and safety requirements 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Service transmission	3.1 Service and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements , and without causing damage to components or systems 3.2 Post-service testing is carried out according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and transmission is presented ready for use 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.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking service procedures and specifications relating to outboard and stern drive transmissions.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and recording parts and material used.

Skills	Description
Oral communication skills to:	- clarify instructions - report inspection findings and make repair recommendations.
Numeracy skills to:	- use basic mathematical operations, including addition and subtraction, to calculate liquid volumes and service schedule intervals - understand gear ratios in outboard and stern drive transmissions.

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 requirements</i> must include:	work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for identifying hazards and controlling risks associated with working with rotating components.
<i>Environmental requirements</i> must include:	procedures for trapping, storing and disposing of fluids released from transmissions.

Unit Mapping Information

Equivalent to AURRTX2001 Service marine outboard and stern drive transmission

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 AURRTX001 Inspect and service marine outboard and stern drive transmissions

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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:

- inspect and service two different marine transmissions, including:
 - one outboard transmission
 - one 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 inspecting and servicing marine outboard and stern drive transmissions, including procedures for identifying hazards and controlling risks associated with working with rotating components
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from transmissions
- identification and function of outboard and stern drive transmission components, including:
 - steering
 - trim and tilt
 - gear shift control, including:
 - mechanical
 - electrical
 - electrohydraulic
 - clutch system
 - cooling system

- types and applications of lubricants and lubricating fluids for outboard and stern drive transmissions
- inspection procedures for outboard and stern drive transmissions, including oil and fluid condition and leaks
- service and adjustment procedures for outboard and stern drive transmissions, including:
 - lubricant replacement
 - trim and tilt
 - steering system
 - screens and pick-ups
 - control system with forward, neutral and reverse
 - cooling system
- post-service testing procedures for outboard and stern drive transmissions.

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 outboard and stern drive transmissions 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 outboard and stern drive transmission specifications
- two different marine transmissions specified in the performance evidence and requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing marine outboard and stern drive transmissions.

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