



Australian Government

AURRTQ005 Install marine jet drive propulsion systems

Release: 1

AURRTQ005 Install marine jet drive propulsion systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to install marine jet drive propulsion systems. It involves preparing for the task, installing jet drive propulsion systems and testing their operation, 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 - Driveline and Final Drives

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 install jet drive propulsion system	1.1 Job requirements are determined from workplace instructions 1.2 Installation procedures and information are sourced and interpreted 1.3 Installation options are analysed and those most appropriate to the circumstances are selected 1.4 Hazards associated with the work are identified and risks are managed

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.
	1.5 Tools, equipment and materials are selected and checked for serviceability
2. Install and commission system	2.1 System is checked for correct application and components are checked for damage 2.2 System is installed according to manufacturer specifications, workplace procedures and safety requirements , and without causing damage to components or systems 2.3 Installed system is tested for correct operation and required adjustments are made according to manufacturer specifications, workplace procedures and safety requirements 2.4 System is re-tested in normal operating conditions and final adjustments are made
3. Complete work processes	3.1 Final inspection is made to ensure work is to workplace expectations and vessel is presented ready for use 3.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 3.3 Tools and equipment are checked and stored according to workplace procedures 3.4 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 jet drive propulsion system specifications and procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting work performed and recording parts and material used.
Oral communication skills to:	- clarify instructions - report findings and make installation recommendations.

Skills	Description
Numeracy skills to:	measure jet drive propulsion system components and use basic mathematical operations, including addition, subtraction, multiplication and division, to calculate distances, areas, volumes, tolerances and deviations from manufacturer specifications.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Problem solving skills to:	determine installation methods for different vessels.
Technology skill to:	use precision measuring equipment, such as rulers, vernier calipers, micrometers and dial gauge indicators.

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 lifting and supporting procedures for jet drive propulsion systems.
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Unit Mapping Information

Equivalent to AURRTQ3005 Install jet drive propulsion systems

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 AURRTQ005 Install marine jet drive propulsion systems

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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:

- install and test prior to placing in service two different marine jet drive propulsion systems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to installing jet drive propulsion systems, including lifting and supporting procedures for jet drive propulsion systems
- construction and operating principles of jet drive propulsion systems, including:
 - types of jet pumps, including:
 - centrifugal
 - axial flow
 - methods of reversing thrust, including:
 - cable-operated buckets
 - hydraulically-operated buckets
 - electrically-operated buckets
 - gearboxes
- procedures for installing marine jet drive propulsion systems in vessels
- procedures for testing the installation of marine jet drive propulsion systems
- commissioning procedures for marine jet drive propulsion systems.

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 jet drive propulsion systems they have installed in vessels, 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:

- workplace location or simulated workplace
- workplace instructions
- manufacturer jet drive propulsion system specifications
- two different vessels requiring installation of jet drive propulsion systems
- tools, equipment and materials appropriate for installing marine jet drive propulsion systems.

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