



Australian Government

Assessment Requirements for AURRTX104 Diagnose and repair marine inboard transmissions

Release: 1

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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 at least two different marine inboard transmissions.

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 inboard transmissions including:
 - information provided by customers and supervisors
 - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair marine inboard transmissions 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 inboard transmissions, including procedures for:
 - working with inboard propeller drive systems and rotating shafts
 - working near hot exhaust systems
 - working in restricted spaces

- using manual and mechanical lifting equipment
- environmental requirements relating to diagnosing and repairing marine inboard transmissions, including procedures for trapping, storing and disposing of fluids released from transmissions
- operating principles of inboard transmissions and associated components, including:
 - gear types
 - gear ratios and torque reduction and multiplication
 - simple gear trains
 - compound gear trains
 - lubricant types
- purpose and operation of inboard transmissions and components, including:
 - power flows
 - V-drive transmissions
 - in-line transmissions
 - step-up transmissions
 - hydraulic transmissions
 - counter shaft transmissions
 - planetary gear transmissions
 - mechanical dog clutch transmissions
 - cone clutch transmissions
 - methods of matching propeller to transmission gear ratio, engine output and boat performance
- diagnostic testing procedures for marine inboard transmissions, including procedures for analysing:
 - gear selection problems
 - drive problems
 - abnormal system noise
- removal procedures for inboard transmissions
- dismantling procedures for inboard transmissions, including procedures for:
 - measuring clearances and tolerances
 - inspecting components
- repair procedures for marine inboard transmissions, including procedures for:
 - gearshift mechanisms
 - bearings and seals, including oil replacement
 - gears and transmission shafts
- assembly procedures for inboard transmissions, including procedures for:
 - shimming bearings and gears
 - adjusting preloads
- installation procedures, including procedures for aligning engines
- post-repair testing procedures for marine inboard transmissions, including water testing.

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 inboard 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 inboard transmissions with faults
- diagnostic equipment for marine inboard transmissions
- tools, equipment and materials appropriate for dismantling, repairing, reassembling and adjusting marine inboard transmissions.

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>